National Park Service
U.S. Department of the Interior

San Juan Island National Historical Park

San Juan Island National Historical Park

Draft General Management Plan and Environmental Impact Statement



January 2008



American Camp beach at sunset.
Photo by Robert Demar.

United States Department of the Interior

NATIONAL PARK SERVICE
San Juan Island National Historical Park
P.O. Box 429
Friday Harbor, Washington 98250

IN REPLY REFER TO:

December 2007

Dear Friend of San Juan Island National Historical Park,

It is with great pleasure that the National Park Service releases for comment the Draft San Juan Island National Historical Park General Management Plan and Environmental Impact Statement. Once finalized, the General Management Plan will provide park management with a fifteen to twenty year blueprint concerning the future operation and protection of this unit of the national park system.

The Draft General Management Plan discusses three alternative approaches for protecting and managing resources and providing for public use and enjoyment of the park. Alternative C has been proposed as the National Park Service's preferred alternative, and this set of actions and programs is intended to become the General Management Plan for San Juan Island National Historical Park. This document also contains an analysis of the natural, cultural and social effects and consequences of implementing each of these alternatives.

Since its creation in 1966, San Juan Island National Historical Park has benefited from community support and public participation. Our planning effort for this Draft General Management Plan has also benefited from your participation and involvement. Many ideas from past workshops and written comments are represented in the desired conditions for the park, the individual alternatives considered, as well as the National Park Service's preferred alternative.

The proposed alternative would broaden the scope of resource management and interpretation programs to emphasize the connections and interrelationships between the park's cultural and natural resources. Historic buildings and structures would continue to be preserved, with some additional buildings open to the public for interpretation. New facilities, trails and programs would provide opportunities for visitors to understand how the park's natural surroundings influenced the settlement and historic events on San Juan Island and help define the cultural landscapes preserved within the park.

Please read this document and provide your comments to the National Park Service. The "How to Use this Document" section provides instructions about how to comment on this document. Your continued involvement and input to this draft document is sincerely appreciated and will help us fulfill our mission for the future of San Juan Island National Historical Park.

Thank you for taking the time to help us in this important planning effort.

Peter Dederich

Peter Dederich
Superintendent, San Juan Island National Historical Park

TAKE PRIDE IN AMERICA



San Juan Island National Historical Park

Draft General Management Plan and Environmental Impact Statement

San Juan Island National Historical Park
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Cover: Aerial view of American Camp.
Opposite: Aerial view of Washington State Ferry sailing through the San Juan Islands. Photos by Robert Demar.



Draft General Management Plan

Draft Environmental Impact Statement

for

San Juan Island National Historical Park

Prepared by

U.S. Department of the Interior

National Park Service

Three alternatives have been examined in this draft general management plan and environmental impact statement for San Juan Island National Historical Park. They respond to National Park Service (NPS) planning requirements and to issues identified during the scoping process. These alternatives address visitor use and the preservation of cultural and natural resources to protect and interpret the sites of the American and English camps, and of commemorating the historic events that occurred from 1853-1871 on the island in connection with the final settlement of the Oregon Territory boundary dispute, including the so-called Pig War of 1859. Alternative C is the National Park Service's preferred alternative. Whatever alternative or combination of alternatives is approved will become the general management plan for the park.

Alternative A is the No Action Alternative and assumes that existing programming, facilities, staffing, and funding would generally continue at their current levels. The primary emphasis of the No Action Alternative would continue to be protection and preservation of cultural resources.

The general concept for Alternative B is to increase visitor use opportunities and outreach at both English Camp and American Camp and in the town of Friday Harbor through additional visitor facilities, recreational opportunities, programs, and services. Interpretation would be enhanced for both cultural and natural interpretive themes through more extensive facilities and programs.

Alternative C, the Preferred Alternative, would broaden the scope of resource management and interpretation programs to emphasize the connections and interrelationships between the park's natural and cultural resources. New facilities, trails and programs would provide opportunities for visitors to understand the importance of the park's natural resources in defining the cultural landscapes and influencing the settlement and historic events of San Juan Island.

The detailed description of the alternatives is followed by a description of park resources and the likely environmental consequences of the alternatives. Also included are the results of initial public involvement, as well as consultation with other agencies, organizations and individuals associated with planning for the park's future.

This draft general management plan/environmental impact statement has been distributed to agencies, organizations, and individuals for review and comment. The public comment period will last for 60 days after the Notice of Availability has been published in the *Federal Register*. Please see "How to Comment on this Plan" section on the following page. For more information, contact or write to the Superintendent at San Juan Island National Historical Park, 650 Mullis Street, Suite 100, Friday Harbor, Washington 98250; telephone: (360) 378-2240.



How to Use This Document

This draft general management plan/environmental impact statement (GMP/EIS) is presented in seven main chapters. The "Summary" at the beginning of the document provides a condensed version of this document. **Chapter 1**: "Introduction" describes the background of the park and important actions that have occurred since its establishment. It also explains the purpose and need for the plan, and an overview of the planning process. **Chapter 2**: "Foundation for Planning" describes the park's purpose, significance, special mandates, interpretive themes, fundamental resources and values, and legal and policy requirements. **Chapter 3**: "Scope of the GMP/EIS" describes the issues developed with public involvement during the planning process and presents the impact topics to be carried forward. **Chapter 4**: "Alternatives" describes three management alternatives, including the National Park Service's Preferred Alternative. The alternatives represent reasonable sets of management decisions to be considered consistent with NPS policy and applicable laws and planning requirements. This chapter includes two helpful summary charts: "Summary of Actions for Each Alternative" and "Summary of Impacts." **Chapter 5**: "The Affected Environment" provides detailed information on the park focusing on those resources that could be affected by the decisions contained in the individual management alternatives. **Chapter 6**: "Environmental Consequences" describes the impacts of each alternative on park resources. **Chapter 7**: "Public Involvement" summarizes public involvement and the consultation process that was an integral part to the creation of this draft GMP/EIS. This chapter also summarizes public comments received by the NPS during scoping.

How to Comment on this Document

The pubic comment period for this draft GMP/EIS will extend through **March 17, 2008,** or no later than 60 days after the EPA's notice of filing of the EIS appears in the *Federal Register***.** As soon as this date is confirmed, it will be announced on the PEPC website and by local and regional media. We encourage you to review the document and welcome your comments. During the comment period comments may be submitted using several methods:

- We prefer that readers submit comments online at the NPS Planning, Environment and Public Comment (PEPC) website at http://parkplanning.nps.gov/sajh. An electronic public comment form is provided through this website.
- A postage-paid comment response form is included in the Draft General Management Plan Summary Newsletter. You may use this form and attach additional pages as necessary.
- Letters can be sent to:
  Superintendent
  San Juan Island National Historical Park
  650 Mullis Street, Suite 100
  Friday Harbor, Washington 98250

In addition, comments may be made in person at one of the upcoming public workshops. The specific dates and times for these workshops will be announced in local newspapers, in the Draft GMP Alternatives Newsletter, and online at the above website. A limited number of additional copies of this report are available from the above mailing address. In addition, this Draft GMP/EIS is available at the public library in Friday Harbor, Washington and at the NPS Pacific West Region's library in Seattle. Public comments and contributions have been an invaluable component of this planning process, and the National Park Service looks forward to comments on this draft GMP/EIS.

Before including your address, phone number, email address, or other personal identifying information in your comment, please be aware that due to recent litigation our practice is to make comments, including names, home addresses, home phone numbers, and email addresses of respondents, available for public review. Individual respondents may request that we withhold their names and/or home addresses, etc., but if you wish us to consider withholding this information you must state this prominently at the beginning of your comments. We will always make submissions from organizations or businesses, and from individuals identifying themselves as representatives of or officials of organizations or businesses, available for public inspection in their entirety.



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Summary

San Juan Island National Historical Park was authorized by an act of Congress on September 9, 1966 (Public Law 89-565). The last general management plan (GMP) was completed in 1979. Many changes have occurred since this time. Patterns and types of visitor use have changed. San Juan County is one of the fastest growing counties in the state. Over 250,000 annual park visitors have been recorded at American and English camps. This growth in local population and visitation has implications for management of the park's resources. As the population of the island has grown and the island has become more developed, the park has become an important refuge for natural resources such as prairie and Garry oak woodlands. Water has become a precious commodity. Each of these changes has major implications for how visitors access and use the park and the facilities needed to support these uses, how resources are managed, and how the National Park Service (NPS) manages its operations.

This GMP establishes and articulates a management philosophy and framework for decision-making and problem solving in the park that would be implemented over the next 15-20 years. A new plan is needed for the following reasons:

- to clearly define resource conditions and visitor experiences to be achieved in the park,
- to provide a framework for NPS managers to use when making decisions about how to best protect national park unit resources,
- to determine how to provide a diverse range of visitor experience opportunities,
- to determine how to manage visitor use,
- to determine what kinds of facilities, if any, are needed,
- to ensure that the foundation for decision making has been developed in consultation with interested stakeholders and adopted by the NPS leadership after an adequate analysis of the benefits, impacts, and economic costs of alternative courses of action.

This draft GMP presents three alternatives including the National Park Service's preferred alternative for future management of San Juan Island National Historical Park. The alternatives, which are consistent with the park's purpose, significance, and special mandates, present different ways to manage resources and visitor use and improve facilities and infrastructure at the park. The three alternatives include the No Action Alternative (continuation of current management) and two action alternatives, B and C.

Several other actions and alternative were also considered, but were eventually dismissed from further analysis. These actions and alternatives, along with the rationale for their dismissal, are included near the end of the Chapter 4 "Alternatives".

The implementation of the approved plan (no matter which alternative is selected) will depend on future funding, Service-wide priorities, and partnership funds, time, and effort. The approval of a GMP does not guarantee that funding and staf ng needed to implement the plan will be forthcoming. Full implementation of the GMP could be many years into the future.

Alternative A: No Action

The No Action Alternative consists of a continuation of existing management and trends at San Juan Island National Historical Park and provides a baseline for comparison in evaluating the changes and impacts of the other alternatives. No new construction would be authorized.

The primary emphasis in the No Action Alternative would continue to be placed on the protection and preservation of cultural resources. Since 1966, the park has been listed in the National Register of Historic Places and is a National Historic Landmark. The management of cultural landscapes around the immediate encampment areas places emphasis on cultural landscape management while still respecting the natural environment and natural processes. Existing landscape elements from the encampment period and the Crook homesteading era would continue to be preserved and maintained. At English Camp, this would include the formal garden, flagpole, segments of historic trails and roads, cemetery, parade ground, fencing, historic orchard fruit trees, and extant structures. At American Camp, this would include the redoubt, parade ground, fencing, extant structures, cemetery, historic fruit trees, historic prairie, and segments of historic trails and roads from the encampment period. The 1979 double-wide trailer that serves as the temporary visitor center would remain.



At English Camp, the barracks would continue to be used as the primary visitor contact station and for special events, and the Crook house would continue to be used as an exterior exhibit. Interpretive displays and exhibits would continue to focus on historical themes.

Alternative B

The general concept for Alternative B is to increase visitor use opportunities and outreach at both English Camp and American Camp and in the town of Friday Harbor through additional visitor facilities, recreational opportunities, programs, and services. Natural and cultural resources interpretation would be enhanced through more extensive facilities and programs.

At English Camp, the road system would be reconfigured as a one-way loop road by connecting a road segment approximately one-fifth mile long from the entrance road to the administrative road. The road would follow the existing historic road alignment where possible. The Crook house would be rehabilitated as a visitor contact facility on the ground floor and for administrative use on the second floor. The educational camp would remain in its present location.

At American Camp, the existing visitor center would be removed, the site restored to natural conditions, and a new enlarged visitor center would be constructed north of the redoubt. The new visitor center would include space for a collections study room for natural and cultural resource items, including a portion of the prehistory and military-era collections. The existing road to the redoubt off Pickett's Lane would be removed and converted to a trail. The cultural landscapes would be enhanced to aid visitor understanding and interpretation through a variety of techniques. The prairie would be restored to native plant species.

Off-island interpretation would be enhanced through partnerships. The park would propose boundary adjustments at both camps to include important natural and cultural resources related to the purpose of the park.

Alternative C

Alternative C, the Preferred Alternative, would broaden the scope of resource management and interpretation programs to emphasize the connections and interrelationships between the park's natural and cultural resources. New facilities, trails and programs provide opportunities for visitors to understand the importance of the park's natural resources in defining the cultural landscapes and influencing the settlement and historic events of San Juan Island. This alternative was selected by the GMP planning team using a objective analysis process.

At English Camp, the Crook house would be retained, stabilized, and used as an exterior exhibit with interpretive signs and displays that tell the story of the Crook family. The educational camp would be relocated within English Camp along the administrative road and set back in the woods. The hospital would be rehabilitated and opened to the public for interpretation.

The 1979 double-wide trailer that serves as the temporary visitor center at American Camp would be removed and replaced with a permanent, enlarged visitor center at the existing site, allowing for improved exhibits and staff space. A collections study room for natural and cultural resource items, including a portion of the military-era collections would be relocated to the park. The collections study room would be located at park headquarters or at the permanent visitor center and would be easily accessible to park staff. The NPS would retain pre-history collections predominately at the University of Washington's Burke Museum in Seattle. The existing road to the redoubt off Pickett's Lane would be removed and converted to a trail.

In the officers' quarters duplex, half would be rehabilitated for use as an interpretive exhibit that shows a typical officers' quarters, and the other half woul d be available as a study house so visitors could see evolution of the structure and changes that have occurred to it over time. The cultural landscapes would be enhanced to aid visitor understanding and interpretation through a variety of techniques. As in Alternative B, the prairie would be restored to native plant species.

Historic buildings from the encampment period still existing on the island would be repatriated back to their original locations within the camps. Off-island interpretation would be enhanced through partner-ships. The park would propose boundary adjustments at both camps to include important natural and cultural resources related to the purpose of the park.





Chapter 1: Introduction

San Juan Island National Historical Park is a unit of the national park system and is managed by the National Park Service (NPS). It is located on San Juan Island, the second largest island in the San Juan archipelago. The archipelago is situated in northwestern Washington between the southern tip of Vancouver Island, British Columbia, and the United States mainland. The park is within Washington's Second Legislative District in San Juan County, Washington.

Background of the Park

San Juan Island National Historical Park was established by Congress in 1966 for the purpose of "interpreting and preserving the sites of the American and English camps on the island, and of commemorating the historic events that occurred from 1852 to 1871 on the island in connection with the final settlement of the Oregon Territory boundary dispute, including the so-called Pig War of 1859" (80 Stat. 737) (Public Law 89-565). Among the national park system's nearly 400 units, San Juan Island National Historical Park is the only site that illustrates, in its dramatic and largely intact physical setting, how war can be averted and peace maintained through positive action by individuals and governments — a powerful message in unsettled times. (See Figure 1: Regional Context and Figure 2: The San Juan Islands at the end of this chapter.)

San Juan Island National Historical Park consists of two distinct units, American Camp (1223 acres) and English Camp (529 acres), which together comprise 1,752 acres (See Figure 3: San Juan Island). The boundary of English Camp includes an offshore island known as Guss Island. The marine ecosystems surrounding these units and their six miles of publicly accessible shoreline are renowned for their scenery. The natural assets and historical significance of the park attract more than 250,000 visitors each year – mostly during the summer months and on weekends.

San Juan Island sits in the rain shadow of the Olympic Mountains and is drier than other areas of western Washington. There is considerable variation in microclimate even within San Juan Island. This natural variability is reflected in the local vegetation, with grassy prairies in the dry American Camp area and western evergreens and deciduous trees in the English Camp area. Freshwater areas exist in the form of numerous small wetlands in each area. Marine waters of the park include Garrison and Westcott bays adjacent to English Camp, as well as more exposed shorelines along Griffin Bay and the Strait of Juan de Fuca in American Camp, and three small lagoons on Griffin Bay (Klinger et. al., 2006).

English Camp is significant as the location of a British Royal Marines camp during the joint occupation. Following the military occupation, the site was the location of the Crook family homestead. The site is situated on Garrison Bay and comprises 1,400 feet of shoreline, a broad level bank, and surrounding hillsides. English Camp features significant historic resources, including four buildings from the military period, the historic landscape, extensive earthworks and masonry work, and numerous archaeological sites. Following the encampment era, the Crook family lived on and farmed the land of English Camp from 1875 until it was acquired by Washington State in 1963. The Crook House and two orchards exist from this period (See Figure 4: English Camp: Existing Conditions).

American Camp is significant as the location of the United States Army camp during the joint occupation of the island by British and American Troops from 1859 to 1874. The site occupies a portion of the southeast peninsula of San Juan Island and is comprised of a broad ridge overlooking Griffin Bay to the north and Haro Strait to the south, and includes scrub-prairie lands and Puget Sound shoreline. American Camp features significant historic resources including two of the original military buildings, the reconstructed military fence and flagpole, and numerous archaeological sites. The cultural landscape also includes the sites of the Hudson's Bay Company agricultural outpost, Belle Vue Sheep Farm, and San Juan Town (See Figure 5: American Camp: Existing Conditions).

Archaeology at both camps reveals human occupation of San Juan Island dating back 9,000 years or more and illustrates how native peoples built a culture that utilized the abundant natural resources of the area. English and American camps both served as gathering places and the soil and vegetative communities of both had some influence in the settlement and use

Regional Context

San Juan Island National Historical Park GMP/EIS



Figure 1

- City
- Interstate Highway
- State Highway
- US Highway
- County
- Indian Reservation
- National Forest
- National Park Service Unit



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Produced by: National Park Service, PWRO-Seattle GIS Group

Date Created: February 28, 2007

Data Sources:
ESRI: cities, counties, roads
ESRI Digital Chart of the World: country and state boundaries, streams, lakes & rivers
Interior Columbia Basin Ecosystem Management Project: National Forests
NPS: National Park Service Units
USFS: trails
WA Department of Natural Resources: Indian Reservations

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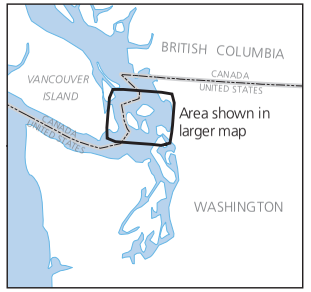
San Juan Islands

San Juan Island National Historical Park GMP/EIS



Figure 2

- City
- Interstate Highway
- State Highway
- US Highway
- Primary Road
- Indian Reservation
- National Park Service Unit
- State Park



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Miles

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Produced by: National Park Service, PWRO-Seattle GIS Group

Date Created: February 28, 2007

Data Sources:
ESRI: cities, roads, state parks
ESRI Digital Chart of the World: country and state boundaries, lakes, rivers, state parks, streams,
NPS: National Park Service Units
Padilla Bay NERR: Reserve boundary
San Juan County: roads
WA Department of Ecology: shoreline
WA Department of Natural Resources: Indian Reservations

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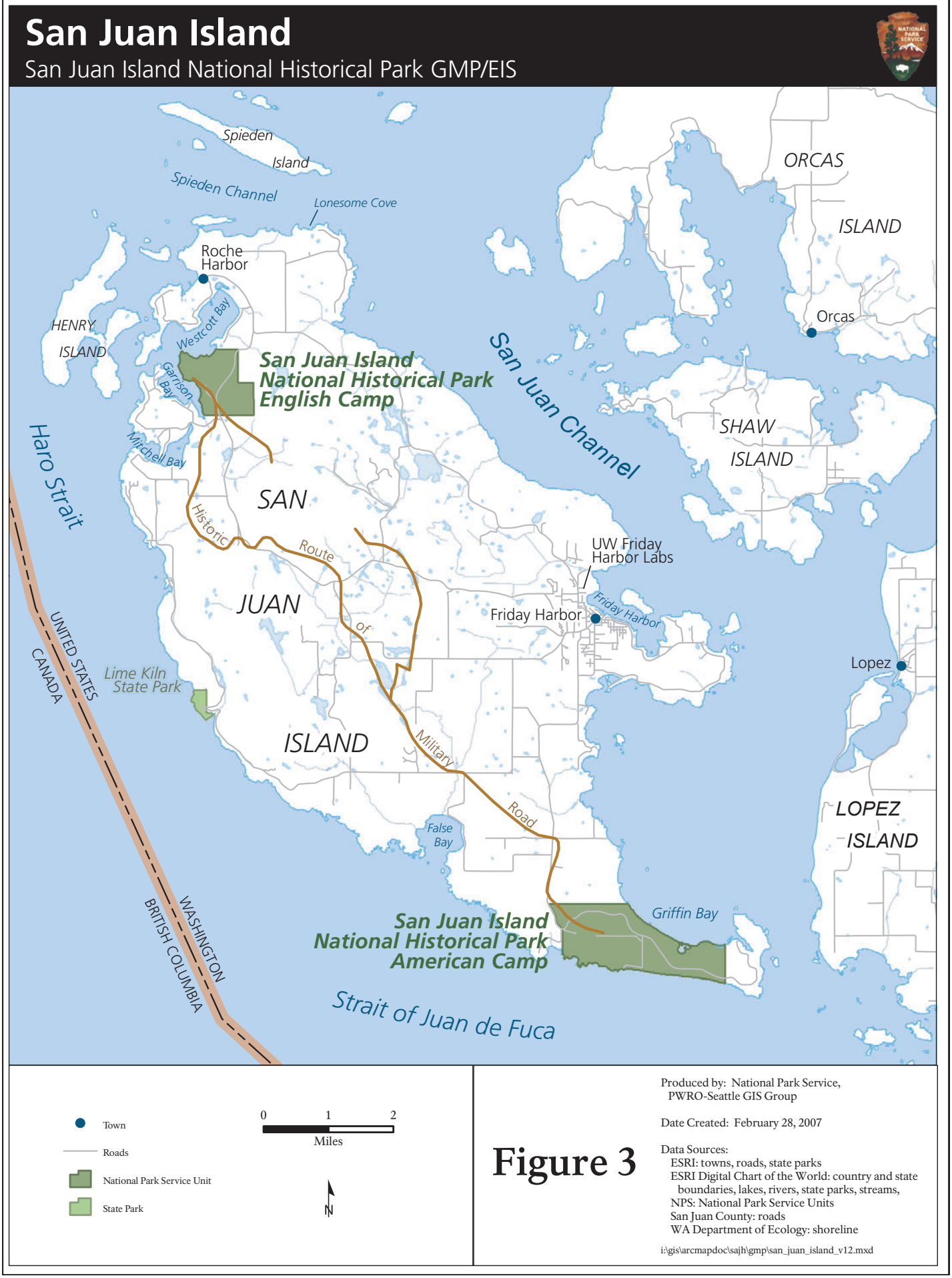

San Juan Island
San Juan Island National Historical Park GMP/EIS
Spieden Island
Spieden Channel
Lonesome Cove
Roche Harbor
HENRY ISLAND
Westcott Bay
Garrison Bay
San Juan Island National Historical Park English Camp
Mitchell Bay
Haro Strait
San Juan Channel
ORCAS ISLAND
Orcas
SHAW ISLAND
SAN JUAN ISLAND
Historic Route of Military Road
UW Friday Harbor Labs
Friday Harbor
Friday Harbor
Lopez
LOPEZ ISLAND
Lime Kiln State Park
UNITED STATES
CANADA
WASHINGTON
BRITISH COLUMBIA
False Bay
Griffin Bay
San Juan Island National Historical Park American Camp
Strait of Juan de Fuca
Town
Roads
National Park Service Unit
State Park
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Date Created: February 28, 2007
Data Sources:
ESRI: towns, roads, state parks
ESRI Digital Chart of the World: country and state boundaries, lakes, rivers, state parks, streams,
NPS: National Park Service Units
San Juan County: roads
WA Department of Ecology: shoreline
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Figure 3

English Camp: Existing Conditions

San Juan Island National Historical Park GMP/EIS



Figure 4

Produced by: National Park Service
PWRO-Seattle GIS Group

Date Created: February 28, 2007

Data Sources: NPS - lakes, park boundary, roads, shoreline, structures, trails
San Juan County - parcels
USGS - shaded relief

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American Camp: Existing Conditions

San Juan Island National Historical Park GMP/EIS



Figure 5

Produced by: National Park Service, PWRO-Seattle GIS Group

Date Created: February 28, 2007

Data Sources: NPS - lakes, park boundary, roads, shoreline, structures, trails
San Juan County - parcels
USGS - shaded relief

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of the area. The prairies at American Camp provided important planting areas while Garrison Bay offered a protected living area for gathering shellfish and other marine resources.

Captain Vancouver was the first explorer to visit the region in 1792. Europeans began to settle the region in the 1830s, and by the 1850s, both Britain and the United States had sent troops to the area as part of their efforts to claim these lands as part of their respective empires. While the Oregon Treaty of 1846 gave the United States undisputed possession of the Pacific Northwest south of the 49th parallel and settled the larger boundary question of the Oregon Territory, its wording left unclear who owned San Juan Island.

On June 15, 1859, an American settler named Lyman Cutlar shot and killed a pig belonging to the Hudson's Bay Company because it was rooting in his garden. When British authorities threatened to arrest Cutlar, American citizens drew up a petition requesting U.S. military protection. Twelve years of military occupation by American and British troops followed and both sides settled into peaceful joint occupation of the island. The dispute culminated in third-party arbitration by Kaiser Wilhelm I of Germany and in 1872, the Kaiser ruled in favor of the United States, awarding the San Juan Islands to the United States and determining the final boundary between the U.S. and Canada. On November 25, 1872, the Royal Marines withdrew from English Camp and by July 1874, the last of the U.S. troops had left American Camp. This resolution was a triumph for peacefully settling a dispute between nations.

Following the military occupation, the island was settled by homesteaders, who were farmers, fishermen, and laborers. At American Camp, land was thrown open to settlement by presidential proclamation and homesteaders made use of the site for farming and grazing, gradually altering the historic landscape of the camp. In 1951, the Washington State Parks and Recreation Commission acquired the core five acres of the historic camp to preserve it from further alteration. At English Camp, the homesteading family of William Crook settled in the abandoned buildings of the camp and began to cultivate the land. For two generations, the Crook family worked and shaped the landscape, making practical use of the historic structures as well as erecting new ones. The site was purchased by the Washington State Parks and Recreation Commission in 1963, and both American and English camps were transferred to the National Park Service in 1966.

Today, San Juan Island National Historical Park provides a glimpse of life on the island in the mid-1800s, with stunning vistas and a variety of plant communities, including rare prairie at American Camp and Garry oak woodlands at English Camp. The pastoral landscape and low level of development around the park play a key role in preserving the historic character of the park. The demand for preserved landscapes and open space for outdoor recreation is expected to continue to grow in the future. While much of park management focuses on historic preservation and interpretation, the diverse natural and scenic resources offer increasingly significant opportunities for research, interpretation, and recreation. Management of cultural resources in conjunction with natural resources is paramount to preserving the integrity of the park and providing appropriate recreation opportunities.

Establishment of San Juan Island National Historical Park

From 1951 through 1963, the Washington State Parks and Recreation Commission purchased lands to create a state park centered on the historic sites. In 1959, the camps were surveyed by the National Survey of Historic Sites and Buildings and later in 1961 by the NPS Western Region staff. At this time, the two camps were approved for National Historic Landmark Status. In September 1966, the park came into national stewardship when President Lyndon B. Johnson signed the park's enabling legislation into law. San Juan Island National Historical Park was, and still is, the largest area of public land to be created on the island.

The park's enabling legislation states that the park will be known as "the San Juan Island National Historical Park and shall commemorate the final settlement by arbitration of the Oregon boundary dispute and the peaceful relationship which has existed between the United States and Canada for generations." The Secretary of the Interior will "administer, protect, and develop the park" in accordance with the provisions of the Organic Act (39 Stat. 535; 16 U.S.C. 1 et seq.) and the Act of August 21, 1935 (49 Stat. 666; 16 U.S.C. 461 et seq.).

The legislation further calls for the Secretary to "enter into cooperative agreements with the State of Washington, political subdivisions thereof, corporations, associations, or individuals, for the preservation of nationally significant historic sites

and structures and for the interpretation of significant events which occurred on San Juan Island, in Puget Sound, and on the nearby mainland, and he may erect and maintain tablets or markers at appropriate sites in accordance with the provisions of the Act of August 21, 1935 (49 Stat. 666; 16 U.S.C. 461 et seq.)." (See Appendix A, San Juan Island National Historical Park Enabling Legislation.)

Events Affecting the Park after Enabling Legislation

American Camp By-Pass Road

The original road through American Camp lies just north of the redoubt, affecting not only the historic scene but also contributing to incompatible use and erosion. To preserve the redoubt, the park constructed a new by-pass road with the intention of exchanging the new by-pass road with San Juan County for a portion of the county road. The old road was to be restored to the conditions of the historic setting. In 1974, the road was completed and opened to the public. Both the by-pass road and the county road remained open and available for use for many years. However, in 1990, the county vacated 1.3 miles of road, which allowed the park to close the road and begin restoration work (Cannon, 1997).

Cattle Point Road Environmental Impact Statement

Cattle Point Road traverses a portion of the park including the southern tip of San Juan Island at American Camp. The area of concern is a failing 1,750 foot section of Cattle Point Road that crosses land managed by the National Park Service and Washington State Department of Natural Resources (DNR). The DNR portion is designated a Natural Resource Conservation Area (NRCA). Natural Resource Conservation Areas in Washington State are lands designated to maintain, enhance or restore ecological systems and habitat for threatened, endangered, sensitive plants and animals while providing opportunities for education and low-impact public use.

The failing section of the Cattle Point Road is located on a slope that rises from the Strait of Juan de Fuca to the edge of a bluff approximately 50 feet from the existing roadway. The road traverses the slope at an approximate elevation of 150 feet above sea level. Coastal wind and wave action has been eroding the base of the slope that supports the Cattle Point Road. As erosion continues, the roadway will eventually fail and curtail vehicular and non-motorized access to the southeastern portion of the island. The project has identified five alternative routes for public review. The one with the most advantages and the least environmental effects will eventually replace the affected roadbed.

This project is a separate planning process, and is separately funded from the current general management plan. It is managed by the Department of Transportation, Federal Highway Administration. The role of this general management plan is to affirm the need of continued access for the 250 residents who live in Cape San Juan subdivision and Cattle Point Estates and whose interests are represented by county government. The draft EIS for the road replacement is expected to be released shortly after the San Juan Island National Historical Park draft GMP/EIS.

Purpose and Need for the Plan

Purpose of the Plan

The new general management plan will set the basic management philosophy for San Juan Island National Historical Park for the next 15 to 20 years. The purposes of this GMP are as follows:

- to develop the purpose, significance, and primary interpretive themes of the park,
- to describe any special mandates of the park,
- to clearly define resource conditions and visitor uses and experiences to be achieved in the park,
- to provide a framework for park managers to use when making decisions about how to best protect park resources, how to provide quality visitor experiences, how to manage visitor use, and what kinds of facilities, if any, to develop in or near the park,
- to ensure that this foundation for decision-making has been developed in consultation with interested stakeholders and adopted by the NPS leadership after an adequate analysis of the benefits, impacts, and economic costs of alternative courses of action.

Legislation establishing the National Park Service as an agency (Organic Act of 1916) and governing its management provides the fundamental direction for the administration of San Juan Island National Historical Park (and other units and programs of the national park system). This GMP is intended to build on these

laws and the legislation that established San Juan Island National Historical Park to provide a vision for the park's future. (See Appendix A: San Juan Island National Historical Park Enabling Legislation.)

For more detail on the law and policy directing management actions, see Appendix B: Pertinent Laws, Policies, and Procedures. The alternatives in this general management plan address desired future conditions not already mandated by law and policy which must be determined through a planning process.

One purpose of this general management plan is to identify strategies to protect significant resources and manage visitor use at San Juan Island National Historical Park. Successful implementation of the GMP would result in the long-term preservation of natural and cultural resources and an enhanced visitor experience. Where law, regulations, or policy do not provide clear guidance, management decisions will be based on the park's purpose, public concerns, and analysis of impacts of alternative courses of action, including long-term operational costs.

This general management plan will not describe how particular programs or projects will be implemented or prioritized. Those decisions will be deferred to more detailed implementation planning, which will follow the broad, comprehensive plan presented in this document.

Need for the Plan

Many conditions on San Juan Island and within the park have changed since the last general management plan was produced in 1979. Patterns and types of visitor use have changed. San Juan County is one of the fastest growing counties in the state. Over 250,000 annual park visitors have been recorded at American and English camps. This growth in local population and visitation has implications for management of the park's resources.

National Parks and Recreation Act of 1978

The National Parks and Recreation Act of 1978 (Public Law 95-625), requires the preparation and timely revision of general management plans for each unit of the national park system. The National Park Service management policies call for each GMP to "…set forth a management concept for the park [and] establish a role for the unit within the context of regional trends and plans for conservation, recreation, transportation, economic development, and other regional issues…" Congress has also specifically directed (16 U.S.C. 1a-7[b]) the NPS to consider, as part of the planning process the following elements:
"General management plans for each unit shall include, but not be limited to:

- measures for the preservation of the area's resources;
- indications of types and general intensities of development (including visitor circulation and transportation patterns, systems and modes) associated with public enjoyment and use of the area, including general locations, timing of implementation, and anticipated costs;
- identification of an implementation commitment for visitor carrying capacities for all areas of the unit; and
- indications of potential modifications to the external boundaries of the unit, and the reasons therefore."

A further discussion of these and other issues can be found in Chapter 3 "Planning Issues and Concerns." The proposed GMP is accompanied by an environmental impact statement, which identifies and evaluates the effects or impacts of various alternative approaches to the protection and appropriate uses of San Juan Island National Historical Park.

Overview of Planning Process

The Planning Process and Public Scoping

Planning provides an opportunity to create a vision and to define the park's role in relation to its national, natural, historic, and community settings. The planning process is designed to provide decision makers with adequate information about resources, impacts, and costs. Decisions made within this planning context are more likely to be successful over time and promote a more efficient use of public funds.

A general management plan is a logical decision-making process, in which relevant information is gathered and used to make a series of related decisions. The process of creating a GMP ensures that park managers and stakeholders share a clearly defined understanding of the resource conditions, opportunities for visitor experiences, and general kinds of management, access, and development that will best achieve the park's purpose and conserve its

resources unimpaired for the enjoyment of future generations.

An interdisciplinary planning team was assembled in the spring of 2003. It was comprised of the park's superintendent and staff and Pacific West Region specialists. The planning team met several times during 2003 and 2004 to gather background information, identify the purpose and significance and interpretive themes of the park, examine resources, identify issues, and formulate alternative management concepts. Throughout the planning process, public participation efforts played a large part in helping to focus the plan, identify issues, and formulate alternatives. Many meetings were held, newsletters were distributed, and public open houses were conducted in Friday Harbor and Seattle. A detailed account of the public scoping process and public input received during the planning process for the park is provided in the "Public Involvement" chapter of this draft GMP/EIS.

Next Steps

After distribution of the draft GMP/EIS, there will be a 60-day public review and comment period after which the NPS planning team will evaluate comments from other federal agencies, tribes, organizations, businesses, and individuals regarding the draft plan and incorporate appropriate changes to produce a Final San Juan Island National Historical Park General Management Plan/Environmental Impact Statement.

The final plan will include letters from governmental agencies, any substantive comments on the draft document, and NPS responses to those comments. Following distribution of the Final GMP/EIS and a 30-day no-action period, a record of decision approving the final plan will be signed by the NPS regional director. The record of decision documents the NPS selection of an alternative for implementation. With the signing of the record of decision, the plan can then be implemented.

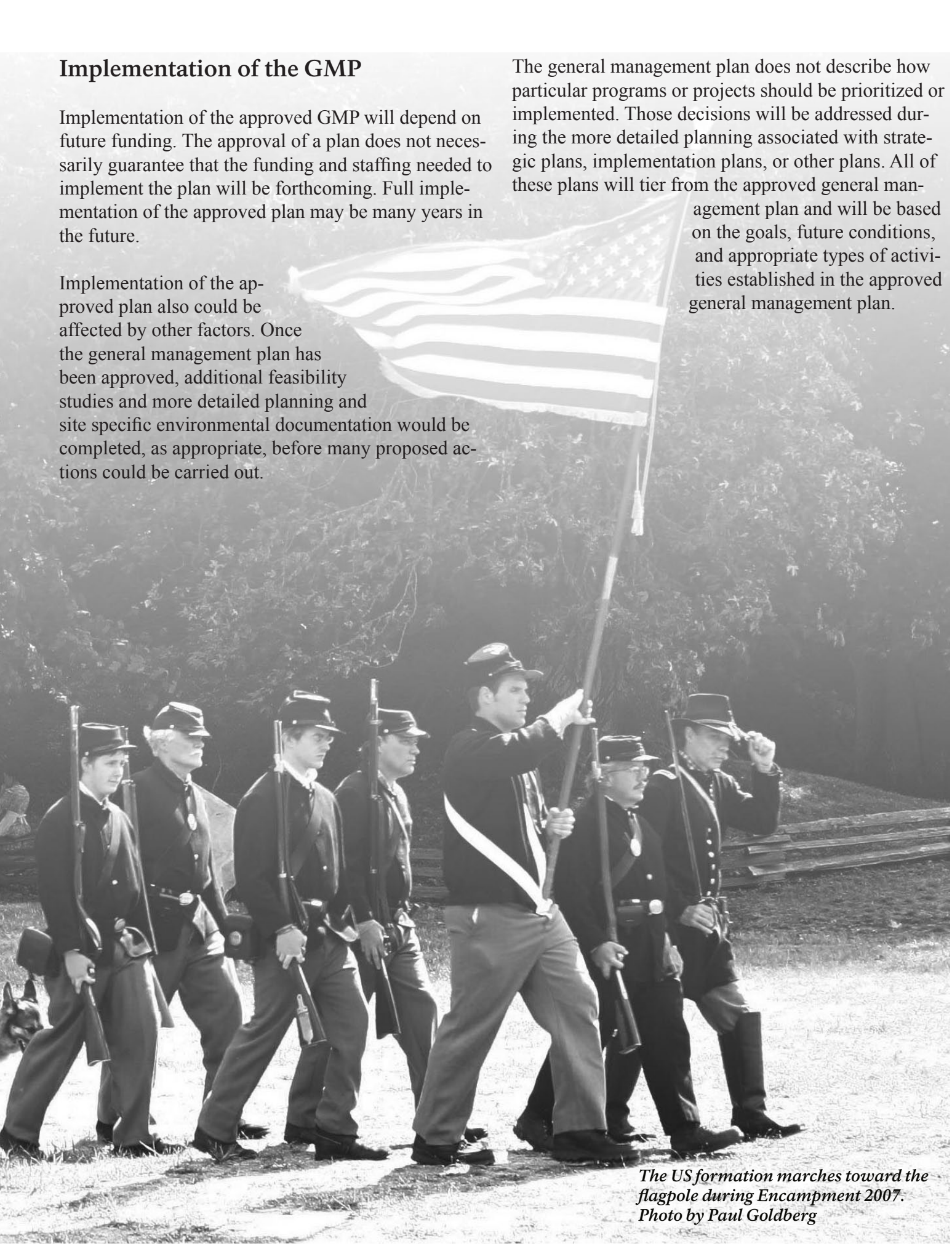


Implementation of the GMP

Implementation of the approved GMP will depend on future funding. The approval of a plan does not necessarily guarantee that the funding and staffing needed to implement the plan will be forthcoming. Full implementation of the approved plan may be many years in the future.

Implementation of the approved plan also could be affected by other factors. Once the general management plan has been approved, additional feasibility studies and more detailed planning and site specific environmental documentation would be completed, as appropriate, before many proposed actions could be carried out.

The general management plan does not describe how particular programs or projects should be prioritized or implemented. Those decisions will be addressed during the more detailed planning associated with strategic plans, implementation plans, or other plans. All of these plans will tier from the approved general management plan and will be based on the goals, future conditions, and appropriate types of activities established in the approved general management plan.



The US formation marches toward the flagpole during Encampment 2007. Photo by Paul Goldberg



Chapter 2: Foundation for Planning

This chapter contains a summary of the foundation statement developed for San Juan Island National Historical Park. A foundation statement documents a shared understanding of a park's purpose, significance, resources and values, primary interpretive themes, special mandates, and legal and policy requirements. These statements identify what is most important about a park and provide basic guidance for decision-making and management. Elements of foundation statements are discussed below. The summary of the foundation statement specific to the park can be found on the following page.

Foundation Statement

The foundation for planning and management, called a foundation statement, is generally developed early in the general management planning process, as part of agency scoping and data collection for a park's GMP. The foundation statement for San Juan Island National Historical Park was developed during a planning team workshop held in the spring of 2002 and revised in the summer of 2006.

The foundation statement can be used in all aspects of park management to ensure that the most important objectives are accomplished before turning to items that are also important but not directly critical to achieving the park purpose and maintaining its significance. A full copy of the foundation statement is available at the park.

Park Purpose

The park purpose is a statement of why Congress and/or the president established the park as a unit of the national park system. The purpose statement provides the most fundamental criteria against which the appropriateness of all planning recommendations, operational decisions, and actions are tested. The purpose of the park is based upon its enabling legislation and legislative history.

Park Significance

Park significance statements express why the park's resources and values are important enough to warrant national park designation. Statements of the park's significance describe why the park is important within a global, national, regional, and system-wide context and are directly linked to the purpose of the park. A park's significance statements are substantiated by data or consensus and reflect the most current scientific or scholarly inquiry and cultural perceptions, which may have changed since the park's establishment.

Primary Interpretive Themes

Primary interpretive themes connect park resources to relevant ideas, meanings, concepts, contexts, beliefs, and values. They support the desired interpretive outcome of increasing visitor understanding and appreciation of the significance of the park's resources. Primary interpretive themes are based upon park purpose and significance. They provide the foundation on which the park's educational and interpretive program is based.

Fundamental Resources and Values

Fundamental resources and values are the most important ideas or concepts to be communicated to the public about a park and merit primary consideration during planning and management because they are critical to achieving the park's purpose and maintaining its significance. They may include systems, processes, features, visitor experiences, stories, scenes, sounds, smells or other resources and values.

Fundamental resources and values provide a valuable focus throughout the planning process and the life of the plan. They are the reasons for data collection, planning issues, management prescriptions, impact assessments, and value analyses.

Other important resources and values or secondary significance statements are those that may not be fundamental to the park's purpose and significance but are nevertheless determined to be particularly important in general management planning.

Special Mandates and Constraints

Often there are special mandates or constraints that direct park planning and management decisions. The special mandates are specific directions or agreements that relate directly to the park. Mandates might be a legislative requirement or signed agreements that

add another dimension to a park's purpose and significance. Mandates include the designation of an area in the park as wilderness or as an area that is managed by another entity, or designating something of international significance such as a world heritage area or biosphere reserve. Mandates may also commit park managers to specific actions and limit their ability to modify land use in the park, such as long-term cooperative agreements, or easements. A special mandate should be specific to the park. The mandates and constraints that relate to National Park Service servicewide laws and policies are considered in the following section.

Servicewide Policy and Procedures

The purpose of servicewide policies and procedures is to support park managers and to convey to the public and stakeholders the National Park Service's commitment to protecting its resources and values as prescribed by law and policy. The section on servicewide policies and procedures is part of the San Juan Island National Historical Park Foundation Statement. The Foundation Statement outlines those policies and procedures and identifies management strategies that would not vary among any future planning alternatives or decisions that might be proposed. For each listed policy and procedure, the originating authority is identified along with a brief description of National Park Service policy and management direction.



Battery D, Third Artillery, posing at American Camp. NPS Photo.

San Juan Island National Historical Park Foundation Statement

Park Purpose	**The purpose of San Juan Island National Historical Park is to preserve and interpret the sites of American and English camps and to commemorate the historic events associated with the final settlement and peaceful arbitration of the Oregon boundary dispute. Within these cultural landscapes, the park also protects natural resources and provides compatible recreational and educational opportunities.**
Park Significance, Fundamental Resources and Values, and Interpretive Themes	**1. San Juan Island National Historical Park commemorates and interprets the arbitration and resolution of an international dispute, including the Pig War crisis, and the establishment of a lasting, peaceful relationship with Great Britain and Canada. San Juan Island NHP is the only NPS site that illustrates, in its dramatic and largely intact physical setting, how war can be averted and peace maintained through positive action by individuals and governments.** **Fundamental Resources and Values:** 1.1 Cooperative relationships with Great Britain, Canada and other organizations with related resources and locations for preservation and interpretation. 1.2 The story of how diplomacy instead of war determined the final northern boundary of the U.S. and Canada and set the course for 150 years of peaceful coexistence. **Interpretive Theme:** Tensions fueled by the United States' territorial ambitions in the Pacific Northwest and Great Britain's determination to preserve her commercial empire nearly escalated into an armed clash between U.S. and British forces in 1859 over possession of the San Juan Islands. The crisis was resolved peacefully through a combination of restraint, diplomacy, and arbitration.
	2. American and English camps are nationally significant cultural landscapes that preserve the authentic settings of the mid-19th century military encampments. **Fundamental Resources and Values:** 2.1 Historic, archaeological and recreated features of the military encampment era at American Camp—such as officers' quarters, laundress' quarters, redoubt, parade ground, military road, and San Juan town. 2.2 Historic, archaeological, and recreated features of the military encampment era at English Camp—such as Royal Marine cemetery, block house, parade ground, Royal Marine barracks, hospital, commissary, garden, military road, officers' hill features. 2.3 Views, vistas and linkages to other associated historic locations, such as Esquimalt Naval Base and views up Admiralty Inlet. 2.4 Museum collections including historical artifacts, and archival research materials such as copies of written histories, memoirs, congressional records, correspondence, diaries, photos, and paintings. **Interpretive Theme:** The cultural landscapes are tangible reminders of the military occupation and reveal the organization and daily routine of the isolated camps.

San Juan Island National Historical Park Foundation Statement

	3. Hudson's Bay Company (HBC) established the first European settlement on San Juan Island at Belle Vue Sheep Farm as part of its strategy to claim the island for the British Empire. **Fundamental Resources and Values:** 3.1 Archaeological site features include foundations and masonry ruins, setting, circulation patterns and other archaeological resources. 3.2 Museum collections and research materials including maps, journals, letters, books, correspondence. 3.3 Connections to other HBC sites, such as Fort Vancouver NHS and Fort Nisqually. **Interpretive Theme:** The establishment of Belle Vue Sheep Farm by the HBC on San Juan Island was the catalyst for the 1859 confrontation between the U.S. and Great Britain over their competing imperialistic ambitions in the Pacific Northwest, offering visitors insights into the strategic maneuvering that was involved in building their respective empires.
	4. San Juan Island National Historical Park protects significant natural habitats and resources essential to the cultural landscapes, including prairies, wetlands, lagoons, forests, and coastal marine environments. **Fundamental Resources and Values:** 4.1 Mixed coniferous forest and Garry oak communities that exist today similar to the encampment period. 4.2 Coastal marine ecosystem that is a primary influence on cultural history and the natural setting. 4.3 Fresh water communities, including wetlands, brackish lagoons and springs. 4.4 Rare prairie and dune ecosystem that was a setting for historic events. 4.5 Visible geologic/glacial landforms which represent a classic example of glacial rebound. **Interpretive Theme:** The significant natural habitats and resources of American and English camps shaped human use and occupation for thousands of years and are becoming increasingly important as development transforms the surrounding region.
Secondary Significance, Resources and Values, and Interptetive Themes	**5. San Juan Island National Historical Park's varied landscapes and settings provide year-round recreational opportunities and experiences that are compatible with the historic settings and values of the park.** **Resources and Values:** 5.1 Opportunities to experience tranquility, natural sounds and dark night sky. 5.2 Non-motorized recreation opportunities that are an integral part of island-wide recreation. 5.3 Open landscape of the park provides historic and unobstructed broad, sweeping views.

Secondary Significance, Resources and Values, and Interptetive Themes (continued)	5.4 Three intact shoreline areas that comprise the longest and most varied expanse of publicly accessible shoreline in the San Juan Islands. **Interpretive Theme:** The trails and shorelines within this island setting offer visitors recreational experiences, while the cultural landscapes provide opportunities to explore the relationship between people and their environments over time.
	6. The park provides educational, research, and volunteer opportunities that support the preservation of park resources and values and contribute to public enjoyment and understanding. **Resources and Values:** 6.1 Educational and interpretive programs and opportunities provided by park staff and partners. 6.2 Access to research materials and authentic resources. 6.3 Partnerships and cooperative relationships with universities, non-profits, other agencies and governments, and individuals. 6.4 Expertise and knowledge of park staff and volunteers. **Interpretive Theme:** The park resources and museum collections provide first-hand opportunities to experience and learn about critical events in American history and the changes to the natural landscape by human uses.
	7. San Juan Island National Historical Park protects and maintains evidence of post military settlement and development of San Juan Island. **Resources and Values:** 7.1 Post military encampment era's historic and archaeological features at English Camp, including Crook house, Crook orchard, and Sandwith orchard. 7.2 Post military encampment era's historic and archaeological features at American Camp including Jakle's family homestead site, farmhouse elements of officers' quarters, remnant orchards, agricultural features, and cannery. **Interpretive Theme:** The use of the camps' buildings and land by homesteaders in the post-military era provide tangible examples of pioneer life on San Juan Island.
	8. The archaeological sites at both American and English camps represent thousands of years of Native American use and occupation of San Juan Island. **Resources and Values:** 8.1 Archaeological resources at English Camp including shell middens, long house site, pithouse occupation sites, and submerged resources. 8.2 Archaeological resources at American Camp including early use and occupation sites, resource processing sites, shell middens, and submerged resources. 8.3 Museum collections including prehistoric artifacts, oral histories, archaeological and ethnographic reports.

San Juan Island National Historical Park Foundation Statement

Secondary Significance, Resources and Values, and Interptetive Themes (continued)	8.4 Traditional use sites at both camps, including Guss Island, fisheries and shellfish collection areas. (Note: there is no landing or mooring allowed at Guss Island for resource reasons.) **Interpretive Theme:** Archaeology has revealed native peoples inhabited these islands for 9,000 years or more before the coming of Europeans, building a culture that utilized the abundant natural resources of the area.

Special Mandates and Constraints

National Historic Landmark	American Camp and English Camp were first designated as nationally significant historic sites in 1961, becoming National Historic Landmarks (NHL) in 1966 just prior to establishment of San Juan Island National Historical Park that same year. Since NHLs are the pre-eminent historic properties in the nation, special consideration will be given to assessing potential impacts to the resources that convey the NHL's significance, and adequate time will be given for appropriate consultation, in accord with Section 110(f) of the National Historic Preservation Act and 36 CFR 800.10.
Conservation Agreement with U.S. Fish and Wildlife Service	**A Conservation Agreement and Strategy for the Island Marble butterfly, between the National Park Service and the U.S. Fish and Wildlife Service.** The purpose of the agreement is to help ensure the long-term continued existence of the Island Marble butterfly and to contribute to its recovery. This agreement lays out general guidelines for a broad spectrum of activities at American Camp, including management and restoration of the grassland ecosystem (prairie) as a natural component of the cultural/historic landscape. These guidelines and conservation measures are consistent with the goal of conserving the Island Marble butterfly and minimizing potential negative effects to the Island Marble from NPS activities. This agreement remains in place until September 2016.
Memorandum of Understanding with Washington State Department of Natural Resources	**Memorandum of Understanding between National Park Service and Washington State Department of Natural Resources for Maintenance of Cattle Point Interpretive Area** The memorandum of understanding between Washington State Department of Natural Resources and San Juan Island National Historical Park allows the park to maintain (mowing and cleaning bathrooms only, no NPS jurisdiction) the Cattle Point Interpretive Area, a ten acre site located on DNR land at the eastern edge of Cape San Juan subdivision near American Camp. It is a ten-year agreement that expires in 2014.
Memorandum of Understanding with Washington State Department of Natural Resources	**Interagency agreement between National Park Service and Washington State Department of Natural Resources on Tidelands at English Camp** The park has a "no fee" lease that was renegotiated as a 20-year lease in 2007 on tidelands development surrounding the English Camp dinghy dock. It allows the park to have the English Camp dinghy dock on state tidelands. The lease covers the footprint of the dock and is limited to the existing structure and recreational use.

San Juan Island National Historical Park Foundation Statement

Project Agreement with Western Federal Highways	**Project Agreement between the NPS Pacific West Region, Denver Service Center, San Juan Island National Historical Park and Western Federal Highways for Cattle Point Road Relocation** The agreement covers project scoping, environmental impact statement completion, and the design and construction of an alternative roadway. Under the proposal, FHWA and NPS would replace a section of Cattle Point Road threatened by coastal erosion and continue to provide for safe vehicular and non-motorized access to the Cattle Point area of the island. San Juan County has a presumptive right-of-way on the current road; with relocation, a new right-of-way would need to be negotiated.
Memorandum of Understanding with the University of Washington Burke Museum	**Memorandum of Understanding between National Park Service and the University of Washington Burke Museum regarding museum collections** This agreement allows for the long-term care of a portion of the park's museum collection. This agreement affects collections use and management by the park and Native American Graves Protection and Repatriation Act issues.



Chapter 3: Scope of the GMP/EIS

Interested public, NPS staff, and representatives from other agencies and organizations identified various issues and concerns about the park during the GMP scoping process. This information helped determine the scope or range of issues to be addressed by the general management plan.

Planning Issues and Concerns

The following issues describe some of the preliminary needs or challenges the GMP must address for the park to carry out its responsibilities of preserving the resources and providing for public enjoyment. The general management plan alternatives provide strategies for addressing the issues within the context of the park's purpose, significance, and special mandates. The issues are listed by category below.

Not all of the issues or concerns raised by the public are included in this general management plan. Other issues raised by the public were not considered if they are already prescribed by law, regulation, or policy; if they would be in violation of laws, regulations, or policies; or if they were at a level that was too detailed for a general management plan and are more appropriately addressed in subsequent planning documents.

Cultural Resource Issues

Cultural Landscape

San Juan Island National Historical Park was established to preserve the significant cultural resources associated with the final settlement and peaceful arbitration of the Oregon Territory boundary dispute. To help document the park's cultural landscapes, two cultural landscape inventories (CLIs) have been completed for American Camp and English Camp and were concurred with by the Washington State Historic Preservation Officer (SHPO). In addition, an inventory was completed for the Sandwith homestead at English Camp, but the Washington SHPO found the cultural landscape features ineligible for listing on the National Register due to a lack of integrity of the landscape as a whole. However, the homestead has historic significance and the park manages the homestead and its orchard as a historic property. Accordingly, the GMP alternatives would explore ways to preserve the Sandwith homestead and its orchard remnants as a historic property. At issue for all cultural landscapes in the park is how to retain historic character, such as historic views, and how to maintain and delineate landscape features that were altered later through human or natural changes.

The NPS needs to reevaluate the use and function of historic buildings at the park. In addition, opportunities may exist to acquire and return historic buildings original to American and English camps.

Curatorial Resources

Most of the park's museum collections consisting of approximately one million objects are currently stored off-island at three locations within western Washington. Keeping the collections at centralized repositories offers safe and secure storage for the collection. However, off-island storage makes it difficult for the park to access these collections for display, rotating exhibits, academic research, and teaching purposes. Having a portion of the collections on island would require the expertise of a journeyman level curator. Associated with storage are cost and staff implications for the park budget. Analysis of curatorial storage options should be completed. Direction provided in the GMP will be in conformance with the Pacific West Region Curatorial Facilities Strategy which is part of the National Park Service Park Museum Collection Storage Plan.



Collection items displayed at the American Camp Visitor Center. NPS Photo.

Prehistory and Native American History

The planning process needs to help define the extent of interpretation for prehistory and Native American history. Ancestors of contemporary tribes used the resources on San Juan Island for thousands of years before being largely displaced by Euro-Americans. The groups associated with the island include several Coast Salish tribes and subgroups. Some of these groups had permanent villages, such as the Lummi at English Camp, and others used the island for seasonal food gathering and fishing. South Beach at American Camp is one park site where important research is still being done on Native American occupation and cultural practices.

Natural Resource Issues

It has become increasingly important to acknowledge the park's natural resources, including rare terrestrial and marine habitats as well as to define park management of the ability to experience natural sounds and dark night sky. Although the park has focused primarily on managing the cultural resources it was established to protect, given the mission and policies of the NPS, the setting of the cultural landscape, and the influence of natural resources in defining the cultural landscape, it is important to balance the interpretation of the cultural and natural values.

Prairie and Garry Oak Woodland Restoration

Prairie and Garry oak woodlands are rare ecosystems in Puget Sound. As a result, species that depend upon them for habitat are in decline. Some of these species have been listed as threatened, endangered, or special status species, or are candidates for state or federal listing. Both of these habitats occur in the park. The park would explore ways to promote and maintain these habitats, including the use of fire, which plays a natural role in the ecosystem, vegetation management, and restoration implementation. The park would cooperate with other entities such as federal, state, local and Canadian agencies to manage these species.

Water Quality

San Juan Island has a limited amount of fresh water available for consumption. Some of the wells surrounding the park have experienced salt-water intrusion. At issue is how to maintain the quality and



View across American Camp to Griffin Bay. NPS Photo.

quantity of water for park resources, staff, and visitor use. The park has an obligation to protect the quality of surface water both into and out of the park.

The park manages over six miles of shoreline, the largest in public ownership in the San Juan archipelago. The GMP needs to discuss the park's role in monitoring and response actions for potential oil spills and other coastal threats.

The opportunity exists to partner with the University of Washington's Friday Harbor Laboratories, Friends of the San Juans, and San Juan County on both marine and freshwater issues in preparing plans, such as the Westcott-Garrison Bay Marine Habitat Plan and Watershed Plan.

Visitor Orientation/Information

Many visitors coming to San Juan Island by private boat or state ferry do not know there is a national park unit on the island. Most visitors stop at one or both of the park units without first stopping at the park headquarters site in Friday Harbor for orientation. Until recently, a private shuttle for visitors served English Camp, but not American Camp, and no public transportation was available. The planning team documented the need to inform visitors about the park, dispense information, and orient visitors once they have arrived.

Recently, park staff have taken several actions to address this issue. New waysides were developed and installed at the Anacortes Ferry Landing educating visitors about the park. Park staff have become involved in local island organizations, such as the Visitors Bureau. A private shuttle service now provides public transportation to both English and American camps. The park's website continues to be updated for visitor trip planning. Park staff would continue to find new and productive ways to orient the visitor to the park, including the idea of partnering with others for visitor orientation and information.

Park Facilities Issues

Visitor Center

Currently the primary park visitor center is situated in an outdated and deteriorating 1979 double-wide trailer at American Camp that was intended only for temporary use. The visitor center has interpretive space for the public and three employees work in the offices year-round, but the offices are shared by as many as six employees in the summer. The planning process needs to determine the best location, size, and functions for permanent visitor facilities and services.

English Camp

The original site development plan for English Camp was designed in the 1960s and many functions have changed. Site plans, or "Schematic Design Plans," for each alternative need to address the following: the function of the historic Crook house which was built following the historic encampment period; a summer environmental camp site; amenities for park volunteers; an accessibility trail; and trail connections to an island-wide trail network, among other actions.

Visitor Experience Issues

Recreation

Approximately 250,000 people annually visit the park, many of whom are island residents. The park is used by the public not only to enjoy its historical resources but to enjoy recreational opportunities that focus on the park's natural, scenic, and open space attributes.

The adequacy of facilities to maintain the appropriate level of visitor use needs to be addressed. In addition, an understanding of the island-wide trail network needs to be gained from other island organizations.

Boundary

Both English and American camps are adjacent to DNR managed properties. Adjacent DNR managed lands share a strong historic, ecological and spatial relationship with the park and have previously been recommended for inclusion within the park



Visitor Center at American Camp. NPS Photo.

boundaries. General management planning calls for analyzing the park boundary and the potential for inclusion of additional lands. As a result, the GMP would revisit the potential for NPS management of these lands and potentially others, in cooperation with the San Juan County Land Bank, San Juan Preservation Trust, the Bureau of Land Management, or San Juan County.

Adjacent Subdivisions

In 2001, San Juan County was the second fastest growing county in Washington State. Population has increased more than 40 percent over the last 10 years and residential development has grown by more than 60 percent. This level of growth adjacent to the park is already affecting park resources and likely will continue to do so in the future. The park needs to seek ways to enlist the support of park neighbors in protecting its resources. The park also needs to be able to assess the possible effects additional adjacent growth may have on the management and use of park resources. This issue will be discussed as part of the park boundary and scenic resources sections of the alternatives in Chapter 4 "Alternatives".

New Planning Issues

The following new planning issue on intertidal areas was developed during public scoping and will be discussed in the alternatives.

Intertidal Areas

There is inconsistent or unknown jurisdiction of shorelines and tidelands at both American and English camps that makes management difficult for park staff. Some of the known areas are under federal jurisdiction (National Park Service) or state jurisdiction (Department of Natural Resources). Delineating the varying jurisdictions would lead to solutions for successful management.

Issues and Concerns Not Addressed

Not all of the issues or concerns raised by the public will be addressed in this GMP. Some issues raised by the public were not considered because they are already prescribed by law, regulation, or policy; would be in violation of laws, regulations, or policies; or were at a level that was too detailed for a GMP and are more appropriately addressed in subsequent planning documents.

This section briefly describes each of these issues, and the basis for excluding them from this general management plan.

Headquarters Building

One of the issues that was dismissed early in the planning process was the need for a new headquarters site. Park staff was leasing NPS administrative space on Spring Street close to the ferry landing. The location on the main street of Friday Harbor, however, was not as successful as originally envisioned. Most visitors to the island leave the ferry by car and do not notice the NPS sign over the door of the office. In addition, parking spaces were inadequate or unavailable near the office making public access difficult. The interior space for administrative offices was inadequate for the current park staff and had limited room for rotating exhibits and on-going research functions.

In 2004, the park's administrative offices moved from Spring Street in Friday Harbor to the Technology Center on Mullis Street approximately one-half mile away. The NPS headquarters are situated in a prominent location within the Technology Center that is leased to the NPS by the General Services Administration. There is now adequate room for staff offices, visitor information maps, and storage.

Though visitors are less likely to visit the new administrative headquarters since it is not on the town's main street, it is still in close proximity to other agency offices and organizations. In addition, the park has the potential to partner with others in developing a joint visitor information center in Friday Harbor.

Impact Topics

Impact topics allow comparison of the consequences of implementing each alternative. These impact topics were identified based on federal laws and other legal requirements, the Council on Environmental Quality's guidelines for implementing the National Environmental Policy Act, NPS Management Policies (2006), subject-matter expertise and knowledge of limited or easily impacted resources, and issues and concerns expressed by other agencies or members of the public during scoping. Impact topics were developed to focus the environmental analysis and to ensure that alternatives were evaluated against relevant topics.

- Cultural Resources
  - Cultural Landscapes
  - Historic Buildings and Structures
  - Archaeological Resources
  - Museum Collections
- Natural Resources
  - Vegetation
  - Wildlife
  - Special Status Species
  - Geologic Resources
  - Coastal Water Resources and Hydrologic Systems
  - Air Quality
  - Soundscapes
- Visitor Experience
  - Interpretation, Education and Outreach
  - Recreation
  - Scenic Resources
- Visitor Access and Transportation
- Socioeconomics
- Effects on Park Operations

Impact Topics Dismissed

The following impact topics were considered and determined not relevant to the development of this GMP for San Juan Island National Historical Park because implementing the alternatives would have no effect or a negligible effect on the topic or resource, or the resource does not occur in the park. The topics dismissed from further evaluation are as follows:

Coastal Zone Management

The Coastal Zone Management Act (16 U.S.C. 1451 et seq.) requires that all federal activities in coastal areas be consistent with approved state coastal zone management programs to the maximum extent possible. Washington State's Coastal Zone Management program excludes lands the federal government owns, holds in trust, or otherwise has the sole discretion to determine their use (Washington State Department of Ecology, 2001).

Although NPS administered lands do not require a coastal zone consistency determination, if an action may affect a coastal zone area, the National Park Service would evaluate the potential impacts on this zone and, where appropriate, consult informally with the Washington State Department of Ecology.

Under this GMP, the National Park Service proposes no development in any area of the park that would conflict with the coastal management program. A copy of this GMP/EIS has been submitted to Washington State Department of Ecology for a consistency review.

Energy Requirements and Conservation Potential

In both action alternatives (Alternatives B and C), new facilities are planned and would be sustainably designed. The National Park Service has adopted the concept of sustainable design as a guiding principle of facility planning and development (NPS 2006 Management Policies 9.1.1.7). The objectives of sustainability are to design facilities to minimize adverse effects on natural and cultural values, to reflect their environmental setting, and to require the least amount of nonrenewable fuels/energy in their construction and long-term maintenance and operation.

Although Alternatives B or C could result in increased energy needs, increased use would be negligible when compared in a regional context.

Natural or Depletable Resource Requirements and Conservation Potential

Consideration of these topics is required by 40 Code of Federal Regulations (CFR) 1502.16. The National Park Service has adopted the concept of sustainable design as a guiding principle of facility planning and development (NPS 2006 Management Policies 9.1.1.7). The objectives of sustainability are to design facilities to minimize adverse effects on natural and cultural values, to reflect their environmental setting and to maintain and encourage biodiversity, to operate and maintain facilities to promote their sustainability, and to illustrate and promote conservation principles and

practices through sustainable design and ecologically sensitive use. Essentially, sustainability is the concept of living within the environment with the least impact on the environment.

None of the alternatives would substantially affect the park's energy requirements because any rehabilitated or new facilities would take advantage of energy conservation methods and materials. Through sustainable design concepts and other resource management principles, the alternatives analyzed in this document would conserve natural or depletable resources.

Urban Quality and Design of the Built Environment

Consideration of this topic is required by the Code of Federal Regulations (CFR) 1502.16. The quality of urban areas is not a concern in this planning project except possibly in the headquarters area. Throughout the park, vernacular architecture and park-compatible design would be taken into consideration for new structures built under all of the action alternatives. Emphasis would be placed on designs, materials and colors that blend with, and do not detract from, the natural or built environment. Therefore, adverse impacts are anticipated to be negligible.

Environmental Justice

On February 11, 1994, President William J. Clinton signed Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. This order requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs/policies on minorities and low-income populations and communities. The Secretary of the Interior established Department of the Interior policy under this order in an August 17, 1994, memorandum. This memorandum directs all bureau and office heads to consider the impacts of their actions and inactions on minority and low-income populations and communities; to consider the equity of the distribution of benefits and risks of those decisions; and to ensure meaningful participation by minority and low-income populations in the department's wide range of activities where health and safety are involved.

The Environmental Protection Agency's Office of Environmental Justice defines environmental justice as:

> The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

The goal of this "fair treatment" is not to shift risks among populations, but to identify potentially disproportionately high and adverse effects and identify alternatives that may mitigate these impacts. (U.S. Environmental Protection Agency, 1998: p. 7-8)

In responding to this executive order two questions are asked and answered as the major part of the analysis: 1) Does the potentially affected community include minority and/or low-income populations? 2) Are the environmental impacts likely to fall disproportionately on minority and/or low-income members of the community and/or tribal resources?

- The developments and actions of the alternatives would not result in any identifiable adverse human health effects. Therefore, there would be no direct or indirect negative or adverse effects on human health on any minority or low-income population or community.
- The impacts on the natural and physical environment that occur due to implementing any of the alternatives would not disproportionately adversely affect any minority or low-income population or community, or be specific to such populations or communities.
- The alternatives would not result in any identified effects that would be specific to any minority or low-income community.
- The San Juan Island National Historical Park GMP planning team actively solicited public participation as part of the planning process and gave equal consideration to all input from persons regardless of age, race, income status, or other socioeconomic or demographic factors.

- Park staff and planning team members have consulted and worked with the affected Native American tribes and will continue to improve communications and resolve any problems that may occur. In addition, the planning team did not identify any negative or adverse effects that would disproportionately and adversely affect the tribes or tribal resources.

Based on the above information and the requirements of Executive Order 12898, environmental justice was ruled out as an impact topic to be further evaluated in this document.

Prime and Unique Agricultural Lands

In August 1980 the Council on Environmental Quality directed that federal agencies must assess the effects of their actions on farmland soils classified by the U.S. Department of Agriculture's Natural Resource Conservation Service as prime or unique. Prime farmland is defined as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed; unique farmland soils produce specialty crops such as specific fruits, vegetables, and nuts.

According to the National Resource Conservation Service, about 82 acres of the park, or 4.7 percent of the total acreage, meet the soil requirements for prime farmland. About 233 acres, or 13.3 percent of the total acreage, would meet requirements if an adequate and dependable supply of irrigation water were available. About 145 acres, or 8.3 percent of the total acreage, would meet the requirements for prime farmland if the soils were adequately drained to minimize the impact of the seasonal high water table (NRCS, 2005: p.61). These mapped units of prime and potential prime farmland are not available for farming. In addition, the alternatives do not propose irrigation or drainage for potential prime farmland to meet the requirements of prime farmland. The proposed alternatives including proposed boundary additions would have no more than a negligible impact on farmland; therefore, this topic was eliminated from further consideration.

Wild and Scenic Rivers

An analysis of park resources shows there are no rivers or river segments in the park that are eligible for wild and scenic river designation. Therefore, this topic was dismissed from further analysis.

Hazardous Materials

There are no hazardous materials used, or disposed of, in connection with park operations on federally owned property. Therefore, the topic of hazardous materials was dismissed as an impact topic in the document.

Indian Trust Resources

In general, Indian Trust Resources are related to federal land that is held in trust for a federally recognized tribe. In those situations, the federal government, represented by the Bureau of Indian Affairs (BIA) in the Department of the Interior, has an obligation to protect resources such as oil, gas and timber or the income derived from selling or leasing such resources on behalf of a tribe. San Juan Island is not within the boundaries of land that is held in trust on behalf of any federally recognized Indian tribe. Therefore, this topic was dismissed from further analysis.

Sacred Sites

Locations of sacred sites are known within the park, but are not disclosed to the public due to the wishes of interested tribes. Since the alternatives in the GMP, including any proposed boundary additions, do not affect these known sites, this topic has been dismissed from further consideration.



Monument at American Camp Visitor Center. NPS Photo.



Chapter 4: Alternatives

According to the National Environmental Policy Act of 1969, alternatives must be developed in a draft general management plan and fully explore a range of ideas, methods, and concepts for managing a national park unit. It must be possible to implement all alternatives. In addition, regulations require that the draft GMP/EIS identify a "preferred alternative" before the EIS is released for public review. The preferred alternative is that alternative that the NPS believes would best accomplish its goals, based on the analyses conducted.

Formulation of the Alternatives

The planning team, comprised of staff from the park and the Pacific West Region, developed management alternatives in the winter of 2004 for San Juan Island National Historical Park. In developing alternatives, the staff incorporated ideas generated by the public from public meetings and public comment letters. National Environmental Policy Act regulations and NPS planning standards require the formulation of a reasonable range of alternatives that address identified planning issues and management concerns. Each alternative was evaluated to ensure consistency with the park's purpose and significance, the desired future conditions, and current laws, regulations, and policies.

This chapter contains three parts:

- A description of the four management zones for the action alternatives;
- A discussion of desired conditions for each resource. Desired condition statements describe the preferred long-term condition for specific resources. Future decisions and actions by park management would be judged by whether they further progress towards these desired conditions.
- A description of Alternatives A, B, and C with emphasis on the concepts behind the alternative, and management actions for those topics that varies among alternatives. Management actions describe specific activities that help to achieve the desired future conditions. This includes a "Common to All Alternatives" section organized by resource topic.

Included at the end of this chapter are tables that summarize the key differences among the alternatives and their impacts. The summary of impacts chart is based on the analysis in Chapter 6, "Environmental Consequences."

Three alternatives are described in this GMP and are characterized as follows:

- Alternative A is the No Action Alternative, which means a continuation of the present course of action or maintenance of the status quo of existing policies and programs.
- Alternative B strives to increase visitor use opportunities and outreach in both the park and in the town of Friday Harbor through additional visitor facilities, recreational opportunities, programs, and services. Interpretation would be enhanced for both cultural and natural interpretive themes through more extensive facilities and programs.
- Alternative C, the Preferred Alternative, would broaden the scope of resource management and interpretation programs to emphasize the connections and interrelationships between the park's natural and cultural resources. New facilities, trails and programs provide opportunities for visitors to understand the importance of the park's natural resources in defining the cultural landscapes and inf uencing the settlement and historic events of San Juan Island.

Each alternative has a somewhat different concept, which is primarily defined in terms of different management zones and how they are applied geographically. Each alternative also varies in the management prescriptions, or actions, for various resource topics that the park would take in order to achieve the desired conditions. All action alternatives afford a high degree of protection for the park's resources.

The alternatives focus on what resource conditions and visitor uses and experiences should be at the park rather than on details of how these conditions and experiences should be achieved. Thus, the alternatives do not include many details on resource or visitor use management.

More detailed plans or studies would be required before most conditions proposed in the alternatives are achieved. The implementation of any alternative also depends on future funding and environmental analysis. Approval of this plan would not guarantee that funding will be forthcoming. Instead, the plan establishes a vision of the future that will guide future management of the park. Upon approval, full implementation will likely take many years.

Identification of the Preferred Alternative

The development of a preferred alternative involves evaluating the alternatives with the use of an objective analysis process called "choosing by advantages." Through this process, the planning team identified and compared the relative advantages of each alternative according to a set of factors. The benefits or advantages of each alternative were then compared.

The relationships between the advantages and costs of each alternative were established. This information was used to combine the best attributes of three initial alternatives into the preferred alternative. This alternative gives the National Park Service the greatest overall benefits for the most reasonable cost.

Management Zones

Management zones define specific resource conditions and visitor experiences to be achieved and maintained in each particular area of the park under each of the action alternatives. Each zone includes the types of activities and facilities that are appropriate in that management zone. The management zones were developed during this planning effort, except for the No Action Alternative, Alternative A, whose zoning is taken from the park's 1979 general management plan.

In formulating the alternatives, the management zones were placed in different locations on a map of the park according to the overall concept of each of the alternatives. Therefore, the alternatives represent different ways to apply the management prescriptions to the park. For example, an alternative whose overall concept includes emphasizing cultural resources will have more of the cultural management zone than an alternative whose overall concept is to increase visitor access to the entire park.

For the action alternatives B and C, four management zones were developed in this plan to guide future management within the park. The existing management zones are Administrative, Cultural, Natural, and Visitor Services.

The management zones and prescriptions for San Juan Island National Historical Park are presented on the following page. Visitor experiences, resource conditions, and appropriate activities and facilities are described for each management zone.



Management Zones				
Zone	**Administrative Zone**	**Cultural Zone**	**Natural Zone**	**Visitor Services**
Zone Concept	A variety of facilities and functions that support park operations would be accommodated in this zone.	Resources and experiences related to pre-history, the joint occupation period, and post-military history would be accommodated.	Resources and experiences related to coastal, woodland, upland, prairie, and wetland ecosystems and communities would be accommodated.	Education and interpretive facilities and services, and concentrated visitor use would be accommodated. This zone would serve as a primary entry into other zones.
Cultural Resource Prescriptions	Facility design standards echo and complement historic character. Historic structures may be adapted for administrative use when appropriate. All facilities would be sited and designed to minimize disturbance and would be screened for views and noise. Fences, barriers, and other measures may be needed to protect resources.	All significant cultural features would be preserved and interpreted to enhance visitor understanding and enjoyment. There would be low tolerance for resource degradation. Archaeological sites would be preserved.	Cultural resources would be compatible in natural areas and would be managed in a way that would not degrade natural features or the character of the natural environment. Minimal activity would be acceptable to protect cultural resources.	Because this zone is intended to promote access to cultural resources, this zone must be adjacent to important cultural sites. All facilities would be sited and designed to minimize disturbance and would be screened for views and noise. Fences, barriers, and other measures may be needed to protect resources. Signs and trailheads would be preferred in this zone to avoid intrusion into cultural zones. Adaptive use of historic structures could be utilized where appropriate. Design standards echo and complement historic character.
Natural Resource Prescriptions	Natural resources may be modified in ways that harmonize with park settings. Facilities would be located in areas having low impact to sensitive natural resources. Green design, native landscaping, screening for views and noise would be incorporated. Fences, barriers, and other measures may be needed to protect resources.	Natural resources would be managed to maintain or restore the character of the cultural landscape. Non-invasive exotics may be used where they support the cultural landscape and visitor understanding of it. Invasive plant and animal species would be controlled or removed. Trails and roads might be removed and rehabilitated or allowed to recover naturally.	The emphasis in this zone would be on restoring and perpetuating natural systems and processes. There would be low tolerance for resource degradation. Intensive management would be used to restore native species on disturbed lands (such as restoring high quality prairie). Monitoring would be implemented and action taken to prevent degradation. The goal would be to restore ecosystem to a nearly natural state. Trails and roads might be removed and rehabilitated or allowed to recover naturally.	This zone provides access to popular natural features and resources such as shorelines, forested areas, and prairies. Natural resources may be modified in ways that harmonize with park settings. This zone would be located in areas having low impact on sensitive natural resources. Green design, native landscaping, and screening for views and noise would be incorporated. Fences, barriers, and other measures may be needed to protect resources.

Management Zones				
Zone	**Administrative Zone**	**Cultural Zone**	**Natural Zone**	**Visitor Services**
Visitor Opportunities	There would be limited opportunities for visitors. This zone would include work areas for volunteers and housing for Volunteers in the Parks, personnel and researchers.	There would be opportunities for broad understanding of the military encampment period as well as other cultural eras. Visitors would learn about the history through a variety of means. Visitors would have an opportunity to directly experience cultural sites. This zone would offer low impact recreational opportunities, such as hiking, picnicking, and beachcombing that would not affect cultural resources. Park sponsored special events related to the resources of the park would be acceptable.	While emphasizing natural features, this zone would enhance visitor understanding of cultural significance. It would offer low impact and non-motorized recreational opportunities, such as hiking, nature studies, photography, and horse use, where designated, that do not adversely affect the natural landscape and resources. Park sponsored special events related to the resources of the park would be acceptable.	This zone focuses on accessible and convenient visitor services; concentrated recreation and group activities when appropriate; and on visitor orientation, education, and interpretation with the goal of enhancing the visitors' understanding and appreciation of the history and significance of park resources. Interpretive and educational programs would provide opportunities for a wide range of visitors. Signs and trailhead orientation would facilitate access. Regulations and appropriate resource use messages would be communicated to promote stewardship. Visitors have increased opportunities for interaction with NPS staff and volunteers.
Desired Facilities	This zone would include facilities and related utilities needed to support park operations such as administrative offices, supply storage, maintenance office and storage, fire camp, research/curatorial space, library, seasonal housing, staff meeting space, and staff parking. Building design would be sustainable and compatible with the environment. Historic structures could be adaptively used for some of these functions. Administrative roads would occur in this zone.	Facilities in this zone would emphasize preservation of current historic facilities. Where adequate information is available, the park would consider the potential relocation of historic buildings back to the camps. Other techniques could also be considered including delineation and/or reconstruction of historic features. (Reconstruction would only occur if absolutely necessary for visitor understanding of the site.) This zone could include visitor contact stations, wayside exhibits, and other interpretive media.	This zone would include unpaved, non-motorized trails and unobtrusive and approved interpretive and directional signs. Bicycle and horse use may be acceptable on some trails. Scientific monitoring and sampling equipment for research (such as weather stations) would be acceptable.	Visitor centers, educational sites, and staging areas for public programs would be accommodated in this zone. Other support facilities would include picnic areas, restrooms, roads, docks, trails and trailheads, overlooks, signs, parking areas, wayside exhibits, and group activity sites.

Desired Conditions

The planning team used laws, regulations, servicewide mandates, and policies, along with park-specific legislation, public input, and previous planning documents to develop desired conditions for protecting park resources and visitor use and enjoyment. These desired conditions would apply to all alternatives.

The following table summarizes the desired conditions. The individual alternatives would show potential strategies that could be used for achieving the desired conditions.

Desired Conditions	
Cultural Resources	**Cultural Landscapes** Desired conditions: ▪ The cultural landscapes are preserved for interpretation, public understanding, and research, and adverse effects are avoided. ▪ The cultural landscape characteristics are managed in a balance with the natural landscape. ▪ An enhanced cultural landscape provides additional opportunities for interpretation and visitor understanding of the historic setting of the park.
	Archaeological and Historic Resources Desired conditions: ▪ The extent and condition of historic and prehistoric resources are documented and adverse effects are avoided. ▪ Archaeological resources are protected in an undisturbed condition unless it is determined through appropriate consultation that disturbance or decomposition is unavoidable. ▪ The qualities that contribute to the eligibility for listing of prehistoric and historic structures in the National Register of Historic Places are preserved and protected in accordance with the secretary of the interior's standards, unless it is determined through appropriate consultation that disturbance or deterioration is unavoidable.
	Museum Collections Desired conditions: ▪ Museum collections, such as objects, works of art, historic documents, and natural history specimens, are maintained according to NPS museum management requirements.
Natural Resources	**Natural Resources – General** Desired conditions: ▪ Resource inventories and surveys documenting the condition and extent of natural resources and processes are completed. ▪ Monitoring programs are developed and implemented to track changes in the condition of key resources serving as "vital signs" of ecosystem health. ▪ Forces such as erosion, geological shift, and fire remain as dominant agents of change to natural resources.
	Vegetation, Including Special Status Species Desired conditions: ▪ Native plant communities in coastal, prairie, wetland, and woodland environments are managed to protect and restore native species, provide habitat for native wildlife, and for research. ▪ Garry oak woodland and prairie communities are restored and managed as significant resources for both the natural and cultural landscape.

Desired Conditions	
	▪ All plant communities are in or making progress towards fire condition class 1 (class 1 is defined as within the natural or historical range of variability of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances). ▪ Special status species, particularly those listed by U.S. Fish And Wildlife Service (USFWS), make progress toward recovery. ▪ Preventing or limiting the spread of noxious weeds using integrated pest management protocols perpetuates the natural condition and/or historic vegetative cover.
	Wildlife, Including Special Status Species Desired conditions: ▪ Habitat in the park supports a diverse range of native wildlife species and gives the public high-quality opportunities for wildlife viewing. ▪ Habitat for migratory birds and butterflies, including forage, water, cover, structure, and security is available within the park to support healthy populations of resident and migrant species. ▪ Special status species, particularly those listed by U.S. Fish And Wildlife Service, make progress toward recovery.
	Coastal Water Resources and Hydrologic Systems Desired conditions: ▪ Floodplains, riparian areas, and wetlands are maintained or restored to provide diverse and healthy habitat and water quality. ▪ Preserving the quality of surface water in the park and surface water running out of the park is a consideration in park management actions, and decisions and threats to surface water quality are sufficiently mitigated. ▪ Tidelands are adequately protected by either the state or park, regardless of jurisdiction.
	Geologic Resources Desired conditions: ▪ Unique or representative geological features and landforms such as marine terraces, glacial erratics, and striations are identified, documented, and have protective strategies implemented to minimize any adverse effects from visitor access. ▪ Geologic knowledge and understanding are effectively shared with the public to stimulate appreciation and protection of the geologic resources.
	Air Quality Desired conditions: ▪ Air quality parameters negatively affecting human health, visibility or biological diversity remain at or below current levels.
Visitor Experience	**Interpretation and Education** Desired conditions: ▪ The public has opportunities to understand and appreciate the park's natural and cultural resources through interpretation of natural and cultural history. ▪ Park interpretive programs, including encampment, living history and special events, help the public visualize mid-19th century life at American and English camps. ▪ The park builds and maintains relationships and partnerships with visitor user groups and educational organizations to disseminate the story and lessons of the Pig War.

Desired Conditions	
	▪ The story of native peoples and their connection to San Juan Island and park resources is interpreted to the public in consultation and coordination with appropriate native peoples and governments. ▪ The park's commemorative message of dispute resolution and peace between nations is incorporated in educational programming. ▪ The public has access to park information and learning opportunities through a wide variety of media both on and off site. ▪ Regional cooperation and partnerships help reach visitors who are unaware of the presence of a national park unit on the island and convey interpretive opportunities prior to arrival. ▪ Visitors understand and appreciate the natural resources at the park, which include rare plant communities and sensitive species, as well as the cultural resources, and leave with a sense of stewardship for these resources.
	Recreation Desired conditions: ▪ A wide variety of safe, year-round recreational opportunities is available for island residents and visitors that are compatible with the historic setting of the park. ▪ The park provides public access to the longest and most varied expanse of publicly accessible shoreline in the San Juan islands for compatible recreation. ▪ The park works cooperatively with other public and private entities to provide appropriate trail connections as part of an island-wide trail system.
	Scenic Resources Desired conditions: ▪ Existing opportunities to experience solitude, dark night sky, and broad-sweeping vistas to the Strait of Juan de Fuca, the Olympic Mountains, Mount Baker, Mount Rainer and other regional features remain substantially free of human intrusions. ▪ The visual integrity of American and English camps, including vistas and viewsheds, are maintained and restored where appropriate.
	Soundscapes Desired conditions: ▪ Existing opportunities to experience tranquility, natural sounds, and natural quiet remain substantially free of human intrusions.
Socioeconomics	**Socioeconomics** Desired conditions: ▪ Gateway communities of Friday Harbor, Roche Harbor and Anacortes benefit socially and economically from the park's presence.
Facilities	**Facilities** Desired conditions: ▪ Visitor and administrative facilities meet visitor and staff needs. ▪ The park cooperates with Friday Harbor and Roche Harbor in providing information and services to visitors at sites outside the park. ▪ Location of park facilities and staffing levels promotes efficiency of operations while meeting public needs. ▪ Principles of sustainable and universal design are incorporated into all facilities and operations.

Desired Conditions	
	▪ Regional cooperation and partnerships provide new opportunities to locate additional visitor facilities on the island.
Transportation, Access, and Circulation	**Transportation, Access, and Circulation** Desired conditions: ▪ The road system within the park provides access for visitors, non-federal landowners, and NPS administrative needs while protecting park resources and values. ▪ Vehicular road access is maintained for residents at Cape San Juan and Cattle Point Estates and visitors to the Cattle Point Interpretive Area.
Research	**Research** Desired conditions: ▪ The park continues to be an important coastal marine setting for research in the natural and social sciences ▪ The findings of scientific research in both the natural and social sciences enhance management decisions and contribute to increased public appreciation and understanding of the park's cultural and natural resources.
Park Boundary and Land Protection	**Park Boundary and Land Protection** Desired conditions: ▪ The park boundary is adequate to protect the fundamental resources and values of the park and to provide for enjoyment of these resources by a diverse public. ▪ The park boundary recognizes the broader boundaries of the encampment period to preserve artifacts associated with the historic military presence and better interpret the historic camp setting and circulation pattern.



Guss Island at English Camp. NPS Photo.

Actions Common to All Alternatives

The following table summarizes the management guidance, or actions, that would apply to all the alternatives, including the No Action Alternative.

Actions Common to All Alternatives	
Cultural Resources	**Cultural Landscapes – Common To All Alternatives** Management actions: ▪ A resource stewardship strategy would be completed that would provide direction for natural and cultural resources. ▪ Prescribed fire would continue to play a role in maintaining the cultural landscape. ▪ The park would update the existing historic landscape report to reflect the current needs at both camps. ▪ The park would update the national register listing for the park. **Archaeological and Historic Resources – Common To All Alternatives** Management actions: ▪ Fire and security systems would be installed in all existing historic buildings. ▪ Historical buildings would be maintained in good condition. ▪ Archaeological sites would be preserved and protected and, if appropriate, interpreted by park staff. ▪ An archaeological research strategy would guide decisions about future excavations. English Camp: ▪ The Crook house would retain all aspects of integrity that make it eligible for the Register of Historic Places on both its interior and exterior. The 1960s non-historic addition on the back of the Crook house would be removed to reestablish its original look and form during the Crook family era at the park. ▪ Park staff would continue efforts to relocate bats from the Crook house by providing alternate houses for bats and excluding bats from the Crook house. **Museum Collections – Common To All Alternatives** Management actions: ▪ Park collections would be available for education, interpretation, and scientific research purposes.
Natural Resources	**Natural Resources – General – Common To All Alternatives** Management actions: ▪ The park would prepare and periodically update a resource stewardship strategy that would include a comprehensive list of prioritized actions to achieve the desired resource conditions identified in the GMP. ▪ Invasive plant and animal species would be eliminated where feasible and otherwise controlled to ensure the long-term survival of the native ecosystem. **Vegetation, Including Special Status Species – Common To All Alternatives** Management Actions: ▪ The park would develop a vegetation management plan to guide future management and provide specific direction for managing vegetative resources, such as prairies and Garry oak woodland, that also possess cultural significance.

	▪ The park would continue to explore ways to promote and maintain these habitats, including the use of fire which plays a natural role in the ecosystem, vegetation management, and restoration implementation. ▪ The park staff would continue to work with a variety of partners toward restoration of the Garry oak woodlands and prairie habitats. ▪ The park's fire management plan would be updated every five years, consistent with federal fire policy.
	Wildlife, Including Special Status Species – Common To All Alternatives
	Management actions: ▪ The park would continue to work cooperatively with other U.S. agencies and Canada in managing wildlife, particularly candidate species for federal listing, and managing habitat for broader ecological restoration of special status species. ▪ Inventory and monitoring of wildlife would emphasize species that are regionally, nationally, or internationally important. ▪ Non-native animal species identified as pests would be managed in accordance with the applicable NPS Management Policies.
	Coastal Water Resources and Hydrologic Systems – Common To All Alternatives
	Management actions: ▪ The park would continue to work with a consortium of Puget Sound groups regarding oil spill response plans, including Island Oil Spill Association, Washington State Department of Ecology, and other interested organizations responsible for creating and updating geographic plans for oil spill prevention and response. ▪ The park would follow provisions in the consortium's geographic response plan. ▪ The park staff would continue to monitor water use and quality in an effort to conserve scarce water resources and maintain water quality levels.
	Geologic Resources – Common To All Alternatives
	Management actions: ▪ Examples of wave-cut marine terraces, or other glacial features created by a series of glacial periods would be protected for educational, interpretive, and scientific purposes.
	Air Quality – Common To All Alternatives
	Management actions: ▪ Federal, state, and local air agencies that have primary responsibility for managing air quality would continue to monitor and use computer models to assess air quality in and around the park. If air quality deteriorates to the point that the ambient standards are exceeded, then these agencies would implement and the park would support additional requirements to further reduce air pollution at or near the park.
Visitor Experience	**Interpretation and Education – Common To All Alternatives**
	Management actions: ▪ Park staff would maintain existing interpretation programs and topics and enhance cultural interpretation through increased use of existing cultural resources, such as historic sites and features. ▪ The website would continue to place interpretive and educational materials online that would be periodically updated. ▪ A comprehensive interpretive plan (CIP) would be developed for the park.

- Self-guided walks and ranger and volunteer guided walks would continue to be offered at both camps.
- Interpretive programs, including reenactments, covering themes related to historical and natural resources would continue to be offered in the summer.
- The park staff would continue to offer curriculum-based school programs.
- The Junior Ranger program would continue to be offered at the park.
- The educational camp would continue to offer programs on park themes to nonprofit groups such as the Oregon Museum of Science and Industry camp for children of various ages.
- Park staff would work with partners to communicate unique park themes, including peaceful conflict resolution.
- Interpretation of both Native American culture and prehistory would be enhanced, in consultation with those tribes affiliated with the area, through personal and non-personal interpretive services including, but not limited to, Native American demonstrations, exhibits and waysides, and special programs.
- The park would encourage tribal members to participate in the preparation of interpretive exhibits and programs that relate to the direct connections American Indians have with San Juan Island.

Recreation – Common To All Alternatives

Management actions:

- Recreational activities such as beachcombing, picnicking, bird watching, viewing and photographing wildlife, hiking, fitness and pet walking, general sightseeing and attending park interpretive programs would continue.
- The park would establish one trail connection at English Camp and one trail connection at American Camp to link with the island-wide trail system.
- Biking would continue along park roads and county roads within the park.
- Horseback riding would continue at the discretion of the superintendent.
- The park would continue to be a day-use only area.
- Overnight camping, hunting, and off-road vehicles would continue to be prohibited on park property.

English Camp

- On Garrison Bay, public shell fishing would continue to be permitted on approximately 900 feet of shoreline within English Camp.

Scenic Resources – Common To All Alternatives

Management actions:

- The park staff would continue to provide programs that highlight interpretation and education of the values derived from a dark night sky.
- The NPS would continue to protect the scenic resources of the park as required by law and policy.
- The NPS would educate and cooperate with adjacent private landowners and relevant agencies about potential modern development effects on the historic scene and provide vegetative screening where possible. This is especially important along Garrison Bay and at the east and west boundaries of American Camp.
- The park would encourage the use of low impact lighting to reduce visual impacts and promote energy efficiency.

Actions Common to All Alternatives	
	Soundscapes – Common To All Alternatives Management actions: ▪ The park would initiate an overflight management plan that would help in establishing a baseline for noise level in the park.
Socioeconomics	**Socioeconomics – Common To All Alternatives** Management actions: ▪ Trail connections would be established that provide new opportunities for visitors and links to communities. ▪ The park would provide a destination and educational opportunity for visitors, which would create indirect economic benefits to gateway communities.
Facilities	**Facilities – Common To All Alternatives** Management actions: ▪ The park's administrative headquarters would remain in its present location in Friday Harbor; however, in the long-term the park staff would have the flexibility to buy a building/property on the island, preferably a historic one, for administrative purposes. English Camp ▪ A new fire cache building would be replaced near the administrative road at English camp.
Transportation, Access, And Circulation	**Transportation, Access, and Circulation – Common To All Alternatives** Management actions: ▪ The park would work cooperatively with the state and county to provide appropriate access to private land adjacent to the park where rights-of-way exist.
Research	**Research – Common To All Alternatives** Management actions: ▪ A research plan would be developed, based on the park's vital signs workshop, to provide a framework for permitting and promoting research, including identifying research needs to support park management and restoration efforts.
Park Boundary And Land Protection	**Park Boundary and Land Protection – Common To All Alternatives** Management actions: ▪ The park would continue to evaluate the growth and development trends on San Juan Island that affect resource protection and public access. ▪ A land protection plan would be developed for the park.

Alternative A – No Action

Alternative A is the No Action Alternative and is required by the National Environmental Policy Act. The No Action Alternative provides the baseline from which to compare the other alternatives. Under this alternative, current management practices would continue, as funding allows. Emphasis would be upon protecting the values of the park without substantially increasing or changing staff, programs, funding support or facilities.

The primary emphasis in the No Action Alternative would continue to be the protection and preservation of cultural resources. Since 1966, the park has been listed in the National Register of Historic Places and is a National Historic Landmark. The management of cultural landscapes around the immediate encampment areas places emphasis on cultural landscape management consistent with protecting the natural environment and natural processes. Existing landscape elements from the encampment period and the Crook homesteading era would continue to be preserved and maintained. At English Camp, these elements would include the formal garden, segments of historic trails and roads, cemetery, parade ground, fencing, historic orchard fruit trees, and extant (remaining) structures. At American Camp, these elements would include the redoubt, parade ground, f agpole, fencing, extant structures, cemetery, historic fruit trees, historic prairie, segments of historic trails and roads from the encampment period, and the Hudson's Bay Company's Belle Vue Sheep Farm.

The key components of Alternative A are as follows:

- At English Camp, the barracks would continue to be used as the primary visitor contact station and for special events, and the Crook house would continue to be used as an exterior exhibit.
- Interpretive displays and exhibits would continue to focus on historical themes.
- In the short-term, visitor facilities at both units would remain in their present location.
- The existing park boundary would be maintained.

Management Zones

In the last San Juan Island National Historical Park General Management Plan, dated April 1979, both English and American camps were broadly zoned Historic, including Guss Island, protecting the historical integrity of these sites. Peripheral areas of the park units were zoned Park Development for administration and secondary recreational uses. An area in the northeast portion of American Camp unit was zoned Natural— Environmental Protection Subzone, for maintaining the sanctuary qualities of the area for eagles, deer, and marine life. These zones were originally based on proposed actions in the GMP, many of which were never realized. (See Figure 6: Alternative A: Management Zones for English Camp and Figure 7: Alternative A: Management Zones for American Camp at the end of Alternative A.)



Alternative A—No Action

Alternative A would incorporate all of the management actions that are "Common to All" as previously described, plus the following alternative-specific actions.

Alternative A – No Action	
Cultural Resources	**Cultural Landscapes – No Action Alternative**
	Management actions: ▪ The cultural landscape would continue to be maintained with some modest improvements for Americans With Disabilities Act (ADA) accessibility along trails. English Camp: ▪ The historic Crook and Sandwith orchards would continue to be maintained at the existing number of trees.
	Archaeological and Historic Resources– No Action Alternative
	Management actions: ▪ Management direction would continue to place emphasis on preservation of the existing historic buildings and structures that are included on NPS list of classified structures. ▪ No historic buildings from the encampment period would be repatriated to the camps. English Camp: ▪ The barracks would continue to be preserved and used as the primary visitor contact station and for special events. ▪ The Crook house would continue to be used as an exterior exhibit. The Crook house would undergo hazardous materials remediation after the bats are removed so that the house could eventually be adaptively reused. ▪ The blockhouse would continue to be open to the public for viewing and the hospital and commissary would continue to be interpreted as exterior exhibits. American Camp: ▪ The laundress' quarters and the officers' quarters would continue to be viewed and interpreted as exterior exhibits.
	Museum Collections– No Action Alternative
	Management actions: ▪ Park collections of approximately one million objects would continue to be maintained at off-site locations in western Washington with only a few dozen objects exhibited in display cases at the American Camp visitor center.
Natural Resources	**Vegetation, Including Special Status Species– No Action Alternative**
	Management actions: ▪ Same as "common to all".
	Wildlife, Including Special Status Species– No Action Alternative
	Management actions: ▪ Same as "common to all"
	Coastal Water Resources and Hydrologic Systems– No Action Alternative
	Management actions: ▪ Same as common to all alternatives for water quality data collection. ▪ Park staff would continue to work toward defining ownership of the intertidal areas

Alternative A – No Action	
	Geologic Resources – No Action Alternative Management actions: ▪ Same as "common to all".
	Air Quality– No Action Alternative Management actions: ▪ Same as "common to all".
Visitor Experience	**Interpretation and Education– No Action Alternative** Management actions: ▪ Interpretive displays and exhibits would continue to focus primarily on historical themes. ▪ The volunteers in the parks (VIP) program would continue to focus primarily on interpretation, helping with summer reenactments, demonstrations, and staffing the information counters. ▪ Interpretive programs would continue to be offered at the visitor center and at the barracks building at English Camp. American Camp: ▪ American Camp would continue to have the only visitor center inside the park.
	Recreation– No Action Alternative Management actions: ▪ Park staff would assist island organizations taking lead in developing island-wide trail connections if funding were available. English Camp: ▪ A 94- foot dingy dock would continue to be available for public boat access to English Camp from the water.
	Scenic Resources – No Action Alternative Management actions: ▪ Same as "common to all".
	Soundscapes – No Action Alternative Management actions: ▪ Same as "common to all".
Socioeconomics	**Socioeconomics – No Action Alternative** Management actions: ▪ Same as "common to all".
Facilities	**Facilities – No Action Alternative** Management actions: ▪ Hook-ups for VIP trailers would continue to be provided at both English and American camps. English Camp: ▪ Maintenance facilities would remain at the current location along the West Valley Road. ▪ The educational camp, consisting of a group tent site with water but no sewer, would remain in its present location at English Camp.

Alternative A – No Action	
	American Camp: ▪ Park staff would continue to utilize the 1,400 square foot double-wide trailer that serves as the temporary visitor center assembled in 1979. ▪ The fire camp would continue to be maintained along Cattle Point Road north of the visitor center.
Transportation, Access, and Circulation	Transportation, Access, and Circulation– No Action Alternative
	Management actions: ▪ NPS would maintain the existing access into the park at both camps. Limited improvements would be undertaken for safety and road maintenance. English Camp: ▪ The existing park entrance road off West Valley Road into English Camp would continue to be maintained along the existing alignment, most of it along the alignment of the historic military road. The park entrance road would need turnouts defined and chip seal to handle increased two-way traffic. ▪ The park's administrative road into the park from West Valley Road would continue to be a nonpublic road, used by park staff and occasionally by staff from the Oregon Museum of Science and Industry (OMSI) or other educational groups. The parking lot at English Camp would be maintained, but no additional improvements provided. ▪ Informal visitor parking to access Young Hill would continue along the shoulder of West Valley Road, a county maintained road that bisects English Camp. ▪ An ADA trail would be extended from the Crook house to the parade ground, providing better access to persons with disabilities. American Camp: ▪ No additional improvements to the parking lot at the visitor center would be made in the near future.
Research	Research – No Action Alternative
	Management actions: ▪ Same as "common to all".
Park Boundary and Land Protection	Park Boundary and Land Protection– No Action Alternative
	Management actions: English Camp: ▪ The boundary at English Camp would remain the same. American Camp: ▪ The boundary at American Camp would remain the same.

Development Cost Estimates

The No Action alternative has costs associated with continuing to manage the park. The NPS estimates are $2,380,000 to implement Alternative A over the next 15-20 years. These costs are derived from projects already entered into the Project Management Information System (PMIS) for the next five years. Costs are expressed in gross construction dollars and include design, compliance, and supplemental services.

These costs are based upon general "class C" estimates of site development. These estimates are not intended to be used for budgetary purposes, but should only be used for relative comparison of the alternatives proposed in the GMP. Prior to submitting funding requests for the design and construction phases, "class B" estimates are required, based upon detailed site design that will provide decisions about facility size and cost. Costs are expressed in 2007 dollars and phased over 15-20 years.

Park Operations

Staffing for Alternative A

This alternative assumes current staf ng levels will be maintained at nine full-time staff positions. In addition, there are three part-time seasonal positions, all dependent upon funding.

Outside of the existing staff, the park currently pays for part-time curatorial services provided by North Cascades National Park where most of the park's collection is located.

Full-time staff positions:

- Superintendent
- Administrative Of cer
- Administrative Technician
- Chief of Resource Management
- Chief of Interpretation
- Chief of Maintenance
- Chief Ranger
- Park Ranger (Interpretation)
- Maintenance Worker

Part-time seasonal positions:

- Maintenance Worker
- Law Enforcement Ranger
- Park Ranger (Interpretation)

Current Operating Base for Alternative A

Total operating base for the park in 2006 was $725,000.

Asset Management

For a discussion of the "Asset Business Plan for San Juan Island National Historical Park," see the section on "Asset Management" in the "Affected Environment" chapter under "Existing Park Development and Programs." In summary, the park has a total of 38 assets in the park. These assets include roads, parking areas, trails, maintained landscape, buildings, water systems and marina/waterfront. The majority of these assets contribute to the purpose of the park. The majority are in good or fair condition; a few are considered in poor condition. The largest deferred maintenance backlog is found in roads, trails, and landscapes. To maintain current assets in relatively good condition, application of the asset business plan model indicates that the park will need an additional $192,000 annually in 2006 dollars for operation and maintenance requirements. In addition, there would be ongoing cyclic maintenance, component renewal, and rehabilitation projects for existing park facilities.

Staffing Under Alternative A

Administration	Maintenance	Interpretation/ Education	Resource Management And Visitor Protection	Total Staff
3 Permanent	2 Permanent	2 Permanent	2 Permanent	9 Total Staff
0 Seasonal	1 Seasonal	1 Seasonal	1 Seasonal	3 Total Staff
3 Total	**3 Total**	**3 Total**	**3 Total**	**12 Total**

There would be no capital development costs. The No Action Alternative does not add or subtract any assets from the park's inventory.

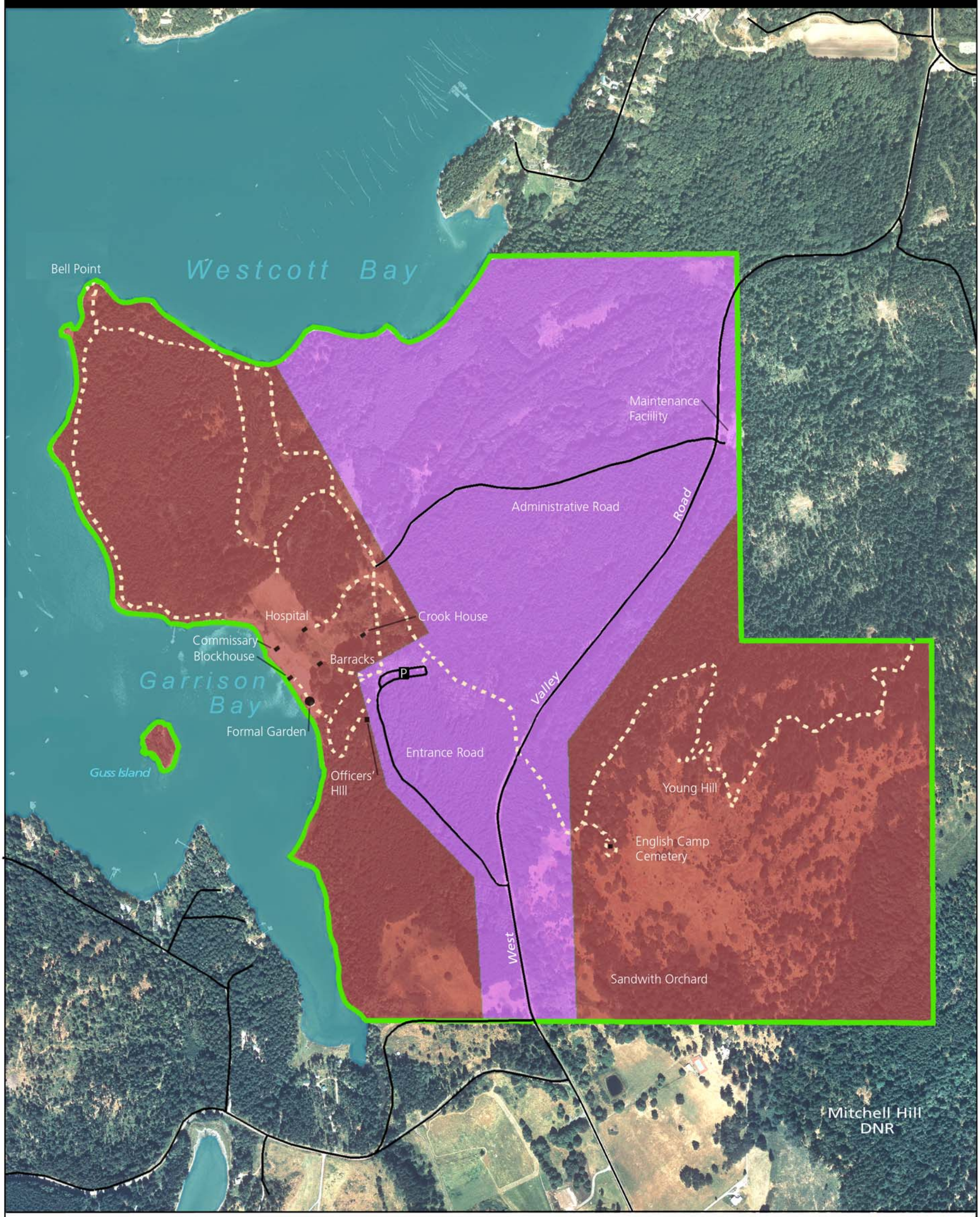
Programmed as part of the No Action Alternative are two large park projects, one involving paving the entrance road at English Camp and the other replacing the fire cache at American Camp. These two projects call for future expenditures of approximately $550,000 total in 2006 dollars.

The Crook house is a notable resource that has a high asset prioritization index (API) value, meaning it contributes significantly to the mission of the park, but is in poor condition. The No Action Alternative includes identified needs of approximately $275,000 of deferred maintenance on the Crook house. The park staff has requested and received funding this year for emergency stabilization on the building, but none of this funding reduces the $275,000 in deferred maintenance.



The Crook house. NPS Photo.

Alternative A:
Management Zones for English Camp
San Juan Island NHP Draft GMP/EIS



Management Zones

- Historic
- Park Development
- NPS Boundary
- Road
- Trail
- P Parking

0 250 500 1000 feet

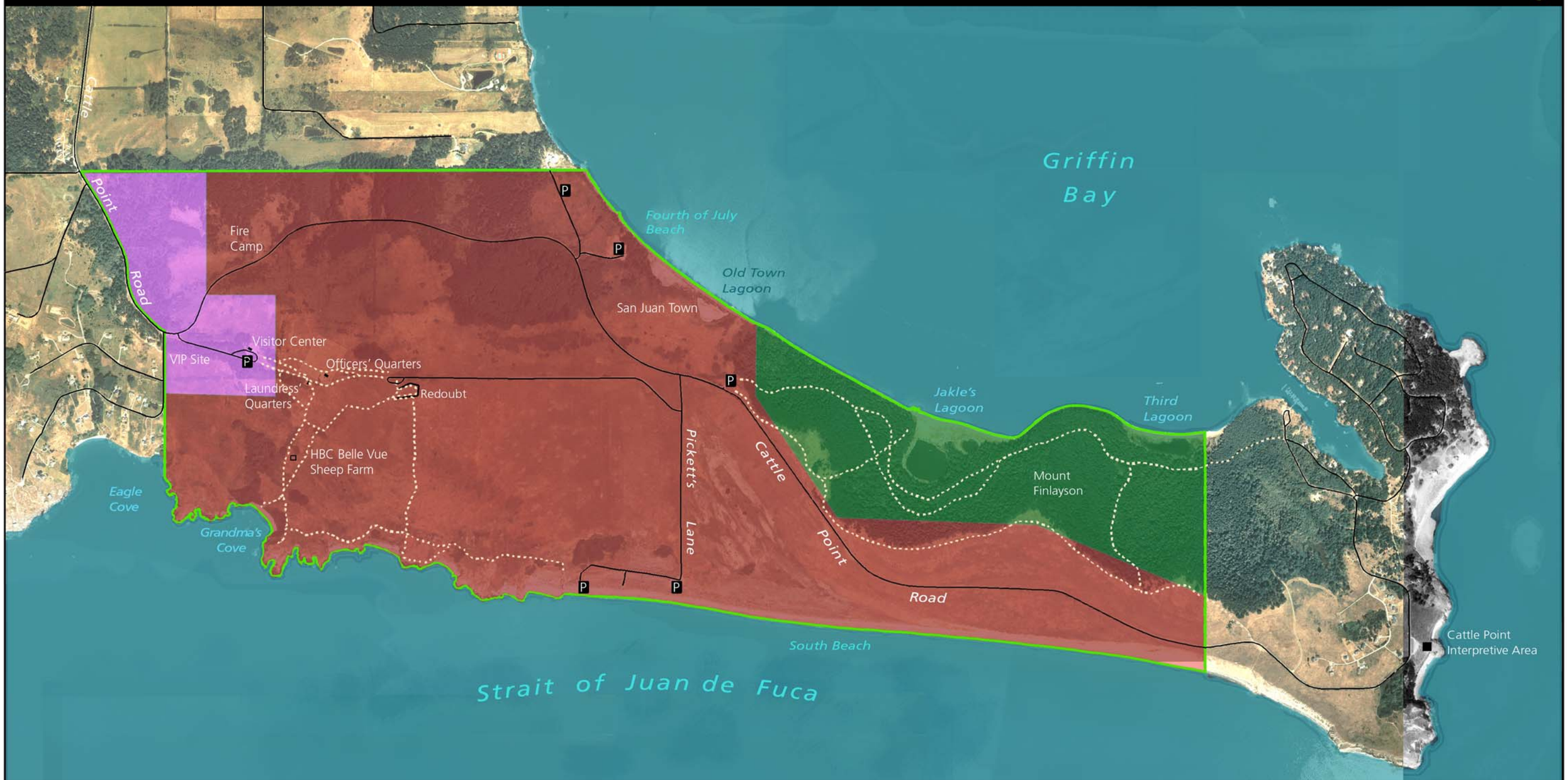
Produced by: National Park Service, Pacific West Region, Seattle, Washington

Data Sources: NPS - DOQs (1997), management zones, NPS boundary, roads, trails

Figure 6

Date Created: October 2007

Alternative A: Management Zones for American Camp
San Juan Island NHP Draft GMP/EIS



Management Zones
- Historic
- Natural
- Park Development

NPS Boundary
Road
Trail

P Parking

0 250 500 1000 feet

Figure 7

Produced by: National Park Service, Pacific West Region - Seattle

Date Created: October 2007

Data Sources: NPS - DOQs (1997), management zones, NPS boundary, roads, trails
San Juan County - parcels
USGS DOQ (1990)

Alternative B

The general concept for Alternative B is to increase visitor use opportunities and outreach in English Camp, American Camp, and in the town of Friday Harbor through additional visitor facilities, recreational opportunities, programs, and services. Interpretation would be enhanced for both cultural and natural interpretive themes through more extensive facilities and programs.

The key components of Alternative B are as follows:

- At English Camp, the road system would be reconfigured as a one-way loop road by connecting a road segment approximately one-fifth mile long from the entrance road to the administrative road. It would follow the existing historic road alignment where possible.
- The Crook house would be rehabilitated as a visitor contact facility on the ground f oor and administrative use on the second f oor.
- At American Camp, the existing visitor center would be removed and a new permanent enlarged visitor center including space for a collections study room would be constructed north of the redoubt. The existing road to the redoubt, off Pickett's Lane, would be removed and reclaimed.
- The cultural landscapes would be enhanced for visitor understanding and interpretation through a variety of techniques.
- Off-island interpretation would be enhanced through partnerships.
- Park staff would seek to manage the intertidal areas through partnerships with DNR and others and encourage DNR to provide free conservation easements on tidelands connected to park land for consistent management.
- The park would propose boundary adjustments at both English Camp and American Camp. The park would acquire Mitchell Hill at English Camp. At American Camp, the park would acquire the DNR managed Cattle Point Interpretive Area, the DNR managed Cattle Point Natural Resource Conservation Area, the BLM property, and a privately owned parcel.

Management Zones

Management zoning for Alternative B includes the following zones: Administrative, Cultural, Natural, and Visitor Services. In formulating zones for Alternative B, the management zones were placed in locations or configurations on the park maps according to the overall concept of emphasizing visitor opportunities.

At English Camp, the Cultural Zone would include four distinct areas: the historic core area including the parade ground, historic encampment structures, formal garden, and of cers' hill; the old military road spur and Sandwith orchard southeast of West Valley Road to the park boundary; the cemetery at Young Hill, and Guss Island. The Visitor Services Zone would form a loop along the park and county roads and include the Crook house, a new parking lot, and educational camp site (unless moved to Mitchell Hill). It would also include a small area on Westcott Bay that would allow for development of a canoe/kayak landing. Three small areas would be zoned Administrative to accommodate park operations for maintenance and VIP sites. The majority of the acreage at English Camp would fall under the Natural Zone. (See Figure 8: Alternative B: Management Zones and Schematic Design for English Camp.)

At American Camp, the Cultural Zone is situated south of Cattle Point Road to the Strait of Juan de Fuca, stretching from the western park boundary to Pickett's Lane. This zone would include the HBC Belle Vue Sheep Farm, the historic prairie, the redoubt, of cers' quarters, the laundress' quarters, and the parade ground. It would also include a contiguous area north of Cattle Point Road to Old Town Lagoon incorporating the site of the former San Juan Town. The Visitor Services Zone would include the park roads and parking areas, an area from Fourth of July Beach north to the park border, and an area accommodating the new proposed visitor center. There are three small areas zoned for Administrative use: the existing visitor center area and access road, the VIP sites, and the fire camp. The Natural Zone is in two separate sections: the first would include the eastern half of the park from Pickett's Lane to the eastern park border. It would also include the area north of Cattle Point Road to the park boundary, excluding a small area that is zoned Administrative. The Cultural and Natural Zones are approximately the same amount of acreage in this alternative. (See Figure 9: Alternative B: Management Zones, Boundary Modification, and Schematic Design for American Camp.)

Alternative B

Alternative B would incorporate all of the management actions that are "Common to All" as previously described, plus the following alternative-specific actions.

Alternative B	
Cultural Resources	**Cultural Landscapes – Alternative B** Management actions: ▪ Park staff would use a variety of techniques to enhance visitor understanding of the cultural landscape, including but not limited to delineating non-extant historic building sites and other landscape features. ▪ Park staff would conduct additional research including historical research to provide better understanding of park resource and new interpretation information for visitors. English Camp: ▪ The park would partially restore and enlarge the Sandwith orchard to approximately one acre to better portray the extent of the orchard during the encampment period. The park would replant historically accurate fruit trees in gaps to maintain the late 19th century character of the orchard. ▪ The park would rehabilitate the Crook family orchard to give visitors an improved understanding of the role and activities of the Crook family. The orchard would remain the same size in acreage, but gaps would be filled in with historically accurate trees to depict an early 20th century orchard. ▪ Information regarding treatment of the orchards was derived from recent research and past planning efforts. American Camp: ▪ The historic prairie would be restored within the cultural landscape to enhance the native species composition and visual quality of the prairie as it existed during the encampment period. This treatment is consistent with the historic landscape report and the cultural landscape inventory. **Archaeological And Historic Resources – Alternative B** Management actions: ▪ Similar to Alternative A, management direction would continue to place emphasis on preservation of the existing historic buildings and structures that are included on the NPS list of classified structures. No historic buildings from the encampment period would be repatriated to the camps. English Camp: ▪ The barracks would continue to be preserved and used as the primary visitor contact station and for special events. ▪ The Crook house would undergo hazardous materials remediation so that the house could eventually be adaptively reused. The Crook house would be adaptively reused as a visitor contact facility on the ground floor and administrative use on the second floor. ▪ The blockhouse would continue to be open to the public for viewing and the hospital and commissary would continue to be interpreted as exterior exhibits. American Camp: ▪ The laundress' quarters and the officers' quarters would continue to be viewed and interpreted as exterior exhibits.

Alternative B

	Museum Collections – Alternative B Management actions: ▪ Adequate space for a collections study room would be provided in the newly constructed visitor center north of the redoubt. The study room would contain important natural and cultural resource items. Cultural resources would be from the prehistory and the historic military era, including some non-military items from locations such as San Juan Town. These collections will aid park staff in preparing interpretive and other special event programs to the public.
Natural Resources	**Vegetation, Including Special Status Species– Alternative B** Management actions: American Camp: ▪ Same as common to all alternatives, plus the prairie, a threatened resource in Puget Sound, would be restored to enhance the historic scene and provide habitat for critical prairie plant and animal species. This restoration effort would include continued use of prescribed fire as a management tool in maintaining the prairie. ▪ The vegetation on Mitchell Hill has been heavily altered, primarily from timber harvest. If acquired, the NPS would manage the forest to promote progression toward a multiple species stand more characteristic of natural forest succession, similar to what is done elsewhere in the park where farming or forestry occurred prior to acquisition. **Wildlife, Including Special Status Species – Alternative B** Management actions: ▪ Park staff would expand interpretation for visitors to include topics on wildlife in the park and the impacts of invasive species on park resources. **Coastal Water Resources And Hydrologic Systems – Alternative B** Management actions: ▪ Park staff would seek to manage the intertidal areas through partnerships with DNR and others. The park would encourage DNR to provide free conservation easements on tidelands connected to park land for consistent management. ▪ Park staff would work to inform visitors about the value of bays and surface and subsurface water quality in the watershed through a variety of interpretive media to increase protection and awareness of water related issues. **Geologic Resources – Alternative B** Management actions: ▪ Same as "common to all". **Air Quality– Alternative B** Management actions: ▪ Same as "common to all".
Visitor Experience	**Interpretation and Education– Alternative B** Management actions: ▪ Off-island interpretation would be enhanced by partnering with Washington State Ferries and Washington State Parks to locate interpretive exhibits on ferries and state park lands. ▪ Park staff would enhance interpretation of both cultural and natural interpretive themes through more extensive facilities open to the public and through additional exhibits and programs.

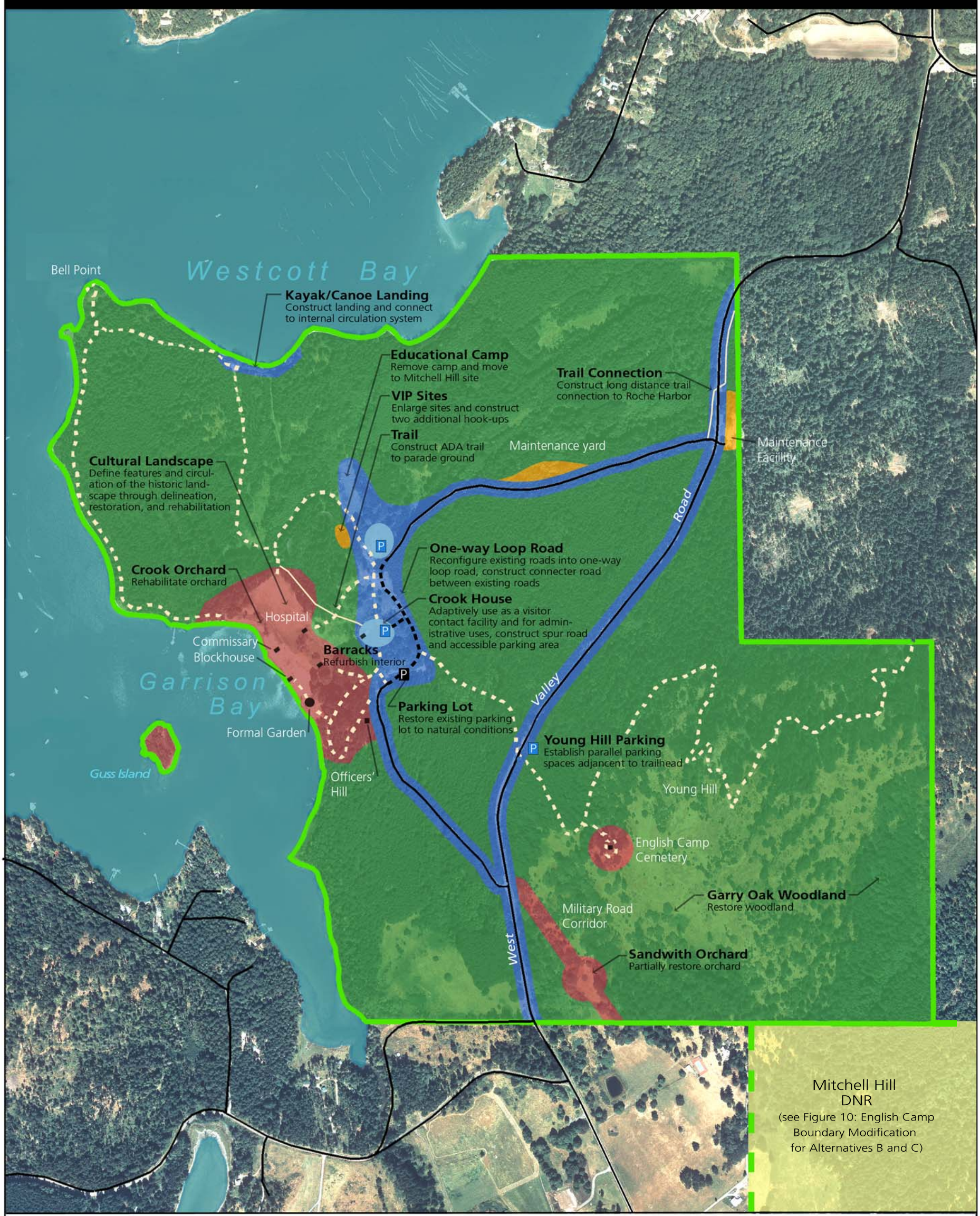
Alternative B	
	▪ The park would explore ways to partner with various communities and organizations, such as Spring Street School, home school groups, OMSI, Earth Corps and with fifth grade history school programs on the island. This partnership would enhance personal education and interpretation of the park's stories to others through outreach, including additional web resources, traveling kits, or curriculum guides. ▪ The park would develop a visitor use management plan. English Camp: ▪ Park staff would develop materials for interpreting the orchards at English Camp.
	Recreation– Alternative B Management actions: ▪ The NPS would improve existing park roads (such as widening shoulders) for bicycle use. If additional land were acquired, park staff would partner with bicycle user groups to establish and maintain bicycle trails and enforce proper use of trails. ▪ The NPS would study existing recreational uses and develop a visitor use management plan for any new land parcels acquired, consistent with the recreational uses within the park. Any new trails added to the park from acquired parcels would be managed for non-motorized uses. ▪ Park staff would partner with San Juan County to establish new long distance trail connections such as the county's proposed old military road trail linking the two camps. Various routes would be considered. English Camp: ▪ A kayak/canoe landing would be developed on the Westcott Bay shoreline near the park's north boundary and connect to the existing internal trail system. ▪ The NPS would continue to allow compatible, non-motorized use along the multi-use trails at Mitchell Hill, if acquired. ▪ The park would establish an ADA trail between the Crook house and the parade ground for persons with disabilities. ▪ The park would work with partners to establish a trail to connect Roche Harbor with the park's administrative road.
	Scenic Resources – Alternative B Management actions: ▪ New facilities would be constructed with photovoltaic systems, as possible and would be compatible with scenic resources. Outdoor lighting on buildings would be designed and directed appropriately to minimize light pollution, such as using motion sensors and fixtures with lower lumen ratings.
	Soundscapes – Alternative B Management actions: ▪ The park would conduct baseline acoustic monitoring through the NPS soundscapes program.
Socioeconomics	**Socioeconomics – Alternative B** Management actions: ▪ Same as "common to all."

Alternative B

Facilities	**Facilities – Alternative B**
	Management actions: ▪ NPS staff would explore opportunities to partner with groups such as the Chamber of Commerce or Visitors Bureau in the creation of an island visitor information center in Friday Harbor. English Camp: ▪ The Crook house would be rehabilitated as a visitor contact facility on the ground floor and administrative use on the second floor. Visitors would be directed first to the Crook house from the parking lot to receive information about the encampment period and information about the Crook family before walking downhill into the historic core of the park. ▪ The VIP sites would be enlarged to provide privacy and two additional hook-ups. ▪ The educational camp would be relocated to Mitchell Hill, if the land is acquired. Otherwise, the camp would remain in its present location. American Camp: ▪ The 1979 double-wide trailer serving as the temporary visitor center would be removed and a new, enlarged visitor center would be constructed north of the redoubt behind an existing grove of trees. This location would allow the visitor to be closer to the historic core of the park. The visitor center would be a sustainable building design, approximately 5,400 square feet and include space for educational exhibits and a collections study room. ▪ A new parking lot and access road would be sited north of the new visitor center. ▪ Once the existing temporary visitor center is removed, a small covered maintenance storage area approximately 1000 square feet would be developed and maintained at the existing visitor center site to supplement the facility at English Camp. ▪ The fire camp would be formalized along Cattle Point Road north of the visitor center. ▪ The VIP sites at American Camp would be maintained.
Transportation, Access, and Circulation	**Transportation, Access, and Circulation– Alternative B**
	Management actions: ▪ All the following actions would take into consideration preservation of historic road remnants and circulation patterns through compatible uses such as trails and linkages to significant resources within the camps. English Camp: ▪ The road system would be reconfigured as a one-way loop by connecting the entrance road with the administrative road, following the existing historic road alignment where possible. Vehicles would continue to enter at the existing entrance but exit along the existing administrative road onto West Valley Road. ▪ A new main parking lot would be constructed to the north of the Crook house. The existing parking lot would be restored to natural conditions. ▪ A road spur would be developed that would access the rear of the Crook house. Two to three ADA parking spaces would be provided adjacent to the Crook house. ▪ Several parallel parking spaces would be created along West Valley Road adjacent to the trailhead to Young Hill and the cemetery. American Camp: ▪ The non-historic existing road to the redoubt would be converted to a trail. The existing redoubt parking lot would be restored to natural conditions. A small parking lot would be constructed at the redoubt road where it intersects Pickett's Lane. ▪ A road spur would be constructed off Cattle Point Road leading to the new visitor center. The road spur would end in a parking lot north of the visitor center. The parking lot would be designed for approximately 30 visitor parking spaces, including three ADA parking spaces. A pull-through for large recreational vehicles would be provided.

Alternative B	
	▪ The existing paved road into the existing visitor center would be closed to the public, but maintained as an access road to the proposed maintenance storage area. ▪ The parking lots at South Beach and Fourth of July Beach would be reconfigured, and possibly expanded, for increased visitor use. ▪ The parking lot for Jakle's Lagoon and Mount Finlayson would be reconfigured to include a few additional parking spaces and a restroom facility.
Research	**Research - Alternative B** Management actions: ▪ Same as "common to all".
Park Boundary and Land Protection	**Park Boundary and Land Protection– Alternative B** Management actions: ▪ The park would develop appropriate resource and interpretive documents for newly acquired land. ▪ Development around the park has the potential for negative impacts on a variety of park resources, particularly historic views, and water quality and quantity. Some of these negative impacts are already occurring. The park would work collaboratively with the county and others to address neighborhood development and its affect on park viewsheds, and water resources. English Camp: ▪ The National Park Service would request appropriation of funds needed to acquire Mitchell Hill (312.32 acres). Mitchell Hill contains part of the original historic military road spur and potentially other artifacts dating to the encampment period. American Camp: ▪ The boundary at American Camp would be modified to encompass an adjacent 27.32 acres of BLM land, which is managed by DNR through a lease. It would also include the 10.29-acre cattle point interpretive area, two DNR tracts totaling 78.61 acres contiguous to the park called the Cattle Point Natural Resources Conservation Area, and a private 1.9-acre parcel. Historically, these tracts along with American Camp were part of the original military reservation. These properties also encompass part of the same critical dune and forest ecosystem shared by NPS and would extend public shoreline access and coastline protection along the Strait of Juan de Fuca. The boundary adjustment would provide consistent management standards for both cultural and natural resource protection and recreational use. ▪ The boundary expansion would not include the Third Lagoon Preserve, a 20.08-acre San Juan County Land Bank/DNR property managed for public use.

Alternative B:
Management Zones and Schematic Design for English Camp
San Juan Island NHP Draft GMP/EIS



Produced by: National Park Service, Pacific West Region, Seattle, Washington

Data Sources: NPS - DOQs (1997), management zones, NPS boundary, roads, trails

Figure 8

Date Created: October 2007

Alternative B: Management Zones, Boundary Modification, and Schematic Design for American Camp
San Juan Island NHP Draft GMP/EIS



Management Zones
- Administrative
- Cultural
- Natural
- Visitor services

- NPS Boundary
- Proposed Boundary Addition
- Road
- Proposed Road
- Trail
- Proposed Trail

- Parking
- Proposed Parking

0 250 500 1000 feet

Figure 9

Produced by: National Park Service, Pacific West Region - Seattle

Date Created: October 2007

Data Sources: NPS - DOQs (1997), management zones, NPS boundary, roads, trails
San Juan County - parcels
USGS DOQ (1990)

Development Cost Estimates

The NPS development cost estimates are $11,885,000 to implement Alternative B over the next 15-20 years. Included in these costs is approximately $4,400,000 for a new permanent visitor center. Meeting the long-range development needs of the park would not just rely upon federal appropriated funds. A variety of other public and private sector funding sources could be sought by the park to assist in implementation efforts. Other parks have successfully found partners to help with funding major projects, and some of the costs associated with actions in this alternative may prove to be less expensive when donated materials, labor, and other support are forthcoming. Costs are expressed in gross construction dollars and include design, compliance, and supplemental services.

These costs are based upon general "class C" estimates of site development. These estimates are not intended to be used for budgetary purposes. These costs should only be used for relative comparison of the alternatives proposed in the GMP. Prior to submitting funding requests for the design and construction phases, "class B" estimates are required, based upon detailed site design that will provide decisions about facility size and cost. Costs are expressed in 2007 dollars and phased over 15-20 years.

Park Operations

Staffing for Alternative B

This alternative calls for five additional full-time staff positions over Alternative A for a total of fourteen to carry out the operational responsibilities of the park over the next 15-20 years. In addition, there would be three part-time positions over Alternative A: one seasonal interpretation/education positions, one seasonal maintenance position, and one seasonal resource specialist position.

Outside of the existing staff, the park currently pays for part-time curatorial services provided by North Cascades National Park where most of the park's collection is located. Alternative B would add the equivalent of one full-time journeyman level curator position which would be apportioned between North Cascades National Park and San Juan Island National Historical Park.

Total staf ng under Alternative B is shown in the following table and includes additional staf ng which would be needed for managing the proposed boundary additions.

Additional full-time staff positions under Alternative B:

- Two interpretation/education positions
- One maintenance position
- One visitor protection (law enforcement) position
- One journeyman level curator position (equivalent FTE)

Additional part-time/seasonal staff positions under Alternative B:

- One interpretation/education position
- One maintenance position
- One resource specialist/plant ecologist position

Operating Base for Alternative B

The addition of five full-time staff and three part-time seasonal positions would add approximately $355,000 to the operating base for Alternative B. Additional administrative costs for equipment and supplies at the Crook house and the permanent visitor center would amount to approximately $15,000.

Total operating costs for Alternative B would be $1,095,000 per year (in 2007 dollars). Alternative B would cost $370,000 more in annual operating costs than Alternative A.

Staffing Under Alternative B

Administration	Maintenance	Interpretation/Education	Resource Management And Visitor Protection	Total Staff
3 Permanent	3 Permanent	4 Permanent	4 Permanent	14 Total
	(1 New)	(2 New)	(2 New)	
0 Seasonal	2 Seasonal	2 Seasonal	2 Seasonal	6 Total
	(1 New)	(1 New)	(1 New)	
3 Total	**5 Total**	**6 Total**	**6 Total**	**20 Total**

The implementation of the approved plan (no matter which alternative is selected) will depend on future funding, Service-wide priorities, and partnership funds, time, and effort. The approval of a GMP does not guarantee that funding and staf ng needed to implement the plan will be forthcoming. Full implementation of the GMP could be many years into the future.

Asset Management

At American Camp, a permanent visitor center would be built north of the redoubt to replace the 1979 double-wide trailer presently in use at American Camp. Though this would be a new building, the construction of a sustainable design building would offset many of the energy use and maintenance costs of a traditional building, and definitely one such as the existing 1979 double-wide trailer. The addition of a covered maintenance storage at the location of the existing visitor center would add one additional asset at American Camp.

At English Camp, the Crook house would be rehabilitated as a visitor contact facility with exhibits on the ground f oor and administrative use on the second f oor. As mentioned in the discussion on asset management in the No Action Alternative, the Crook house has a high asset priority index value (See Chapter 5 "Affected Environment," "Existing Park Development and Programs") meaning it contributes significantly to the mission of the park, but is in poor condition. There are identified funding needs of approximately $275,000 of deferred maintenance on the Crook house. The cost of bringing the condition of the Crook house up to meet preservation standards supporting both visitor and park staff use is estimated to be approximately $1,300,000 (NPS class C estimates).

Boundary Modification

The proposed boundary additions for Alternative B are shown on Figures 8 and 10 for English Camp and Figure 9 for American Camp.

At English Camp, Alternative B would add the Mitchell Hill property to the park boundary. This property is served by a dedicated easement for an existing access road and right-of-way, which is a legal appurtenance to the DNR property from West Valley Road.

At American Camp, Alternative B would add three DNR properties, a Bureau of Land Management (BLM) property, and a private parcel, but not the co-owned San Juan County Land Bank property.

Language in the legislation for San Juan Islands National Historical Park specifically states. "That the Secretary of the Interior is authorized to acquire on behalf of the United States by donation, purchase with donated or appropriated funds, or by exchange, lands, interests in lands, and such other property on San Juan Island, Puget Sound, state of Washington, as the Secretary may deem necessary for the purpose of interpreting and preserving the sites of the American and English camps on the island, and of commemorating the historic events that occurred from 1853 to 1871 on the island in connection with the final settlement of the Oregon Territory boundary dispute, including the so called Pig War of 1859. Lands or interests therein owned by the state of Washington or a political subdivision thereof may be acquired only by donation."

This park enabling legislation thus provides the Secretary of the Interior with the legislative authority to make the determination for the park boundaries to include land adjustments at both American and English camps as described in Alternative B. With this legislative authority, the Mitchell Hill property at English Camp and the other areas in the Cattle Point area at American Camp that are proposed to be included as part of the park, are suf ciently authorized to modify the park boundary, as long as the Secretary of the Interior deems it necessary, and funding is available. In the case of state owned land, the land can only be acquired by the NPS by donation from the state of Washington.

Inclusion of Washington State land parcels 3, 4 and 7 at American Camp that are managed by the Washington State Department of Natural Resources (DNR), may occur through a donation of these lands to the park. Washington DNR has expressed a preliminary interest in doing so. Until that donation is completed, the Washington DNR would retain ownership and work with the park and other parties to ensure compatible management.

These proposed American Camp additions were part of the original military reservation where joint occupation activities took place. They are part of the landscape setting crucial to understanding the story. Having these lands would allow the NPS to better interpret the park story by allowing public trail access to these sites. It also provides for a continuous protected coastline and coordinated management

English Camp: Boundary Modification for Alternatives B & C

San Juan Island National Historical Park GMP/EIS



Figure 10

Produced by: National Park Service
PWRO-Seattle GIS Group

Date Created: February 28, 2007

Data Sources: NPS - lakes, existing park boundary, proposed park boundary, roads, shoreline
USGS - shaded relief

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involving a single public ownership from South Beach around to the eastern portion of Cattle Point. The lands proposed for addition to the park are currently managed by the Washington state DNR and the Bureau of Land Management. Current management of these lands do not relate to the park's period of significance, and, while social trails now exist, the agencies have never established or maintained formal trails for public use on these properties.

The DNR lands at Mitchell Hill at English Camp, involve a different land classification status within DNR because of the property's status as School Trust land. In this instance, given the state's fiduciary trust responsibilities to the Washington State Education Fund, the State interest in the Mitchell Hill site would need to be purchased, most likely by a third-party non-governmental entity (such as a land trust). Subject to available funds, the third-party entity would then be compensated by the federal government and title would then be conveyed to the park. The culmination of this transaction would not only benefit the park and the public, it would also benefit the state school construction fund and Washington State school programs. The National Park Service would request an appropriation from Congress through the Land and Water Conservation Fund or other sources in order to secure the funds necessary to purchase the Mitchell Hill property from the third-party non-governmental entity. The Washington DNR is actively seeking to divest itself of its remaining school trust properties in San Juan County and supports the ultimate acquisition of Mitchell Hill by the park. The addition of the Mitchell Hill to the English Camp unit of the park provides for the important protection of portions of known locations of the historic military road that linked English and American camps, protects one of the oldest stands of Garry oak in the San Juan Islands, and provides for enhanced recreational opportunities for public use and enjoyment of the site though a network of trails linking other portions of the park to the island-wide trail system.

English Camp

Mitchell Hill property (DNR-state of Washington) 312.32 acres



American Camp

(Parcels 1 and 2 are not included in the boundary modification for Alternative B.)

Parcel 3 (DNR-state of Washington) 39.84 acres
Parcel 4 (DNR) 38.77 acres
Parcel 5 (BLM-federal) 27.32 acres
Parcel 6 (private landowner) 1.9 acres
Parcel 7 (DNR) 10.29 acres

The NPS would seek donation for parcels 3, 4, and 7 at American Camp. For parcel 5, federal land managed by BLM, an administrative transfer would be proposed by the Secretary of the Interior. Opportunities for purchase of parcel 6 would be explored with the private landowner on a willing seller basis only.

The entire boundary addition would include 430.35 acres.

Alternative C—Preferred Alternative

Alternative C, the Preferred Alternative, would broaden the scope of resource management and interpretation programs to emphasize the connections and interrelationships between the park's natural and cultural resources. New facilities, trails and programs would provide opportunities for visitors to understand the importance of the park's natural resources in defining the cultural landscapes and inf uencing the settlement and historic events of San Juan Island. This alternative was selected by the GMP planning team using the Choosing by Advantages method. It combines several actions from Alternatives A and B; the preferred actions were objectively chosen for their advantages over other similar actions in the other alternatives.

The key components of Alternative C are as follows:

- The Crook house at English Camp would be stabilized, preserved, and used as an exterior exhibit with interpretive signs and displays that tell the story of the Crook family era.
- The hospital would be rehabilitated and opened to the public for interpretation.
- The educational camp would be relocated at English Camp along the administrative road and set back in the woods.
- The prairie would be restored using native plant species.
- The 1979 double-wide trailer serving as a temporary visitor center at American Camp would be removed and replaced with a permanent visitor center at the existing site, allowing for improved exhibits and staff space.
- In the Of cer's Quarters duplex, half would be rehabilitated for use as an interpretive exhibit that shows a typical of cers' quarters and the other half would be available for research and academic study.
- A portion of the military-era collections would be relocated to a collections study room at either park headquarters or at the visitor center making it easily accessible to park staff. The NPS would maintain the majority of pre-history collections at the University of Washington's Burke Museum in Seattle. Important natural resource items would also be included in the collections study room.
- Historic buildings from the encampment period existing on the island would be repatriated back to their original location within the camps. This would occur only if the historic buildings could be authenticated and if they possess historical integrity.
- The park would work to acquire and manage the intertidal zone within the park by exchanging tidelands with DNR. Park staff would work with the county and others to establish a Marine Preserve at both camps to be managed by the county's Marine Resources Committee and partners.
- The park would propose boundary adjustments at both English Camp and American Camp similar to Alternative B, but would also include the Third Lagoon Preserve, co-managed by San Juan County Land Bank and DNR.

Management Zones

The management zoning for Alternative C includes the following zones: Administrative, Cultural, Natural, and Visitor Services. In applying zones for Alternative C, the management zones were placed on the ground in the following locations.

At English Camp, the Cultural Zone would be larger than in Alternative B. It would include all the area from Alternative B in addition to the area around the Crook house. There would be no new road connections or parking area at the Crook house. The Visitor Services Zone would be limited to the existing publicly accessible roads and a new area along the administrative road for an educational camp. The administrative road itself would be zoned Administrative. The majority of the acreage at English Camp would fall under the Natural Zone.

At American Camp, the Cultural Zone would be confined to the area representing the core of the historic scene. It would be similar to the zoning in Alternative B, but would not include the majority of the area between Cattle Point Road and the redoubt. The Visitor Services Zone would also be more limited in size than Alternative B, and would predominantly include the existing roads, parking areas, and current visitor center area. Two small areas would be zoned Administrative to accommodate park operations: the VIP sites and the fire camp. The Natural Zone would be expanded in size from Alternative B to

include an area between Cattle Point Road and the redoubt, as well as an area around Fourth of July Beach. (See Figure 10: English Camp: Boundary Modification for Alternatives for Alternatives B and C, and Figure 11: Alternative C: Management Zones and Schematic Design for English Camp. See also Figure 12: Alternative C: Management Zones, Boundary Modification, and Schematic Design for American Camp after the “Alternative C” table.)



Alternative C—Preferred Alternative

Alternative C would incorporate all of the management actions that are "Common to All" as previously described, plus the following alternative-specific actions.

Alternative C – Preferred Alternative	
Cultural Resources	**Cultural Landscapes – Alternative C, Preferred Alternative** Management actions: ▪ Same as Alternative B, plus: English Camp: ▪ The park would partially restore one-half to one acre of the Sandwith orchard to better portray the extent of the orchard during the encampment period. Park staff would replant historically accurate fruit trees in gaps to maintain the late 19th-century character of the orchard. ▪ To give visitors an understanding of the role of the Crook family, the park would preserve the number, variety, and style of existing fruit trees in the Crook family orchard through cyclic maintenance and replace individual trees with the same species as needed. ▪ Information regarding treatment of the orchards was derived from recent research and past planning efforts. American Camp: ▪ The historic prairie would be restored on a larger scale than in Alternative B to improve the native species composition, ecological function, and visual quality of the prairie as it existed during the encampment period. Historic and natural values of the prairie are managed to be complementary. This treatment is consistent with the historic landscape report and the cultural landscape inventory. **Archaeological And Historic Resources – Alternative C, Preferred Alternative** Management actions: ▪ Treatment of archaeological resources would be the same as Alternative A with sites preserved and, if appropriate, interpreted to the public. ▪ The historic buildings and structures would be the same as Alternative B, plus historic buildings, if authentic and processing integrity, from the encampment period located on the island would be repatriated back to their original location within the camps. One building, known as the Brown house, is located in Friday Harbor. National Park Service staff would acquire the historic structures from willing sellers and replace them in their exact location. This would be done in accordance with NPS Management Policies regarding movement of historic structures (NPS management policy 5.3.5.4.5). English Camp: ▪ Part of the barracks would be rehabilitated for combined use as an interpretive exhibit, visitor contact station, and special events facility. ▪ Park staff would seek funding to rehabilitate the hospital building and make it available for public interpretation. ▪ Treatment of the blockhouse and commissary would be the same as in Alternative B. ▪ The Crook house would be stabilized, preserved, and used as an exterior exhibit with interpretive signs and displays that tell the story of the Crook family era. The park would retain the flexibility to potentially use the Crook house in the future for certain adaptive uses if remedial clean-up actions are successful. American Camp: ▪ The laundress' quarters would continue to be viewed as an exterior exhibit.

	▪ The officers' quarters would be open for visitation as a combined interpretive exhibit and study house. One-half of the officers' quarters would be rehabilitated for an exhibit showing a typical officers' quarters; the other half would remain available for study for those interested in the evolution of an historic building and the alterations that have occurred to it over time.
	Museum Collections – Alternative C, Preferred Alternative
	Management actions: ▪ A portion of the military-era collections would be relocated to San Juan Island to a collections study room located at either park headquarters or at the visitor center. The study room would meet NPS standards for collections storage. Collections of the encampment era, including some non-military items from locations such as San Juan Town would be readily available to researchers, park staff, and to visitors. Important natural resource items would also be included in the collections study room. These collections will aid park staff in preparing interpretive and other special event programs to the public. ▪ Prehistoric collections would continue to be maintained by the Burke Museum at the University Of Washington in Seattle. ▪ Records for museum collections would continue to be maintained at North Cascades National Park.
Natural Resources	**Vegetation, Including Special Status Species – Alternative C, Preferred Alternative**
	Management actions: English Camp: ▪ The vegetation on Mitchell Hill has been heavily altered, primarily from timber harvest. If acquired, the NPS would manage the forest to promote progression toward a multiple species stand more characteristic of natural forest succession, similar to what is done elsewhere in the park where farming or forestry occurred prior to acquisition. American Camp: ▪ A larger area of the prairie would be replanted in native species or otherwise restored to historic conditions than in Alternatives A and B. Invasive plant species would be eliminated or controlled where feasible. Woody vegetation would be managed to prevent intrusion into portions of the landscape that were open grassland during the historic period.
	Wildlife, Including Special Status Species – Alternative C, Preferred Alternative
	Management actions: ▪ A monitoring program would be established to detect species populations in decline, species as indicators of the health of the ecosystem, and monitor for the presence of species of special concern.
	Coastal Water Resources And Hydrologic Systems– Alternative C, Preferred Alternative
	Management actions: ▪ As in Alternative B, park staff would inform visitors about the value of bays and surface and subsurface water quality in the watershed. ▪ The park would work to acquire and manage the intertidal zone within the park. The NPS would seek to exchange the tidelands with DNR. Park staff would work with the county and partner with other adjacent owners to establish a marine preserve at both American and English camps, to be managed collaboratively under the auspices of the County Marine Resources Committee and partner agencies. ▪ The park would work toward implementing the goals of the NPS Ocean Park Stewardship Action Plan. ▪ The park would strive to implement the recommendations of the assessment of coastal water resources and watershed conditions at San Juan Island National Historical Park.

	▪ The park would work together with the Northwest Straits Commission and the San Juan County Marine Resources Commission on education projects and programs related to water issues. English Camp: ▪ The park would work with the state, county, and other interested parties in the development of a cooperative management plan for Garrison and Westcott Bays, which would include educating the public and visitors about sustainable boating, mooring, anchorage, human impacts, and the creation of a "no wake" zone in the bays. American Camp: ▪ Park staff would coordinate with the Whale Museum and NOAA to add the South Beach shoreline at American Camp to the Whale Watch Voluntary Exclusion Zone, which would extend the protected areas to orca whales by limiting approach of tour boats to one-quarter mile.
	Geologic Resources – Alternative C, Preferred Alternative Management actions: ▪ Same as "common to all"
	Air Quality – Alternative C, Preferred Alternative Management actions: ▪ The park would participate and implement the Climate Friendly Parks Program to determine the park's ecological footprint, and in turn, potentially mitigate certain actions related to climate change.
Visitor Experience	**Interpretation And Education – Alternative C, Preferred Alternative** Management actions: ▪ The park would enhance the interpretation of natural resources such as geology, vegetation, and the human connection to the landscape through additional programs and learning opportunities. ▪ The park would encourage tribal members to participate in preparation of exhibits/programs that relate to Native American connection with the island. English Camp: ▪ As in Alternative B, the park staff would develop a wayside exhibit or other media for interpreting the orchards at English Camp. ▪ As in Alternative B, the park would develop a visitor use management plan. American Camp: ▪ Interpretation of cultural resources would be enhanced over Alternative A. In addition, park sites such as San Juan Town and the Hudson's Bay Company's Belle Vue Sheep Farm, the interior of the officers' quarters, hospital, and any repatriated buildings (potentially two buildings) would be actively interpreted to visitors.
	Recreation – Alternative C, Preferred Alternative Management actions: ▪ As in Alternative B, the NPS would improve existing roads for bicycling use, and if additional land were acquired, park staff would partner with bicycle user groups to establish and maintain bicycle trails and enforce the proper use of trails. ▪ As in Alternative B, the NPS would partner with the county to establish new trail connections to connect the park with existing long distance trails. Various routes would be considered. ▪ The park would support county efforts to implement the concept of an old military road trail connecting English Camp with American Camp, as part of an island-wide trail system.

Alternative C – Preferred Alternative	
	English Camp: ▪ The NPS would continue to allow compatible, non-motorized use along the multi-use trails at Mitchell Hill, if acquired. ▪ As in Alternative B, the park would establish an ADA trail between the Crook house and the parade ground for persons with disabilities. ▪ As in Alternative B, the park would work with partners to establish a trail connection between Roche Harbor and the park along the administrative road.
	Scenic Resources – Alternative C, Preferred Alternative
	Management actions: Same As Alternative B.
Soundscapes	**Soundscapes – Alternative C, preferred alternative**
	Management actions: ▪ Same As Alternative B.
Socioeconomics	**Socioeconomics – Alternative C, Preferred Alternative**
	Management actions: ▪ Same as "common to all."
Facilities	**Facilities – Alternative C, Preferred Alternative**
	Management actions: ▪ The VIP sites would be treated the same as Alternative B. English Camp: ▪ The Crook house would be stabilized, preserved, and used as an exterior exhibit with interpretive signs and displays about the Crook family era. The park would retain the flexibility to potentially use the Crook house in the future for certain adaptive uses if remedial clean-up actions are successful. ▪ The educational camp would be established at a new site along the administration road. American Camp: ▪ The 1979 double-wide trailer serving as the temporary visitor center would be removed and replaced with a permanent 5,400 square foot visitor center at the existing site in American Camp. The building would incorporate sustainable "green" building design including low shielded outdoor lighting. ▪ The existing parking lot would be enlarged to include approximately 30 parking spaces for visitors. ▪ The fire camp would remain in its present location at American Camp, but would be formalized and include minimal improvements, such as bathrooms.
Transportation, Access, And Circulation	**Transportation, Access, And Circulation – Alternative C, Preferred Alternative**
	Management actions: ▪ All the following actions would take into consideration preservation of historic road remnants and circulation patterns through compatible uses such as trails and linkages to significant resources within the camps.

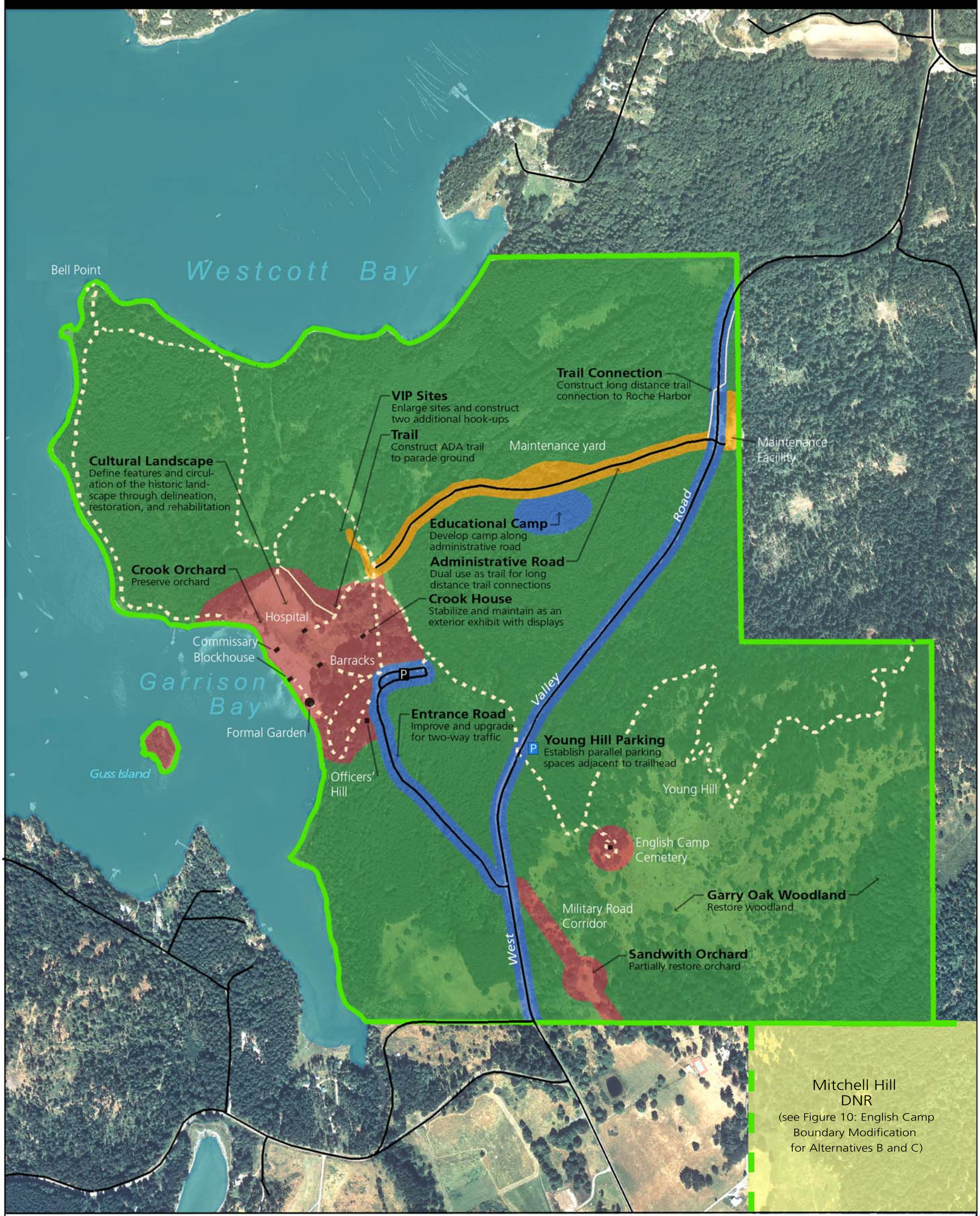
	English Camp: ▪ The primitive character of the entrance road at English Camp would be maintained, and the road would be improved to handle increased two-way traffic. Improvements would include paving or chip sealing certain segments of the road where traction or erosion are a problem. Two to three informal turnouts would be created to allow cars approaching each other to pass. ▪ The administrative road into the park from West Valley Road would continue to be for administrative use only. This road may also be used as a trail connecting to other trails outside the park. ▪ The parking lot at English Camp would be maintained in its existing location with additional improvements to control runoff. ▪ As in Alternative B, informal visitor parking access to Young Hill would be formalized by providing several parallel parking spaces along the shoulder of the west side of West Valley Road for easy and safe trail access. American Camp: ▪ As in Alternative B, the non-historic existing road to the redoubt from the intersection at Pickett's Lane would be converted to a trail and the redoubt parking lot restored to natural conditions. A small parking lot would be developed by Pickett's Lane. ▪ The parking lot at the existing visitor center would be reconfigured to meet the needs of an enlarged visitor center, including adding ADA-compliant spaces. ▪ The parking lot at the Jakle's Lagoon and Mount Finlayson trailhead would be treated the same as in Alternative B, and would be reconfigured to include additional parking spaces and a restroom facility. ▪ As in Alternative B, parking lots at South Beach and Fourth of July Beach would be reconfigured to accommodate more vehicles.
Research	**Research – Alternative C, Preferred Alternative** Management actions: ▪ Same as "common to all."
Park Boundary And Land Protection	**Park Boundary And Land Protection – Alternative C, Preferred Alternative** Management actions: ▪ The park would develop appropriate resource and interpretive documents for newly acquired land. ▪ Development around the park has the potential for negative impacts on a variety of park resources, particularly historic views, and water quality and quantity. Some of these negative impacts are already occurring. The park would work collaboratively with the county and others to address neighborhood development and its affect on park viewsheds, and water resources. ▪ The park would coordinate with the DNR to acquire and manage the intertidal lands within the two camps. English Camp: ▪ The National Park Service would request appropriation of funds needed to acquire Mitchell Hill (312.32 acres) which contains part of the original historic military road spur and potentially other artifacts dating to the encampment period and which has numerous other values that would enhance protection of park resources.

Alternative C – Preferred Alternative	
	American Camp: ▪ The boundary at American Camp would be modified to encompass an adjacent 27.32 acres of BLM land, which is managed by DNR through a lease. It would also include the 10.29-acre Cattle Point Interpretive Area, two DNR tracts totaling 78.61 acres contiguous to the park called the Cattle Point Natural Resources Conservation Area, and a private 1.9-acre parcel. Historically, these tracts along with American Camp were part of the original military reservation. These properties also encompass part of the same critical dune and forest ecosystem shared by NPS and would extend public shoreline access and coastline protection along the Strait of Juan de Fuca. The boundary adjustment would provide consistent management standards for both cultural and natural resource protection and recreational use. ▪ The boundary modification at American Camp would also include the Third Lagoon Preserve, a 20.08-acre San Juan County Land Bank/DNR property currently in public use. ▪ This alternative would encourage the acquisition of conservation easements by private non-profits, local government, or others, from willing sellers owning farmland located at the northern boundary of American Camp near the reported site of the American settler's farm where the incident that initiated the Pig War occurred. In addition, the NPS in cooperation with partners would explore less than fee title strategies to protect the woodland habitat in the Cattle Point Water District parcel that is not dedicated to water treatment use and road access.



Alternative C (Preferred Alternative): Management Zones and Schematic Design for English Camp

San Juan Island NHP Draft GMP/EIS



Produced by: National Park Service, Pacific West Region, Seattle, Washington

Data Sources: NPS - DOQs (1997), management zones, NPS boundary, roads, trails

Figure 11

Date Created: October 2007

Alternative C (Preferred Alternative): Management Zones, Boundary Modification, and Schematic Design for American Camp
San Juan Island NHP Draft GMP/EIS



Management Zones
- Administrative
- Cultural
- Natural
- Visitor services

- NPS Boundary
- Proposed Boundary Addition
- Trail
- Proposed Trail

- Road
- Parking
- Proposed Parking

0 250 500 1000 feet

Figure 12

Produced by: National Park Service, Pacific West Region - Seattle

Date Created: October 2007

Data Sources: NPS - DOQs (1997), management zones, NPS boundary, roads, trails
San Juan County - parcels
USGS DOQ (1990)

Development Cost Estimates

The NPS development cost estimates to implement Alternative C would be $7,488,000 over the next 15-20 years. These costs include the construction of a $4,000,000 replacement visitor center. It is assumed that meeting the long-range development needs of the park would not just rely upon federal appropriated funds. A variety of other public and private sector funding sources would be sought by the park to assist in implementation efforts. Other parks have successfully found partners to help with funding major projects, and some of the costs associated with actions in this alternative may prove to be less expensive when donated materials, labor, and other support are forthcoming. Costs are expressed in 2007 dollars and phased over 15-20 years.

These costs are based upon general "class C" estimates of site development. These estimates are not intended to be used for budgetary purposes. These costs should only be used for relative comparison of the alternatives proposed in the GMP. Prior to submitting funding requests for the design and construction phases, "class B" estimates are required, based upon detailed site design that will provide decisions about facility size and cost.

Park Operations

Staffing for Alternative C

The Preferred Alternative calls for four additional permanent staff over Alternative A for a total of thirteen permanent staff positions to carry out the operational responsibility of the park over the next 15-20 years. In addition, there would be an increase of three part-time staff positions.

Outside of the existing staff, the park currently pays for part-time curatorial services provided by North Cascades National Park where most of the park's collection is located. Alternative C would add the equivalent of one full-time journeyman level curator position which would be apportioned between North Cascades National Park and San Juan Island National Historical Park.

Total staffing under Alternative C is shown in the following table and includes additional staffing which would be needed for managing the proposed boundary additions.

Additional full-time staff positions under Alternative C:

- One interpretation/education position
- One visitor protection (law enforcement) position
- One maintenance position
- One journeyman level curator position (equivalent FTE)

Additional part-time/seasonal staff positions under Alternative C:

- One visitor protection (law enforcement) position
- One maintenance position
- One resource specialist/plant ecologist position

Operating Base for Alternative C

The addition of four full-time staff and three part-time seasonal positions would add $300,000 to the operating base over Alternative A. In addition, additional administrative costs for equipment and supplies at the permanent visitor center would amount to approximately $10,000.

Total operating costs for Alternative C would be $1,035,000 per year (in 2007 dollars). Alternative C would cost $310,000 more in annual operating costs than Alternative A.

The implementation of the approved plan (no matter which alternative is selected) will depend on future funding, Service-wide priorities, and partnership funds, time, and effort. The approval of a GMP

Staffing Under Alternative C

Administration	Maintenance	Interpretation/ Education	Resource Management And Visitor Protection	Total Staff
3 Permanent	3 Permanent	3 Permanent	4 Permanent	13 Total
	(1 New)	(1 New)	(2 New)	
0 Seasonal	2 Seasonal	1 Seasonal	3 Seasonal	6 Total
	(1 New)		(2 New)	
3 Total	**5 Total**	**4 Total**	**7 Total**	**19 Total**

does not guarantee that funding and staffing needed to implement the plan will be forthcoming. Full implementation of the GMP could be many years into the future.

Asset Management

In Alternative C, there would be an increase in the number of assets at the park by one or more depending on how many historic structures were repatriated to the park from elsewhere on the island. These buildings are located on San Juan Island and have been adapted to modern uses. One building, called the Brown House, has been authenticated as a camp building and has high integrity. Once relocated, it is the intent of this proposal to restore the exteriors and use them as exterior exhibits, so the costs of maintaining them would be less than a traditional building with associated interior costs and infrastructure.

In the Alternative C, a permanent visitor center would be constructed on the existing site to replace the 1979 double-wide trailer presently in use. As in Alternative B, the construction of a sustainable design building would offset many of the energy use and maintenance costs of a traditional building, and definitely one such as the existing 1979 double-wide trailer.

Boundary Modification

The proposed boundary additions for Alternative C are shown on Figures 10 and 11 for English Camp and Figure 12 for American Camp.

At English Camp, Alternative C would add the Mitchell Hill Property to the park boundary. This property is served by a dedicated easement for an existing access road and right-of-way, which is a legal appurtenance to the DNR property from West Valley Road.

At American Camp, Alternative C would add four DNR parcels to the park boundary, a BLM property, and a private parcel. One of the DNR properties is co-owned with the San Juan County Land Bank. For a detailed analysis of the individual parcels, see Appendix C: Analysis of Boundary Adjustment and Land Protection.

Language in the legislation for San Juan Islands National Historical Park specifically states:

> "That the Secretary of the Interior is authorized to acquire on behalf of the United States by donation, purchase with donated or appropriated funds, or by exchange, lands, interests in lands, and such other property on San Juan Island, Puget Sound, state of Washington, as the Secretary may deem necessary for the purpose of interpreting and preserving the sites of the American and English camps on the island, and of commemorating the historic events that occurred from 1853 to 1871 on the island in connection with the final settlement of the Oregon Territory boundary dispute, including the so called Pig War of 1859. Lands or interests therein owned by the state of Washington or a political subdivision thereof may be acquired only by donation."

This park enabling legislation thus provides the Secretary of the Interior with the legislative authority to make the determination for the park boundaries to include land adjustments at both American and English camps as described in Alternative B. With this legislative authority, the Mitchell Hill property at English Camp and the other areas in the Cattle Point area at American Camp that are proposed to be included as part of the park, are sufficiently authorized to modify the park boundary, as long as the Secretary of the Interior deems it necessary, and funding is available. In the case of state owned land, the land can only be acquired by the NPS by donation from the state of Washington.

Inclusion of Washington State land parcels 3, 4 and 7 at Cattle Point at American Camp that are managed by the Department of Natural Resources may occur though a donation of these lands to the park. Washington DNR has expressed a preliminary interest in doing so. Until that donation is completed, the Washington DNR would retain ownership and work with the park and other parties to ensure compatible management.

These proposed American Camp additions were part of the original military reservation where joint occupation activities took place. They are part of the landscape setting crucial to understanding the story. Having these lands will allow the NPS to better interpret the park story by having public trails that take the public to these sites. It also provides for a continuous protected coastline and coordinated management involving a single public ownership from South Beach around to the eastern portion of Cattle Point. The lands proposed for addition to the park are currently managed by the Washington State DNR and the Bureau of Land Management. Current management of these lands do not relate to the park's period of significance, and, while social trails now exist, the agencies have never established or maintained formal trails for public use on these properties.

The DNR lands at the Mitchell Hill site at English Camp involve a different land classification status within DNR because of the property's status as School Trust land. In this instance, given the state's fiduciary trust responsibilities to the Washington State Education Fund, the state interest in the Mitchell Hill site would need to be purchased, most likely by a third-party non-governmental entity (such as a land trust). Subject to available funds, the third-party entity would then be compensated by the federal government and title would then be conveyed to the park. The culmination of this transaction would not only benefit the park and the public, it would also benefit the state school construction fund and Washington State school programs. The National Park Service would request an appropriation from Congress through the Land and Water Conservation Fund or other sources in order to secure the funds necessary to purchase the Mitchell Hill property from the third-party non-governmental entity. The Washington DNR is actively seeking to divest itself of its remaining school trust properties in San Juan County and supports the ultimate acquisition of Mitchell Hill by the NPS. The addition of the Mitchell Hill to the English Camp unit of the park provides for the important protection of portions of known locations of the historic military road that linked English and American camps, protects one of the oldest stands of Garry oak in the San Juan Island archipelago, and provides for enhanced recreational opportunities for public use and enjoyment of the site though a network of hiking trails that link to trails in other portions of the park to the island-wide trail system.

English Camp

Mitchell Hill property (DNR-state of Washington) 312.32 acres



American Camp

Parcel 1 (County Land Bank/DNR)	20.08 acres
Parcel 2 (Cattle Point Water District)	2.36 acres
Parcel 3 (DNR-state of Washington)	39.84 acres
Parcel 4 (DNR)	38.77 acres
Parcel 5 (BLM-federal)	27.32 acres
Parcel 6 (private landowner)	1.9 acres
Parcel 7 (DNR)	10.29 acres

The NPS would seek donation for parcels 3, 4, and 7, but not parcel 1. Parcel 1 would most likely need to be reimbursed because of the nature of the state's joint ownership with the San Juan County Land Bank. The Land Bank interest would need to be acquired most likely by a third party non-governmental entity (such as a land trust), which would then be compensated by the federal government and title conveyed to the park. The acquisition of parcel 1 would be acquired to provide public trail access and to provide onsite management of the resource values that are present.

Parcel 2 is owned by the Cattle Point Water District. This parcel contains a reverse osmosis treatment facility to serve certain residential portions of Cattle Point Estates. The NPS, in cooperation with private non-profit partners, would explore various less than fee title strategies to protect the woodland habitat of the remainder of the tract not dedicated to water treatment use and road access.

For parcel 5, federal land managed by BLM, an administrative transfer would be proposed by the Secretary of the Interior. Opportunities for purchase would be explored with the private landowner on a willing seller basis only.

The entire boundary addition would include 452.79 acres.

User Capacity

Developing Indicators and Standards

General management plans are required to include user capacities for all areas of a park. It is not necessarily a set of numbers or limits, but instead a process involving monitoring, evaluation, actions (managing visitor use), and adjustments to ensure a park's values are protected. The idea behind this process is that with any use on public lands comes some level of impact that must be accepted. Therefore, it is the responsibility of the National Park Service to

decide what level of impact is acceptable and what actions are needed to keep impacts within acceptable limits. Instead of just tracking and controlling user numbers, the NPS park superintendent and staff manage the levels, types, behaviors, and patterns of visitor use and other public uses as needed to protect the condition of the resources and quality of the visitor experience. The monitoring component of this user capacity process helps test the effectiveness of management actions and provides a basis for informed adaptive management of public use.

User capacity is the type and level of visitor use that can be accommodated while sustaining resource and social conditions defined by the park's management objectives. User capacity can be affected by physical constraints or by the perception of crowding or diminished quality of visitor experience. The foundation for user capacity decision making is in a general management plan's qualitative descriptions of desired resource conditions, visitor experience opportunities and general levels of development and management, which were developed in the management zones.

The GMP also includes identification of the indicators and standards that will be monitored and a range of management strategies that may be employed in the future as needed. An indicator is a measurable variable that can be used to track changes in resource and social conditions related to human activity so that progress towards a desired condition can be assessed. A standard is the management decision about the minimum acceptable condition for an indicator. The development of indicators and standards are the focus for determining capacity in the GMP.

The physical capacity of the buildings, parking lots, and additional infrastructure are the focus of establishing capacity at San Juan Island National Historical Park. Many of the facilities at the park were designed and built at a time of lower visitation. The present parking lot size is helpful to park management for managing user capacity. The number of parking spaces per site is as follows:

- English Camp 33
- American Camp visitor center 12
- Redoubt 9
- Jakle's Lagoon 7
- Fourth of July Beach 20
- South Beach 31

The maximum legal occupancy of buildings also plays a role in user capacity and the facility capacity can help the park manage user capacity for the park: for the visitor center at American Camp it is 60 persons; for the English Camp barracks it is 75 persons. Each developed area typically has a duplex toilet; in some cases toilets are more limiting than parking or building capacity. Seating capacity to view the park movie is six to eight at American Camp and approximately 50 at English Camp. The English Camp barracks building is only open in the summer. This information on physical capacity is helpful in the development of indicators and standards.

No visitor use management plan currently exists at the park. However, a workshop to address user capacity was facilitated in October 2005 by the Cooperative Ecosystem Studies Unit of the University of Washington with the participation of park and regional of ce staff. The results of the workshop are on file at the park.

Following is a table that identifies the indicators and standards for each management zone.

The last steps of user capacity decision making, which continue indefinitely, are monitoring the indicators and standards and taking management actions to minimize impacts when needed. The park would monitor indicators to determine if standards were being exceeded with techniques that could include non-systematic monitoring of visible impacts to trails or resources as part of regular staff and volunteer patrols, establishing systematic trail and resource assessments, reviewing special permit requests, and reviewing general information collected with respect to visitor trends, parking problems, vandalism, accidents and visitor complaints. Potential management actions that might be undertaken if

standards are exceeded could include increasing educational programs, modifying facilities, improving trail delineation or hardening trails, closing sensitive resource areas, removing invasive plants and revegetating with native species, and limiting the number of permits issued for different special park uses. The indicators and standards included in this general management plan/environmental impact statement will generally not change in the future. However, as monitoring of the park's conditions continues, managers may decide to modify, add, or delete indicators if better ways are found to measure important changes in resource and social conditions. A detailed monitoring plan for San Juan Island National Historical Park will be developed.

Mitigation Measures

Mitigation measures are the practicable and appropriate methods that would be used under any alternative to avoid and/or minimize harm to the park's natural and cultural resources, and visitors. These mitigation measures have been developed using existing laws and regulations, best management practices, conservation measures, and other known techniques from past and present work in and around San Juan Island National Historical Park.

The general management plan provides a management framework for the park. Within this broad context, the alternatives include the following measures that

Indicators and Standards

Zone	Indicator	Standard
Cultural and Natural	Social trails per mile of official trail.	No more than two social trails per mile of official trail.
Cultural and Natural	Incidents of audible human-caused sound.	No more incidents during peak use season than current baseline (2006/2007).
Cultural and Natural	Size of groups granted special event permits.	No more than 15 percent of special events will include more than 75 people.
Cultural and Natural	Location of special events granted permits.	Permits will not be granted for locations of primary visitor interest during peak season.
Cultural	Visible degradation of vegetation in the cultural landscape related to visitor activity.	Degradation visible at a landscape level will not persist through more than one year.
Cultural	Deterioration of historic structures.	Deterioration will not threaten historical integrity, structural integrity, visitor safety, or the desired visitor opportunities.
Natural	Diversity of native plant species in forest communities.	Plots located between two and ten meters from trail center will contain at least 80 percent of native plant species found in comparable control plots located in areas not frequented by visitors.
Natural	Diversity of marine invertebrate species in the rocky tidal zone.	Plots located in areas of high visitor use will contain at least 80 percent of native species found in comparable control plots located in areas not frequented by visitors.
Visitor Services	The waiting period necessary to talk with park staff at visitor orientation facilities.	During peak use periods at least ninety percent of visitors seeking orientation information will wait less than fifteen minutes to talk with park staff at visitor orientation facilities.
Visitor Services	Visitors' ability to view next available audio-visual program.	During peak use periods, no more than one showing per day will have inadequate capacity to accommodate all visitors waiting to view the audio-visual program.
Visitor Services	Parking utilized by large groups of visitors (including special events).	Single groups of visitors will not be allowed to occupy more than half the official capacity of any parking lot.
Visitor Services	Visiting motor vehicles displaced due to lack of parking.	During peak use periods no more than five percent of motor vehicles will leave the American Camp visitor center and English Camp parking lots without having an opportunity to park.

would be used to minimize potential impacts from the implementation of the alternatives. These measures would be applied to all alternatives, subject to funding and staf ng levels. Additional mitigation would be identified as part of implementation planning and for individual projects to further minimize resource impacts.

Management of Cultural Resources

The protection of San Juan Island National Historical Park's cultural resources is essential for understanding the past, present, and future relationship of people with the park environment and the expressions of our cultural heritage. The park would pursue strategies to protect its cultural resources that would allow the integrity of the park's cultural resources to be preserved unimpaired. They would also ensure that the park is recognized and valued as an outstanding example of resource stewardship, conservation education and research, and public use.

Cultural Landscapes and Historic Buildings and Structures

- All project work relating to cultural landscapes and historic buildings/structures would be conducted in accordance with the guidelines and recommendations of the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* and the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*. Typical mitigation measures include measures to avoid adverse impacts, such as rehabilitation and adaptive reuse for historic buildings/ structures, designing new development to be compatible with surrounding historic properties, and screening new development from surrounding historic resources and cultural landscapes to minimize impacts.
- When a building's original use can not be accommodated, adaptive use is the best strategy to ensure that buildings remain in good condition. When not being adaptively used, the next best approach for preserving these structures is regular preservation maintenance, which ensures that roofs and walls as well as supporting structural elements are maintained in a sound, weather-resistant condition. An example of adaptive use is using historic structures to house park operations.

Archaeological Resources

- Archaeological surveys would precede any ground-disturbing activity in a proposed project location. Proposals for project locations are based upon existing knowledge of distribution of archeological resources and known archeological resources would be avoided to the greatest extent possible. If National Register eligible or listed archaeological resources could not be avoided, an appropriate mitigation strategy would be developed in consultation with the State Historic Preservation Of cer and associated American Indian tribes, as appropriate.

Museum Collections

- Mitigative measures related to museum collections consist of conservation of a collection through proper storage, handling, and exhibit of objects as specified in the NPS Museum Handbook and NPS Director's Order – 24, Museum Collections Management.

Traditionally Associated Peoples

- The NPS would continue to consult with culturally associated Native American tribes on a government-to-government basis to identify ethnographic resources and develop appropriate strategies to mitigate impacts on these resources. Such strategies could include continuing to provide access to traditional use or spiritual areas and screening new development from traditional use areas to minimize impacts on ethnographic resources.
- Consultation with Native Americans linked by ties of kinship, culture, or history to park lands would address the inadvertent discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony, and all provisions outlined in the Native American Graves Protection and Repatriation Act (25 USC 3001) of 1990 would be followed.

Management of Natural Resources

Air Quality

- The NPS would implement a dust abatement program. Standard dust abatement measures

could include the following elements: using water or other soil stabilizers, covering haul trucks, employing low speed limits on unpaved roads, minimizing vegetation clearing, and revegetating with native species.
- NPS vehicle emissions would be minimized by using the best available technology whenever possible.
- The NPS would encourage the public and commercial tour companies to employ methods that reduce emissions, including reducing idling of vehicles.
- Sustainable designs that reduce energy demands would be employed, thus reducing pollutant production.

Soundscapes / Natural Quiet

- The NPS would implement standard noise abatement measures during park operations, including: scheduling to minimize impacts in noise-sensitive areas, using the best available noise control techniques wherever feasible, using hydraulically or electrically powered impact tools when feasible, and locating stationary noise sources as far from sensitive areas as possible.
- The NPS would locate and design facilities to minimize objectionable noise.
- Idling of motors would be minimized when power tools, equipment, and vehicles are not in use.
- The NPS would muf e above ambient noise whenever possible to reduce noise impacts.

Night Skies (Lightscapes)

- Existing outdoor lighting in the park would be replaced with fixtures (directed inward and downward) that do not contribute to night sky light pollution.
- The NPS would use energy-ef cient, low-impact lighting, such as diffused light bulbs, and techniques such as down-lighting, to prevent light spill and preserve the natural lightscape.

Hydrologic Systems including Wetlands

- Projects adjacent to or in waterways would be timed to occur during the dry season, usually late summer.
- The NPS would implement erosion control measures, minimize discharge to water bodies, and regularly inspect construction equipment for leaks of petroleum and other chemicals to prevent water pollution. Minimize the use of heavy equipment in water.
- Runoff control systems would be integrated into the designs of larger parking areas near water resources to minimize water pollution.
- Sediment control and prevention plans for projects that could impact water quality would be developed.
- The NPS would delineate wetlands and apply protection measures during projects and perform project activities in a cautious manner to prevent damage caused by equipment, erosion, and siltation.

Soils

- New facilities would be built on soils suitable for development. Minimize soil erosion by limiting the time that soil is left exposed and by applying other erosion control measures, such as erosion matting, silt fencing, and sedimentation basins in construction areas to reduce erosion, surface scouring, and discharge to water bodies. Once work is completed, revegetate construction areas with appropriate native plants in a timely period.

Vegetation

- The NPS would monitor areas used by visitors for signs of native vegetation disturbance. Public education, revegetation of disturbed areas with native plants, erosion control measures, and barriers would be used to control potential impacts on plants from erosion or creation of social trails.
- The NPS would develop revegetation plans for disturbed areas and require the use of genetically appropriate native species. Revegetation plans should specify species to be used, seed/plant source, seed/plant mixes, site-specific restoration conditions, soil preparation, erosion control, ongoing maintenance and monitoring requirements, etc. Salvaged vegetation should be used to the extent possible.
- The NPS would implement a noxious weed control program. Standard measures could include the following elements: use only weed-free materials for road and trail construction,

repair, and maintenance; ensure equipment arrives on site free of mud or seed-bearing material; certify all seeds and straw material as weed-free; identify areas of noxious weeds pre-project; treat noxious weeds or noxious weed topsoil before construction (such as topsoil segregation, storage, herbicide treatment); when depositing ditch spoils along the roads, limit the movement of material to as close as possible to the excavation site; scrupulously and regularly clean areas that serve as introduction points for invasive plants (campgrounds, staging areas, and maintenance areas); revegetate with genetically appropriate native species; inspect rock and gravel sources to ensure these areas are free of noxious weed species; and monitor locations of ground-disturbing operations for at least three years following the completion of projects.

Wildlife and Fish

- Techniques would be employed to reduce impacts on fish and wildlife, including visitor education programs, restrictions on visitor and park activities, and law enforcement patrols.
- The NPS would implement a wildlife protection program. Standard measures would include project scheduling (season and/or time of day), project monitoring, erosion and sediment control, fencing or other means to protect sensitive resources adjacent to project areas, disposing of all food-related items or rubbish, salvaging topsoil, and revegetating.
- The NPS would consult with National Oceanic and Atmosphere Administration (NOAA) Fisheries Service for projects within essential fish habitat.

Special Status Species

- Mitigation actions would occur during normal park operations as well as before, during, and after projects to minimize immediate and long-term impacts on rare, threatened, and endangered species. These actions may vary by project area, and additional mitigation measures may be added depending on the action and location. Many of the measures listed for vegetation, wildlife, and water resources would also benefit rare, threatened, and endangered species by helping to preserve habitat.
- Facilities/actions/ operations would be located and designed to avoid or minimize the removal of rare, threatened, and endangered species habitat. If avoidance is infeasible, the NPS would minimize and compensate for adverse effects as appropriate and in consultation with the appropriate resource agencies.
- Work would be planned in areas in or near suitable threatened and endangered bird habitat as late as possible in the summer/fall.
- The NPS would conduct work outside of critical periods for the specific species when possible.
- Restoration and/ or monitoring plans would be developed and implemented as warranted. Plans should include methods for implementation, performance standards, monitoring criteria, and adaptive management techniques.
- For projects in or near streams, the NPS would employ appropriate best management practices.
- Measures would be implemented to reduce adverse effects of nonnative plants and wildlife on rare, threatened, and endangered species.
- The NPS would conduct surveys and monitoring for rare, threatened, and endangered species as warranted.
- Critical habitat features, such as nest trees, would be protected and preserved whenever possible.
- The NPS would follow the elements of the *Conservation Agreement and Strategy for the Island Marble Butterfly.*

Management of Scenic Resources

Mitigative measures are designed to minimize human-made visual intrusions. These include the following:

- Where appropriate, use facilities such as boardwalks and fences to route people away from sensitive natural and cultural resources while still permitting access to important viewpoints.
- The NPS would design, locate, and construct facilities to minimize adverse effects on natural and cultural resources and visual intrusion.
- Vegetative screening would be provided, where appropriate, to protect significant views or vistas.

Sustainable Design and Aesthetics

- Projects would use sustainable practices and resources whenever practicable by recycling and reusing materials, by minimizing materi-

als, by minimizing energy consumption during the project, and by minimizing energy consumption throughout the lifespan of the project.

Other Actions and Alternatives Considered

The Council on Environmental Quality (CEQ) guidelines for implementing NEPA requires federal agencies to analyze all "reasonable" alternatives that substantially meet the purpose and need for the proposed action.

Under NEPA, an alternative may be eliminated from detailed study for the following reasons [40 CFR 1504.14 (a)]:

- Technical or economic infeasibility;
- Inability to meet project objectives or resolve need for the project;
- Duplication of other less environmentally damaging alternatives;
- Conf icts with an up-to-date valid plan, statement of purpose and significance, or other policy; and therefore, would require a major change in that plan or policy to implement; and
- Environmental impacts too great.

The following alternatives or variations were considered during the alternatives development phase of the project, but because they did not meet one of the above criteria, they were rejected.

Other Alternatives

Cultural Resources Emphasis Alternative

An alternative originally considered but rejected by the planning team included an alternative with a cultural resources emphasis that was later dropped because of similarities with the No Action Alternative. The park has historically been managed with a strong cultural resource emphasis.

Increased Emphasis on Natural and Cultural Resources Management

A second alternative considered would have broadened the scope of resources by placing additional emphasis on natural and cultural resources management. Cultural resources would continue to be protected and interpretation of cultural resources and sites would be enhanced. Natural resource interpretation on themes such as geology and astronomy would be improved through additional interpretive methods and programs. After going through the Choosing by Advantages process to pick a Preferred Alternative, this alternative became redundant to the Preferred Alternative.

Other Actions

In addition to alternatives, there were several actions considered but rejected for the following reasons:

Combined Visitor Center and Administrative Headquarters

The idea to include administrative facilities as part of a new visitor center was discussed by the planning team. One reason that this idea was rejected was due to the availability of potable water at American Camp. The present well shares an aquifer with the neighboring community and has elevated levels of chlorides, indicating that salt water intrusion is occurring in the aquifer. Having additional administrative staff at the visitor center would require additional water extraction. Additionally, building a larger facility to include administrative of ces could potentially have a bigger visual impact on the adjacent historic setting and cultural landscape.

Relocate Crook house within English Camp

An action to relocate the Crook house to another location within English Camp was originally considered by the planning team. The Crook house was constructed after the historic encampment period, which is the period of historic significance for the park. The location and prominence of the house confuses some visitors into thinking that the house is a resource connected to the encampment period. The Crook family and their efforts are an integral part of the history of the site. After the military left, the Crook family bought the land and were caretakers of the remaining buildings and cemetery before it became a state park and later a national park unit. If the NPS were to remove the Crook house from its present location, the impact would be an adverse effect and could result in a loss of historic integrity.

Include Entire Historic Military Road in Park Boundary

A concept to include the entire historic military road that connected English and American camps as part of the park boundary was brief y discussed and dismissed. Though it could have enhanced the interpretation of the interrelationships between the two camps, gaining public support at this time for the trail and the ability to acquire interests in private property was determined to be unrealistic.

Identification of the Environmentally Preferred Alternative

The environmentally preferred alternative is defined as the alternative that causes the least damage to the biological and physical environment. It is also the alternative which best protects, preserves, and enhances historic, cultural, and natural resources.

In accordance with NPS Director's Order-12, Conservation Planning, Environmental Impact Analysis, and Decision-making, the NPS is required to identify the "environmentally preferred alternative" in environmental documents. The environmentally preferred alternative is determined by applying the criteria suggested in the National Environmental Policy Act (NEPA) of 1969, which is guided by the Council on Environmental Quality (CEQ). The CEQ (46 FR 18026 - 46 FR 18038) provides direction that "[t]he environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in NEPA's Section 101", which considers:

- Fulfilling the responsibilities of each generation as trustee of the environment for succeeding generations;
- Assuring for all generations safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
- Attaining the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
- Preserving important historic, cultural and natural aspects of our national heritage and maintaining, wherever possible, an environment that supports diversity and variety of individual choice;
- Achieving a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and
- Enhancing the quality of renewable resources and approaching the maximum attainable recycling of depletable resources (NEPA Section 101(b)).

The Council on Environmental Quality states that the environmentally preferable alternative is "the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources (46 FR 18026 – 46 FR 18038)." According to NPS NEPA Handbook (DO-12), through identification of the environmentally preferred alternative, the NPS decision-makers and the public are clearly faced with the relative merits of choices and must clearly state through the decision-making process the values and policies used in reaching final decisions.

After the environmental consequences of the alternative were analyzed, the alternative was evaluated to see how well the goals from NEPA section 101 listed above are met.

Alternative A represents the No Action Alternative and would continue ongoing management of programs and actions. The park would continue to be managed in accordance with approved plans and policies.

Cultural resources would continue to be protected and preserved; however, no additional historic structures would be opened to the public. Natural resources would continue to be managed as a critical element of the cultural landscape as well as for public recreational opportunities.

Alternatives B and C both call for expansion of cultural and natural resource management to enhance protection of resources. Additional measures would be employed to enhance the cultural landscape and to restore the orchards and prairie. More historic buildings would be opened to the public, providing new visitor opportunities and personal connections with park resources.

Interpretation of natural resources topics, including fire management, wildlife, and exotic species, would expand in Alternatives B and C. Prairie restoration would also be expanded in both alternatives, allowing the opportunity for additional preservation and interpretation of this rare Northwest resource. The park would also work to cooperatively manage intertidal areas with DNR and other partners.

In both alternatives, there would be expanded

recreational opportunities emphasizing non-motorized multi-use trails for bicyclists and hikers. New infrastructure, such as improved roads and parking, and conversion of temporary visitor facilities to permanent structures would also improve public access to park resources.

Alternatives B and C differ the most in the extent of development,and site disaturbance of the new visitor center and its location, as well as certain other features, such as the location of the educational camp and the emphasis on cooperative partnerships to increase marine resource protection, to protect endangered species and to address the potential impacts of global climate change.

While Alternatives B and C both call for a permanent visitor center to replace the temporary double-wide trailer at American Camp, Alternative B proposes construction closer to the historic scene, which would improve access for visitors, but which would also create additional impacts by developing a previously undeveloped area. The visitor center in Alternative B would also include a collections study room for some museum collections, whereas in Alternative C the collections study room could be located at either the permanent visitor center or at park headquarters in Friday Harbor. Alternative B also proposes a loop road through English Camp to improve visitor access, including visitor safety, but which would also result in additional impacts to resources. A small maintenance building would also be constructed in this alternative.

Historic structures, such as the Crook house, hospital, of cer's quarters, and others would be treated differently in Alternatives B and C. In Alternative B, the Crook house would be preserved both inside and out, with a visitor contact station on the first f oor and administrative of ces on the second f oor. In Alternative C it would become an exterior exhibit with perhaps some f exibility for adaptive use in the future if remedial actions are successful. In Alternative C, two buildings at the park, the of cer's quarters and the hospital, would be opened, instead of being exterior exhibits as in Alternative B. Alternative C would also include the possible repatriation of historic buildings located elsewhere on the island that have maintained integrity since their removal from the camps.

Both alternatives would improve parking and access to a number of park areas, including Young Hill, Pickett's Lane, Jakle's Lagoon, South Beach, Fourth of July Beach, and the Mount Finlayson trailhead.

Alternative C also enhances visitor access to both American and English camps by replacing the visitor center on the existing site with a larger, permanent structure and improving the existing entrance road to English Camp by adding turnouts that would allow for safer two-way traf c f ow. The modified access road (compared to Alternative B) would have fewer impacts while still providing similar long-term benefits to visitors.

Alternative C also includes some key elements for long-term resource protection, including developing a cooperative management plan for Westcott and Garrison bays, seeking to exchange the tidelands with the DNR, establishing a Marine Preserve, and actively participating in the Climate Friendly Parks program.

Alternative C includes the park taking a more active role to support county efforts to implement the concept of an Old Military Road Trail connecting the camps as part of an island-wide trail system which would improve public access and provide new recreation opportunities.

After careful review of potential resource and visitor impacts and assessing proposed mitigation for cultural and natural resource impacts, the environmentally preferred alternative is Alternative C. This alternative clearly surpasses Alternative A, the No Action Alternative in realizing the six goals stated above. While Alternative B is similar in many respects to Alternative C, Alternative C overall provides the highest level of protection of cultural and natural resources while allowing for human use and enjoyment of park resources. Taken as a whole, this alternative is environmentally preferred because it would best meet all six goals stated in the National Environmental Policy Act.

Summary of Costs

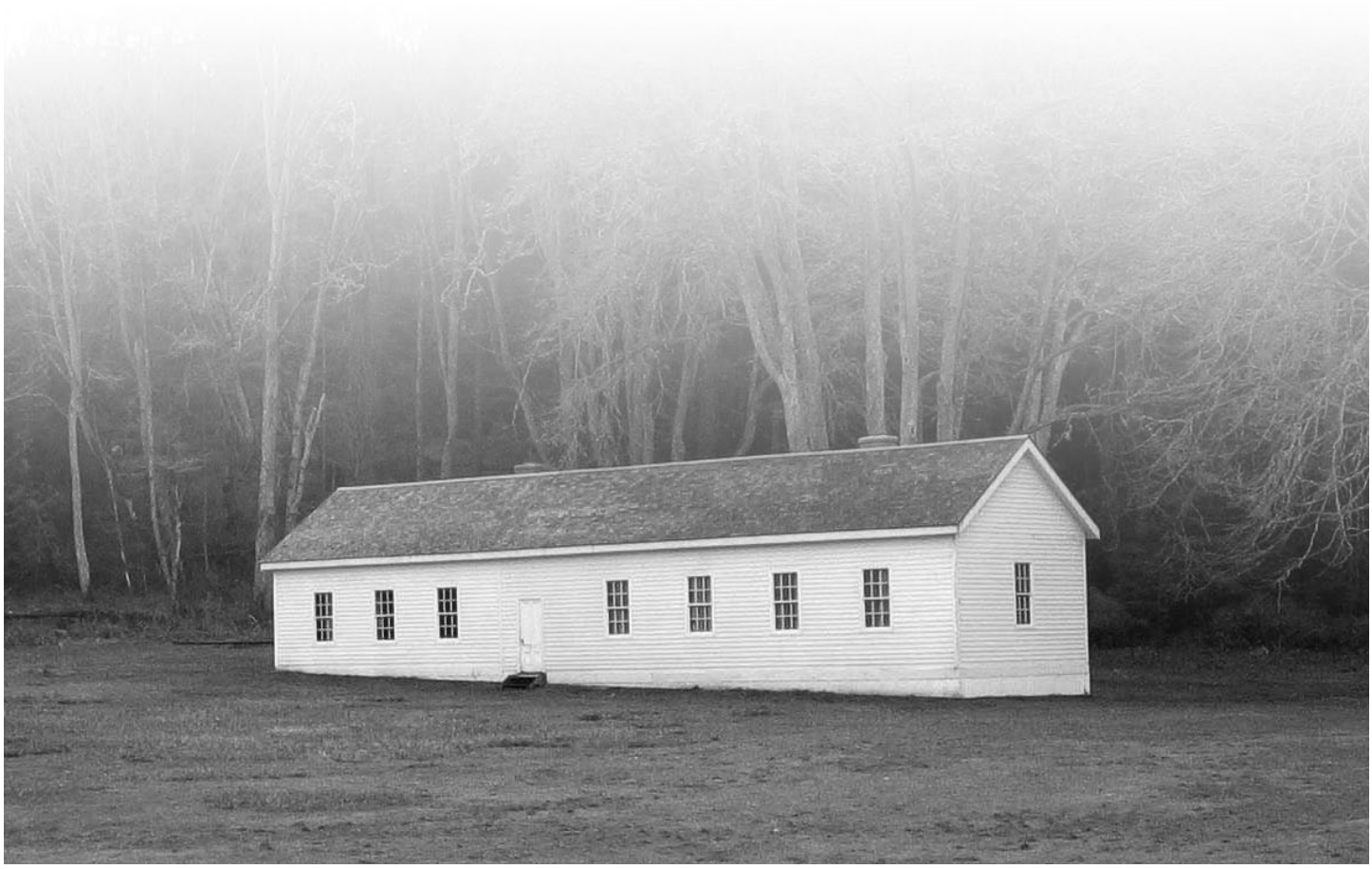
The costs of implementing the alternatives are summarized in the table below. For the purposes of cost estimating, general assumptions were made regarding the amounts and size of development or restoration. These assumptions were then carried across all alternatives so that comparable costs could be considered for each alternative. Costs identified in the GMP are not intended to replace more detailed consideration of needs, sizes, and amounts of future development. They should not be used as a basis for funding requests or budgeting. These figures only relate to NPS capital development costs and do not include contributions by partners that offset capital costs.

The NPS recognizes that a GMP is a long-term (15-20 years) plan, and in the framework of the plan, park managers would take incremental steps to reach management goals and objectives. Although some of the actions can be accomplished with little or no funding, some actions would require more detailed implementation plans, site-specific compliance, and additional funds. The park would actively seek alternative sources of funding, but there is no guarantee that all the components of the plan would be implemented.

Summary of Comparative Costs (FY 2007 Dollars)*			
	Alternative A	**Alternative B**	**Alternative C**
Annual Recurring Costs	$725,000	$1,095,000	$1,035,000
Development Costs	$2,380,000	$11,885,000	$7,488,000**

***Figures are rounded**

****These costs include the repatriation of two historic buildings to the park.**



Summary of Alternatives

This table summarizes the individual actions called for the in different alternatives, including those actions that are common to all the alternatives.

Summary of Alternatives				
Actions	**Common to All Alternatives**	**Alternative A No Action**	**Alternative B**	**Alternative C Preferred**
Cultural Resource Management				
Cultural Landscapes	Complete resource management plan to provide guidance for cultural and natural resources; continue use of prescribed fire to manage cultural landscape; update the existing historic landscape report.	Continue to maintain with modest ADA trail improvements.	Same as Alternative A, plus use a variety of techniques to enhance visitor understanding of the cultural landscape such as delineating non-extant historic building sites and other landscape features: conduct additional historical research to provide better understanding of the cultural landscape.	Same as Alternative B
Crook House *English Camp*	Remove non-historic addition on back of Crook house to reestablish original character and form during the Crook family era; continue efforts to relocate bats to adjacent bat houses.	Continue to use as an exterior exhibit.	Rehabilitate as visitor contact facility on ground floor with displays about the Crook family era and for administrative use on second floor.	Stabilize, preserve, and use as an exterior exhibit with interpretive signs and displays about Crook family era; retain flexibility to use the Crook house in the future for certain adaptive uses if remedial clean-up actions are successful.
Barracks *English Camp*		Continue to preserve and use as primary visitor contact station at English Camp and for special events.	Part of the barracks would be rehabilitated for combined use as an interpretive exhibit, visitor contact station, and special events facility.	Same as Alternative A.
Blockhouse *English Camp*		Continue to be open to public for viewing.	Same as Alternative A.	Same as Alternative A.
Hospital *English Camp*		Continue to be viewed and interpreted as an exterior exhibit.	Same as Alternative A.	Rehabilitate and make available for public interpretation.

Summary of Alternatives

Actions	Common to All Alternatives	Alternative A No Action	Alternative B	Alternative C Preferred
Commissary *English Camp*		Continue to be viewed and interpreted as an exterior exhibit.	Same as Alternative A.	Same as Alternative A.
Laundress' Quarters *American Camp*		Continue to be viewed and interpreted as an exterior exhibit.	Same as Alternative A.	Same as Alternative A.
Officers' Quarters *American Camp*		Continue to be viewed and interpreted as an exterior exhibit.	Same as Alternative A.	Open for visitation as combined interpretive exhibit and study house. Rehabilitate half for use as an interpretive exhibit that shows a typical officers' quarters; other half would be available as a study house.
Crook Family Orchard *English Camp*		Maintain existing historic orchard.	Rehabilitate orchard. Keep same size, but fill in gaps with historically accurate trees to depict early 20th century orchard.	Preserve number, variety, and style of existing fruit trees. Replace individual trees with same species as needed.
Sandwith Orchard *English Camp*		Maintain existing historic orchard.	Partially restore and enlarge orchard to 1 acre and replant historically accurate fruit trees in gaps to maintain late 19th century character.	Partially restore ½-1 acre and replant historically accurate fruit trees in gaps to maintain late 19th century character.
Repatriation of Historic Structures		Do not acquire buildings.	Do not acquire buildings.	Acquire historic buildings once located at the camps and return to original locations within the park.
Collections Management	Maintain museum collection records; make available park collections for education, interpretation, and scientific research purposes.	Continue to maintain collections at off-site locations in Washington. Exhibit some objects in display cases at American Camp.	Provide adequate space for a collections study room located in newly constructed visitor center north of the redoubt at American Camp. The collections would include natural resource items and a portion of prehistory and historic military era collections.	Provide adequate space for a collections study room located at either park headquarters or at the visitor center. The collections would include natural resources and a portion of the military-era collection, including some non-military items.

Summary of Alternatives

Actions	Common to All Alternatives	Alternative A No Action	Alternative B	Alternative C Preferred
Archaeology and Historic Structures	Install fire and security systems in all existing historic buildings. Document, preserve, protect and, if appropriate, interpret archaeological sites. Protect in undisturbed condition, if possible.	Same as Common to All	Same as Common to All	Same as Common to All
Natural Resource Management				
General	Develop a resources management plan to guide future natural resource management actions; eliminate invasive plant/animal species where feasible to ensure survival of ecosystem.	Same as Common to All	Same as Common to All	Same as Common to All
Vegetation	Develop a vegetation management plan to guide future management of natural resources; explore ways to promote and maintain these habitats, including use of fire; continue to work with students and others for restoring Garry oak woodlands and prairie habitats; update fire management plan every 5 years.	Same as Common to All	Restore prairie to enhance the historic scene and provide habitat for critical prairie plant and animal species.	Restore larger area of prairie with native plant species than in Alternative B; manage woody vegetation to prevent intrusion into portions of the landscape that were open grassland during the historic period.
Wildlife	Continue to cooperate with other U.S. and Canada agencies to manage wildlife species and their habitats, particularly listed and candidate species for federal listing; continue to construct and install bat houses adjacent to Crook house to relocate maternity bat colony; emphasize species that are regionally, nationally, or internationally	Same as Common to All	Same as Alternative A, plus expand interpretation of wildlife and impacts of invasive species to visitors.	Same as Alternative B, plus, establish monitoring program to detect species populations in decline as indicators of health of ecosystem.

Summary of Alternatives

Actions	Common to All Alternatives	Alternative A No Action	Alternative B	Alternative C Preferred
Wildlife (continued)	important in inventorying and monitoring wildlife; manage nonnative species, such as pests, according to NPS Management Policies.			
Water Resources	Continue to work with consortium of Puget Sound groups regarding oil spill response plans; follow provisions in the consortium's geographic response plan; continue to monitor water use and quality. Work with county to develop measures for protecting quality and quantity of shared water resources.	Continue to define ownership of intertidal areas.	Same as Alternative A plus manage the intertidal areas through cooperation with DNR and others; encourage DNR to provide free conservation easements on tidelands connected to park ownership of uplands.	Same as Alternative A plus acquire and manage the intertidal zone within the park; seek to exchange the tidelands with DNR; collaborate with Marine Resources Committee and others to establish and manage an Marine Preserve at both camps; inform visitors about the value of bays and surface and subsurface water quality in the watershed. At English Camp work with state, county and others in development of a cooperative management plan of Garrison and Westcott bays to educate public about sustainable boating, mooring, anchorage, human impacts and creation of "no wake" zone in bays. At American Camp; coordinate with Whale Museum and NOAA to add South Beach to the Whale Watch voluntary exclusion zone to extend protection to Orca whales by limiting approach of tour boats.
Geological Resources	Protect examples of marine terraces and other glacial features for education,research and interpretive purposes.	Same as Common to All	Same as Common to All	Same as Common to All

Summary of Alternatives

Actions	Common to All Alternatives	Alternative A No Action	Alternative B	Alternative C Preferred
Air Quality	Federal, state, and local air agencies that have primary responsibility for managing air quality would continue to monitor and use computer models to assess air quality in and around the park. If air quality deteriorates to the point that the ambient standards are exceeded, then these agencies would implement and the park would support additional requirements to further reduce air pollution.	Same as Common to All	Same as Common to All	The park would participate and implement the Climate Friendly Parks Program to determine the park's ecological footprint, and in turn, potentially mitigate certain actions related to climate change.
Interpretation and Education				
Levels and Topics of Interpretation	Develop comprehensive interpretive plan; maintain existing interpretation programs/ topics and enhance cultural interpretation through increased use of existing cultural resources; update website with interpretive and educational materials; continue to provide self-guided walks and ranger/volunteer guided walks at both English and American camps; continue to offer summer interpretive programs covering historical and natural themes; continue to offer curriculum-based school programs and Junior Ranger program; continue park theme programs through educational camps; enhance interpretation of Native American culture and prehistory in consultation	Continue to focus interpretive displays/ exhibits on historical themes; VIP program would continue to focus on interpretation.	Same as Alternative A, plus, enhance off-island interpretation by partnering with Washington State Ferries and Washington State Parks to locate interpretive exhibits on ferries and in parks; enhance interpretation through more extensive facilities and exhibits and programs open to the public; explore ways to partner with various organizations through outreach methods; develop visitor use management plan.	Same as Alternative A plus encourage tribal members to participate in preparation of exhibits/programs that relate to Native American connection with the island; add additional programs on geology, astronomy, and vegetation; develop visitor use management plan. At English Camp, develop media for interpreting the orchards. At American Camp, actively interpret San Juan Town and the HBC Belle Vue Sheep Farm to visitors.

Summary of Alternatives

Actions	Common to All Alternatives	Alternative A No Action	Alternative B	Alternative C Preferred
Levels and Topics of Interpretation (continued)	with tribes; encourage tribal members to participate in preparation of interpretive exhibits and programs that related to connection of American Indians with San Juan Island.			
Recreation				
General	Continue to allow activities such as beachcombing, picnicking, bird watching, viewing and photographing wildlife, hiking, f sightseeing, attending park programs; and shell fishing at English Camp (on approximately 900 feet of shoreline); continue to manage park as day-use only area; continue to prohibit overnight camping, hunting and off-road vehicles. If additional lands are acquired, prohibit hunting, but allow non-motorized use on Mitchell Hill.	Same as Common to All	Same as Common to All plus develop a kayak/canoe landing on north boundary on Westcott Bay and connect to internal trail system.	Same as Common to All.
Equestrian Trails	Horseback riding would continue at the discretion of the superintendent.	Same as Common to All	Same as Common to All	Same as Common to All
Bicycle Use	Biking would continue along park and county roads within the park.	Same as Common to All	Same as Common to All plus improve bicycling use along existing roads; if additional land is acquired, partner with bike user groups to maintain multi-use trails and enforce proper use of trails.	Same as Alternative B.
Hiking Trails	Establish one trail connection at English Camp and one trail	Pursue development of island-wide trail connections only if others take lead;	Partner with county to establish new trail connections to connect park with existing	Same as Alternative B, plus support county efforts to implement concept of an Old

Summary of Alternatives

Actions	Common to All Alternatives	Alternative A No Action	Alternative B	Alternative C Preferred
Hiking Trails (continued)	connection at American Camp to link with island-wide trail system.	establish ADA trail between Crook house and parade ground.	long distance trails; manage additional new trails on any acquired property as "non-motorized"; establish ADA trail between Crook house and parade ground; establish trail to connect Roche Harbor with administrative road.	Military Road Trail connecting camps as part of island-wide trail system.
Visual and Scenic Resources				
Dark Night Sky	Continue to provide programs that highlight values of dark night sky; continue to protect scenic values of park as required by law and policy.	Same as Common to All	New facilities would be constructed with photovoltaic systems, as possible. Outdoor lighting on buildings would be designed and directed appropriately to minimize light pollution, such as using motion sensors and fixtures with lower lumen ratings.	Same as Alternative B.
Scenic Viewshed	Educate and cooperate with adjacent private landowners and relevant agencies about how modern development affects the historic scene and provide vegetative screening where possible. Work with county to develop measures for protecting scenic viewsheds.	Same as Common to All	Same as Common to All	Same as Common to All
Soundscapes				
	Initiate development of an overflight management plan for establishing noise baseline for overflights.	Same as Common to All	Conduct baseline acoustic monitoring through the NPS Washington Office Soundscapes Program.	Same as Alternative B.

Summary of Alternatives

Actions	Common to All Alternatives	Alternative A No Action	Alternative B	Alternative C Preferred
Park Facilities				
Visitor Center *American Camp*		Retain temporary 1979 double-wide trailer serving as the visitor center.	Remove temporary 1979 visitor center; construct 5,400 square foot permanent visitor center north of redoubt behind trees. Incorporate sustainable building design.	Remove temporary 1979 visitor center; construct 5,400 square foot permanent visitor center at the existing site. Incorporate sustainable building design.
Administration Building *Friday Harbor*	Remain in current location: in long-term, potential to buy a building/property on the island, preferably a historic one, for administrative purposes.	Same as Common to All	Same as Alternative A.	Same as Alternative A.
Maintenance Building *English Camp*		Retain maintenance building at current location on West Valley Road.	Same as Alternative A, plus develop a 1,000 square foot covered maintenance storage area at American Camp at the site of the existing visitor center.	Same as Alternative A.
Visitor Information Center *Friday Harbor*			Explore opportunities to partner with other groups in the creation of an island visitor information center.	Same as Alternative B.
Educational Camp		Retain at present location in English Camp.	Move camp to Mitchell Hill if acquired, otherwise retain in present location.	Develop educational camp along administrative road.
Fire Camp		Continue to maintain along Cattle Point Road north of visitor center.	Retain and formalize fire camp along Cattle Point Road north of visitor center.	Same as Alternative B, plus provide minimal improvements such as restrooms.
VIP Sites	Retain VIP sites	Continue to provide hook-ups for volunteer's trailers at both American Camp and English Camp.	Enlarge VIP sites at English Camp to provide privacy and two additional hook-ups.	Same as Alternative B.

Summary of Alternatives

Actions	Common to All Alternatives	Alternative A No Action	Alternative B	Alternative C Preferred
Park Operations				
Staffing		9 Full time staff 2 Seasonal staff	14 Full time staff 6 Seasonal staff	13 Full time staff 6 Seasonal staff
Transportation, Access, and Circulation				
Young Hill Parking		Continue informal shoulder parking arrangement along both sides of road.	Create several parallel parking spaces along west side of road for easy and safe trail access.	Same as in Alternative B.
English Camp Road System and Parking		Continue to maintain existing park entrance road as two-way; keep administrative road for park and educational camp use only; there would be no improvements for visitor parking lot.	Reconfigure road system as a one-way loop by connecting the entrance road with administrative road following existing historic alignment; construct new parking lot north of the Crook house; develop 2-3 ADA parking spaces adjacent to Crook house; restore existing visitor parking lot to natural conditions.	Maintain entrance road, but improve to handle increased two-way traffic; pave or chip seal segments for better traction and erosion control, create 2-3 informal turnouts for passing cars; keep administrative road for park and educational camp use only; improve visitor parking lot drainage.
Cattle Point Road System and Parking	Work cooperatively with state and county to provide appropriate access to private land adjacent to the park.	Continue to maintain existing park roads.	Develop new parking lot and access road to new visitor center; convert redoubt road to a trail and restore redoubt parking lot to natural conditions; create small parking lot by Pickett's Lane; reconfigure parking lots at South Beach and Fourth of July Beach; reconfigure parking lot at Jakle's Lagoon for additional parking and restroom facilities.	Convert redoubt road to a trail and restore redoubt parking lot to natural conditions; create small parking lot by Pickett's Lane; reconfigure parking lots at South Beach and Fourth of July Beach; reconfigure parking lot at Jakle's Lagoon for additional parking and restroom facilities.
Trail ADA Access	Extend ADA trail from Crook house to parade ground	Same as Common to All plus: maintain cultural landscape with some modest improvements for ADA access along trails.	Same as Alternative A.	Same as Alternative A.

Summary of Alternatives

Actions	Common to All Alternatives	Alternative A No Action	Alternative B	Alternative C Preferred
Research				
General	Develop research plan to provide framework for permitting and promoting research.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Park Boundary and Land Protection				
Modification of Boundary	Continue to evaluate growth and development trends on the island that affect resource protection and public access; develop a land protection plan.	Maintain existing boundary.	At English Camp, request appropriation to acquire Mitchell Hill (approximately 312 acres). At American Camp, acquire adjacent BLM land, three DNR tracts adjacent to the park, and a private parcel. The park would work collaboratively with the county and others to address neighborhood development and its affect on park viewsheds, and water resources.	At English Camp, same as Alternative B. At American Camp, same as Alternative B, plus acquire San Juan County Land Bank/ DNR property currently in public use; explore less than fee title strategies to protect woodland in Parcel 2 (Cattle Point Water District); encourage the acquisition of conservation easements, by private nonprofits, local government, or others, from willing sellers owning farmland located the northern boundary of American Camp near the reported site of the American settlers' farm where the incident that initiated the Pig War occurred. The park would work collaboratively with the county and others to address neighborhood development and its effect on park viewsheds, and water resources.

Summary of Alternatives				
Actions	**Common to All Alternatives**	**Alternative A No Action**	**Alternative B**	**Alternative C Preferred**
Implementation Plans				
Implementation Plans Needed	Update historic landscape report; develop land protection plan.	Same as Common to All, plus resource management strategy, vegetation management plan, updated fire management plan, comprehensive interpretive plan, overflight management plan, and land protection plan.	Same as Alternative A, plus visitor use management plan.	Same as Alternative A, plus visitor use management plan and be involved in cooperative management plan of Garrison and Westcott bays.



Summary of Impacts

This table summarizes the impacts called for the in different alternatives. Please see Chapter 6: Environmental Consequences for a full description of impacts.

Summary of Impacts			
Actions	**Alternative A No Action**	**Alternative B**	**Alternative C Preferred**
Effects On Cultural Resources			
Cultural Landscape	No adverse effect on the cultural landscapes of the park; continued program of cultural resource management in the park would have minor to moderate beneficial impacts on the cultural landscape. This alternative would provide some beneficial impacts to cumulative effects of long-term wear and tear on cultural landscapes and would not contribute to the adverse cumulative effects.	Overall long-term moderate benefits to the cultural landscape through expanded techniques that enhance the cultural landscape, restore the orchards and the prairie. Could contribute minor to moderate adverse impact toward the cultural landscape by placing a new visitor center closer to the historic core of the cultural landscape. Impacts from construction related activities in the short-term could be moderate to major. Would also provide some additional long-term benefits to cumulative impacts on the cultural landscape.	Same impacts to the cultural landscape as Alternative B, plus added benefits from the repatriation of historic buildings and structures.
Historic Buildings and Structures	No adverse effect on historic buildings and structures in the park; emphasis on preservation of existing historic structures, and actions to remove the non-historic addition and bats from the Crook house would have minor to moderate benefits. Some additional long-term benefits to the preservation of historic structures through the public visitation of additional buildings at American Camp on the island and repatriating historic buildings to the park if possible. Some additional benefits to cumulative impacts through these same actions.	Similar impacts as Alternative A; however proposals for adaptive reuse of the Crook house and added interpretation at the barracks at English Camp would have greater long-term benefits to historic structures by giving the buildings new function and keeping them in service.	Some additional long-term benefits to the preservation of historic structures through the public visitation of additional buildings at American Camp on the island and repatriating historic buildings to the park if possible. Some additional benefits to cumulative impacts through these same actions.

Summary of Impacts

Actions	Alternative A No Action	Alternative B	Alternative C Preferred
Archaeological resources	No adverse effects to archaeological resources. Overall cumulative impacts would be adverse from past disturbance and natural erosion processes; however, implementing this alternative would not contribute to adverse cumulative effects.	Could result in minor to moderate adverse impacts to archaeological resources from the development of the visitor center near the redoubt at American Camp and the construction of the loop road, parking, and kayak/canoe landing at English Camp. Cumulative impacts are the same as Alternative A, with a minor contribution to long-term, adverse cumulative effects from construction.	Minor long-term adverse impacts to archaeological resources since the location of the proposed visitor center is on a previously disturbed site away from documented significant archaeological sites. Negligible contribution to long-term, adverse cumulative impacts on these resources.
Museum collections	Maintaining museum collections at facilities off-site would result in minor benefits, limited by current curatorial staffing levels. Planned cumulative activities for storage and curation at different facilities would result in moderate long-term benefits.	Moderate long-term benefits by providing on-site collections in a collections study room, the ability to interpret them within their historic context, and additional staff to provide for care beyond basic requirements. Contribution to cumulative impacts is similar to Alternative A.	Similar moderate long-term benefits to museum collections as Alternative B by providing a collections study room in the new visitor center and additional curatorial capacity. Contribution to cumulative impacts is similar to Alternative A.
Effects on Natural Resources			
Vegetation	Long-term moderate benefits to vegetation through ongoing resource management actions, expanded interpretation of native plants, and implementation of fire and vegetation management plans. Continuing park operations and sustained or increasing visitation would have some minor adverse impacts to vegetation. Overall effect of the cumulative actions would be minor to moderate and adverse; however the contribution from this alternative would be small.	Similar moderate long-term benefits as Alternative A plus some additional benefits from partnering opportunities. Moderate adverse impacts from the construction of a permanent visitor center and associated infrastructure on a previously undeveloped site at American Camp and relocation of the road and parking lot at English Camp. Cumulative impacts are similar to Alternative A; however Alternative B has a greater contribution to long-term adverse cumulative impacts.	Similar benefits as Alternative B, with additional long-term benefits from the park's more active role related to coastal resource management. Adverse impacts from smaller scale construction would be less than Alternative B, and would be minor to moderate in the short-term and minor in the long-term. Cumulative impacts are the same as Alternative B, with this alternative contributing fewer adverse impacts to cumulative effects.
Wildlife	Overall long-term moderate benefits by promoting a plan to remove exotics to ensure the long-term survival of the native ecosystem and its associated wildlife. Providing alternative bat houses to relocate the bat colony would have short-term minor adverse impacts but long-term benefits by providing a more sustainable location.	Similar impacts as Alternative A, with some additional long-term benefits from prairie restoration. Moderate adverse short-term impacts to wildlife from construction activities, including development of a permanent visitor center and associated infrastructure on a previously undeveloped site at American Camp and development of	Similar long-term benefits to wildlife as Alternative B from prairie restoration efforts and other expanded resource management programs. Adverse impacts are less than Alternative B due to less construction of facilities and roads, and would be minor to moderate in the short-term, and would likely not exceed minor in the long

Summary of Impacts			
Actions	**Alternative A No Action**	**Alternative B**	**Alternative C Preferred**
Wildlife (continued)	Minor to moderate adverse cumulative impacts to wildlife mostly resulting from ongoing development, continued presence of exotic species, and habitat fragmentation; however the contribution from implementing this alternative would be small.	the road and parking lot at English Camp. Cumulative impacts are similar to Alternative A; however Alternative B has a greater contribution to long-term adverse cumulative impacts.	term. Cumulative impacts are the same as Alternative B, although Alternative C would contribute fewer adverse impacts to cumulative effects.
Special Status Species	Minor short-term adverse impacts to bald eagles and marbled murrelets if they are nesting on the island from the reduction or removal of exotic species. Bald eagles were delisted on June 2007 under the endangered species act, but are still protected under the U.S. Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. However, this protection does not extend to habitat protection as it did in the ESA. Protection of both the species and habitat would continue to provide long-term benefits to bald eagles and marbled murrelets. Impacts from prairie restoration would also have overall long-term minor to moderate benefits to the Island Marble butterfly by improving habitat. Cumulative impacts would be minor to moderate from past habitat fragmentation and habitat loss.	Beneficial impacts from the continued protection of sensitive species and their habitats within the park, as well as some additional short-term minor to moderate impacts, most likely resulting from noise associated with construction projects. Expanded prairie restoration efforts would have a long-term moderate benefits to bald eagles and long-term moderate to major benefits to the Island Marble butterfly. Contribution to cumulative impacts related to noise disturbance would be greater than Alternative A; however, this alternative contributes beneficial effects from increasing prairie habitat through restoration efforts.	Similar impacts to special status species as Alternative B; however, limited construction activities in this alternative would reduce adverse impacts related to noise. Cumulative impacts are the same as Alternative B.
Geologic Resources	No additional impact on geologic features or processes. Long-term minor to moderate adverse impacts to soils would continue from ongoing park operations and burrowing activity from rabbits. Cumulative impacts to geologic landforms from the Cattle Point Road proposed realignment would be moderate, long-term and adverse while impacts to soils from this project would be minor, long-term and adverse.	Some minor, short-term adverse impacts from construction activities, with no long-term impacts to prominent geologic features and processes. Soils would also be moderately impacted from construction in the short-term; however, there would be long-term benefits to soils from prairie restoration efforts.	Impacts on geologic resources and processes would be the same as Alternative B. Impacts to soils would be the same as Alternative B in terms of intensity and duration, but a smaller amount of soil area would be impacted.

Summary of Impacts			
Actions	**Alternative A No Action**	**Alternative B**	**Alternative C Preferred**
Geologic Resources (continued)	This alternative would have a negligible contribution to cumulative impacts.	Cumulative impacts are the same as Alternative A and implementation of this alternative would contribute short-term moderate adverse impacts to cumulative impacts from construction as well as long-term benefits from prairie restoration.	Cumulative effects are the same as Alternative B; however, Alternative C contributes less adverse impacts to soil resources.
Coastal Water Resources and Hydrologic Systems	No direct adverse impact on coastal water resources or hydrologic systems, including wetlands. Water resources in Westcott and Garrison Bays would continue to be influenced by relatively low rates of flushing, recreational boaters, and by land use practices, which combined could cause major impacts to water quality in the vicinity of English Camp. Water quality at American Camp would remain relatively high, with minor impacts from recreation activities. Continued restoration of the native plant communities would have moderate benefits to hydrologic systems. Cumulative impacts would be moderate and adverse and could be major and adverse based on potential tidal energy development programs and invasion of the European green crab. The contributions to these effects from this alternative would be very small.	Long-term benefits to coastal water resources by engaging more actively in management of the intertidal zone in cooperation with DNR. Minor to moderate adverse impacts to hydrologic systems in the short- and long-term from construction at both American and English camps. Cumulative impacts would be similar to Alternative A, with additional minor contributions.	Additional moderate to major long-term benefits to coastal water resources through additional management actions, such as implementation of the ocean stewardship strategy, and partnership opportunities. Adverse impacts to hydrologic systems would be less than Alternative B due to the location of the visitor center at American Camp on the existing site. Cumulative impacts are the same as Alternative B, with Alternative C having fewer contributions to adverse effects and greater contributions to long-term benefits.
Air Quality	No adverse impacts to air quality. Cumulative impacts associated with population growth and increased pollution primarily from motor vehicle emissions and increasing marine vehicle traffic would contribute minor to moderate adverse impacts to park air quality. Implementing Alternative A would not alter any trends that impact air quality and therefore would not contribute to cumulative impacts.	Some short-term minor to moderate adverse impacts to air quality from construction of facilities and roads at American and English camps. Alternative B would have a greater contribution to cumulative impacts in the short-term, but long-term contributions to impacts as a result of implementing this alternative would be very small.	Similar impacts to air quality as Alternative B. Limited development, notably eliminating the loop road alternative at English Camp, would contribute fewer direct and cumulative adverse impacts to air resources. Adverse impacts would be moderate and short-term, with no long-term impacts.

Summary of Impacts			
Actions	**Alternative A No Action**	**Alternative B**	**Alternative C Preferred**
Soundscapes	Long-term benefits to soundscape through development of an overflight management plan and establishment of a noise baseline for planes flying over the park. Cumulative impacts are largely from overflights and boat traffic and could be moderate and adverse in the long-term as development on Garrison Bay expands. Alternative A would have a minor contribution to cumulative impacts.	Similar impacts as Alternative A, plus additional long-term benefits from conducting baseline acoustic monitoring. Additional moderate short-term adverse impacts would also occur from construction activities at both camps. Cumulative impacts are the same as Alternative A, but this alternative would have a slightly greater contribution to cumulative impacts.	Similar impacts as Alternative B, with fewer adverse short-term impacts due to the smaller scale of construction. Cumulative impacts are the same as Alternative B.
Effects on Visitor Experience			
Interpretation and Education	Moderate long-term benefits on interpretation and education. Although visitors would enjoy the park, they would experience crowding and limited access to key interpretive opportunities as a result of overcrowded facilities during peak periods. Limited staffing and funding would prevent the further expansion of interpretive programs and limit visitor contact with park interpretive rangers. As a result, visitors may not understand the sensitivity of park resources and the complexity of the interconnections of the park's natural and cultural resources. This limitation would result in moderate, long-term adverse impacts to visitor understanding and appreciation of park resources. Park programs, facilities, and staff would continue to contribute moderate long-term benefits to cumulative impacts on interpretation and education about park resources and values.	Development of a permanent visitor center closer to the historic scene at American Camp and adaptive reuse of the Crook house at English Camp. Both would have moderate to major long-term benefits to interpretation. Expanded partnerships would also contribute moderate to major long-term benefits by reaching a broader audience. Moderate to major long-term benefits to cumulative impacts on interpretive opportunities for the public.	Construction of a permanent, larger visitor center at the existing site, which would have a major long-term benefit to interpretation. Reuse of the Crook house as an exterior exhibit would improve visitor understanding of the distinction between the encampment era and the subsequent Crook family era at the site and contribute additional moderate benefits to interpretation. Expanded partnerships would also enhance the park's ability to communicate interpretive themes to the public. Same moderate to major benefits to cumulative impacts as Alternative B.
Recreational Resources	Moderate long-term benefits to recreational opportunities. Continuing limited involvement with local efforts to establish island-wide trail connections and working with the county to improve	Major long-term benefits to recreation realized through more active participation in the expansion of island-wide trail connection and partnerships to improve bicycle use and access.	Major long-term benefits to recreation similar to Alternative B, with the added effort to help the county implement some concept of a historic military road trail connecting the two camps.

Summary of Impacts			
Actions	**Alternative A No Action**	**Alternative B**	**Alternative C Preferred**
Recreational Resources (continued)	Bicycle routes along roads would have moderate benefits to recreation and contribute to improving public safety. Maintaining the publicly accessible shoreline would have moderate benefits to recreation. Contributes moderate to major benefits to the cumulative impacts on recreation opportunities.	Active management of the intertidal zone would result in the long-term preservation of the shoreline areas which are a critical recreation resource. Addition of Mitchell Hill and other properties would also expand recreational opportunities.	
Scenic Resources	Moderate long-term benefits to scenic resources by working with adjacent landowners and others to minimize impacts to the park's scenic resources from cumulative actions outside the park.	Some additional short-term moderate adverse impacts to scenic resources from construction of a new visitor center and enlarged parking at American Camp and construction of a one-way loop road at English Camp. Removing the redoubt road at American Camp and converting it to a bicycle and pedestrian trail would have long-term benefits to scenic resources. Some long-term benefits from the use of new photovoltaic systems and lighting techniques that would enhance dark night skies.	Fewer short- and long-term impacts to scenic resources eliminating construction of a loop road at English Camp as in Alternative B. Similar long-term benefits to scenic resources as Alternative B by removing the redoubt road at American Camp and converting it to a bicycle and pedestrian trail. Long-term benefits to scenic resources by implementing new systems and techniques for outdoor lighting that would reduce light pollution and enhance dark night skies.
Effects on Visitor Access and Transportation			
Access and Transportation	Minor long-term benefits to visitor access and transportation due to the limited improvements to parking and maintenance of existing road systems at American and English camps. Some moderate long-term benefits from linking with the island-wide trail system and extending the ADA trail at English Camp. Major long-term benefits from cumulative impacts including the implementation of the County Non-motorized Transportation Plan, San Juan Island Trails Plan and Master Plan for the Friday Harbor ferry terminal.	Moderate to major, long-term benefits to visitor access and transportation from a number of improvements at both American and English camps. Construction of a new visitor center closer to the historic scene and enhancements to parking areas at American Camp, coupled with the improved parking at Young Hill and the one-way loop road at English Camp provide moderate to major benefits. Moderate long-term benefit to cumulative impacts island-wide.	Improvements contribute moderate long-term benefits to visitor access and transportation at both American and English camps. Construction of a new visitor center on the existing site and enhancements to parking areas at American Camp, coupled with the improved parking at Young Hill and improvements to the existing entrance road at English Camp would have moderate benefits. Moderate long-term benefit to cumulative impacts island-wide.

Summary of Impacts			
Actions	**Alternative A No Action**	**Alternative B**	**Alternative C Preferred**
Effects on Socioeconomics			
Socioeconomics	Major, long-term benefit to the local economy through a sustained stream of tourism dollars and jobs supported by park-based recreation. Continuation of park facilities, infrastructure and programs also contribute major long-term benefits to the local community and area economy. Potential adverse cumulative impacts from rising home prices and the gap between wage earnings and the median cost of a home. Other cumulative impacts include economic benefits from the 2010 Olympic Games and development of Rosario Resort on Orcas Island. Contributes moderate long-term benefits to cumulative impacts.	Major, long-term benefit to the socioeconomic environment similar to Alternative A through a sustained stream of tourism dollars and jobs supported by park-based recreation. Addition of a new visitor center, improved facilities, and expanded recreation and education opportunities could result in additional tourists and a greater long-term benefit than Alternative A.	Similar major, long-term benefits to socioeconomics to Alternative B from expanded recreation and education opportunities, as well as new and expanded facilities that could attract additional visitors and bring increased tourism revenues to the local economy.
Effects on Park Operations			
Park Operations and Maintenance	No immediate change to park infrastructure and the continuation of inadequate funding and staffing levels, resulting in long-term minor adverse impacts to park operations. As projects are completed to replace or maintain aging facilities, and replace them with more sustainable infrastructure, the ongoing maintenance needs will decrease. Completing these projects would result in cumulative moderate long-term benefits. Overall short-term minor to moderate adverse impacts and long-term cumulative moderate benefits to park operations.	Long-term benefits to operations by improving infrastructure and providing a permanent visitor center that appropriately meets the needed function of the park. Construction of this facility on a different location would minimize short-term disruptions to the visitor contact function as the temporary structure could remain in place and operational while the new facility was being constructed. Additional staff and budget proposed would have long-term benefits by providing adequate staff to meet a broad range of park operational needs. Cumulative impacts are the same as Alternative A.	Similar long-term benefits by improving the visitor center and other park infrastructure. Greater short-term impacts to park operations from construction occurring in the same location as the primary visitor contact function at American Camp. Additional staff and budget would have similar benefits as Alternative B. Cumulative impacts are the same as Alternative A.



Chapter 5: The Affected Environment

The purpose of this chapter is to describe the physical, biological, cultural, and social environments of San Juan Island National Historical Park, including human uses that could be affected from implementing any of the alternatives described in the preceding chapter. This chapter contains topics that were identified as important issues by the public and the agencies during scoping. It also contains additional background data relevant to both readers and park managers.

The Cultural Environment

Prehistory and History

San Juan Island National Historical Park is the site of one of the last dramatic chapters of American continental expansion. San Juan Island, one of 172 named islands and islets of the San Juan archipelago, is strategically located at the confluence of the Strait of Juan de Fuca and the Strait of Georgia, midway between mainland Washington State, and Vancouver Island, British Columbia, Canada. In the mid-19th century, there remained a lingering dispute over which channel between Vancouver Island and the mainland had been designated by the Oregon Treaty of 1846 as the boundary between British holdings to the north and American holdings to the south. If the treaty negotiators had intended the boundary to follow the Rosario Strait, the islands would be British possessions; if they intended the Haro Strait to the west, then the islands belonged to the U.S. Territory of Washington.

Competing claims between the British and American settlers and officials ultimately led to a brief confrontation between British and American forces in 1859 known today as the "Pig War." (It was known then as the San Juan Imbroglio.) The crisis was followed by 12 years of joint British-American military occupation of the island while the international dispute was addressed and slowly resolved through mediation by the Emperor of Germany. American Camp at the southeastern end of the island and English Camp in the northwest corner on Garrison Bay, provide the backdrop for interpreting the story of the boundary dispute and its peaceful arbitration. (See Figure 13: English Camp, Historic Conditions—1872 and Figure 14: American Camp, Historic Conditions—1872.)

Occupation of the San Juan Islands by Native Peoples

The prehistory and early history of native peoples of the islands has been derived from the evidence obtained through archaeological investigations. Additional information has been gathered through documents on initial Euro-American contact with indigenous populations and more than a century of ethnographic research by anthropologists who have worked with members of United States tribes and Canadian First Nations (Boxberger 1989, 1994, Suttles 1951, 1990, 2003).

The landmass we know as San Juan Island began to emerge from the glacial ice approximately 16,000 years ago (Riedel 2003). At this time, the Vashon glacier, the last glacier known to have affected the San Juan archipelago, began its retreat back to the Fraser River valley. At the height of glaciation, the islands and all of Puget Sound were covered with a river of ice almost a mile thick. The ice extended south from the Fraser River valley to the Nisqually delta just north of Tacoma. When the glacier began retreating, it exposed bare ground compressed from the constant weight of the ice upon it. Over thousands of years after the glacier receded, the ground would "rebound" as it was freed from the tremendous weight. Evidence of the rebound on San Juan can be seen on the south slope of Mount Finlayson, where beach erosion lines, called benches, can be seen. These benches were formed by marine waters cutting into the land as it emerged after the glacier had retreated. The Cattle Point Road, where it crosses the side of Mount Finlayson, was built on one of these benches.

Slowly the glacier melted and retreated northward. At San Juan, American Camp's South Beach was the first to appear, and then finally, after hundreds of years, the entire island emerged from the ice. Native people already present on the North American continent began moving northward, following the retreating glaciers and hunting woolly mammoths, mastodons,

English Camp: Historic Conditions - 1872

San Juan Island National Historical Park GMP/EIS

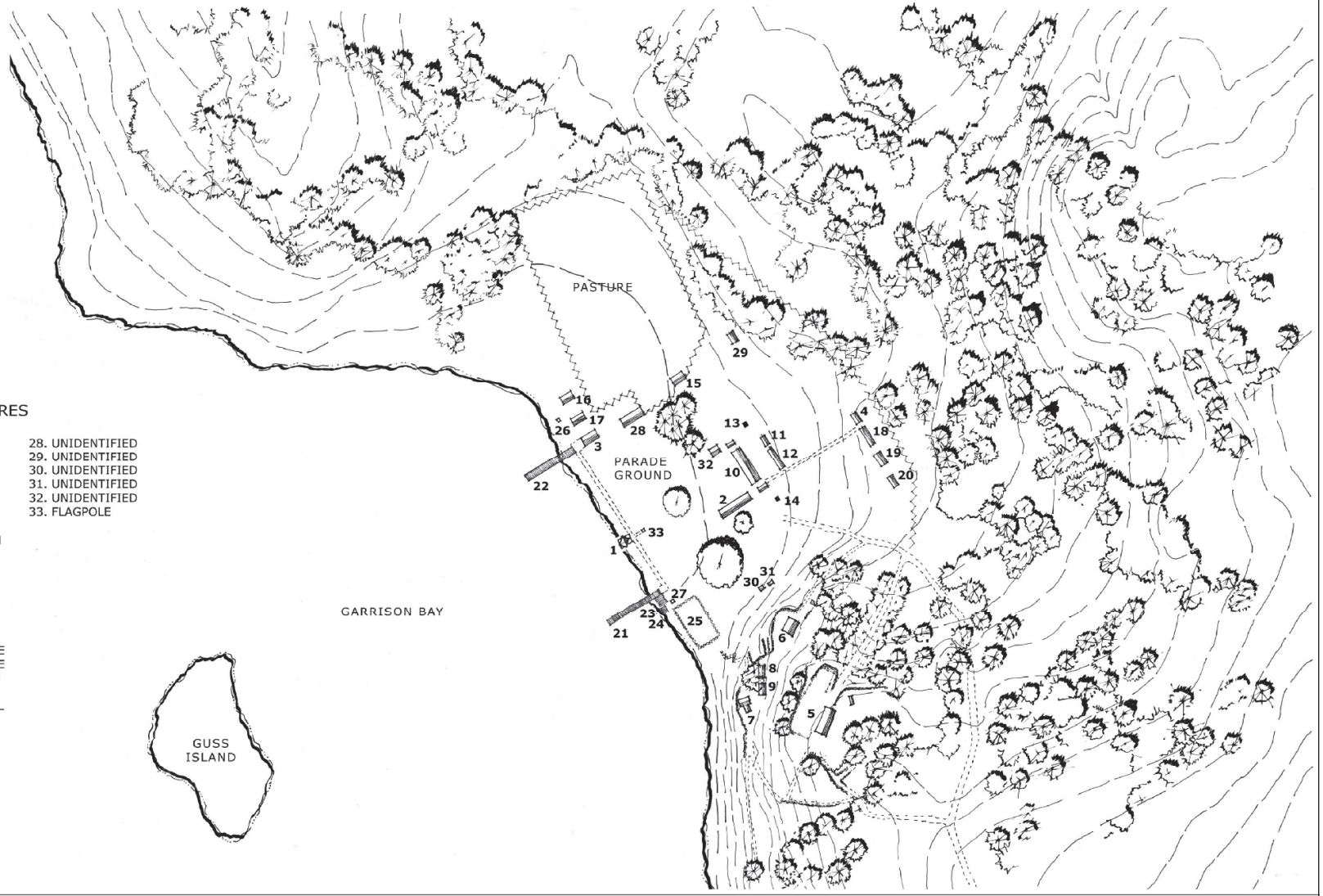


Figure 13

Produced by: National Park Service
PWRO-Seattle GIS Group
Date Created: February 28, 2007
Data Sources: Adapted from "Historic Landscape Report: American Camp & British Camp, 1987"

NORTH 0 100 200 300 FEET

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American Camp: Historic Conditions - 1872

San Juan Island National Historical Park GMP/EIS

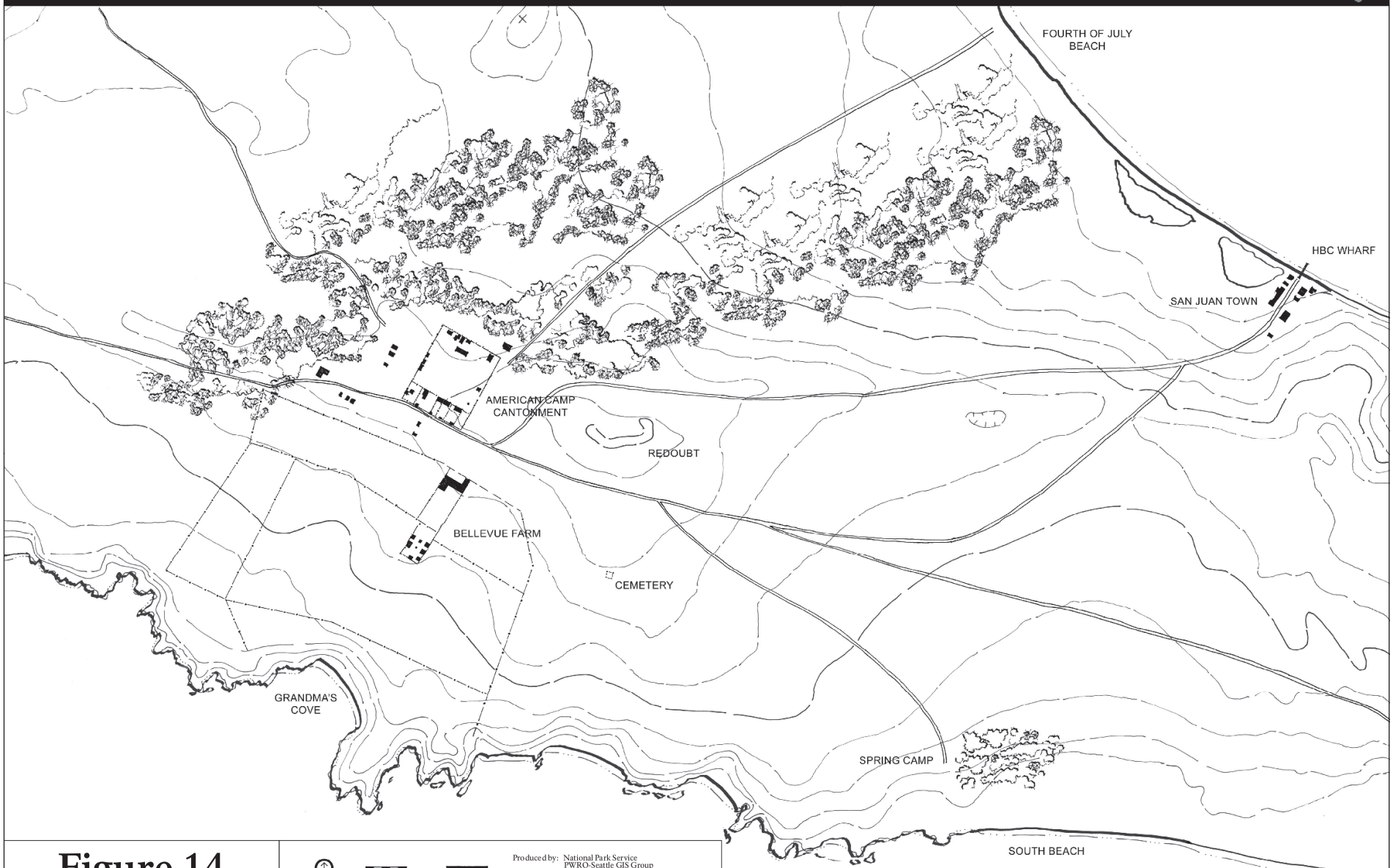


Figure 14

and other large animals that grazed on the grassy slopes watered by the melting ice.

These people are referred to by archaeologists as the Paleo-Indians. They hunted in the post-glacial period until about 9,500 years ago when most of the prey was no longer available. To date, no Paleo-Indian archaeological sites containing Clovis spear points have been found on San Juan Island. Sites containing the Clovis points have been found at the Manis Mastodon site near Sequim, Washington, across the straits from San Juan Island. One of the points was also found in a garden above the town of Coupeville, on neighboring Whidbey Island. Many archaeologists feel it is only a matter of time before a Clovis site is found on San Juan Island. Perhaps a site exists on one of the earliest formed benches below Mount Finlayson where the earliest visitors to San Juan might have camped.

Although no Clovis sites have been found on San Juan Island, sites that were left by the successors of the Paleo-Indians have been found within the park.

The oldest archaeological site found within the park is on the bluff above South Beach at American Camp. There, spear points called Cascade points were found by Dr. Arden King (Tulane University) in 1948. These points were used by native peoples from about 9,000 to 7,000 years ago, and were used to hunt the animals that are now commonly found in western Washington.

As no shelters that can be associated with the Cascade people have been discovered in the Northwest, archaeologists have surmised that these people were still concentrating their search for food of terrestrial animals and rarely stopped to erect more than temporary shelters.

About 4,500 years ago, the western red cedar began to appear in the islands offering an excellent wood for the production of tools and shelter. Sometime after 2,500 years ago, salmon began running from the Pacific down the straits, turning near South Beach to either head north up to the Fraser River or south to the rivers on the Olympic Peninsula and those draining into Puget Sound.

Archaeologists suggest that between 4,500 and 2,500 years ago, moderating climate and changes in plant and animal communities were associated with a flowering of native arts and technology and an increase in human organizational structure. Tool making and other craft industries made it easier to procure resources. These technologies, together with a developing societal structure, offered a more stable environment for family and community life. The native people began to build more permanent shelters and moved from a hunting and gathering lifestyle to more permanent living arrangements. Besides hunting the terrestrial animals, they began exploiting more resources such as shellfish, birds, fish, berries and harvesting edible plants like camas, bracken fern and nettle.

Sometime between 2,500 and 1500 years ago, the number of the people living on the islands increased. People from the mainland moved to occupy the islands year-round, where before they had visited only seasonally to fish, dig camas and collect berries. Archaeologists have determined the population boom by the carbon 14 dating of shell middens and other sites discovered on the islands.

These people produced the art, tools and carvings that we now associate with the Northwest Native American culture. They also began to design and construct long houses—the traditional homes of the northwest people and those first seen by Europeans in the early 16th century.

By early historic times, the indigenous people of the San Juan Islands and nearby mainland areas were primarily members of six Central Coast Salish tribes who spoke the Northern Straits language. Another Central Coast Salish tribe that entered the Northern Straits country spoke the closely related Klallam (or Clallam) language. In addition to sharing closely related languages, the Central Coast Salish tribes shared a culture and way of life through which they used a wide range of marine, riverine, and terrestrial resources. They followed patterns of seasonal movement between islands and the mainland and from large winter villages to smaller resource collection camps occupied in the other seasons. A distinctive feature of the subsistence strategy was the use of underwater reef nets to catch migrating salmon.

Throughout the southern Gulf and San Juan Islands generally, Northern Straits speaking tribal groups known as the Lummi, Saanich, Samish and Songhees had winter villages in the mid-eighteenth century. However, Suttles notes that by

> …the mid-nineteenth century, because of the great loss of life from the early epidemics and from northern raiders, village sites in the islands were abandoned as winter villages.

> Their inhabitants had either died out or moved to villages on Vancouver Island or on the mainland, from which they returned to the islands seasonally for fishing, hunting, or harvesting vegetable foods and shellfish (Suttles, 2003: Chapter 10, p.1).

The numerous localized family and tribal groups of the Central Coast Salish continued to be highly mobile within the region in the mid-nineteenth century and there is a great deal of ethnographic information about intermarriages among them. The native population responded to the initial presence of British and American armed forces, as well as increasing non-native settlement, by changing patterns of seasonal travel, residential occupation and resource procurement. Treaties with two governments then directly led to the relocation of most indigenous people from the islands to reserves in Canada and reservations in the United States.

Three settlements or village sites were located in northern San Juan Island in a cove just to the west of Lonesome Cove, at Mitchell Bay, and within the English Camp unit of San Juan Island National Historical Park at Garrison Bay. West of San Juan Island, there may have been a fourth village located at Open Bay on nearby Henry Island. Central Coast Salish tribes believed to be residents of these sites included a group known as the Klalakamish (variously claimed as ancestors by Songhees, Lummi and Saanich) the Lummi, the Saanich and the Songhees. In addition to larger settlements or villages, four smaller camps were noted on an 1853-54 U.S. Coast Survey map that were probably associated with one or more of the ten reef net locations along the western shore of the island (Suttles 1998: p.21-25).

At the south end of San Juan Island, east of American Camp, there was "a single small house on or near Fish Creek just north of Cattle Point . . . that belonged to a Clallam man, his Samish wife and their son Captain George" (Suttles 1998: p.26). According to Suttles, Captain George had worked for the American garrison and often hosted Samish relatives who trolled and fished for halibut in the area south of the island around 1850. The family reportedly moved to a Samish village on Guemes Island around 1875 (Suttles 1998: p.26).

In addition to those who occupied San Juan Island villages and used certain reef net locations, other tribes made use of resources on the island or in the immediate vicinity. While the Klallam traditionally occupied the northern slope of the Olympic Peninsula on the south side of the Strait of Juan de Fuca, some of them established winter villages in former Sooke territory on the Vancouver side of the strait after Fort Victoria was built in 1843 (Suttles 2003: Chapter 10, 1). Intermarriage among Lummi, Samish and other native groups was probably an old practice that persisted in the late nineteenth-century and continued subsequently (Suttles, personal communication). Like the Samish, the Klallam and the Swinomish also used the popular fishery south of Cattle Point.

Treaty relationships with native people of the San Juan Islands were shaped by the on-going competition between Britain and the United States over control of the region. Between 1850 and 1852, Governor James Douglas negotiated a series of British treaties wherein the Saanich and Songhees peoples accepted reserves on the Saanich Peninsula and elsewhere on southeastern Vancouver Island and ceded other lands. In 1855, Governor Isaac Stevens of Washington Territory held a series of treaty councils with Indians of the territory. Representatives of the Lummi, the Swinomish and, it is claimed by present day Samishes, the Samish, signed an early draft of the Point Elliott Treaty of 1855(Ruby and Brown 1986: p.179). These treaties obligated native peoples to leave the San Juan Islands and take up residence on the reserves and reservations. However, a small number of individuals and extended families remained in the islands during the early reservation period and their descendents continue to be part of the island communities of the present.

European and American Exploration and Settlement of the San Juan Islands, 1790-1859

The first Europeans known to have explored the San Juan Islands were the Spanish. In 1790, Manuel Quimper explored both shores of the Strait of Juan de Fuca and may have reached as far as the southwestern corner of the islands. The following year, Francisco Eliza sailed into this region and is generally credited with giving these islands the name "San Juan." Eliza explored many of the islands and recorded brief descriptions of what were probably Saanich and Semiahmoo peoples operating reef nets near Point Roberts on the mainland to the north.

The Nootka Convention of 1790 opened the region between Russian America and Spanish California to joint exploration and occupation between Great Britain and Spain. Capts. George Vancouver and Juan Francisco de la Bodgea y Quadra met in Nootka Sound in 1792 to work out the details of the Nootka

Convention. The Spanish charted Vancouver Island and the Strait of Georgia while British focused on Puget Sound (named for Lt. Peter Puget) and the Strait of Georgia. The Spanish chart makers, Capts. Dionisio Alcala Galiano and Cayetano Valdes aboard *Mexicana* and *Sutil,* started their surveys of the inland waterways east of Vancouver Island in June 1792. It was here they met the Vancouver expedition off Point Roberts and exchanged notes. The San Juan Islands were partially charted by Vancouver and the Spanish explorers between 1792 and 1794. The Spanish sketched only the outer rim of the island group, while Vancouver identified the interior channels and roughed in the major islands served today by Washington State Ferries. Vancouver also emphasized with a solid line the route he chose in circumnavigating Vancouver Island and its contiguous islands and islets: the Rosario Strait, which runs between the San Juan Archipelago and the mainland. The British would cite this route to support their claim of Rosario Strait as the boundary from 1846 to 1872.

U.S. Navy Lt. Charles Wilkes arrived in the San Juan Island in 1841 as part of the U.S. Exploring Expedition, which had been dispatched by the United States to chart the Pacific Basin. Wilkes also produced charts of the San Juans based largely upon the surveys of Vancouver, Quimper, Galiano and Eliza. However, the American surveyor held that Haro Strait, being deeper, wider and more amenable to sailing craft was the logical boundary between U.S. and British possessions. He underscored his opinion by arbitrarily re-naming all of the island and features, some of which remain today. Vancouver and Wilkes wrote little about native peoples living in the archipelago. Vancouver was focused on chart making while Wilkes had to cut his survey short and rush south on learning that one of the expedition ships had wrecked crossing the Columbia River bar.

The signing of the Oregon Treaty of 1846, establishing the 49th North Parallel as the principle boundary between British and American possessions in the West, had left ambiguous the question of the final boundary line between Vancouver Island and the mainland, which ultimately threw possession of the San Juan Islands into dispute

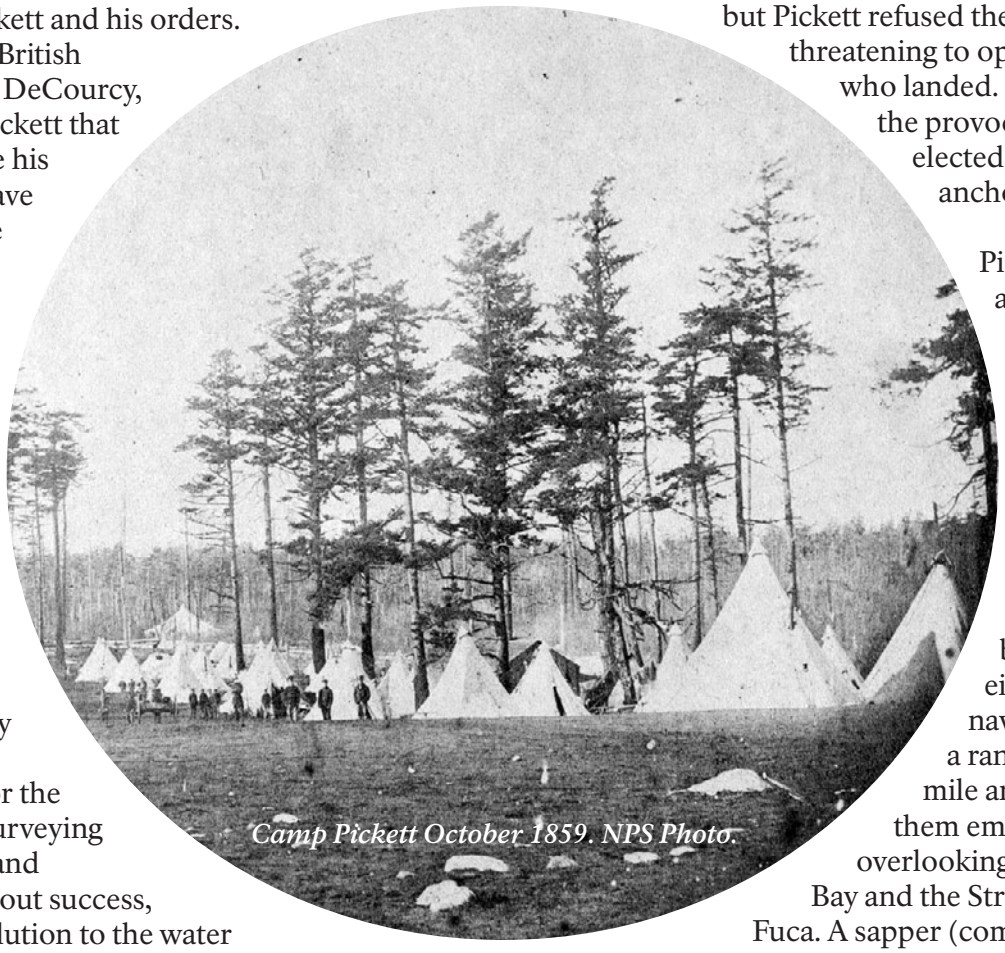
Euro-American exploitation of the islands may have begun as early as 1840 with some timber harvesting operations. Between 1850 and 1851, the Hudson's Bay Company, operating out of their post at Fort Victoria on Vancouver Island, set up their first seasonal fishing station on San Juan Island. By August 1853, James Douglas, operating as governor of the British crown colony of Vancouver Island in addition to being chief factor of the Company, was enforcing British jurisdiction over timber resources in the islands. In December 1853, Douglas hoped to further entrench British claims to the San Juan group, and San Juan Island in particular, by establishing a permanent agricultural station on the southern end of San Juan Island within the current boundaries of American Camp. Belle Vue Sheep Farm was a substantial operation, eventually supporting a herd of 4500 sheep. In addition to houses, barns, and outbuildings, there were fenced pastures and more than 100 acres in cultivation. The foundations and other features of the Belle Vue Sheep Farm operation comprise an archeological site on the slope below the redoubt at American Camp.

By the mid-1850s, the non-native population of the San Juan Islands was limited to a few European Belle Vue Sheep Farm employees and the temporary residence of three successive deputy U.S. Customs inspectors. By June 1859, about 25 Americans lived on the island along with the sheep farm staff. Two American surveyors that year staked out speculative preemption claims (in anticipation of the dispute being resolved at some near date) on Oak Prairie (today's San Juan Valley) and near the company dock on Griffin Bay. The act of staking claims attracted a score of failed American miners and others looking for free land, which heightened the paranoia company officials held over potential American incursions upon their real estate. The proximity of these claims, which included some subsistence garden patches, to the Company operations set the stage for confrontation.

The designation of the military confrontation as the Pig War stems from an incident on June 15, 1859, in which an American settler shot a black boar foraging in his potato patch. The boar belonged to Belle Vue Sheep Farm and the subsequent disagreements over compensation as well as exaggerated accounts of the event, led to the American settlers on the island petitioning the government for protection. While the petition sought protection only against northern Indian raids, the department of Oregon commander, Brig. Gen. William S. Harney must have been impressed by the settlers' verbal complaints about the Hudson's Bay Company. On July 18, Harney issued Special Orders #72 to Capt. George E. Pickett, commander of Fort Bellingham. Pickett was to abandon his post on Bellingham Bay and proceed to San Juan Island, where he was to establish a new post to protect U.S. citizens from Indian raids. In a closing

paragraph—almost an afterthought—Pickett also was directed to discourage British officials from assuming jurisdiction over U.S. citizens.

A company of U.S. troops (64 officers and Prevost thereafter enlisted men) arrived on July 27, 1859, landing at the HBC dock on Griffin Bay and establishing their camp just up from the beach on the Griffin Bay shore, about 50 yards from the dock on the other side of what we call today Old Town Lagoon. HMS *Satellite*, a 21-gun steam corvette with a British magistrate aboard, arrived on the bay shortly after Pickett. The magistrate was there to arrest Lyman Cutlar and evict as trespassers all Americans on the island, which placed him in immediate conflict with Pickett and his orders. Undaunted, the British magistrate, John DeCourcy, announced to Pickett that if he did not take his company and leave that he would be placed under arrest.



Camp Pickett October 1859. NPS Photo.

Watching all this from his berth on the U.S. Lighthouse Tender *Shubrick* was Archibald Campbell, the U.S. Boundary Survey commissioner. Campbell had for the past year been surveying the 49th parallel and attempting, without success, to negotiate a solution to the water boundary with his British counterpart, Capt. James Prevost, who was also captain of the *Satellite* and in company with DeCourcy in Pickett's camp. Campbell had been notified of Pickett's landing before the fact by Harney's adjutant, Capt. Alfred Pleasonton, but had been away on a hunting expedition in the San Juan's, which is why he was on the bay aboard the *Shubrick*.Prevost thereafter believed that Campbell was engaged in duplicity and had nothing to do with him, which stymied any solutions concerning the San Juans for years to come, never mind George Pickett's provocative behavior.

Pickett escalated the crisis by posting a sign on Old Town Lagoon that proclaimed the islands U.S. territory and himself the sole arbiter of justice. It was in response to this that Douglas dispatched HMS *Tribune*, a 31-gun steam frigate under the command of Capt. Geoffrey Phipps Hornby, son of a Royal Navy fleet admiral , to take Pickett in hand. His orders-to evict Pickett, by force if necessary—were quickly countermanded by the senior British naval officer in Victoria, Capt. Michael DeCourcy (no relation to John). The Royal Navy's British Station policies were clear about not firing until being fired upon. Captain DeCourcy's suggested alternative was to land a number of Royal Marines on Griffin Bay equal to Pickett's company. Douglas assented, but Pickett refused the proposal, threatening to open fire on any who landed. Hornby ignored the provocation and elected to remain at anchor in the bay.

Pickett meanwhile asked Harney for reinforcements, which arrived 10 days later with Lt. Col. Silas Casey, deputy commander of the Ninth Infantry Regiment. Casey brought along eight 32-pounder naval guns (with a range of up to a mile and half) and had them emplaced on a hill overlooking both Griffin Bay and the Strait of Juan de Fuca. A sapper (combat engineers) team led by 2nd Lt. Henry M. Robert planned and supervised excavation of the earthen fortification, which thereafter became known as the redoubt. (Robert would go on to write *Robert's Rules of Order*.) Hornby watched these proceedings from his quarterdeck with growing alarm. For his original orders had been to take whatever steps necessary to prevent the U.S. from reinforcing Pickett and erecting fortifications; acts that would affirm U.S. intentions to formally occupy the island. By the act of dispatching Casey, 400 soldiers and 8 naval guns and 14 field pieces, Harney was stating that he was ready to fight.

Hornby sent a messenger to his superior, the recently arrived Rear Adm. R. Lambert Baynes, asking if he should land the marines, storm the heights and spike the guns. The admiral rejected this course at once, ordering in strong terms that Hornby remain on station and only fire if fired upon. Baynes knew that his nation, already stressed by war with Russia and two colonial conflicts in the 1850s, could not afford a major conflagration with the United States, a rapidly expanding industrial power. The Royal Navy's mission was to protect British commercial interests around the world. Britain had a huge capital investment in U.S. businesses and a lucrative trade agreement with the United States worth millions more pounds. Where the San Juan Island issue was concerned, Baynes also was aware that British interests were not served by risking war over a 54 square-mile island.

The importance of maintaining peace between the two nations also is underscored by the fact that, with the blessing of the British government, an aged and infirm Lt. Gen. Winfield Scott, was sent on the difficult journey from New York City to Washington Territory, which required transit of the Isthmus of Panama by rail. Scott was considered indispensable as the only leader, military or civilian, in the United States with the moral authority to negotiate a peaceful stand-down with British officials. On that score, Scott and Baynes were a perfect match, both adept in the arts of international diplomacy, even though they were warriors by profession. Heretofore an aggressive businessman and absolutist civil authority, Douglas had to have been both impressed and intimidated by these two men because he quickly toned down his rhetoric and expressed a willingness to arrive at accommodation with the Americans.

In less than a week, the three leaders agreed to remove all reinforcements from the island and surrounding waters, save for a single company of U.S. infantry. The soldiers would remain to protect U.S. citizens and British subjects alike from Indian raids, which had been the primary focus of the petition the Americans had submitted to Harney that June.

Douglas, however, asked Scott to remove Pickett from the island. The governor, still rankled by Pickett's truculence and his proclamation, wanted no part of the Virginian. He was certain that Scott would concur to a command that would "ensure a continuation of perfect harmony and tranquility, until the unfortunate question of title may be forever set at rest." Scott assured the governor on November 9 that no official from Washington territory would be permitted to interfere with any British subject. British subjects violating the law would be referred to the proper British authorities. Pickett would return to Fort Bellingham, and Captain Lewis Cass Hunt and Company C, Fourth Infantry would remain. Hunt was directed to break up "…that part of the camp near and within sight of the Hudson's Bay Company's buildings... The little clearing in the wood and behind the hill has had comfortable shelter erected upon it where one company will be stationed."

Scott and Douglas agreed to remove all artillery from the island as part of the stand down agreement; an act that also became a key proviso of the formal joint military occupation agreement drafted almost simultaneously a continent away by officials from both nations. The conventional wisdom was that big guns represented the potential for big trouble. Once work on the redoubt was stopped, the guns, ammunition, and other equipment were hauled from the edifice and lugged back down the prairie slope to South Beach.

In October of 1859, Great Britain and the United Stated agreed to joint military occupation of San Juan Island, buying time for the boundary dispute to be submitted for arbitration to the court of Wilhelm I, Kaiser of Germany.

British-American Military Occupation of San Juan Island, 1859-1874

In March of 1860, British Royal Marines were dispatched to the north end of the island with supplies and provisions for construction of a British encampment. The U.S. camp was relocated three times within the first three weeks of Pickett's landing. The permanent camp, which technically was not on the prairie but in the forest fringe, was established at its present site to guard against naval bombardment should the Royal Navy decide to bring bomb (or mortar) ships into the harbor. From Officers' Row, the U.S, commander had commanding views of Griffin Bay, the Strait of Juan de Fuca, and the British settlement of Victoria on the western horizon.

The joint military occupation of San Juan Island continued for twelve years. Troops stationed at American Camp operated under the command of the Department of Oregon, U.S. Army, headquartered in Vancouver, Washington (now part of Vancouver National Historical Reserve). The Royal Marines were attached to the Royal Navy's Pacific Station command, headquartered at Esquimalt on Vancouver Island. Both military outposts evolved into substantial structural complexes with officers' quarters and

barracks, parade grounds, hospitals and service buildings, fortifications, gardens, cemeteries, and circulation systems. Access by boat and wagon road was established by the two camps and over time, a cordial communication system existed between the military personnel. The American Civil War prevented a speedy resolution of the boundary issue until 1872, when the San Juan Islands were finally awarded to the United States through arbitration. (See Figure 15: English Camp, Cultural Resources.)

American Camp – Physical Evolution, 1859-1872

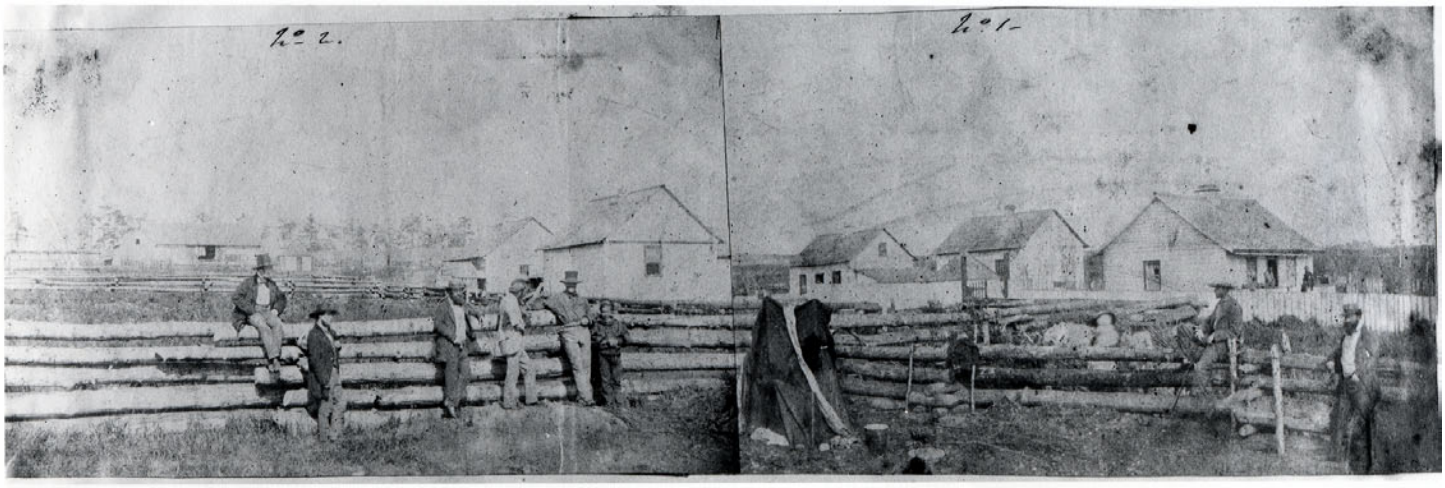
Structural development at American Camp under the military occupation can be divided into two major periods: the years between 1859 and 1865 when the primary framework of the site evolved; and a second period between 1866 and 1872 when improvements and additions established the camp as a major island settlement. A primary physical feature of the camp was the large earthen redoubt, approximately 350 feet in length, which formed the easternmost edge of the overall campsite. Rudimentary barracks, officers' housing, laundress' quarters, a hospital, guardhouse, kitchen, mess hall, and bake house, along with a parade ground, vegetable garden, and extensive fencing were in place by the early 1860s, when the advent of the Civil War halted all construction at the camp. Repairs and construction accelerated dramatically between 1866 and 1868 when the war drew to a close. Seven of the original buildings were repaired and converted to new uses, two received major additions, and the remaining buildings received various types of repairs. In addition, over a dozen new buildings were constructed, along with more fencing and improvements to the roads and trails linking the camp with other island residents. (See Figure 16: American Camp, Cultural Resources.)

English Camp – Physical Evolution, 1859-1872

Captain James Prevost of the Royal Navy selected a suitable location for the British encampment at a cove located on the inland waters of Garrison Bay. Long used by native peoples, the cove offered well-sheltered prairie land for use as the parade ground and a good supply of grass and water. On March 21, 1860, Captain George Bazalgette landed 86 Royal Marines at the site along with construction materials and supplies.

Physically and symbolically, the structural complex at English Camp was divided into a series of "levels" according to rank and function. Officers' quarters were sited on the highest ground surrounding the camp, while troops were housed in barracks located on the broad level grounds around the shore. Service buildings were clustered around the barracks and shoreline enclosing the parade ground. Most of these structures were oriented toward Garrison Bay, which was the primary focus for the entire camp. From the highest points in the camp, signal fires on Vancouver Island could be spotted.

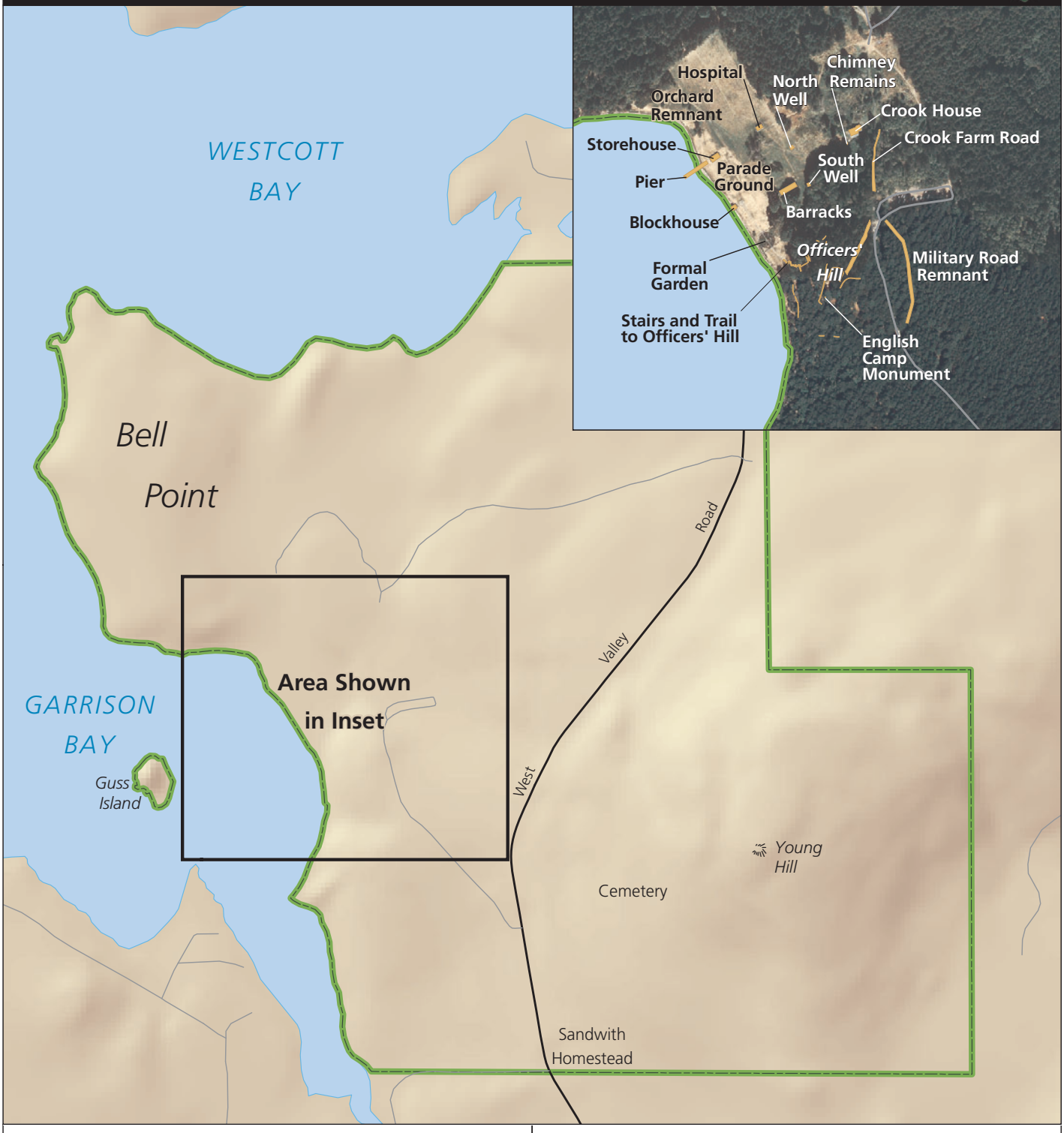
Actual construction took place in two primary phases: an initial phase of development from 1860 to 1866; and a second period between 1867 and 1872, when several new buildings were added. By the mid-1860s, the post included officers' quarters built on stone-walled terraces on the lower slopes of Young Hill, two barracks, a blockhouse-style guardhouse, wharf, storehouses, a barn, cookhouse, mess room, and sutler's (trader or merchant) store. Later developments included a home for the commanding officer, a subaltern's house, hospital, and several service-related buildings.



Belle Vue Sheep Farm, September 1859. NPS Photo.

English Camp: Cultural Resources

San Juan Island National Historical Park GMP/EIS



Park Boundary
Primary Road
Secondary Road

0 500 1,000
Feet

N

Figure15

Produced by: National Park Service
PWRO-Seattle GIS Group

Date Created: February 28, 2007

Data Sources: NPS - cultural resources, DOQ's (1997), park boundary, roads, shoreline
USGS - shaded relief

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American Camp: Cultural Resources

San Juan Island National Historical Park GMP/EIS



Park Boundary
Primary Road
Secondary Road

0 0.25 0.5
Miles

N

Figure 16

Produced by: National Park Service, PWRO-Seattle GIS Group

Date Created: February 28, 2007

Data Sources: NPS - cultural resources, lakes, park boundary, roads, shoreline
USGS - shaded relief

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San Juan Town, 1859-1890

Despite the efforts of the military commanders who were placed in charge of civil affairs on the island, the presence of the two camps and the lack of direct civil authority attracted a number of outlaws, scoundrels, and others interested in profiting from the sale of liquor and other items to both the military personnel and local Indians. The village of San Juan sprang up around the Hudson's Bay Company wharf following the arrival of American forces in 1859. Located within the present day boundaries of American Camp, the village consisted of approximately 14 crude structures. Following the withdrawal of the military and the establishment of Friday Harbor as the county seat, the town was slowly abandoned and finally burned to the ground in 1890.

Late Settlement and Agricultural Activity on San Juan Island, 1873-present

In 1880, six years after the conclusion of the military occupation in 1874, the U.S. Census Report listed an island population of 536 individuals, 302 men and 234 women. They were farmers, fishermen, or laborers. Among the Euro-Americans, a high percentage were European born. By 1900, Friday Harbor was a thriving village with a population of 300-400, a salmon cannery, wharves and warehouses, and a telephone system. At Roche Harbor, north of English Camp, a lime manufacturing plant was operating. Steamers connected the islands to the mainland.

Indian use of San Juan Island also continued. The Indian population was primarily composed of reef net fishermen who traveled to the island from various locations, as well as a full-time residential population of mixed blood from unions between Native American women and Euro-American men. Several families formed the core of this resident "metis" community and came to be known as two separate groups: the San Juan Tribe of Indians and the Mitchell Bay Band. Those who remained on the island also engaged in farming and early commercial fishing.

After the military departed, both camps were sold to private individuals. At American Camp, land was thrown open to settlement by presidential proclamation. The military buildings were sold at auction and most were removed from the site. Homesteaders made use of the site for farming and grazing, gradually altering the historic landscape of the camp. In 1951, the Washington State Parks and Recreation Commission acquired the core five acres of the historic campsite thus preserving it from further alteration.

At English Camp, the land and many of the structures were acquired by the William Crook family in 1875. For the next 92 years, the Crook family worked and shaped the landscape around the cove at Garrison Bay. Though some of the original camp structures had been sold at auction and removed in 1875, Crook retained and made practical use of many of them. The family also erected new structures, including a substantial barn and house. An orchard was planted on the old parade ground. In 1963, the Crook family transferred ownership of 100 acres of the farm, including the historic campsite, to the Washington State Parks and Recreation Commission. In 1966, with the creation of the San Juan Island National Historical Park, both the English and American Camp sites were transferred from Washington State Parks to the National Park Service.

Historic Properties Eligible for or Listed in the National Register of Historic Places

The cultural resources of San Juan Island National Historical Park have been surveyed, evaluated, and documented over the years through a series of studies prepared primarily by historians, anthropologists, archaeologists, cultural landscape architects, and historical architects working for the National Park Service as staff or contractors. Originally, the Secretary of the Interior identified the two camps as nationally significant historic landmarks in 1961 through the National Survey of Historic Sites and Buildings program, authorized by the Historic Sites Act of 1935. No documentation for the camps was prepared. It was in 1966—just prior to establishment of the Park—that the camps were administratively entered into the newly created National Register of Historic Places with the passage of the National Historic Preservation Act. The National Register listing for the NHL originally encompassed an area of more than 12,000 acres, though no boundaries were described and no nomination form existed for the properties. This informality was not unusual for this period of time. The lack of specificity has led many to treat the NHL and the park as the same, while in actuality, the NHL preceded the park and (theoretically) was much larger. In 1973, the NPS prepared a National Register of Historic Places nomination for American Camp. No companion nomination for English Camp was prepared. The National Register listing did not specifically mention many of the cultural resources

now recognized as important in the park. In an attempt to consolidate all of the historical research and studies previously completed for the park, the NPS prepared a draft multiple property document (MPD) entitled "Cultural Resources of San Juan Island National Historical Park, Prehistory through 1945." It was prepared under contract with NPS by historian Florence Lentz and forwarded to the State Historic Preservation Officer in 1999. While the SHPO approved the draft, the MPD was never finalized and officially entered into the National Register due to additional documentation required by the NPS Washington Office. Regardless of which alternative is chosen for this GMP, the National Register listing needs to be updated to finalize the documentation for the park and to be in compliance with Section 110 of the National Historic Preservation Act. A new nomination is needed for the prehistoric archaeological sites, as they were not included in the 1999 MPD.

This multiple property listing documentation of 1999 summarized the findings of the following key studies, beginning in 1961, as follows:

- *National Survey of Historic Sites and Buildings: American and English Camps (Pig War Site), San Juan Island, Washington* (Charles Snell, NPS, 1961)
- National Historic Landmark File Correspondence (Pacific West Region, Cultural Resources NHL files)
- *English Camp, San Juan Island National Historical Park: Historic Structures Report – Part One* (Lewis Koue and Erwin Thompson, NPS, 1969)
- *Historic Resource Study, San Juan Island National Historical Park, Washington* (Erwin Thompson, NPS, 1972)
- *Historic Structures Report, Officers' Quarters, Laundress' Quarters, English Camp Hospital, San Juan Island National Historical Park* (Harold LaFleur, NPS, 1978)
- *San Juan Archeology, Volume I and II* (Roderick Sprague, University of Idaho, 1983)
- *Historic Structures Report, Crook House, San Juan Island National Historical Park* (Pat Erigero and Barry Schnoll, NPS, 1984)
- *Historic Landscape Report: American Camp and English Camp, San Juan Island National Historical Park* (Cathy Gilbert, NPS, 1987)
- *Archaeological Overview and Basemap of American and English Camps, San Juan Island National Historical Park* (Gary C. Wessen, NPS, 1988)
- *An Ethnographic Overview of the Native Peoples of the San Juan Islands Region* (Gary C. Wessen, NPS, 1988)
- *Deciphering a Shell Midden* (Julie K. Stein, Academic Press, 1992)
- *San Juan Island Cultural Affiliation Study* (Daniel L Boxberger, Western Washington University, 1994)

The multiple property documentation identifies four major historic contexts associated with the American Camp and English Camp sites and lists historic property types, as well as specific resources, associated with each context. These resources have been evaluated for eligibility for the National Register of Historic Places.

Historic Context I: Occupation of the San Juan Islands by Native Peoples, to 1855

Habitation sites associated with the native peoples of the San Juan Islands are thought to have been of two types: cedar plank longhouses and mat-covered lodges. Split cedar plank longhouses were often large structures, as much as 60 feet wide and twice that in length. They had either gable or shed roofs, made of overlapping cedar planks supported by rafter support posts. Walls consisted of cedar planks tied horizontally between pairs of support posts. Inside, the entire house consisted of a single room with a low cedar plank bench running along the inner wall. Space was divided into a series of individual nuclear family areas along the bench and walls sharing a common household area in the center of the floor. Each nuclear family area had its own fire hearth near the bench. Mat lodges were 15-20 feet long, pole structures covered with mats made of cattail rushes or cedar bark. Some lodges had split cedar roofing.

Within English Camp, the remains of a longhouse platform at Garrison Bay have been located, confirming ethnographic reports of a winter village being located at the cove. The site features include evidence of the physical dimensions of the structure, as well as hearths, pits, and post holes. It is eligible for the National Register under Criteria D (resources with the potential to provide significant information). No examples of mat lodge dwelling types have been identified within the park's boundaries.

Sites related to resource procurement have been identified at both American and English camps.

Sites related to the religious beliefs of the native people of the San Juan Islands include tangible artifacts such as rock cairns and burial sites, as well as significant landscape features. Rock cairns and burial sites have been identified within the boundaries of the park.

Historic Context II: European and American Exploration and Settlement of the San Juan Islands, 1790-1859

Belle Vue Sheep Farm, the sheep station established by the British Hudson's Bay Company is within the boundaries of American Camp. The remains of the 1850s sheep station include foundations and other archaeological features associated with the main structures and related outbuildings. The site is eligible for the National Register of Historic Places under Criteria A (associated with broad patterns of history) and Criteria D.

Lyman Cutlar's farmstead, where the infamous pig was shot, may have been located just outside the present boundaries of American Camp to the northwest, though this has long been subject to conjecture. The site of the subsistence farm of Lyman Cutlar would represent the earliest farmsteads established by American squatters prior to the Pig War. If conclusively identified, it would have the potential to provide valuable information on subsistence farming in the 1850s on the island. Additional historical and archaeological research would be required to solve this 150-year old puzzle.

The archaeological remains of the San Juan Town site have been identified within the boundaries of American Camp. Features include foundations and building materials associated with the fourteen structures of this small settlement that included a store, hotel, and numerous saloons. The site is eligible for the National Register under Criteria D, offering the potential for providing additional knowledge about the physical fabric of San Juan Town, its spatial relationships, and its inhabitants.

Historic Context III: British-American Military Occupation of San Juan Island, 1859-1874.

Both American Camp and English Camp are cultural landscapes incorporating complex layers of structural, landscape and archaeological features that provide a strong interpretive background for relating the military story of the Pig War and the subsequent joint occupation. The great majority of original aboveground features whose existence is documented in early photographs and maps have long since been removed. Two buildings out of an original 28 now stand at American Camp, four out of an original 30 at English Camp. The locations of some former buildings are marked by foundations, chimney rubble, or depressions in the earth; others have been identified by archaeological survey and/or excavation. Elements of landscape patterns that relate to the historic setting are distinguishable at both sites. These include the earthen redoubt at American Camp; rock-walled terraces, shoreline features, and a fenced cemetery at English Camp; and parade grounds and portions of original paths and road systems at both camps. At English Camp, remains of the post sutler's farm and orchard are also in evidence.

These resources represent the primary features contributing to the eligibility of the two sites as National Historic Landmarks and are eligible under Criteria A, B, and D for their associations with the



Bay view of English Camp, post-1867. NPS Photo.

story of the Pig War and the diplomacy associated with the resolution of the boundary dispute.

Historic Context IV: Late Settlement and Agricultural Activity on San Juan Island, 1873-1945

Although both camps were subsequently occupied by farmsteads, the primary resource associated with the post military settlement of the two camps is the Crook house and related archaeological and landscape resources associated with the Crook Farm era.

The Crook family was the caretaker of English Camp for many years. William Crook took possession of the 161-acre property as a homestead in 1876. Ownership was transferred to Washington State in 1963 and the park received it in 1966. The Crook house was determined eligible for the National Register of Historic Places in 1984.

History of Archaeology at San Juan Island National Historical Park

Two prehistoric sites preserved within the boundaries of the park are "Cattle Point" (45SJ1) at South Beach in American Camp, and at English Camp (45SJ24).

Cattle Point

The older of the two sites within the park is Cattle Point. It was excavated twice, first in 1946-1947, under the direction of Dr. Arden King, who was teaching a field school for the University of Washington as a faculty member at Tulane University in New Orleans. Dr. Carroll Burroughs (an archaeologist working for the National Park Service at Mesa Verde who came to teach the field school for the University of Washington) directed the second excavation in 1948. King, who published his results in *American Antiquity* (Memoir 7, 1950) found two different occupations at the site above South Beach. The first and deeper site contained Cascade points and preserved animal bone and charcoal. King did not retain any of the bone or charcoal, so carbon 14 dating of the occupation level was not possible. From the artifact association, the site's estimated date is somewhere between 9,000 to 4,500 years ago. In addition, the data King recovered at the first occupation depth reveals that the grassy prairie now seen at American Camp has persisted for thousands of years.

Luckily, King did save shell from the second and higher occupation level, and the carbon 14 analysis from the shell produced dates between 2,550 and 2,300 years ago. In this level, King and Burroughs also found interesting rock lined trenches and several circular bowl shaped features. It is unclear what function these features served.

English Camp

The English Camp (45SJ24) was excavated three times. In 1950, Dr. Adam E. Treganza (San Francisco State University) taught a field school there for the University of Washington. The field school consisted of testing the shell midden just west of the parade ground. No formal report was submitted.

In 1970-1972, Dr. Roderick Sprague (University of Idaho) specializing in the historic period, directed a large archaeology excavation within the park. Sprague excavated several of the historic British building foundations at English Camp. His data was used to assist the NPS in reconstructing the historic structures and in the interpretation of the British occupation on Garrison Bay. Sprague's report, a two-volume document entitled *San Juan Archaeology* was published by the NPS in 1983. The report also includes historical archaeological investigations at American Camp, old San Juan Town and the Hudson's Bay Company's Belle Vue Sheep Farm.

An appendix to the *San Juan Archaeology* publication was a small report by Stephen Kenady, a University of Washington student connected with Sprague's field school. Kenady conducted limited testing of the prehistoric shell midden at English Camp. Most of Kenady's data, in the form of field notes, were lost for 20 years, and were rediscovered in the mid-1990s. Park and Regional Office funds were provided to allow Kenady to revisit his data and write a report. The final draft report has recently been received and will be published when funds become available.

The third major excavation conducted from 1983-1991, was led by Dr. Julie K. Stein, Curator of Archaeology at the Burke Museum, University of Washington. Stein investigated the shell midden lining the eastern shore of Garrison Bay, underlying the grassy parade ground and continuing partially into the wooded region to the north. The middens were an accumulation of used shell and other food waste and trash that was deposited throughout the prehistoric occupation period.

The largest excavations were at the parade ground, Operation (Op) A, and in the wooded area to the north, Op D. Carbon-14 dates from Op D indicate that people lived there for only a short time, from AD 500

to AD 800. The shell midden accumulated and was abandoned within a few hundred years. The midden at Op A dated from AD 500 to AD 1800, deposited by the native peoples over a thirteen hundred-year period.

Occupation by native people at English Camp covers a two thousand-year period. Tentative testing at Op D, a horseshoe-shaped midden, suggests an early type of shelter similar to a site at Beach Grove in British Columbia. The exact nature of the structure is not clear and further testing may provide more data.

The structures at Op A, on what is now the parade ground, were more likely to correspond to the plank houses that represent the shelters of late northwest Native American culture.

Stein has reported on the English Camp investigations in both *Deciphering a Shell Midden* (Academic Press 1992), and *Exploring Coast Salish Prehistory* (University of Washington Press 2000). A book about the findings at Op D is in draft, but currently remains unpublished.

Museum Collections

The park maintains a significant museum collection of about one million objects, covering a vast array of time, disciplines, and understanding. Only a few dozen items are on exhibit in the American Camp visitor center. The remaining objects are housed in repositories, in order of extent, at the Burke Museum Archeology Collections at the University of Washington, the Marblemount Curation Facility at North Cascades National Park, Fort Vancouver National Historic Site, and San Juan Island National Historical Park (approximately 170 objects on exhibit).

There are 105,000 catalog numbers for the park's museum and archival collections: 66,000 are housed at the Burke Museum, 35 are housed at the Marblemount Curation Facility, and 5,000 are at Fort Vancouver National Historic Site. Because quantities within catalog numbers vary, the item count differs from the catalog number count. These off-site locations provide preservation and protection to the collection and allow scholarly research and comparative analysis of these collections; however, off-site collections also make the collection difficult to access by park visitors and park staff.

The collections are a dynamic set of resources. Research is ongoing in marine biology, landscape and prairie restoration, archival research and in many fields of archaeology. Collections are better understood with continued access, study, interpretation and description.

The archaeological artifacts are extensive. The NPS conducts research, works to refine descriptions of artifacts, produces analyses of artifacts, and publishes findings. American and British historic artifacts are of particular historic interest and include the Hudson Bay Company farm on San Juan Island, the military presence of the U.S. Army and the British Royal Marines co-occupation (1859-1872), the settlers present during military co-occupation of the island, and immediate occupation by Americans of the English Camp following British withdrawal. Excavated materials include soil, minimally sorted material, well-sorted material and identified artifacts. The items include prehistoric items associated with American Indians, specifically the Lummi tribe, people related by family, culture, and history.

Natural history specimens will increase in the collection as inventory work continues. The natural history collection is chiefly vascular plant specimens collected for the herbarium by NPS staff as part of the inventory component of the Natural Resource Challenge's Inventory and Monitoring Program. Paleontology and geology specimens shape the remainder of the collection. A soil survey conducted in 2003 developed soil voucher specimens, which are stored at the Natural Resource Conservation Service facility in Mount Vernon, Washington.

The park archives document the park's administrative history, legislative action, annual reports, historic structures descriptions and compliance documentation, interpretive programs, research proposals, and facility development. Field notes and documentation from archaeology fieldwork, maps, and photographs comprise another portion of the archives. As homesteaders and caretakers of English Camp lands, the Crook family's documents and letters provide clues of life on the island around 1900, and letters composed by the Harvey Allen family-to-family off-island, weave an 1860's correspondence web. These materials are located at Marblemount, the Burke Museum, Fort Vancouver National Historic Site and at the National Archives and Records Administration in Seattle.

The Marblemount Curation Facility at North Cascades National Park provides a center for resource protection, research, education and interpretation. The collection room has tight temperature and relative humidity requirements and the environment is closely

monitored. Emergency operations plans, fire and security plans and systems conform to NPS museum standards. Housekeeping is performed regularly, and a pest management plan is in draft form. Data sharing is limited at present to museum staff members. Access to collections is with a museum staff chaperone. Access to the Burke Museum collection is under the direction of the Burke museum staff. The exhibits are viewable on San Juan Island at park visitor contact stations and at the Burke Welcome Center.

Since its establishment as an historical park in 1966, NPS professionals and scholars alike have accepted that the *in situ* archaeological resources, including foundations, artifacts and features, are one of the two most important park resources. The historic documentation of military life during the peaceful boundary resolution has continually been strengthened and enhanced by the analysis of the data and artifacts resulting from excavations at San Juan Island National Historical Park. As a result of the archaeological investigations, a primary interpretive theme at the park is the archaeological resources of the camps as much as it is the story of the Pig War.

As a result of 50 years of archaeological investigations at San Juan Island National Historical Park, one million artifacts have been retrieved and a score of scholarly reports have been produced and archived.

The preservation, management, and interpretation of this collection continue to be one of the most important cultural resource issues for the park. Representing the original fabric of English Camp and American Camp and providing insight into the lives of its occupants, it is an internationally significant resource.

San Juan Island National Historical Park Archival and Material Cultural Collections

The institutions below house original historic documents, maps and images that pertain to the cultural history of San Juan Island National Historical Park.

- U.S. National Archives, Washington, D.C.
- University of Washington Library, Seattle, Washington
- Washington State Historical Society, Tacoma, Washington
- Public Record Office, London, England
- Royal Provincial Archives of British Columbia, Victoria, British Columbia
- Washington State Library, Olympia, Washington
- National Archives of Canada, Ottawa, Ontario
- National Collections, Ottawa, Ontario
- American Antiquarian Society, Philadelphia, Pennsylvania

Technology Options for Collection Availability

It is the intent of the park to explore options for making natural and cultural resource collections available on the internet for researchers and interested public. In addition to internet applications, the park could also consider other innovative methods to convey a virtual "hands-on" experience in order for visitors to better experience the collections and park archeology. Examples of these techniques could include viewing field notes and maps, archeological tools, holographic images, and "electronically" looking into storage drawers.

This interface between visitors and the collections can provide a crucial link between the science and the public, and a study collection located at the park can be an excellent tool to help support that connection.

Currently, the San Juan Island National Historical Park archaeological collection is available to the public through a variety of integrated, technological means. An "online collection" project uses several different features to make artifacts accessible to researchers and interested persons.

The Automated National Catalog System (ANCS+) used for recording artifact data has a function that allows a digital image to be attached to an electronic catalog record. Staff and volunteers at the park have been producing digital images for each object in the archaeological study collection, a grouping of approximately 1,000 artifacts. These are designed to show views of an object and a detail of any diagnostic traits. This entire process of digitizing the artifacts and importing the images into the cataloging software can be shown on a monitor in the Marblemount Curation Facility. Visitors to the site can view the artifact image and catalog data as a Museum Technician or volunteer works on the project. During other times, the monitor shows a slide show of images so visitors can be introduced to items from the archaeological collection.

These data, the ANCS+ catalog records and related digital images, are used as the basis for the online collection. Re:discovery Software, in conjunction with the National Park Service Park Museum Management Program (MMP), has developed templates so that the data can easily be accessible through the World Wide

Web. A visitor to this Web Catalog can browse the catalog records, view images, and compose searches and queries to sort or filter data according to their personal research needs.

In addition to the Web Catalog, which is hosted on a server managed by the NPS Park Museum Management Program, the San Juan Island website will include archaeological and curatorial features designed to increase the availability of the collection. Articles on current excavations can be tied to artifact descriptions and images, highlighting the most recent additions to the collection. An online Research Guide will introduce visitors to the collection and guide them to representative artifacts and archival references. Additional features will illustrate conservation projects.

Utilizing technology to increase the availability of the collection would be an integral component of the transition to a research and education center. In addition to continuing the online collection project, several technology options could improve the availability of the San Juan Island National Historical Park collection and other archaeological collections the park holds that are associated with the Pig War and Hudson's Bay Company material culture and prehistoric artifacts. One project could integrate the ANCS+ catalog records with GIS data, visually tying individual artifacts to the units and strata from which they were excavated. This would allow researchers more flexibility when looking at stratigraphic variety, distribution patterns, and other types of spatial analyses. Various software programs could make this visual representation accessible through the Web, and visitors to the website, or to a park kiosk, could interact with map layers (historical features, archaeological excavations, and existing conditions) and corresponding artifacts from the collection. This would in essence place an artifact in time and space, giving visitors a historical context for an item from the collection.

Additionally, the World Wide Web could be more intensely utilized to promote the availability of the collection through virtual exhibits; interactive educational features based on cultural resources, and online versions of archival documents like archaeological reports and photos. Overall, a research center would require online services that address collection availability for both visitors to the park and those who come via the website, and are capable of meeting the needs of researchers as well as visitors who desire an introductory or engaging view of the collection. The NPS museum management program oversees and makes the majority of decisions about museum technology.

The mission of the research and collection management for the park is to foster the analysis, interpretation, and dissemination of information relating to archaeology, archives and historic architecture. The foundations of the curatorial facility are the park's archaeological collections, the archaeological resources remaining *in situ*, the archives and the existing historic architecture of the park area. These cultural resources form an unparalleled opportunity for researchers, students, and members of the public to study within the fields of archaeology, curation and collections management, museum studies, preservation and conservation, and historic architecture. Possible research topics would include U.S. Army forts and related sites, British Royal Marine forts and related sites, fur trade farm sites, and island homesteading. The mission of the curation facility will be accomplished through the following: repository for archaeological excavations and field school, analysis of existing collections and data, expansion of archival materials, development of web-based educational tools, and the archiving of research papers.

The Natural Environment

Geology

Located in the Puget Sound basin, the San Juan Island Archipelago consists of approximately 473 islands at low tide or 428 at high tide with a wide variety of rock types and formations. Two key geologic processes are responsible for the rugged landscape the islands are known for today—accretion of small microcontinents to the mainland and several glaciations. However, millions of years of geologic activity laid the groundwork for these events to take place. The oldest rocks date to the Devonian Period with a minimum age of 360 million years and include a complex of diorites, amphibolites, gneisses and gabbros. These ancient crystalline rocks are overlain by chert, shale, limestone, greywacke sandstone, and volcanic rocks (Easterbrook and Rahm, 1970).

Over 80 million years ago, plate tectonics set the stage for the complex geologic structure of bedrock underlying the region. Small landmasses moving eastward along the Juan de Fuca plate collided with the coastline in a relatively short period of time. Due to the intense pressure created by the collisions, the smaller landmasses were forced upward against the continental plate producing an intricate system

of thrust faults along the tectonic plates and lenses (Brandon et al., 1988). Many fractures and joints in the varied bedrock are associated with this thrust system.

Later, during the Pleistocene Epoch, commonly referred to as the Ice Age, at least four glaciations occurred with alternating warmer periods. As the glaciers advanced from north to south around 18,000 years ago, they accumulated and transported eroded rock material of all kinds that varied from the size of clay to gigantic boulders (McKee, 1972). These materials aided in scraping and scouring the bedrock. Glaciers carved bays, channels, and other waterways. They shaped and rounded more resistant rock material. Striations, or gouges in the rock, are still visible today. (See photo below.). Good examples of glacially grooved bedrock occur along the southern tip of San Juan Island at Cattle Point and on glacially polished bedrock on top of Young Hill (McKee, 1972).

As the edges of the ice below, in front of, and along the sides of the glacier melted, accumulations of debris were deposited creating glacial moraines and outwash plains. Mount Finlayson, located at American Camp, is a moraine formed from glacial till and outwash sand (McKee, 1972). When the glaciers began retreating around 13,500 years ago, the lowland areas were covered with unconsolidated deposits of glacial till and marine deposits including clay, silt, gravel, and boulders (Easterbrook and Rahm, 1970).

At the most recent glacial maximum, the ice sheet depressed the crust in this area several hundred feet. As the landscape rebounded from the immense weight of the glacier during deglaciation, waves cut benches and terraces at various elevations. Long, horizontal benches on the south side of Mount Finlayson record the emergence of this landscape, and date to approximately 13,500 years ago. The lack of tree cover and the size of these features make them some of the most visible reminders of crustal movements associated with glaciation in this part of the world (Riedel, 2004).



Glacial striations found on bedrock within the park. NPS Photo.

When compared to deposits on the mainland, glacial and interglacial deposits on the islands are relatively thin. In fact, most of San Juan Island has less than 20 feet of sediment cover. Some of the thickest deposits are associated with the southern portion of the island. Nearly all deposits at American Camp measure roughly 100 feet deep, while sediment cover at English Camp is 20 feet or less (White, 1994).

Since the end of the Ice Age, the primary geomorphic agent has been water in the form of rain, runoff, and ocean currents and tides. Because the park manages 6.67 miles of shoreline that have been greatly affected by these processes, it is important to understand how they interact. The development of beaches requires an input of loose sand and gravel along the shoreline (Downing, 1983). Coastal bluffs supply this material as they erode, and the sediment accumulates below to form beaches. Loose sand and gravel is moved in and out with the rising and falling of the tide and along the shoreline with longshore currents. Eventually, most of it is transferred to form sand bars, spits, and small capes in shallow water (Terich, 1987). Bluff erosion is critical for the natural maintenance of these shorelines because beaches will begin to narrow or erode if this sediment supply is reduced or stopped (Terich, 1987).

Topography

Most of San Juan Island is less than 400 feet in elevation. However, occasional steep slopes and rock bluffs occur throughout the gently rolling landscape. The highest point on the island is Mount Dallas at 1,036 feet located halfway between American and English camps.

The landscapes of the two park units are quite different. Located on the southeastern tip of the island, American Camp is characterized by a rolling, windswept prairie with the highest point atop Mount Finlayson at 290 feet. The unit is open to Haro Strait to the west, the Strait of Juan de Fuca to the south, and Griffin Bay to the north. Along the southern shoreline, long gravel beaches are broken up by rock outcroppings and protected sandy coves. The northern shoreline also exhibits long gravel beaches with three temperate, marine lagoons occurring on

Griffin Bay (National Park Service, San Juan Island National Historical Park, Statement for Management, 1997).

In contrast, English Camp, located on the northwest corner of the island, is settled along the tree-sheltered cove of Garrison Bay. Bell Point divides Garrison Bay to the south from Westcott Bay to the north. Much of the camp itself and part of Bell Point are somewhat level with a gradual rise from the shoreline. East of the camp, Young Hill rises abruptly to 650 feet. Rocky outcrops rise sharply along Bell Point on Westcott Bay before leveling out into woodlands. Short gravel/mud beaches occur at this unit.

Soils

Soil is an environment for the exchange of water, nutrients, energy, and air, thus, providing several essential functions. First, it supports plant growth by providing a medium for plant roots and supplying essential nutrients to plants (Brady and Weil, 2000). Soil also regulates the distribution and storage of water, recycles nutrients and organic wastes, acts as a filter for air and water, and provides habitat for organisms. It also supports physical structures and protects archaeological objects (U.S. Department of Agriculture, 2001).

Soil throughout San Juan County is derived largely from glacial sediments. Many of the soil types feature a cemented or densic horizon of glaciolacustrine (glacial lake) sediment, which serves to restrict root and water penetration through the soil profile. These soils tend to have management limitations due to seasonally high water tables and susceptibility to soil quality degradation. Other soil types throughout the county have formed in coarser grained glacial sediments from weathered bedrock. Typically, these soils are found associated with landforms of greater local relief and have historically remained forested due to steep slopes or non-suitability for agriculture.

Both English and American camps encompass soil of both general soil types. At American Camp, most soils are at least 15 feet deep with depths greater than 50 feet in the dune area north of South Beach (U.S. Department of Agriculture, 1962). Very shallow soils and bedrock occur along the coastline. Soils associated with the prairie and slopes of Mount Finlayson are gravelly to cobbly and are somewhat excessively drained. Depending on slope gradient, runoff can be very low to low. Native vegetation is critical for preventing excessive erosion. Soils north of the redoubt tend to have a seasonally high water table because of the presence of a densic horizon.

In general, the soils at English Camp are shallow to moderately deep extending down to bedrock or densic material. The entire unit is characterized by scattered rock outcroppings and gentle to steep topographic relief. As with American Camp, there are soils with seasonally high water tables perched on a densic or cemented horizon. Generally, these soils occur on low slope gradient areas and have historically been utilized for agricultural and cultural practices. At the top of Young Hill, runoff is high due to the prevailing exposed bedrock. Between the outcrops are patches of gravelly soil that is well-drained. Forested soils on the side slopes and base of Young Hill are gravelly to cobbly and well-drained. On the north side of Young Hill, forested soils tend to have a component of volcanic ash from the eruption of Crater Lake mixed with glacial sediments. South of Young Hill, soils typically have a dark surface horizon indicative of historic grassland or an open overstory plant community. Maintaining a native vegetative cover is crucial to preventing excessive erosion where runoff is significant.

A detailed soil survey, *Soil Survey of San Juan Island National Historical Park, Washington,* was completed in 2005 for the park by the Natural Resources Conservation Service in cooperation with the National Park Service and the San Juan County Conservation District.

Monthly and Annual Averages for Temperature and Precipitation

Month	Maximum Temp (°F)	Minimum Temp (°F)	Precipitation (inches)
March	51.0	37.6	2.38
June	66.3	47.9	1.35
September	65.2	48.1	1.69
December	45.5	36.2	4.44
Annual Average	57.0	42.4	28.94

Climate

The climate of the San Juan Islands is affected by its geographical location. With the Olympic Mountains situated to the southwest and Vancouver Island, British Columbia, to the west northwest, the "rain shadow" effect produces less rainfall in the islands than the rest of the northern Puget Sound region (Heater et al., 2000). Prevailing westerly winds shed much of their moisture prior to reaching the islands.

On San Juan Island, precipitation varies significantly. Moving from south to north, the effect of the rain shadow subsides and precipitation increases. Rainfall also increases with elevation gain. The average annual precipitation near American Camp on the south end of the island is 19 inches, while ten miles to the north, English Camp's upper slopes receive 29 inches average annual precipitation (Cannon, 1997).

The maritime air surrounding the islands also affects the climate by moderating the temperature. Compared with other northern Puget Sound locations, the summers on San Juan Island are short and cool with very little precipitation, and the winters are mild and moderately dry. Snowfall may occur, but most winter precipitation falls as soaking rain (Flora and Sharrow, 1992). At the weather station at Olga, Washington on Orcas Island, the average annual maximum temperature recorded is 57.0° Fahrenheit and the minimum is 42.4° Fahrenheit.

In general, the prevailing wind patterns are south southeast in the winter and west northwest in the summer (Washington State University and U.S. Department of Agriculture, 1966). Occasionally in the winter months, freezing temperatures and strong northeasterly winds occur when low-pressure systems off the coast mix with outbreaks of cold air moving down through the Fraser River Valley (Garland, 1996).

Weather Station

A fire weather station operated at American Camp from the spring of 1983 through 1998. It was used to obtain weather readings pertaining to fires and fire hazards. It functioned each year from June 1 until September 20. Current technology does not require a permanent fire weather station. RAWS data are obtained from a station on Whidbey Island. Portable devices are used when fire weather is needed for park activities.

Climate Change

Climate change is defined by the United Nations Framework Convention on Climate Change (UNFCCC) as "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods" (UNFCCC, 1992). In recent years, scientific data have shown that human influence on climate systems is taking place, and evidence of climate change has already presented itself. A 2001 report by the Intergovernmental Panel on Climate Change (representing 39 countries and reporting on the greenhouse effect) projected that the average global temperature will increase by 1.4 to 5.8 degrees Fahrenheit between the years 1990 and 2100. Based on climate change modeling, the IPCC reports that most land areas will warm more rapidly than this global average. The northern regions of North America are highlighted as an area that exceeds global mean warming by more than 40 percent in each model. A 0.09 to 0.88 meter (3.5 inches to 2.9 feet) global average sea level rise is predicted by the year 2100 using computer simulated models (IPCC 2001).

According to Washington State climatologist Philip Mote, summertime temperatures in Washington State have increased an average of over 1 degree Fahrenheit in the last century. The University of Washington's Climate Impacts Group (CIG) has done extensive research on the potential impacts of climate change in the Pacific Northwest. In the San Juan Islands specifically, concerns related to climate change include rising sea levels and intensified storm events. CIG computer modeling has predicted accelerated warming in Washington State from 1990 to 2050. This modeling shows an increase of approximately 2 degrees Fahrenheit for the San Juan Island area. According to CIG, sea level rise could affect the San Juan Islands, and would affect different areas of the island differently, based on local factors such as beach slope, vertical land movements, land use, and land cover. Potential effects of higher sea levels could include increased erosion, bluff landsliding, salt water intrusion of coastal aquifers, and inundation of low-lying areas (University of Washington, 2007). Climate change could also result in increasing water temperatures, threatening the island's surrounding marine areas, including the habitats of salmon and the endangered southern resident Orcas. On land, non-native plants as well as pathogens are expected to increase. Already-rare plant and animal species that have narrow habitat requirements and limited dispersal ability may be particularly vulnerable

to loss. While precipitation in the rainy season is likely to increase, there is also the likelihood of increased summer droughts. Moisture stress, higher temperatures, and invasive non-native species could all be expected to contribute to a change in the fire regime.

Within lands managed by the National Park Service nationwide, climate change has already had noticeable impacts on both natural and cultural resources (National Park Service and NASA, 2006). Conditions for sustaining the health and prosperity of animal and plant habitats, glacial, marine, and wetland ecosystems have been diminished and changing patterns of weather and natural hazards such as flooding and wildfires have damaged habitat areas and cultural resource sites. Invasive species of plants and pests, such as bark beetles, are encroaching into areas where they have not previously survived, and threatening the native plants, as well as the animals that rely on those plants for food and shelter.

In response to the increasing need for understanding and action related to climate change impacts in the parks, the NPS has partnered with the Environmental Protection Agency through an interagency agreement to create the Climate Friendly Parks Program. This program enables the NPS to educate its staff about climate change issues, assess the park's contribution to greenhouse gas emissions, create short- and long-term strategies for reducing emissions, determine potential effects of climate change on park resources, and develop skills and strategies for communicating these effects to the public.

Air Quality

Air quality in the Pacific Northwest region is good compared with other areas of the United States (Eilers, Rose, and Sullivan, 1994). Principal air masses for the region are derived from the atmosphere over the Pacific Ocean where the air is clean and moist. Occurring on a regular basis, wind-driven mixing through the Strait of Juan de Fuca effectively disperses air pollution (Puget Sound Clean Air Agency, 2003). Consequently, air pollutant loads are relatively low. However, long-range transport of pollution from Asia may become a growing concern as development occurs in that region.

Sources of air pollutants on the islands are few, predominately from occasional outdoor burning, wood burning stoves, and vehicle emissions. Only two industrial sources of air contaminants in the county have been listed in the state emission inventory. These sources are the Friday Harbor Incinerator and Friday Harbor Sand and Gravel, both of which are now closed (Garland, 1996). There are several large industrial sources in the adjacent counties including petroleum refineries in Bellingham and Anacortes, an aluminum smelter in Bellingham, and a large pulp mill in Port Townsend. Air quality is generally good with nearby particle monitoring stations at Oak Harbor, Anacortes, and Mount Vernon showing no danger of exceeding ambient air quality standards (Franzmann, 2003).

However, the islands are located in the Puget Sound/Georgia Basin airshed subject to the movement of air pollutants between the large urban/industrial areas of Seattle/Tacoma/Everett and Vancouver/Abbotsford/Bellingham, as well as, the busy Interstate 5 corridor and increasing marine vessel traffic. Recent international efforts to characterize cross-boundary airflow indicate that ozone pollution from both countries may converge around the northern San Juan Islands creating a heretofore unknown hotspot. Additional modeling and/or monitoring will be needed to verify these preliminary results. Concern is also growing over increasing marine vessel traffic and associated emissions in the Georgia Basin and Puget Sound airshed (Environment Canada, 2004).

The park has been designated a Class II area under the Clean Air Act. The 1977 Clean Air Act amendments designated all national parks over 6,000 acres and wilderness areas over 5,000 acres as Class I. This classification affords the most protection from new major emitting sources. All other areas that meet the National Ambient Air Quality Standards are Class II areas for purposes of controlling increases in air pollution under the 1977 Clean Air Act. For a brief period in 2001-2003, the park operated a visibility camera at American Camp as part of the network inventory and monitoring program. This camera took three pictures daily of a fixed vista of the Olympic Mountains to the southwest in order to establish baseline visibility data and to detect visible air pollution that may travel through the Strait of Juan de Fuca (Air Resource Specialists, Inc., 2001). The photos have not been analyzed, as funding ran out and the camera was removed.

Water Resources

Hydrology

Runoff, evapotranspiration, and groundwater recharge are three key components of the region's hydrologic cycle, and they affect the yield and distribution of water within a watershed. Runoff is water that flows from the land surface to a water body with no filtering process, and it can carry pollutants, loose soil, and debris into the body of water in which it drains. It is affected by topography, vegetation, soil type and depth, and precipitation. The runoff on San Juan Island is proportionately high due to exposed bedrock and impervious soil layers. During the winter months, runoff is more prevalent due to heavy rainfall and saturated soils. Of the average annual rainfall, anywhere from 11 to 45 percent results as runoff (Heater et al., 2000). This figure is dependent upon variations in precipitation and the effect of evapotranspiration. (See Figure 17: English Camp: Hydrology and Figure 18: American Camp: Hydrology.)

Accounting for the greatest annual water loss, evapotranspiration, or evaporation and transpiration, is the cycling of water to the atmosphere from surface water, soils, and plant surfaces. The amount of water lost to evapotranspiration varies with land cover and relief. An estimated 45 to 49 percent of the annual average rainfall is lost to evapotranspiration (Heater et al., 2000). However, depending on the characteristics of the watershed, the loss can be much greater. On the island, evapotranspiration is greater than precipitation during the summer months because rainfall is minimal and plants are actively respiring.

When the final melting of the glaciers occurred, all fractures, cracks, and loose glacial outwash materials underlying the region were supercharged with freshwater. Today, groundwater recharge is supplied in the form of local rainfall. Water available for groundwater recharge is the remainder of the total annual precipitation that is not lost to runoff or evapotranspiration. Recharge almost exclusively occurs from October through April when precipitation is high and evapotranspiration is low. Because geology, soil type, topography and vegetation influence the rate and amount of water infiltration, recharge rate is site specific (Orr et al., 2003). Wetlands increase infiltration by providing a water storage site. The water is filtered as it slowly seeps into the aquifer. Recharge for San Juan County is estimated at approximately 1.99 inches and 6 percent of total rainfall (San Juan County, Water Resource Management Plan, 2004). American Camp has been identified as an area of significant recharge (Klinger et.al., 2006).

Groundwater

In the region, fresh groundwater occurs as a lens floating atop the denser saltwater in two major aquifer types (Johns, 1997). Fractured bedrock aquifers provide little filtration and water yield is typically low. Glacial outwash aquifers can provide better filtration because the water occurs in the spaces between loose sand and gravel. The yield from these aquifers is generally greater than fractured bedrock, but they tend to be more susceptible to saltwater intrusion. Salt water intrusion occurs when fresh water is removed from an aquifer faster than it is replenished (Flora and Sharrow, 1992). Given the complex geology underlying the island, it is difficult to determine the amount of water available. Shortages often occur during summer months when rainfall is minimal and visitation is at a peak.

Groundwater is the only sizable source of fresh water in the park. It supplies domestic needs, contributes to the park's wetlands and springs, and is necessary for wildlife habitat and proper ecological function. Both aquifer types occur at American Camp, but only one well is in operation drawing from a fractured bedrock aquifer. Located on the western boundary of the unit, this well supplies the needs of the temporary visitor center. At English Camp, groundwater occurs in unconsolidated beach deposits, which are highly susceptible to saltwater intrusion, and in fractured bedrock aquifers. Water is drawn from bedrock aquifers by means of two wells with low yields at this unit. This water supplies the maintenance facility, the Volunteers in the Park (VIP) trailer pads, the Oregon Museum of Science and Industry (OMSI) summer camp site, and a drinking fountain in the parking lot. Low yielding wells (one-quarter to a few gallons per minute) are indicative of the water supply at English Camp (Werrell, 1994).

Water Uses and Rights

Maintaining a balance between the domestic, biological, and physical water supply needs is a goal at the park. In order to properly meet each of these requirements, the park must balance three main water rights issues; water rights for administrative purposes, water rights for the protection of park resources, and responding to requests for the exportation of water to adjacent developments from wells within the park (Flora and Sharrow, 1992).

English Camp: Hydrology

San Juan Island National Historical Park GMP/EIS

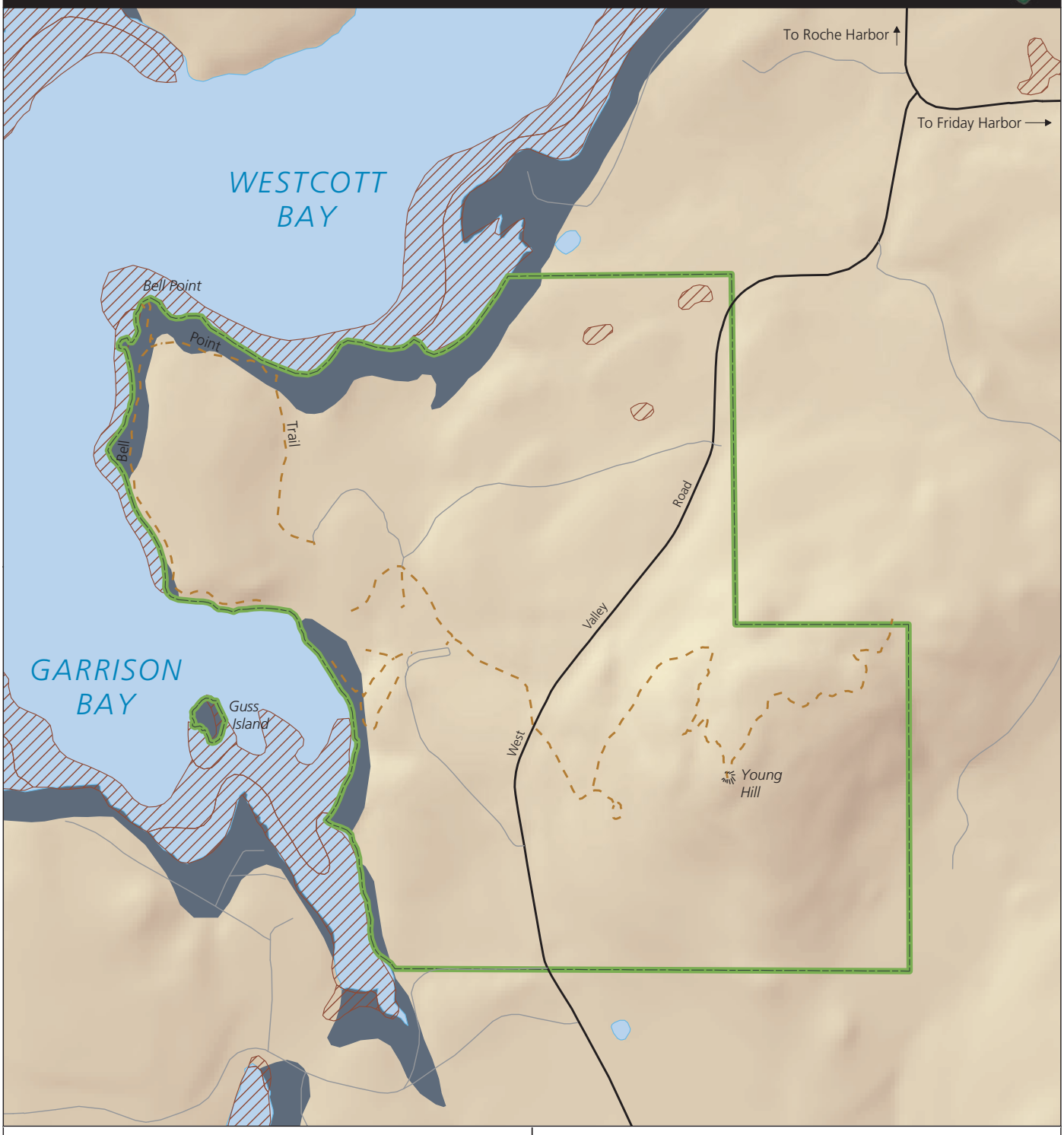


Figure 17

Produced by: National Park Service
PWRO-Seattle GIS Group

Date Created: February 28, 2007

Data Sources: FEMA - floodplains
NPS - lakes, park boundary, roads, shoreline, trails
NWI - wetlands
USGS - shaded relief

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American Camp: Hydrology

San Juan Island National Historical Park GMP/EIS



100-Year Floodplain
Wetland
Park Boundary
Primary Road
Secondary Road
Trail

0 0.25 0.5
Miles

N

Figure 18

Produced by: National Park Service, PWRO-Seattle GIS Group

Date Created: February 28, 2007

Data Sources: FEMA - floodplains
NPS - lakes, park boundary, roads, shoreline, trails
NWI - wetlands
USGS - shaded relief

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Local agreements recognize both units as separate water utilities, providing the NPS authority to review and accept or reject any action on park boundaries that may affect the water resources within the park (National Park Service, San Juan Island National Historical Park, Statement for Management, 1997). In accordance with NPS policy, the park has consistently denied requests from adjacent developments to access water from within park boundaries due to the possibilities of exhaustion of park freshwater supplies and detrimental effects on water-dependent resources. In addition, a shared water system is generally in conflict with NPS policy and laws (Johns, 1997). Water rights and supply issues vary between the two units.

At American Camp, with below average annual rainfall and increasing development adjacent to park boundaries, there is a great concern for water quality and availability. The well supplying water to the visitor center maintains a certified water right to pump 3.5 gallons per minute or 5,000 gallons per day. This supply is sufficient for current needs, but the water tests high in total suspended solids and chloride rendering it undesirable as drinking water. It is located within close proximity to several private wells, and all of them are situated within one-half mile of the ocean (Johns 1997). If all wells are in use simultaneously, the potential for salt water intrusion is high.

Another concern at American Camp is aquifer drawdown as a result of adjacent developments withdrawing groundwater from a glacial drift aquifer that extends across the boundary of the park. If occurring, this drawdown may have an impact on the unit's water quality and water-dependent resources including wetlands, seeps, and the three marine lagoons along Griffin Bay. As stated previously, it is difficult to determine groundwater availability given the complex regional geology. Most of the recharge area for this aquifer also lies within the park boundary. Jakle's and Third lagoons are located just north of the aquifer's perimeter. The hypothesis that the aquifer discharges freshwater into the lagoons has not been thoroughly researched, therefore, quantity and timing of discharge are unknown (Johns, 1997). No certified water rights are associated with the lagoons or wetlands, as it is uncommon for the Department of Ecology (DOE) to issue a water right for an *in situ* use without some kind of 'control' of the water (Johns, 1997).

There is little documentation of the water rights associated with English Camp where two wells and a cistern are used to supply fresh water to the unit. The cistern collects water that is utilized for watering the formal garden. In 2000, a well was drilled to supply the needs of the maintenance facility including a low-water washing machine, two sinks, and one toilet. The water is not potable. This well replaced two low yielding wells that were constructed by the previous landowner on private property just east of the maintenance facility. A second well supplies water to the drinking fountain in the parking lot, two VIP trailer pads, and the OMSI summer campsite. It appears that both wells meet the exemption conditions set forth by the DOE; therefore, obtaining a certified water right is not required. Documentation of beneficial use establishes the priority of an exempt well. Exempt rights receive the same protection as certified rights. However, the need to protect the right may be unknown because the DOE does not maintain an official record of exempt rights. Ensuring the proper protection of the water supply is essential due to low yielding wells coupled with increasing subdivision and development taking place on the adjacent shorelines.

Surface Water and Wetlands

While no large bodies of fresh surface water occur within the park, significant wetland areas are present at both units. These wetlands support wildlife populations, and serve as key water filters and storage sites. Many are only small seeps and springs, but a variety of small mammals, reptiles, amphibians, and birds have been observed in and around these wetland sites (Holmes, 1998). Fresh water wetlands are critically important for wildlife on an island with very few fresh surface water features.

In 1998, the wetlands of the park were inventoried and mapped. A total of 35 wetland areas comprising 91.9 acres (5 percent of total park area) were identified (Holmes, 1998). At English Camp, nine wetlands were documented. Several of the sites have been invaded by non-wetland plants, presumably, due to the drought conditions in the early 1990s (Holmes, 1998).

Twenty-six wetlands are scattered throughout the American Camp unit. Many are small seeps and springs, but larger wetland sites occur on the northern side of Mount Finlayson. Located near the end of Pickett's Lane on South Beach is the site of an historic spring that played a role in the siting of the first American Camp.

The three temperate marine lagoons (First, Jakle's, and Third lagoons) located along the shore of Griffin Bay are also designated as wetland areas. Because they are rare to the Pacific Northwest coast, these features

are valuable ecological resources (Flora and Sharrow, 1992). Jakle's Lagoon, the largest body of surface water in the park, has been designated as an Environmental Study Area, and the University of Washington Friday Harbor Labs has conducted ecological research of marine life at this location (Flora and Sharrow, 1992). Studies show that regular circulation occurs with the bay, but salinity in the lagoon is lower than salinity of the seawater, possibly indicating a groundwater inflow from the aquifer underlying Mount Finlayson.

Water Quality

Overall, water quality in the region of the park is relatively high. Marine waters surrounding the islands are typically of high water quality and are rated class AA (Garland, 1996). Located at the intersection of the Strait of Juan de Fuca and the Strait of Georgia, these waters are well flushed by the strong tidal currents. However, little mixing occurs with enclosed inlets and bays making them susceptible to bacterial and nutrient loading particularly when anthropogenic inputs are a factor. Westcott and Garrison bays are protected bays that are poorly flushed. In 2000, the Washington Department of Ecology and the San Juan County Department of Health and Community Services conducted a water quality survey including a site located in Garrison Bay off the shore of the parade ground at English Camp. The site met Class AA standards for fecal coliform and pH, and Class A standards for temperature and dissolved oxygen (Wiseman, 2000). The Washington DNR recently initiated water quality studies in Garrison and Westcott bays in an attempt to determine possible causes for loss of eelgrass in the area. Data are not yet available

By far, saltwater intrusion is the primary source of groundwater quality degradation in this region, and high chloride levels are used as an indicator. Recovery to a suitable water source is a slow process once seawater has contaminated an aquifer. Acting to prevent saltwater intrusion is of utmost concern for the park, particularly at American Camp, in order to maintain an adequate fresh water supply.

Little work has been conducted regarding surface water quality in the park. Salinity and conductivity were recorded during the 1998 wetland inventory, but no other water quality parameters were tested. Even though relatively few surface water sources occur in the park, up to date surface water quality data would be very useful information for determining resource management decisions.

Watersheds

English Camp is located in the approximate center of the 3,609-acre Westcott-Garrison Bay watershed (Larkin, 1999). A series of intermittent lakes, wetlands, and streams drain into Garrison Bay while two significant creeks and one, small drainage flow into Westcott Bay. This watershed was ranked third in importance in the San Juan County Watershed Ranking Report of 1988. It was given priority because the calm, protected waters of these bays exhibit unique intertidal and marine habitats. The moderate to low wave action has allowed for the formation of extensive mudflats. These conditions are required for the growth of large eelgrass beds, which are important habitat for forage fish. The bays are also very productive sites for shellfish, and they are the primary shellfish harvest location on the island. Additionally, they are popular locations for boaters, and overnight mooring occurs here often.

Land and water use can impact the quality of water in the watershed. Forested lands, which help reduce runoff, dominate the watershed with small agricultural plots scattered throughout. Primarily, these 10 to 20 acre farms raise livestock, and the animals have direct access to streams and adjacent riparian land. The average lot along the shoreline of Westcott Bay and the western edge of Garrison Bay is one-half to two acres in size, and the development potential has nearly been reached (Larkin, 1999 and Thompson, 2007). Several failing septic systems have been identified in the watershed, and a program has been established to repair those (Heater et al., 2000).

With regards to water-based activities, there are no mooring buoys in the bays, but the calm waters are an ideal location for boating gatherings. Boaters must drop anchor, which disturbs the marine floor, and the nearest holding tank pump-out facility is located at the Roche Harbor Marina. Because the shoreline directly affects the estuarine region of these water bodies, higher density housing and increased activity pose significant influences on the ecosystems associated with the bays.

In 1997 and 1998, water quality testing of sites within the watershed indicate that runoff events are the likely cause of bacterial pollution entering creeks and the bays (Heater et al., 2000). Areas with little vegetative diversity, primarily occurring on agricultural lands, as well as the upper reaches of the watershed have a high potential for erosion and runoff. However, wetlands occur throughout the watershed where the

soil is inadequately drained, and they help mitigate the effects of runoff by collecting and filtering water.

The land and water resources protected at English Camp are important for the quality of water and habitat found in this watershed. Wetlands and saltwater marshes are preserved, and development will not occur along the shoreline. However, the heavy boating associated with the bays is, in part, related to park usage. Another form of protection within the capability of the park is to provide information regarding the value of the bays and water quality in the watershed.

A watershed has not been defined at American Camp. However, water tends to flow from higher elevations toward the coastline. This premise can be applied to the slopes of Mount Finlayson. Problems associated with runoff are not as great at American Camp for two main reasons: the slopes of Mount Finlayson are not as steep as Young Hill, and the geology and soils occurring along the southern portion of the island allow for greater water infiltration. However, runoff escalates due to the presence of invasive species. (Refer to "Invasive Species" section under "Vegetation".)

Marine Water

While the marine water and associated ecosystems are generally of high quality in the San Juans, many groups, organizations, and government agencies, including the park, are proactively working toward studying, preserving and restoring the resources of the marine waters surrounding the islands. In order to enhance the management of shoreline resources, the park is working toward defining tidal ownership of the 6.67 miles of coast along the borders of the park.

Jurisdiction is patchy along the coastlines at both camps, with tideland ownership sometimes being concurrent with adjacent uplands, but more often retained by the state and under the jurisdiction of the Washington Department of Natural Resources. The park has recently obtained records that document where tidelands were sold to the park and where they were retained by the state. From the cliffs west of Alaska Packer's Rock to east of the restrooms at South Beach, the park's jurisdiction extends to the extreme low tide line. East of that to the eastern boundary, jurisdiction extends to the mean high tide line. The jurisdictional line meanders from Grandma's Cove to the western boundary of the park and along a short stretch of shoreline north of Jakle's Lagoon. The park's authority extends to the mean high tide line along Fourth of July Beach from the northwestern boundary to west of First Lagoon. At English Camp, the park owns tidelands from the northern edge of the parade ground south to the park boundary. The remainder are owned by the state. An old oyster bed lease off Belle Point recently reverted to state ownership.

Marine Protected Areas

Executive Order 13158 of May 2006 was passed to help protect the significant natural and cultural resources within the marine environment by strengthening and expanding the Nation's system of marine protected areas (MPAs). Marine protected areas are defined as "any area of the marine environment that has been reserved by Federal, State, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein." The purpose of this order "is to, consistent with domestic and international law: (a) strengthen the management, protection, and conservation of existing marine protected areas and establish new or expanded MPAs; (b) develop a scientifically based, comprehensive national system of MPAs representing diverse U.S. marine ecosystems, and the Nation's natural and cultural resources; and (c) avoid causing harm to MPAs through federally conducted, approved, or funded activities."

In the San Juan Islands, the Transborder MPA Initiative is a joint undertaking by the Islands Trust, San Juan County, and the Sound and Straits Coalition of nongovernmental organizations, whose purpose is to generate local, citizen-led efforts to increase public awareness of the state of the marine resources and to take action to protect and sustain them by designating a network of marine protected areas in the Orca Pass International Stewardship Area.

The Orca Pass International Stewardship area encompasses the entire boundary area between San Juan County and the Canadian Gulf Islands. The area is rich in natural scenery, marine biodiversity, environmentally sensitive habitats, and places of cultural and spiritual importance to Coast Salish tribes and First Nations on both sides of the border. The Islands Trust and San Juan County have little or no authority to influence fishery harvests, control international shipping, affect recreational boating activities, or control industrial pollution in these areas. However, these entities work to engage communities of people on the islands that live closely with the marine environment and care deeply about the long-term effects of human activities on these critically important resources.

The Orca Pass Marine Protected Area Initiative promotes the creation of an integrated network of MPAs, with multiple areas designated on both sides of the border. These MPAs can protect and help to restore a range of habitat types. A network can accomplish much more than one or two small, isolated MPAs. This connectivity is increasingly important in the transboundary waters, where international vessel traffic of all kinds is among many competing human uses. Given the role of treaty tribes as co-managers of marine organisms and habitats, and the limited authority of local governments in the marine environment, the designation of MPAs by the Islands Trust and San Juan County requires voluntary restrictions and emphasizes public education and awareness about marine resources and their need for protection (Marine Resource Committee, 2007).

Additional Marine Stewardship in the Islands

In January 2004, the San Juan Board of County Commissioners designated the entire county as a Marine Stewardship Area in an effort to protect the rich marine diversity of the San Juan archipelago. This designation set the course for the Marine Resources Committee (MRC) to identify key action steps toward a healthier and more sustainable island marine ecosystem for the natural resources and the benefit of the people who live, work and recreate in the San Juan Islands. The MRC prepared and finalized the San Juan County Marine Stewardship Area Plan in July 2007, identifying education, community stewardship, management and planning, coordination, and research strategies in order to protect and restore the entire marine system in the San Juan Islands.

The Islands Trust and San Juan County have also developed a Marine Management Area Workbook. This Workbook is designed to help local island communities and others to identify sites for marine stewardship and establish Marine Management Areas in effective collaboration with other jurisdictions, citizen groups, and island communities. The workbook is available from the Islands Trust, the San Juan County Planning Department, and on the internet (Marine Resource Committee, 2007).

San Juan County Marine Resources Committee

The San Juan County Marine Resources Committee (MRC) is a citizen-based advisory committee dedicated to the protection and restoration of marine resources in the San Juan Islands. The San Juan MRC was created to provide a citizen-based forum to advise the Board of County Commissioners on marine issues. First established in 1996, MRC serves to represent all members of the local community, including commercial users, scientists, environmentalists, fishers, and whale watch operators.

The MRC receives funding and support through the Northwest Straits Commission (NWSC) and San Juan County. Marine Resource Committee members are selected by the San Juan County Council and represent local government, tribal government, and the scientific, economic, recreational and conservation communities.

The goals of the San Juan County Marine Resources Committee are: to protect and restore nearshore, estuarine and rocky reef habitats; to support salmon and bottomfish recovery by establishing marine protected areas; and to promote public awareness about marine resource issues.

The San Juan MRC was created to provide a citizen-based forum to advise the Board of County Commissioners on marine issues. First established in 1996, the MRC serves to represent all members of the local community, including commercial users, scientists, environmentalists, fishers, and whale watch operators (San Juan County Marine Resources Committee, 2007).

Marine Managers Workshops

San Juan Island National Historical Park has participated in three marine managers' workshops sponsored by the Northwest Straits Commission and the MRC in recent years. This forum provides an opportunity for resource managers to collaborate on marine and tideland protection in a variety of ways, including the county's Marine Stewardship Initiative and an Aquatic Reserve nomination currently being drafted.

Northwest Straits Commission

The Northwest Straits Commission provides guidance and offers resources to the MRCs, with the goal of mobilizing science to focus on key priorities and coordinating regional priorities for the ecosystem. As with the MRCs, the Commission uses performance benchmarks developed by the citizens commission as measurable goals.

The Commission's principal work is to: provide focus on the overall health of the Northwest Straits marine ecosystem; develop and propose scientifically sound recommendations to existing governmental

authorities; and to direct and coordinate scientific, technical and financial support to the marine resources committees.

The Commission serves as a "board of directors" for the Northwest Straits Marine Conservation Initiative. Its members represent each of the marine resources committees, tribes, the Puget Sound Action Team and additional appointments by the Governor. Financial administration is provided by the Department of Ecology through the Padilla Bay National Estuarine Research Reserve (Northwest Straits Commission, 2007).

Puget Sound Partnership

The Puget Sound Partnership is a state agency established in the Washington State Legislature in 2007. The Partnership works collaboratively with all levels of government, tribes, businesses, and citizen groups in its charge to lead and coordinate efforts to protect and restore Puget Sound by 2020.

The Partnership is governed by a Leadership Council of independent citizens from around Puget Sound and is advised by an Ecosystem Coordination Board and a Science Panel. An Executive Director leads day-to-day operations and employs a professional staff including the former staff of the Puget Sound Action Team. As of January 2008, the regional salmon recovery functions performed by Shared Strategy for Puget Sound become the responsibility of the Partnership.

The Partnership is working with a vast array of people, groups, businesses and governments to create a long-term plan called the "2020 Action Agenda" by September 2008. The Action Agenda will be informed by an independent Science Panel and it will cover the entire ecosystem affecting Puget Sound. The Action Agenda will identify and assign priorities to actions needed to get to a healthy Puget Sound by 2020, name those responsible for the actions, and identify funding. The Action Agenda will also hold all parties accountable for their actions by tracking progress and reporting the results publicly. In addition, the Partnership will launch an education effort to bring ordinary citizens, businesses and others up to speed on the Sound's health issues and to inspire them to action (Puget Sound Partnership, 2007).

Personal Watercraft Ban

Personal watercrafts (PWC) are also known by the trademark name "Jet Ski." Personal watercraft impacts can include water quality degradation, noise pollution, harassed and injured wildlife, and increased boating accidents. The two-stroke engine often utilized in PWC discharges up to one-third of its fuel, unburned, into the air and water. This engine style also produces hydrocarbons, a primary factor in the formation of smog. Emitting as much pollution over a period of just a few hours as a new car driven for 100,000 miles, many involved in the PWC industry are exploring alternatives to the two-stroke engine (New York State Department of Environmental Conservation, 2000).

In 1996, San Juan County passed an ordinance placing a two-year ban on personal watercraft. The ban was found unconstitutional by the Whatcom County Superior Court in November 1996 because state boat licensing does not distinguish a difference between PWC and other vessels (Weden v. San Juan County [135 Wn.2d 678]). The argument claimed that there was no basis for treating PWC differently than any other boat.

The county appealed and almost two years later the decision was reversed by the Washington State Supreme Court in November 1998, upholding the county's authority to ban PWC use (Coastlines 1999). The state constitution allows counties to pass laws that protect the public health, safety, and general welfare. Because PWCs are detrimental to the health of humans as well as the health of the marine environment, this finding allows counties to differentiate between PWCs and other watercraft even though Washington State boat licensing does not.

Forage Fish Habitat Assessment

Friends of the San Juans (Friends) is a local non-profit organization concerned with the health of Puget Sound. They are participating in the San Juan County Forage Fish Habitat Assessment. This multi-year project has combined federal, state, and county agencies with scientists and citizen volunteers to identify and map forage fish habitat in San Juan County. The project has covered 414 miles of shoreline, identifying 47 known surf smelt and Pacific sand lance spawning locations (Whitman, 2003). Since the inception of the project in 2001, Friends has surveyed over 500 potential spawning sites on 19 islands in the archipelago locating 25 previously unknown spawning beaches (Whitman, 2003). Partners involved in the project include the University of Washington Friday Harbor Labs and the Washington Department of Fish and Wildlife.

Oil Spill Prevention Plan and Preparedness

In the event of an oil or hazardous substance spill, the park is prepared with the proper procedures and protocol listed in the *San Juan Island National Historical Park Oil and Hazardous Substance Spill Plan* (1993). A spill within the park would be reported to the appropriate NPS staff, Washington State Department of Ecology, and the San Juan County Sheriff's office (County Disbatch–911). Either the Island Oil Spill Association (IOSA) or the county Hazardous Materials Incident Command Agency would respond to the incident. Park staff would monitor the activities, keep NPS support staff advised of the situation, and would assist as needed. Currently, two park employees are active members of IOSA.

Generally, if a spill occurs in the marine waters adjacent to the park, the Coast Guard would be informed before the park. They will be responsible for making the appropriate contacts and initiating clean-up. In this event, the park would provide assistance and comply with the procedures set forth by the Coast Guard.

University of Washington Friday Harbor Laboratories

The University of Washington Friday Harbor Laboratories (Labs) are world renowned for their excellence in marine biology and oceanography research and education. The facilities include nine laboratories and over 1,500 acres of biological reserves in the San Juan Islands. The park has partnered with the Labs on several occasions, and the results have produced a greater understanding of the shoreline, intertidal zone, and marine resources associated with the park.

The Whale Museum

The Whale Museum operates a Soundwatch Boater Education Program in order to respond to the pressures of whale watching on the marine environment in the San Juan Islands. The primary focus of the program is to offer education for whale-watching boaters. The program operates a Soundwatch boat that patrols the boundaries of marine protected areas, including national wildlife refuges and bottomfish recovery zones, as well as responding to marine mammal strandings (Marine Mammal Stranding Network). Bird surveys are also conducted as a part of the Soundwatch program (Whale Museum, 2007). The Whale Museum is the most active and visible organization doing marine mammal education in the Puget Sound area. They have played a key role in getting the Southern Resident Orcas listed as endangered. They provide most of the coordination with the Whale Watch Operators Association Northwest and their voluntary guidelines. They are a strong partner with NOAA.

The Washington State University Extension Beach Watchers Program

The Beach Watchers program is a volunteer stewardship program sponsored by Washington State University Extension San Juan County. The program provides marine stewardship training to volunteers in exchange for 100 hours of community service in community education. Beach Watcher volunteers are educated in the physical, biological, and cultural aspects of marine stewardship, and pass on this valuable education to community members and visitors in a variety of venues, as well as assisting with research and data collection. Beach Watcher volunteers also work in cooperation with other local stewardship groups as appropriate (Washington State University Extension, 2007).

Coastal Observation and Seabird Survey Team

The Coastal Observation and Seabird Survey Team (COASST) is a partnership project between the University of Washington and the Olympic Coast National Marine Sanctuary. The project works on long-term bird monitoring programs in collaboration with citizens, natural resource management agencies, and environmental organizations. Surveys are conducted along the Pacific coast of Oregon and Washington, as well as Puget Sound, the Strait of Juan de Fuca, and the San Juan Islands. Citizen volunteers conduct monthly or bi-monthly surveys of marine bird carcasses along the shorelines. This research helps to establish a baseline of normal marine bird mortality, as well as demonstrate when events such as an El Niño event or an oil spill have an effect on the marine environment (COASST, 2007).

Vegetation

Vegetation data mining, which refers to using reference material only, was conducted March 2000 through April 2001. Field surveys were conducted April through September 2001, 2002, 2003, and 2004. In the NPSpecies database, the park has a documented 373 plant species. Out of this total, approximately 121 species are not native. A greater awareness of the plants occurring in the park will improve

the management of native and non-native species (Rochefort, 2007). (See Figure 19: English Camp: Natural Resources and Figure 20: American Camp: Natural Resources.)

Land Cover

A diverse native vegetative cover has many benefits. Animal diversity is directly related to the complexity of the vegetative cover. Vegetation of varying heights and thickness provide a habitat for a wide range of species. In addition, a range in vegetation protects soil from erosion by absorbing the energy associated with rainfall. Runoff is reduced as the vegetation distributes the rainwater to the soil slowly allowing for increased infiltration. Both park units have invasive species threatening the diversity of the native cover.

Prairie is the predominant cover at American Camp spanning nearly half of the unit's acreage from the bluffs along the southern boundary to the south facing slopes of Mount Finlayson. Non-native species have infested the prairie, but patches of native grasses and wildflowers still exist. Red fescue (*Festuca rubra ssp*), Roemer's fescue (*Festuca idahoensis var. roemeri*), many-flowered wood-rush (*luzula multiflora*), great camas (*Camassia leichtlinni*), field chickweed (*Cerastium arvense*), and western buttercup (*Ranunculus occidentalis*) are some of the dominant species (Lambert, 2003). Non-native grasses and invasive species, including Canada thistle *(Cirsium arvense*), bull thistle (*Cirsium vulgare*), and Himalayan blackberry (*Rubus discolor*) are abundant in these areas. These species tend to form monocultures, thus decreasing the biodiversity of the prairie.

On the northern slopes of Mount Finlayson, the dominant species are Douglas-fir (*Pseudotsuga menziesii*) and western hemlock (*Tsuga heterophylla*) with western red cedar (*Thuja plicata*), grand fir (*Abies grandis*), and lodge pole pine (*Pinus contorta*) interspersed. The understory includes evergreen salal (*Gaultheria shallon*) and western sword fern *(Polystichum munitum*).

South-facing slopes are drier, thus, forest species composition is different. Douglas-fir is still dominant, but the shrubby understory is much thinner. Other trees associated with this forest type include big leaf maple (*Acer macrophyllum*), Pacific madrone (*Arbutus menziesii*), and Pacific yew (*Taxus brevifolia*).

Young, dense Douglas-fir stands have become established on the abandoned agricultural fields north of the redoubt and south of the visitor center along the western boundary. Overlapping tree crowns and dense, impenetrable thickets are signs of a weak forest ecosystem. The trees are susceptible to wind throw, insect infestations, fire, and disease.

English Camp is dominated by mature Douglas-fir (*Pseudotsuga menziesi*) mixed with grand fir (*Abies grandis*), big leaf maple (*Acer macrophyllum*), red alder (*Alnus rubra*), Pacific madrone (*Arbutus menziesii*), and a few western red cedars (*Thuja plicata*) and Pacific yews (*Taxus brevifolia*). Immature cedars and other shade tolerant species form a dense understory in some areas while in other areas there is almost no understory. Much of the cover in the southwest region of English Camp is dense, impenetrable Douglas-fir with a closed canopy. The trees vary in age from 20 to 40 years and they are prone to wind throw due to the height of the trees, the shallowness of the rooting zone, and the wet, poorly drained soil (Rolph and Agee, 1993).

A remnant stand of open Garry oak (*Quercus garryana*) woodlands that once stretched from Vancouver Island to southern Oregon dominates the south side of Young Hill. Encroaching shrubs and young Douglas-fir trees have prompted the park to take actions to preserve the open oak woodland. These actions are discussed next under the "Vegetation Restoration Projects" section. The Sandwith orchard is also located on Young Hill. Approximately twenty fruit trees of about five different species date to 19th century varieties. One of the pear varieties is likely the oldest in the national park system. This site is also facing shrubbery encroachment problems, and a management plan is being developed.

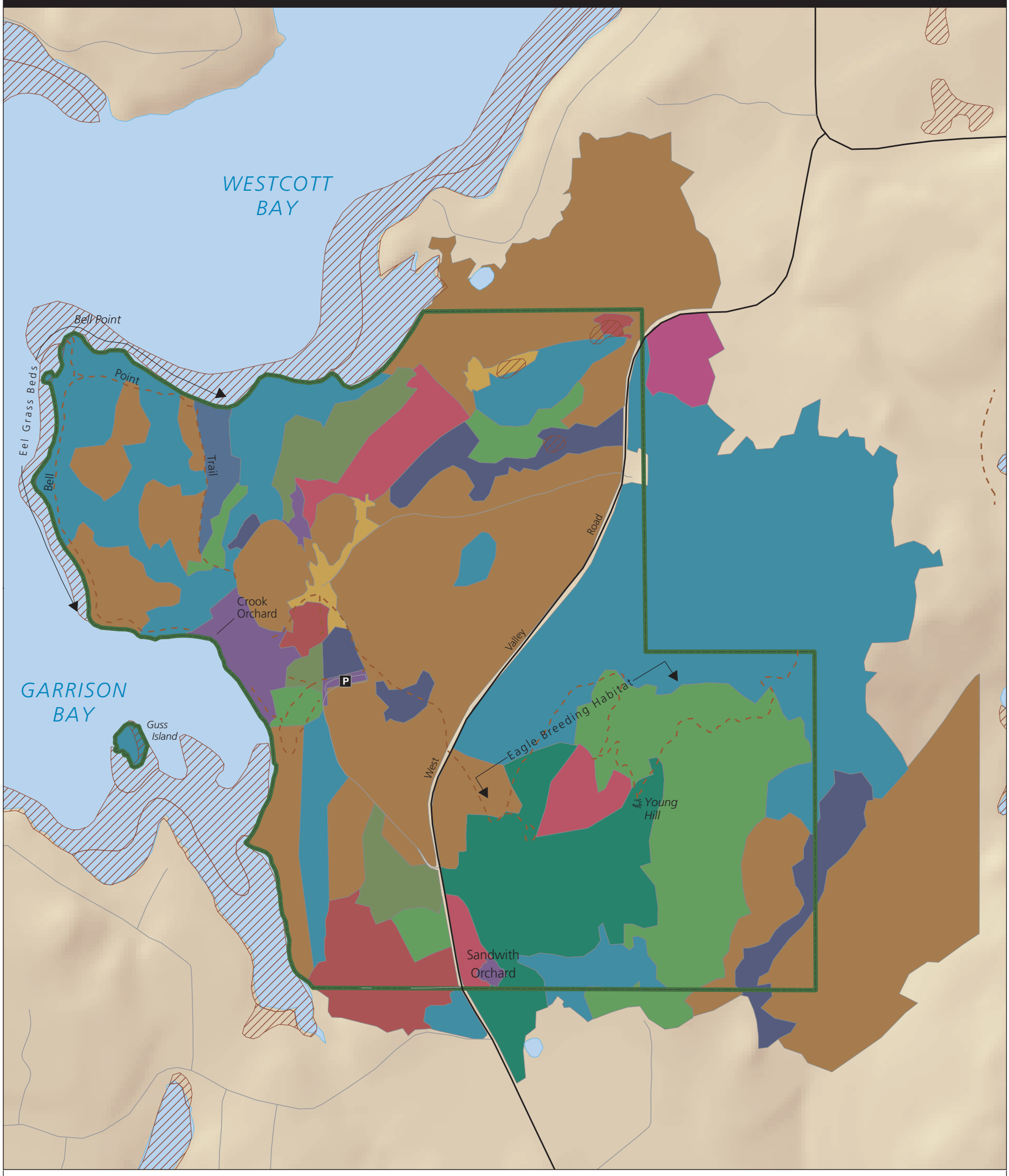
Vegetation Restoration Projects

In the past, vegetation management goals focused on restoring the landscape at both camps to replicate the historic military encampment period. However, current goals call for restoring the native vegetation without compromising the historic landscape, realizing that native vegetation is critical for hydrologic features and ecosystem health. Two major projects fall under this management goal: restoring the grasslands to native vegetation at American Camp, and restoring the health of Garry oak woodlands at English Camp.

Approximately 600 acres of grasslands exist at American Camp (Rolph and Agee, 1993). These areas have been disturbed by fire, plant harvesting, farming, grazing, and invasive plant and animal species. Native people burned south facing slopes to promote the

English Camp: Natural Resources

San Juan Island National Historical Park GMP/EIS



Vegetation - by Community

- Undefined
- Douglas-fir-Pacific madrone/ocean spray-snowberry
- Douglas-fir-bigleaf maple/grass
- Douglas-fir-garry oak-Pacific madrone/grass
- Douglas-fir-grand fir-western hemlock/salal-ocean spray
- Douglas-fir-grand fir-western hemlock/sword fern
- Douglas-fir-lodgepole pine/ocean spray-snowberry
- Douglas-fir/grass
- Mesic Grassland w/ shrubs and tree regeneration
- Mesic Grassland w/ tree regeneration
- Red alder-Douglas-fir/snowberry
- Red alder-cottonwood/salmonberry

- Wetland
- Park Boundary
- Primary Road
- Secondary Road
- Trail

0 500 1,000

Feet

N

Produced by: National Park Service
PWRO-Seattle GIS Group

Date Created: February 28, 2007

Data Sources: NPS - lakes, park boundary, roads, shoreline, trails, vegetation

NWI - wetlands

San Juan County - roads

USGS - shaded relief

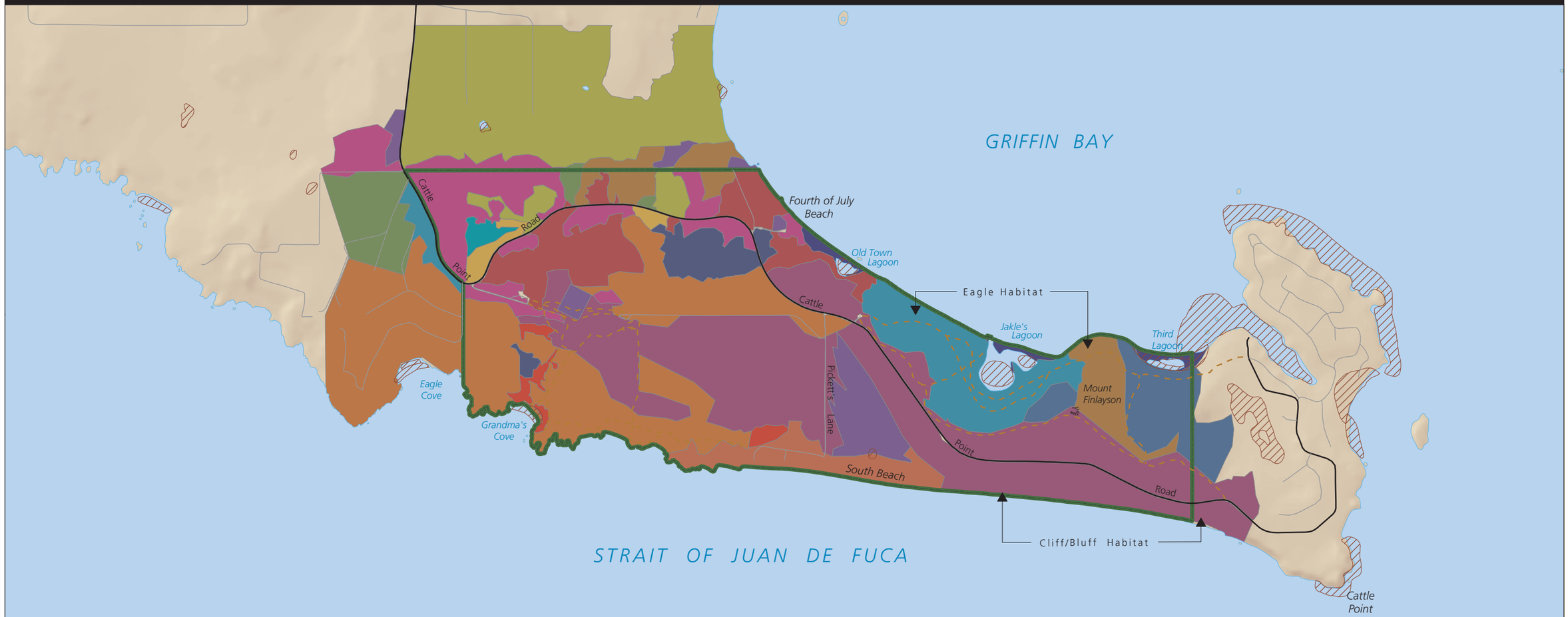
WDW - wildlife zones

i:\gis\arcmapdoc\sajh\gmp\ec_nat_resources_v5.mxd

Figure 19

American Camp: Natural Resources

San Juan Island National Historical Park GMP/EIS



Vegetation - by Community

- Unknown
- Cold-deciduous shrubland
- Distichlis spicata - Salicornia virginica intertidal salt marsh
- Douglas-fir-Pacific madrone/ocean spray-snowberry
- Douglas-fir-grand fir-western hemlock/salal-ocean spray
- Douglas-fir-grand fir-western hemlock/sword fern
- Douglas-fir-lodgepole pine/ocean spray-snowberry
- Mesic Grassland
- Mesic Grassland w/ shrubs
- Mesic Grassland w/ shrubs and tree regeneration
- Mesic Grassland w/ tree regeneration
- Red alder-Douglas-fir/snowberry
- Red alder-cottonwood/salmonberry
- Sparsely vegetated sand dunes
- Sparsely vegetated sand flats
- Xeric Grassland with Shrub Islands
- Wetland
- Park Boundary
- Primary Road
- Secondary Road
- Trail

0 0.25 0.5

Miles

N

Produced by: National Park Service, PWRO-Seattle GIS Group

Date Created: February 28, 2007

Data Sources: NPS - lakes, park boundary, roads, shoreline, trails, vegetation
NWI - wetlands
San Juan County - roads
USGS - shaded relief
WDW - wildlife zones

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Figure 20

Fig 19

Fig 20

growth of camas, a bulb they harvested for food. The natural succession of encroaching trees and shrubs was likely reduced due to this practice (Stein, 2000). When the European settlers arrived, this area was used for livestock grazing as well as agricultural purposes. Because native plant species in this area are not hearty enough to tolerate heavy grazing, the establishment of non-native species occurred. Some of these species were introduced through contamination of seed stock, and others were purposefully planted in order to withstand grazing. Today, non-native and invasive plant species are found in the American Camp grasslands. These species are able to succeed at the expense of plants native to this area. The habits of the European rabbit, an invasive animal species, tend to favor non-native plants. As they burrow and dig out their warrens, the soil is exposed and compacted. Often, native plants are not adapted to establishing quickly at disturbed sites or growing in compacted soil. Non-native species are able to tolerate these conditions so they persist.

Currently, a graduate student is investigating the viability of prairie restoration methods as applied to the Northern Puget Trough Lowland Prairie. Her research will investigate the effectiveness of burning and herbicide applications followed by planting native vegetation with a goal of "effectively minimizing long-term maintenance costs" (Lambert, 2003). Because the European rabbits intensify the problem with invasive plants, management practices would need to include the reduction of both invasive plant and animal species to successfully reestablish native grasses.

The park uses prescribed burning, mechanical and/or chemical control of invasive plants, and planting of native greases and forbs to achieve restoration goals. The discovery of the island marble butterfly at American Camp has created distinct management challenges. (See Special Status Species section.) A conservation agreement was developed by the park and the U.S. Fish and Wildlife Service, with the assistance of Dr. Robert Pyle that will guide management actions relative to the butterfly. It is expected that grassland restoration may increase island marble populations in the long-term by expanding suitable habitat in certain locations (National Park Service and U.S. Fish and Wildlife Service, 2006)



Vegetation restoration area on American Camp prairie. NPS Photo.

Garry oak woodlands, a once thriving and widespread ecosystem in the Puget Sound lowland region, are becoming rare due to urban growth, fire suppression, and the encroachment of Douglas-fir trees. Dense understories of shrubs and young Douglas-fir trees do not allow enough light and space for new oak trees to germinate and grow. Healthy oak woodlands are characterized by scattered trees among a prairie matrix. Native people in this region burned Garry oak woodlands as a hunting aid and to maintain an open prairie (Ericksen, 1993). Garry oaks are fire resistant, but pines, firs and shrubs are not (McGlaughlin, 2001). Thus, fire favors the oaks over conifers and herbaceous vegetation over shrubs.

At English Camp, the park has initiated a prescribed burn regimen to clear out the thick underbrush that is encroaching on the Garry oak woodland located on the southwest side of Young Hill. On July 1, 2003, the park conducted a prescribed burn of 25 acres in the oak woodland. The burn was successful with reports of young oak tree growth. Since then, the park has conducted two other prescribed burns consistent with the park's 2005 Fire Management Plan. Resource management staff from North Cascades National Park is assisting with monitoring post-burn vegetation response. Prescribed fire will continue to be a tool used by the park to restore the Garry oak woodlands.

Wildlife

A wide range of species and biodiversity exist on San Juan Island, but there are fewer species than found on the mainland. The island biogeography theory describes this phenomenon. Smaller more remote islands will exhibit less biodiversity than larger islands closer to the mainland (Schmidt and Olin, 1993). A smaller range of species is sustained when limited space and resources exist. San Juan Island is moderate in size, but it is located approximately 20 miles from

the mainland. Immigration and colonization is limited to those species that are capable of reaching the island.

San Juan Island's land and water ecosystems are varied and unique with the ability to sustain a range of wildlife including large, marine mammals, terrestrial mammals, bats, insects, reptiles, amphibians, and hundreds of bird, fish, and marine invertebrate species. There are no large predators on the island, except for the non-native red fox. Bear, coyotes, and elk inhabited the island prior to Euro-American settlement. These populations were quickly over-hunted and extirpated as the Euro-American population increased.

Mammals

In the spring and summer, it is common to see resident killer whales (*Orcinus orca*), Minke whales (*Balaenoptera acuturostrata*), and Dall's porpoises (*Phocoenoides dalli*) off the shore of South Beach. Orcas congregate off the western and southern shores to feed on salmon migrating to fresh water streams for spawning (Washington Department of Fish and Wildlife, 1999).

There are three distinct forms of killer whales, termed residents, transients, and offshores, in the northeastern Pacific Ocean. Resident killer whales in U.S. waters are distributed from Alaska to California, with four distinct communities known—Southern, Northern, Southern Alaska, and Western Alaska. The Southern Resident distinct population segment (DPS) resides for part of the year in the island waterways of Washington State and British Columbia (Strait of Georgia, Strait of Juan de Fuca and Puget Sound), mainly in the late spring, summer and fall. The Southern Resident DPS consists of three pods, know as J,K, and L pods (National Marine Fisheries Service, 2006). At this time, approximately 90 whales comprise the Southern Resident DPS. The population peaked at 98 whales in 1995 followed by a decline in numbers from 1996 to 2001 (lowest in 2001 with 80 individuals). Whether there will continue to be an increase in population is unknown (Center for Whale Research, 2006). (See Special Status Species section.)

Eighteen native and five non-native terrestrial mammals live, breed, or migrate throughout the park. The most commonly seen species include the Columbia black-tailed deer (*Odocoileus hemionus ssp. Columbianus*), the European rabbit (*Oryctolagus cuniculus*), and the red fox (*Vulpes vulpes*). The latter two species are non-native, and the rabbits have negatively impacted the prairie ecosystem of American Camp. This impact is discussed in the "Invasive Species" section.

Three confirmed species of bats inhabit the park: the yuma bat *(Myotis yumanensis,)* the big brown bat *(Eptesicus fuscus),* and the California myotis bat *(Myotis californicus)*. The bat inventory was updated in 2006 using a variety of techniques at English Camp; however, weather conditions limited the inventory at American Camp (Christopherson, 2006). More than 1,700 yuma bats and big brown bats were counted exiting the Crook House (Christophersen, 2006). However, allowing bats to inhabit the house does not coincide with the preservation and stabilization of this historic building. The park has developed a strategy to relocate the colony into bat boxes, which are human-made fixtures that supply the bats with adequate space and appropriate conditions for breeding and roosting. A total of approximately 514 yuma bats were observed exiting the bat box in 2006, a significant increase from the 136 bats observed exiting the box in a 2005 inventory.

Birds

Approximately 160 species of birds are recorded on the park's species list. While several are assumed to be found in the park, the presence of 93 species has been confirmed. These include a variety of songbirds, shorebirds, seabirds, and waterfowl. Some only breed in the park, others are seasonal residents, and several reside in the park year round. In addition, the San Juan Islands are located along the Pacific Flyway migration route, and the park provides a critical resting stop for several species. Birds of prey including red-tailed hawk (*Buteo jamaicensis*), osprey (*Pandion haliaetus*), and bald eagles (*Haliaeetus leucocephalus*) are commonly observed in the park. A concentration of 40 to 50



Bald eagles tending their young at American Camp. Photo by Russ Illig.

breeding pairs of bald eagles resides in the islands year-round. Washington State has the fourth largest count of eagle pairs in the lower 48 states following Florida, Minnesota, and Wisconsin. Most nesting habitat is located in the San Juan Islands and on the Olympic Peninsula coastline. Two-thirds of all nests in Washington occur on private land (Center for Biodiversity, 2007). Several nests are located in the park, and the eagles utilize the terrestrial and marine habitat for hunting and rearing their young.

Reptiles and Amphibians

Two amphibian and one reptile species have been documented, and an additional four species of each are presumed to be found in the park. The Pacific chorus frog (*Pseudacris regilla*), the red-legged frog (*Rana Aurora*), and the northwestern garter snake (*Thamnophis ordinoides*) were observed during an amphibian study conducted in 2002.

Invertebrates

There are over one million known insect species. Because park funding is limited, a comprehensive insect inventory has not been conducted at the park. However, a butterfly inventory was conducted in 2003. Twenty-five butterfly and four moth species were documented at that time with three additional species confirmed in subsequent surveys. Butterfly monitoring will continue in the park, in part because the island marble butterfly (*Euchloe ausonides insulanus*), a rare species thought to be extinct, was recently found on the island, which has emphasized the importance of pollinators in the grassland ecosystem. (See Special Status Species section below.)

Special Status Species

Species of plants and animals that have undergone serious local, state or national declines and which may be threatened with extinction if they are not protected may be listed by the U.S. Fish and Wildlife Service (USFWS) and State of Washington as threatened, endangered, or rare. Species being studied for declines are often categorized as rare or sensitive.

Under Section 7 of the Endangered Species Act and Council on Environmental Quality regulations requiring analysis of whether proposed actions would violate any federal, state or local law, impacts to species listed or being considered for listing by either the U.S. Fish and Wildlife Service or the Washington Department of Fish and Wildlife are considered.

The following tables identify species listed by the USFWS or National Marine Fisheries Service (NMFS) as threatened, endangered, species of concern, or candidate species; as well as those listed by the Washington Department of Wildlife (WDFW) as rare, threatened, endangered or species of concern. This information was obtained from the USFWS through informal consultation under Section 7 of the Endangered Species Act (ESA) and from the WDFW based on information provided at their website.

As shown in the table below, there are 12 federal or state listed plants. The following table shows federal or state listed wildlife, including one species listed as federally threatened, 5 state sensitive species, and none that are federally proposed candidates for listing or species that are candidates for state listing.

Special Status Plant Species

The following table shows those plants that are considered special status species by state or federal agencies, their current status, their habitat occurrence, and whether the GMP will have an effect on the species. (See definitions at end of table.)

Special Status Plant Species*

Plant Species	Status	Habitat Occurrence	Effect of the Alternatives
Marsh Sandwort *Arenaria paludicola*	FE, SS (potentially extirpated)	See detailed information below.	No effect
Golden Paintbrush *Castilleja levisecta*	FT, SE	See detailed information below.	May affect, not likely to adversely affect (wholly beneficial)
California Buttercup *Ranunculus californicus*	ST	S1 Critically Imperiled. *Ranunculus californicus* grows on bluffs, rocky wooded areas, and in open grasslands along the coast at low elevations. This species generally prefers relatively dry grassland areas, but can be found in moister ecosystems. The plant typically flowers in May and June (Washington Natural Heritage Program, 2004). The taxonomy of *Ranunculus californicus* is complicated by the presence of *Ranunculus occidentalis* and the resulting hybrid swarms. During the field survey undertaken on Mt. Finlayson in the spring of 2005, the NPS identified 33 groups (consisting of 2 to 260 individuals) of California buttercup. The estimated total number of California buttercup plants is 1,839; however, due to the decumbent and multi-branched growth habits of this species, determining individual plants is difficult. Altogether, the plants occupy a total of approximately 0.5 acres within the project area. Within each group, the plants were distributed 'scattered-patchy' to 'continuous,' with no more than 16 feet between individual plants (NPS, 2005). The California buttercup also occurs on the American Camp prairie in approximately the same scattered patchy distribution documented on Mount Finlayson. A comprehensive survey, however, has not been conducted to determine the actual number of groups or individuals (National Park Service, 2005).	No effect

Special Status Plant Species*

Plant Species	Status	Habitat Occurrence	Effect of the Alternatives
Nuttal's Quillwort *Isoetes nuttallii*	SS	GRSS1 Globally secure, critically imperiled. It is found growing in seasonally wet ground or seepages and mud near vernal pools at low to middle elevations (Washington Natural Heritage Program, 2004; National Park Service, 2004).	No effect
Erect Pygmy Weed *Crassula connata*	ST	G5S1S2 Globally secure, but critically imperiled / state imperiled. Its preferred habitat is chaparral and wet to moist vernal pools on coastal bluffs. Five populations of this species are known to be present on private land within San Juan County.	No effect
Sharpfruited Peppergrass *Lepidium oxycarpum*	ST	G4S1 Globally secure, state critically imperiled. It occurs in moist areas in the salt spray zone and in direct sunlight (Washington Natural Heritage Program, 2004).	No effect
Coast Microseris *Microseris bigelovii*	SS	G4SX Globally secure, state extirpated. This species is distributed along the coast from southern Vancouver Island, to California. It is found in grasslands, on old dunes and on glacial deposits, in small crevices, and on rock usually with very little soil, near the high tide line (Washington Natural Heritage Program, 2004).The species was historically present at Cattle Point (Washington Natural Heritage Information System, 2005).	No effect
Annual Sandwort *Minuartia pusilla var. pusilla*	SS	R1 requires more field work to assign rank. It is found in plains, open pine forest, chaparral slopes, and dry rock cliffs at an elevation of 25 to 7900 feet (Washington Natural Heritage Program, 2004).	No effect
Bear's Foot Sanicle *Sanicula arctopoides*	SE	S1 critically imperiled – five or fewer known occurrences in state. It ranges from the southern tip of Vancouver Island to California and grows in coastal bluffs and grassy sand dunes (Washington Natural Heritage Program, 2004).	No effect
Slender Crazyweed *Oxytropis campestris var. gracillis*	SS	It is found in a diverse array of habitats, including prairies and is known from San Juan County (National Park Service, 2004; Washington Natural Heritage Program, 2004).	No effect

Special Status Plant Species*

Plant Species	Status	Habitat Occurrence	Effect of the Alternatives
Macoun's Meadowfoam *Limnanthes macounii*	Canadian rare species	Not known to occur in Washington. It is listed as a rare species in Canada, with populations known from southern Vancouver Island and adjacent islands (National Park Service, 2005). Macoun's meadowfoam is a small annual plant that grows in open areas, close to the Pacific Ocean shoreline. It prefers areas that are seasonally wet in winter (Canadian Biodiversity website, 2005). Suitable habitat for this species is found in the park.	No effect

***Definitions**

Federal

FE = Federally Endangered: **Listed by the U.S. Fish and Wildlife Service as a species that is in danger of extinction throughout all or a significant portion of its range.**

FT = Federally Threatened: **Listed by the U.S. Fish and Wildlife Service as a species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.**

FP = Federal Proposed: **Species for which the USFWS has proposed in the *Federal Register* listing as threatened or endangered.**

FC = Federal Candidate: **Species for which the U.S. Fish and Wildlife Service has sufficient information to propose for listing as threatened or endangered.**

FSC = Federal Species of Concern: **Species whose conservation standing is of concern to the U.S. Fish and Wildlife Service, but for which status information is still needed.**

State

SE = Washington State Endangered: **Any species native to the state of Washington that is seriously threatened with extinction throughout all or a significant portion of its range within the state.**

ST = Washington State Threatened: **Any species native to the state of Washington that is likely to become an endangered species within the foreseeable future throughout a significant portion of its range within the state without cooperative management or removal of threats.**

SC = Washington State Candidate: **Includes species that the department will review for possible listing as state endangered, threatened, or Sensitive. A species will be considered for designation as a state candidate if sufficient evidence suggests that its status may meet the listing criteria defined for state endangered, threatened, or sensitive.**

SS = Washington State Sensitive: **Any species native to the state of Washington that is vulnerable or declining and is likely to become endangered or threatened throughout a significant portion of its range within the state without cooperative management or removal of threats.**

Plants

Marsh Sandwort

Marsh sandwort is an herbaceous perennial that has historically been found in Washington and California. It is an obligate wetland species, growing in or very close to water, found at low elevations. Marsh sandwort flowers from May to August. It can grow in saturated acidic bog soils and sandy substrates with high organic content (Washington Natural Heritage Program, 2004; Natural Resources Conservation Service, 2004).

Although marsh sandwort is classified by the state as potentially extirpated (Washington Natural Heritage Program, 2004), it is on the USFWS species list for San Juan County as potentially occurring in the county. Suitable habitat for this species occurs in the park.

Golden Paintbrush

Golden paintbrush is a rare regional endemic that has been extirpated from many of its historic localities. It is an herbaceous perennial found in open grasslands which prefers full sun. Flowering begins the last week of April and continues into July (U.S. Fish and Wildlife Service, 2000; Washington Natural Heritage Program, 2005). Although historically present at Cattle Point, it is currently thought to be extirpated from the park.

Special Status Wildlife Species

The following table shows those wildlife species that are considered special status species by state or federal agencies, their current status, their habitat occurrence, and whether the GMP will have an effect on the species. (See definitions at end of the table.)



Special Status Wildlife Species

Wildlife Species	Status	Habitat Occurrence	Effect of the Alternatives
Birds			
Bald Eagle *Haliaeetus leucocephalus*	Protected under the U.S. Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act	See detailed information below..	May affect, not likely to adversely affect.
Marbled Murrelet *Brachyramphus marmoratus marmoratus*	FT, SE	See detailed information below..	May affect, not likely to adversely affect
Peregrine Falcon *Falco peregrinus*	FSC, SS	Peregrine falcons nest mainly on cliffs along rivers or near lakes. In the spring and fall, migrant peregrine falcons may be present near the park for short periods.	No effect
Osprey *Pandion haliaetus*	FSC	Osprey nests are located on San Juan Island.	No effect
Black Oystercatcher *Haematopus bachmani*	SS	Black oystercatcher breeding colonies are located in the San Juan Islands.	No effect
Oregon Vesper Sparrow *Pooecetes gramineus affinis*	FSC	Vesper sparrows are migratory birds that inhabit dry prairies and rocky slopes in the San Juan Islands from mid-April to late September. This species was documented at the park during 2002 bird surveys and a stable breeding population resides on San Juan Island.	No effect
Streaked Horned Lark *Eremophila alpestris strigata*	FC, ST or SE	The streaked horned lark has a conspicuously more yellow breast and darker back than any other subspecies of horned larks in the Pacific Northwest. It nests on the ground in sparsely vegetated sites in short-grass dominated habitats (historically prairies) in lowland areas of western Washington and Oregon. It is considered rare and has been extirpated from much of its range	May affect, not likely to adversely affect (wholly beneficial)

Special Status Wildlife Species

Wildlife Species	Status	Habitat Occurrence	Effect of the Alternatives
Streaked Horned Lark *Eremophila alpestris strigata* (continued)		including the Puget Sound region and the San Juan Islands. It was historically a common breeder on the Cattle Point Peninsula. The greatest threat to the streaked horned lark is the loss of habitat, although introduced predators may also have played a role in its decline. For example, the loss of this species from the Cattle Point Peninsula may be attributable more to the introduction of exotic animal species (such as the Eurasian rabbit, Eurasian skylark, feral ferrets, and red foxes) because this area has not undergone a dramatic change in vegetation (U.S. Fish and Wildlife Service, 2003; Washington Department of Fish and Wildlife, 2004; Washington Natural Heritage Program, 2004).	May affect, not likely to adversely affect (wholly beneficial)
Fish			
Bull Trout *Salvelinus confluentus*	FT	See detailed information below..	No effect
Dolly Varden *Salvelinus malma*	FP, SC	Dolly Varden are proposed under the similarity of appearance provision of the Endangered Species Act. They occupy the same habitats and have nearly indistinguishable characteristics from bull trout.	No effect
Puget Sound/Strait of Georgia Coho Salmon *Oncorhynchus kisuytch*	FSC	The evolutionary significant unit (ESU) for this species includes coho salmon from drainages of Puget Sound and Hood Canal, the eastern Olympic Peninsula, and the Straight of Georgia from the eastern side of Vancouver Island and the British Columbia mainland, excluding the Upper Fraser River north of Hope, B.C. (NMFS 2007).	No effect; No waterways sufficient to support spawning coho are present at the park and no development activities are proposed in intertidal areas.
Puget Sound Chinook Salmon *Oncorhynchus tshawytscha*	FT, SC	See detailed information below..	No effect

Special Status Wildlife Species

Wildlife Species	Status	Habitat Occurrence	Effect of the Alternatives
Pacific Lamprey *Lampetra tridentate*	FSC	Pacific lampreys are found in streams from Hokkaido Island, Japan, and along the Pacific Rim, including Alaska, Canada, Washington, Oregon, Idaho, and California to Punta Canoas, Baja California, Mexico. Pacific lampreys are the most widely distributed lamprey species on the west coast of the United States (U.S.). Their distribution includes major river systems such as the Fraser, Columbia, Klamath-Trinity, Eel, and Sacramento-San Joaquin Rivers. Pacific lamprey distribution patterns are similar to that of anadromous salmonids (USFWS 2004).	No effect; this species has not been documented in marine waters adjacent to the park, and the park does not include waterways suitable for supporting the freshwater phase of this species.
River Lamprey *Lampetra ayresi*	FSC	River lampreys are found from just north of Juneau, Alaska, to San Francisco Bay in California most notably in association with large rivers, such as the Fraser, Columbia, Klamath, Eel, and Sacramento Rivers (USFWS 2004).	No effect; this species has not been documented in marine waters adjacent to the park, and the park does not include waterways suitable for supporting the freshwater phase of this species.
Mammals			
Pacific Townsend's Big-eared Bat *Corynorhinus townsendii townsendii*	FSC	Townsend's big-eared bats hibernate in caves and use caves, lava tubes, and abandoned buildings for breeding and roosting sites. Nursery colonies are extremely sensitive to human activity, and sites are readily abandoned if disturbed.	No effect; although the park supports suitable habitat for this species, it has not been documented in the park and none of the proposed actions would affect potential roosting/nursery sites.
Long-eared Myotis *Myotis evotis*	FSC	This species typically prefers forestlands and heavy chaparral. (Sumner and Dixon 1953). Captured in 2005 survey (Christopherson, 2005) – likely first recorded instance of species in park. Could also have been Keen's myotis – only DNA testing would confirm.	No effect; although the park supports suitable habitat for this species, and it likely has been documented at the park, none of the proposed actions would affect potential roosting/nursery sites.
Keen's Myotis *Myotis keenii*	SS	May have been captured in 2005 survey (Christopherson, 2005) – but identity likely long-eared myotis (see above).	No effect; although the park supports suitable habitat for this species, and it may have been documented at the

Special Status Wildlife Species

Wildlife Species	Status	Habitat Occurrence	Effect of the Alternatives
Keen's Myotis *Myotis keenii* (continued)	SS		park, none of the proposed actions would affect potential roosting/nursery sites.
Long-legged Myotis *Myotis volans*	FSC	This bat forages over ponds, streams, open meadows, and forest clearings. Night roosts are usually in caves or mines. Potentially found in Crook house sonar survey, although less likely due to habitat and range distribution (Christopherson, 2002).	No effect
Big Brown Bat *Eptesicus fuscus*	SS	Recorded as primary species present in Crook house maternity colony (Christopherson, 2002). This colony was documented in 2002 to be one of the largest maternity colonies in Washington. Captured in 2005 survey (Christopherson, 2005).	May affect, not likely to adversely affect
Yuma Myotis *Myotis yumanensis*	FSC	Recorded as primary species present in Crook house maternity colony (Christopherson, 2002). This colony was documented in 2002 to be one of the largest maternity colonies in Washington. Captured in 2005 survey (Christopherson, 2005).	May affect, not likely to adversely affect
Western Small-Footed Myotis *Myotis ciliolabrum*	FC	Potentially found in Crook house sonar survey, although less likely due to habitat and range distribution (Christopherson, 2002).	No effect
Southern (Resident) Orca Whale	FE, SE	On November 18, 2005, the Southern Resident killer whales were listed as an endangered species under the federal Endangered Species Act (ESA) (National Oceanic and Atmospheric Administration, 2005). The ESA requires that critical habitat be designated for listed species following public notice and an opportunity for public comment. On November 29, 2006, the final rule to designate critical habitat was published by the National Marine Fisheries Service,	No effect

Special Status Wildlife Species

Wildlife Species	Status	Habitat Occurrence	Effect of the Alternatives
Southern (Resident) Orca Whale (continued)	FE, SE	NOAA, and Commerce, in the Federal Register and became effective December 29, 2006. Three specific areas were designated 1) the Summer Core Area in Haro Strait and waters around the San Juan Islands; 2) Puget Sound; and 3) the Strait of Juan de Fuca, which comprise approximately 2,560 square miles of marine habitat (National Marine Fisheries Service, 2006). The Southern Resident killer whales were also listed endangered in Washington State a year earlier in 2004 (Washington Department of Fish and Wildlife, 2004) and under the Species At Risk Act in Canada.	No effect
Humpback Whale *Megaptera novaeangliae*	FE, SE	Humpback whales migrate to the west coast of North America (from California to southern British Columbia) in summer/fall and have ranges are often relatively close to shore. The humpback whale is unlikely to occur in water close to the project area because waters are too shallow. As shown on the USGS topographic map, waters within 0.5 miles of the project area are no more than 20 feet deep, and most of the waters are less than 10 feet deep.	No effect
Steller Sea Lion *Eumetopias jubatus*	FT, ST	The steller sea lion inhabits the coastal waters of the North Pacific from California, northern Japan and Korea, to the Bering Strait. Steller sea lions may be present in the marine waters adjacent to San Juan Island, although no communal haul-out sites have been identified.	No effect; because the proposed actions are entirely contained on land, it will not affect this species.

Special Status Wildlife Species

Wildlife Species	Status	Habitat Occurrence	Effect of the Alternatives
Harbor Seal *Phoca vitulina*	SS	Harbor seals inhabit coastal and estuarine waters off Baja California, north along the western coasts of the United States, British Columbia, and Southeast Alaska, west through the Gulf of Alaska and Aleutian Islands, and in the Bering Sea north to Cape Newenham and the Pribilof Islands. They haul out on rocks, reefs, beaches, and drifting glacial ice, and feed in marine, estuarine, and occasionally fresh waters (NMFS undated).	No effect; although this species frequents marine waters at and near the park, none of the proposed actions would affect intertidal or upland haul-out areas used by this species.
Reptiles			
Northwestern Pond Turtle *Clemmys marmorata marmorata*	FSC	Although this species has been observed on San Juan Island, it is suspected that such pond turtles were transported to the island by humans, as they are far from other known populations (Hays et al., 1999). The western pond turtle is associated with a variety of permanent and intermittent aquatic habitats found from sea level to approximately 1,375 m (4,500 ft); however, all records for Washington are below 300 m (985 ft) in elevation. Pond turtles are most often associated with rivers and streams; however, in Washington and many areas of Oregon the species is found in ponds and small lakes (Hays et al., 1999).	No effect; this species has not been documented at the park and none of the proposed actions would affect potential habitat for this species.
Amphibians			
Western Toad *Bufo boreas*	FSC	Western Toads are found west of the Rocky Mountains, from Mexico to southern Alaska. They are found in semi-arid and wet forested regions of the Pacific Northwest. They can be found at elevations from sea level to at least 2250 meters (7,425 feet). Western toads use three different types of habitat: breeding habitats,	No effect; this species has not been documented at the park and none of the proposed actions would affect potential habitat for this species.

Special Status Wildlife Species

Wildlife Species	Status	Habitat Occurrence	Effect of the Alternatives
Western Toad *Bufo boreas* (continued)	FSC	terrestrial summer range, and winter hibernation sites. Preferred breeding sites are permanent or temporary water bodies that have shallow sandy bottoms. After breeding, adult Western Toads disperse into terrestrial habitats such as forests and grasslands. They may roam far from standing water, but they prefer damp conditions (BCMWLA, undated).	No effect
Invertebrates			
Island Marble Butterfly *Euchloe ausonides insulanus*	FP	The island marble butterfly was believed extinct for over 90 years, when it was rediscovered on Orcas and San Juan Islands. See detailed information following.	May affect, not likely to adversely affect
Valley Silverspot *Speyeria zerene bremnerii*	FSC, SC	This butterfly has been documented within the park. It is dependent on early blue violet (Viola adunca) which is known to grow in the grasslands east of the redoubt and South Beach. Early blue violet flowers between April and June depending on the elevation (Washington Native Plant Society, 2004).During Pyle's field survey, it was flowering in early May (Pyle, 2004).	No effect
Propertius Duskywing *Erynnis properties*	FSC, SC	The Propertius duskywing is a notable butterfly that occurs within the park (Pyle, 2004). It depends on the preservation of its larval host plant, Garry oak (Quercus garryana), and associated habitat for survival. The Propertius duskywing has been observed nectaring on common vetch (Vicia sativa), manroot (Marah oreganus), and common camas (Camassia quamash), typically in April and May (Pyle, 2004). The park contains Garry oak habitat, as well as common vetch and common camas.	May affect, not likely to adversely affect (wholly beneficial); the park's on-going efforts to enhance Garry oak habitat at English Camp will benefit this species.

Special Status Wildlife Species

Wildlife Species	Status	Habitat Occurrence	Effect of the Alternatives
Moss's Elfin *Incisalia mossii*	Canadian Candidate for Assessment /Washington State Monitor List	The Moss's elfin is a notable butterfly that occurs within the park. It depends on broad-leaved stonecrop (Sedum spathulifolium) which grows on bluffs / rock faces, habitat that occurs on cliff faces or rocky areas in the park.	No effect; although this species has been documented in the park, none of the proposed actions would affect potential habitat for this species.
Taylor's Checkerspot *(Euphydryas editha taylori)*	FSC, ST or SE	According to the USFWS, four of the five known populations of this species are located in the south Puget Sound region. Historically, it was known to be present in 70 locations in British Columbia, Washington and Oregon. It is dependant on native grasslands. This species was not observed by Pyle during surveys undertaken in 2003 (Pyle, 2003) in the Cattle Point area.	May affect, not likely to adversely affect (wholly beneficial); the park's on-going efforts to restore native prairie at American Camp will benefit this species.

Federal

FE = Federally Endangered: **Listed by the U.S. Fish and Wildlife Service as a species that is in danger of extinction throughout all or a significant portion of its range.**

FT = Federally Threatened: **Listed by the U.S. Fish and Wildlife Service as a species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.**

FP = Federal Proposed: **Species for which the USFWS has proposed in the *Federal Register* listing as threatened or endangered.**

FC = Federal Candidate: **Species for which the U.S. Fish and Wildlife Service has sufficient information to propose for listing as threatened or endangered.**

FSC = Federal Species of Concern: **Species whose conservation standing is of concern to the U.S. Fish and Wildlife Service, but for which status information is still needed.**

State

SE = Washington State Endangered: **Any species native to the state of Washington that is seriously threatened with extinction throughout all or a significant portion of its range within the state.**

ST = Washington State Threatened: **Any species native to the state of Washington that is likely to become an endangered species within the foreseeable future throughout a significant portion of its range within the state without cooperative management or removal of threats.**

SC = Washington State Candidate: **Includes species that the department will review for possible listing as state endangered, threatened, or Sensitive. A species will be considered for designation as a state candidate if sufficient evidence suggests that its status may meet the listing criteria defined for state endangered, threatened, or sensitive.**

SS = Washington State Sensitive: **Any species native to the state of Washington that is vulnerable or declining and is likely to become endangered or threatened throughout a significant portion of its range within the state without cooperative management or removal of threats.**

Birds

Northern Bald Eagle

Bald eagles were federally listed as threatened within the lower 48 states in 1967. On June 28, 2007 a decision was made by the Secretary of the Interior to delist the bald eagle off the Endangered Species List. The bald eagle is still protected by the Migratory Bird Treaty Act and the 1940 U.S. Bald and Golden Eagle Protection Act passed by Congress. The Bald and Golden Eagle Protection Act makes it illegal to possess, sell, hunt, or even offer to sell, hunt or possess bald eagles. This includes not only living eagles, but feathers, nests, eggs, or body parts obtained before the act was established. The Act was amended in 1962 to include the golden eagle, a related species (Wisch, 2002).

Unlike the protection awarded to the bald eagle under the Endangered Species Act, protection under the Bald and Golden Eagle Protection Act does not include habitat protection (Mihelich, 2007). The U.S. Fish and Wildlife Service has also issued guidelines extending protection to bald eagle active or inactive nests. Washington State is also one of the few states with a special eagle law that directs state biologists to work with landowners to leave buffer zones around eagle nests. Both the nest tree and the trees that surround and screen the nest must be left standing (Mapes, 2007).

Bald eagles, the only species of sea eagle native to North America, range throughout much of the continent, nesting on both coasts. They can be found from Florida to Baja California in the south and from Newfoundland to the western Aleutian Islands of Alaska in the north. They are aquatic ecosystem birds primarily foraging on fish but occasionally water fowl, seagulls, carrion and prairie species. Wintering sites typically occur in the vicinity of concentrated food resources such as anadromous fish spawning areas or ungulate winter ranges.

Bald eagles use large trees and other elevated perching and roosting sites. They typically nest in remote areas free of disturbance, mostly in large trees near water but occasionally on cliffs. The nesting season lasts about six months and, in the Pacific Northwest, begins in January. Mated pairs are presumed to be long-term but if one of the mates disappears the other will take a new mate. Often returning to the same nest every year, they lay two to three eggs although usually only one survives (USFWS, 1996).

Based on information from the USFWS for the Cattle Point Road EIS, bald eagle wintering concentrations are located at nine locations within the county including southeast San Juan Island. There are also two communal winter night roosts in the county. Wintering bald eagles occur in the county from about October 31 to March 31 (USFWS Species List, 2004).

The USFWS indicates that 122 nesting territories are located in San Juan County, with nesting activities occurring from about January 1 to August 15.The WDFW priority habitat and species database shows six known nest sites near the Cattle Point area. The larger trees on the forest/grassland fringe on top of Mount Finlayson are likely utilized by bald eagles for perching and roosting.

Numerous bald eagle territories, including the Mount Finlayson Bald Eagle Territory and the Cattle Point Bald Eagle Territory, and Old Camp Bald Eagle Territory are within the park. Bald eagle territories and nest sites are also located on Lopez Island.

Marbled Murrelet

The marbled murrelet is a small seabird (Alcid) that ranges from the Aleutian Archipelago in Alaska to central California. They spend most of their lives in the marine environment foraging on small fish and invertebrates in near-shore marine waters and typically only travel inland to nest.

Murrelet nesting sites are generally in large trees of older coniferous forests, within 70 miles of the shore. Usually nesting is solitary although they are commonly found in groups; a single nesting pair may attract another to nearby habitat (U.S. Fish and Wildlife Service, 1996). Marbled murrelets nest from late March to late September laying a single egg in a season. While nesting, murrelets travel to feed at sea daily. For the purposes of consultation under Section 7 of the ESA, the murrelet breeding season is broken into two periods: April 1 through August 5 is the early season, and August 6 through September 15 is the late season, with some chicks hatched and approximately 50 percent fledged as early as August 6.

The murrelet population within Washington, Oregon, and California is thought to be declining at a rate of at least 4 percent per year (USFWS, 1997). Suitable nesting habitat in Washington, Oregon, and California is found in old growth coniferous stands that are multi-layered with moderate to high canopy closure (Hamer and Nelson 1995, Nelson, 1997). Forested stands with old growth remnants are also used. Trees

with suitable nest platforms are typically greater than 200 years of age and at least 20 inches in diameter at breast height although trees in productive ground may develop these characteristics at a earlier age (or faster rate) (Ralph *et al.* 1995). Younger trees may also develop platforms through mistletoe infestation or in reaction to damage from wind or ice.

The waters of the San Juan Islands are used extensively by murrelets and large concentrations of this species have been found in the waters off the San Juan Islands (Farris and Hall, 2002).

In 1999, NPS and WDFW biologists undertook an assessment of suitable nesting habitat for marbled murrelets within San Juan Island National Historical Park. They delineated the most suitable nesting habitat and recommended the best areas for conducting murrelet surveys. The most suitable potential murrelet nesting habitat within the park was identified at the eastern boundary of the park, within American Camp and adjacent to DNR land (Hall, 1999). Surveys were conducted during the 2001 and 2002 breeding seasons, following the Pacific Seabird Group Inland Survey protocol. During the 2001 survey season, one audio detection was recorded at Jakle's Lagoon; however this may have been a bird on the water. No birds were detected during the 2002 survey season. Since murrelets are capable of traveling up to 70 miles between foraging and nesting areas, and because habitat on the San Juan Islands appears to be less ideal than that available elsewhere, it is possible that birds observed foraging in the San Juan Islands could be nesting as far away as the Olympic Peninsula, Vancouver Island, or the northern Cascades (Farris and Hall, 2002). Results of the survey, therefore, suggest that murrelets feed in the waters off the islands, but may not nest on the islands.

Fish

Bull Trout

Bull trout were historically found in most major river systems in the Pacific Northwest and western Canada. Bull trout have been defined as a distinct species (Cavender, 1978). Biologists had previously identified bull trout as Dolly Varden (*Salvelinus malma*), largely because of the external similarity of appearance. Both species occur together in western Washington.

Bull trout are members of the char sub-group of the family Salmonidae and are native to the waters of western North America. They are well adapted to cold water; their range includes the Columbia River and Snake River basins, the Klamath River basin of south-central Oregon and streams in Montana, Idaho and Canada, however their populations are scattered and patchy. Some bull trout complete their entire life cycle in the tributary streams in which they were born (resident) while others may migrate to either a lake (ad fluvial), river (fluvial), or salt water (anadromous).

Dolly Varden

Dolly Varden is proposed for ESA listing under the similarity of appearance provision of the Act. Dolly Varden occupy the same habitats and have nearly indistinguishable characteristics from bull trout. USFWS is opting to use the similarity of appearance provision to minimize the potential risk for take of bull trout by anglers fishing for Dolly Varden. Protection for Dolly Varden under the ESA is extended only in those areas where the Coastal-Puget Sound Distinct Population Segment bull trout overlap with Dolly Varden.

Puget Sound Chinook Salmon

Chinook salmon distribution historically ranged from the Ventura River in California to Point Hope, Alaska in North America, and in northeastern Asia from Hokkaido, Japan to the Anadyr River in Russia (Healey, 1991).The Puget Sound Chinook salmon Ecologically Significant Unit (ESU) was listed as threatened on May 24, 1999 (NMFS, 1999). The ESU includes all naturally spawned populations of Chinook salmon from rivers and streams flowing into Puget Sound. Chinook are likely to be present in the waters offshore in the San Juan Islands.

Invertebrates

Island Marble Butterfly

The island marble is a distinctive subspecies of the large marble butterfly (*Euchloe ausonides*), which generally occurs east of the Cascade Range in Washington and British Columbia. The island marble is in complete genetic isolation and is only known to occur in a few locations on San Juan Islands and nearby Lopez Island. Before its rediscovery on San Juan Island in 1998, the island marble had been believed extinct for 90 years (Xerces Society, 2006). Coastal shoreline and adjacent prairie on San Juan Island are vital habitat for the survival of the only known viable populations of island marble. The range of the island marble extends at least as far east as the DNR-administered Cattle Point Natural Resource Conservation Area (Pyle, 2004). It is one of a suite of

species that depend on the once extensive prairies found in the Puget Trough. These prairies have declined to less than 3 percent of their historic extent (Xerces Society, 2006). Because the park's grasslands serve as important habitat for this extremely rare species, its needs are a high priority consideration as those grasslands are managed and restored.

Surveys undertaken between 1998 and 2004 on the San Juan Islands and surrounding area revealed no new sites for the island marble butterfly. Since 2004, DNR, WDFW, and USFWS, NPS, and the Xerces Society have funded and managed several intensive and extensive investigations on the status of the island marble butterfly. Between 1999 and 2007, approximately 160 sites were surveyed for the butterfly (Miskelly, 2007).

In 2006, a survey was funded by USFWS and managed by DNR to determine whether sites occupied in 2005 remained occupied in 2006. Seventy-two sites were surveyed. The island marble was found at 16 cites on San Juan or Lopez islands, most in one of three areas; the southwest coast of San Juan Island, the San Juan Valley on San Juan Island, and the central valley of Lopez Island. The San Juan Valley site was a new discovery, as was a site on Lopez Island. These sites appear to represent two independent populations of the butterfly on San Juan Island and two independent populations on Lopez Island (Miskelly, 2007).

Lambert studied the population ecology and life history of the island marble over two flight seasons (spring 2004 and 2005). The life cycle of the island marble is closely associated with its host plants (tumble and field mustard and Puget Sound peppergrass). Its lifecycle begins in early April shortly after the emergence of leaves and flowering stalks on the host plants at which time adults begin to emerge from pupae. Based on preliminary results from Lambert's work, adults live for 6-9 days, during which they mate and lay eggs. Eggs hatch in May and by June larvae start searching for pupation sites where they wait until the following spring to emerge as adults.

The host plant on which the eggs are laid provides food for larvae in their early stages of development. Supplementary hosts are also used for food later in development; however, the larvae do not pupate on the host plant but rather in surrounding vegetation within approximately two to five meters of their host/food plant. They attach themselves to the base of senescing (dying) grasses, pupate and enter diapause (a waiting period) until the following spring.

All three of the larval host plants known to be utilized by the island marble, tumble mustard (*Sisymbrium altissimum*) and field mustard (*Brassica campestris*), and Puget Sound peppergrass (*Lepidium virginicum menziesii*) occur in the park (Pyle, 2004; Lambert, 2005). Puget Sound peppergrass grows above mean high tide among driftwood along the American Camp shoreline.

Tumble mustard and field mustard are invasive species which utilize a range of habitats throughout the United States, including grasslands (USDA 2004). According to Pyle (2004), during a site visit in May, all concentrations of island marbles were found in proximity to dense or dispersed stands of field mustard on the prairie. Pyle noted that field mustard was more abundant in May and tumble mustard was more abundant in June.

In addition to its larval food plants, the island marble depends at least ten different plants for nectar. Nectar plants used by the island marble are known to include: yellow sand verbena (*Abronia latifolia*), field chickweed (*Cerastium arvense*), field mustard, tumble mustard, yellow and blue forget-me-not (*Myosotis discolor*), sea rocket (*Cakile maritime, C. edulenta*), seaside fiddleneck (*Amsinkia spectabilis*), yarrow (*Achillea millifolium*), and death camas (*Zygadenus venenosus*) (Pyle 2004).

Lambert's preliminary results showed that island marble butterflies do utilize areas where their host plants are absent although they are more common in areas where host plants are present. According to DNR staff, there are stands of field mustard, which hosted the island marble butterfly in 2005, on DNR property. Pyle (2004) also documented excellent brooding and foraging habitat within American Camp.

Based upon the finding not to list the island marble butterfly as threatened or endangered, the USFWS and the NPS entered into an agreement for conservation of the species and to contribute to its recovery (National Park Service and U.S. Fish and Wildlife Service, 2006). This agreement defines general guidelines for a broad spectrum of activities at American Camp, including management and restoration of the grassland ecosystem there as a natural component of the cultural/historic landscape.

The activities considered in the agreement encompass the following management actions that would affect the grassland ecosystem or butterfly, including the:

- reduction or elimination of non-native European rabbits;
- proposed Cattle Point Road relocation project as well as ongoing maintenance on existing roads;
- removal of creosoted logs from island marble lagoon habitat along the north shore of American Camp, at Griffin Bay;
- issuance of special use permits at American Camp for certain visitor activities;
- continued cultural and natural landscape restoration activities at American Camp (e.g., prescribed burning, mechanical removal of certain invasive plants, herbiciding, and planting of native species); and
- the probable construction of a new visitor center.

Based on the guidelines, the park and USFWS will:

- Work together and participate in the conservation of the island marble butterfly and its habitat through the Conservation Agreement.
- Use appropriate procedures to ensure adherence to all requirements in the Agreement.
- Meet regularly, at least twice each year, to review the proposed actions for any given year. Review and evaluate the noteworthy successes of the year.

The FWS agrees to:

- Coordinate, consult and provide technical assistance to the NPS on actions that are proposed to conserve and minimize threats to the island marble butterfly.
- Review and provide technical assistance to the NPS on management actions that are proposed for the American Camp unit to ensure that actions will not adversely affect the island marble butterfly or its immature life forms.
- Assist with planning actions to be implemented on the ground. Coordinate with NPS on developing monitoring and reporting objectives.
- Assist the NPS with developing criteria that would trigger changes to their management if specific management goals were not being met.

The NPS agrees to implement the following conservation measures in regards to their management actions to minimize effect to island marble butterflies.

- Restore native grassland ecosystem components of the cultural landscape at American Camp through active management, including the use of prescribed fire. The NPS will restore up to 10 acres of grassland per year to create a mosaic of early seral restoration units, for example a matrix of burn/mow/spray/control in different proportions and conditions. Individual management units will be two acres or less in size. National Park Service staff and cooperators will avoid and minimize prescribed fire treatments beyond the prescription boundary for the action. Staff will not construct fire breaks in island marble habitat and will take care not to trample host plants while applying a wet line or preparing the area for prescribed fire.
- Where NPS actions are proposed that would cause soil disturbance, conduct surveys of island marble habitat for the presence of host mustards. Any ground disturbing activities will be positioned where host mustards are absent or sparse. Care will be taken to avoid habitat with dense stands of *Sisymbrium* or *Brassica* and high numbers of marble sightings. This will also apply to marble nectar locations as well as larval host plant incidence.
- For proposed NPS actions in island marble butterfly habitat, survey any larval mustard plants that are present for the presence of eggs and larvae of island marbles and transplant any immatures that are found to host plants outside the activity area. If adults are observed nectaring in the zone, adults should be netted and transplanted to areas away from the ground disturbance.
- For proposed NPS actions in island marble butterfly habitat, herbicide application will occur according to label instructions and appropriate wind conditions to avoid drift to areas outside the treatment area.
- For proposed NPS actions in island marble butterfly habitat, all vegetation treatments (such as mowing, herbiciding, and burning) will occur in the fall, when pupation will have occurred. Actions will not occur in the spring, when most immature forms of the island marble butterfly will be present. Pupation often takes place some distance from the host plant, so some proportion of larvae present will have left the treatment area.

- Develop a monitoring plan to assess how and whether host plants and adult butterflies are responding to the management actions that are being implemented. All management actions should have pre-treatment and post-treatment assessments for island marble butterflies, eggs and larvae.
- Assess the presence of other butterfly species, and inventory their associated host plants, prior to any restoration action. This applies particularly to the Valley Silverspot (*Speyeria zerene bremneri*) and its host violets (*Viola adunca*) among the American Camp grasslands. (See Pyle, 2004 for existing management recommendations regarding several species of concern in the park.)
- Wherever mustard plants are present in sufficient numbers to provide habitat, avoid management actions that would damage them. This will allow for island marble butterfly dispersal and expansion of the core population found at American Camp.

In addition, there are other items agreed to for research and conservation purposes (see Agreement) (National Park Service and U.S. Fish and Wildlife Service, 2006).

Invasive Species

Invasive species are plant and animal species whose introduction into a non-native habitat may lead to economic and/or environmental harm or harm to human health (National Invasive Species Council, 1999). Because invasive species are not generally native to the area in which they are invading, they often have few predators or diseases to control their proliferation. Native populations are negatively impacted by invasive species through a variety of means including predation, competition, introduction of deadly pathogens or parasites, reduction of genetic diversity, and disruption of available nutrients (Ecological Society of America, 2003). Invasive species can also impact the entire ecosystem by altering habitat, species composition, hydrology, and the timing and severity of disturbances (such as fires, floods, and disease).

According to Executive Order 13112 signed in 1999, the National Park Service is responsible for managing invasive species populations. Invasive species management practices include preventing the introduction of such species, detecting and controlling invasive populations, restoring native species and habitat conditions, promoting public education and awareness about the effects of invasive species, and to conduct research and develop technologies to reduce introduction and distribution (National Invasive Species Council, 1999).

Invasive Plants

According to state and county Noxious Weed lists, seven Class B species and six Class C species occur in the park (Washington State and San Juan County Noxious Weed Control Boards, 2003). Additionally, the San Juan County Noxious Weed List names five non-listed species that are particularly invasive in the county. All five occur in the park. At present, thirteen exotic and invasive plant species are managed and monitored. Only seven of these plants are listed as noxious weeds. Both park units have infestations of invasive species. However, the distribution and effects are much greater at American Camp.

During the summers of 2000, 2001, and 2002, the park was able to hire a seasonal employee for the purpose of manually removing and monitoring exotic and invasive plants. The entire prairie at American Camp and small portions of English Camp were systematically covered to manually pull, dig, and cut plants. In subsequent years, various park staff and volunteers have manually removed selected exotics, such as tansy ragwort, teasel, and spotted knapweed from high priority locations. In addition, weed crews from the North Coast and Cascades Network Exotic Plant Management Team (EPMT), Washington Conservation Corps, and a variety of volunteer groups have provided assistance. Since 2003, the EPMT has used broadcast herbicide treatments, including applications of Reedeem (triclopyr + clopyralid), Transline (clopyralid), and Milestone (aminopyralid) to control isolated populations of Canada and Bull thistle at both American and English camps. At the request of the network science advisor and park management, the EPMT began assisting with the preparation of prairie restoration plots in 2005 through broadcast application of Roundup Pro (glyphosate). In 2006, the EPMT expanded chemical control to an 80 acre area in and surrounding the prescribed (Rx) burn units at Young Hill, primarily for the control of Canada thistle, bull thistle and St. Johnswort, in response to the Rx burn activity on the site. Representatives from the EPMT, fuels management, and fire ecology, and the park met in the spring of 2006 to discuss the relationship between fire and invasive plants in the prescribed burn units at Young hill. During the summer of 2006, the EPMT mapped infestations of cheatgrass (*Bromus tectorum*) and rip-gut brome (*Bromus rigidus*) in an effort to lobby for their control at the Young Hill site. This would require late fall/early

spring broadcast application of Plateau (imazapic) (Neel, 2007).

The park also implements Integrated Pest Management strategies to control these species, including the use of herbicides. Manual removal methods can be successful for many species especially when the population is small and contained in one location. It appears that scotch broom (*Cytisus scoparius*) has been eradicated from the park, while tansy ragwort (*Senecio jacobaea*), and small patches of herb Robert (*Geranium robertianum*) and spotted knapweed (*Centaurea maculosa*) have been reduced in size. Removal efforts will need to continue to effectively reduce these populations. Other species are prolific and continue to spread, making management difficult. The species causing the most concern include Canada thistle (*Cirsium arvense*), bull thistle (*Cirsium vulgare*), California poppy (*Eschscholzia californica*) Evergreen (*Rubus lacinatus*) and Himalayan blackberries (*Rubus discolor*). In some locations, dense monocultures are forming as they outcompete all other vegetation.

Invasive Animals

The European rabbit (*Oryctolagus cuniculus*) was introduced onto the island in the late 1800s. By the late 1920s and early 1930s, the population was abundant. Because the rabbits favor open habitat over forest, the main rabbit population on the island occurs in the open grasslands at American Camp (Stevens, 1975). The population crashed in the early 1980's, and researchers postulate that a failure in reproduction and/or survival of offspring was the cause of the decline (Taber, 1982). Over the past twenty years, the population has fluctuated, but has not approached levels seen before the crash. The current population is estimated at just under 1,500 rabbits, down slightly since 2006 (Agee, 2007).

European rabbits are an invasive species that compound the problem with invasive plants in the grasslands at American Camp. In fact, the habits of the European rabbit favor the distribution of invasive plant species. Within its home range, a rabbit will eat almost any available vegetation (Stevens, 1975). Because the native plant species are less adapted to grazing than many of the introduced species, rabbit herbivory tends to favor the non-natives, which gradually changes the composition of the prairie.

In addition, over-grazing may result in exposed soil, a likely place for the establishment of invasive plants. As rabbits colonize an area, they create shelter by digging warrens, which are "complex underground burrow systems" (Stevens, 1975). Numerous large, well-developed warrens exist at American Camp. The digging and excessive use churns and compacts the soil. This affects the soil-water relationship as infiltration is reduced and runoff is increased with soil compaction. It also disrupts the texture of the surface soil by bringing subsurface soil and gravel to the surface (Biggam, 2003). Again, the exposed soil allows for the spread of invasive plants. Thistles and blackberry patches provide rabbits with protection from predators, and rabbits eat thistles near the end of summer when the grasses are dry. Together, these invasive plant and animal species maintain a mutually beneficial relationship that is negatively impacting the native prairie ecosystem at American Camp.

Another invasive species that is of concern to the park is the European green crab (*Carcinus maenas*). From 2000 to 2002, park staff monitored the intertidal zone of Griffin Bay and Garrison Bay with no detections of this species. However, green crabs are present in Willapa Bay and Grays Harbor on the coast of Washington and on Vancouver Island, British Columbia (Washington State Department of Fish and Wildlife, 2000). A native of Europe, the green crab likely arrived in ship ballast or in seaweed used as packing material for bait. This species is an aggressive predator that feeds on a variety of organisms including bivalve mollusks, polychaetes, and small crustaceans (Washington State Department of Fish and Wildlife, 2000). It disrupts and negatively impacts the ecosystem by outcompeting the Dungeness crab (*Cancer magister*) and other native crab species and by heavily feeding on clams and oysters. Additionally, it is a host to a parasitic worm that may affect the health of local shore birds.

Habitat

Marine Habitat

Because a variety of ecosystems are represented, the marine habitat in San Juan County is unique and species rich. Intertidal habitats include sandy beaches, rocky shores, and protected bays. Physical characteristics influencing the shore such as wind, waves, currents, tidal fluctuations, and beach composition (mud, gravel, sand, rock, and clay) are factors that determine the organisms inhabiting the intertidal zone. Biological components, including predation and competition, also influence species composition (Kozloff, 1993).

Located at American Camp, South Beach is composed of sand and gravel, and it is exposed to the open wind and waves of Haro Strait and the Strait of Juan de Fuca. Sandy to gravelly beaches such as this offer little intertidal habitat because no protection is provided from the direct exposure to high wind and wave action. Longshore currents actively move sediment on sandy beaches. Thus, the intertidal zone is in a constant state of flux. However, hearty species such as the razor clam (*Siliqua patula*), and a variety of worms and crustaceans are found on wave swept beaches (Kozloff, 1993). The wetlands and salt marshes lining the shore adjacent to South Beach are critical for nesting and breeding shorebirds.

East of South Beach, the shore is comprised of small pocket beaches divided by rocky coves and headlands. Exposed to strong wave action during storm events, these rocky shores provide crevices, sills, and tide pools where marine organisms thrive. In fact, many species including bull kelp (*Nereocystis luetkeana*) and purple sea urchin (*Strongylocentrotus purpuratis*) favor a turbulent environment (Kozloff, 1993). Subtidally, the northern abalone (*Haliotis kamtschatkana*) is abundant along this stretch (Washington State Department of Fish and Wildlife maps, 2003). Strong tidal currents associated with the western side of the island regularly deliver nutrient rich waters allowing kelps and seaweeds to flourish. These beds support a variety of marine life, and they are prominent feeding areas for birds.

On the northern shore of American Camp, narrow channels and other islands provide protection for Griffin Bay. The shore is less susceptible to strong wind and wave action. However, longshore currents carry sediments along the shoreline to form accretion beaches or berms, which divide the three marine lagoons (First, Jakle's, and Third lagoons) from the bay (Hanson, 2001). The shoreline has a gentle slope, and the substrate is comprised of mud with sand and gravel. Eelgrass (*Zostera marina*) grows in the lower reaches of the intertidal zone as well as the subtidal zone. The plant's spreading rhizomes and extensive root system form mats that help bind the substratum creating a stable habitat for a wide variety of small animals such as sea urchins and pandalid shrimp (Kozloff, 1993; Washington State Department of Fish and Wildlife maps, 2003). Off shore from Fourth of July Beach, two exposed clusters of rocks provide harbor seals (*Phoca vitulina*) with a place to rest, sleep, give birth, and nurse their young. The rocks are utilized year round as "haul-out" sites, and seasonally as pupping grounds (Washington State Department of Fish and Wildlife maps, 2003).

Along the shores of English Camp, Garrison Bay and Westcott Bay are also categorized as protected bays. Wave action is low to moderate allowing fine sediments to settle and form extensive mudflats where marine vegetation flourishes. As a foundation of the ecosystems associated with these bays, eelgrass (*Zostera marina*) supports a wide range of marine



View of Old Town Lagoon from Mt. Finlayson Trail. NPS Photo.

organisms. Algae and other diatoms, jellyfish, snails, sea anemones, sea slugs, small clams and other organisms live on the leaves of eelgrass. The leaves also provide protection for crabs, including the Dungeness crab (*Cancer magister*) and the red shore crab (*Cancer productus*), which primarily feed on small clams. Other species live in the mud on the roots of the eelgrass.

Eelgrass is an important breeding ground for forage fish including Pacific herring (*Clupea pallasi*), Pacific sand lance (*Ammodytes hexapterus*), and surf smelt (*Hypmesus pretiosus*). Surf smelt breeding grounds occur around the perimeter of Bell Point, and Pacific herring spawn throughout both Westcott and Garrison bays. Salmon, lingcod, marine mammals, and sea bird populations feed on forage fish (Larkin, 1999).

In February 2003, severe losses of eelgrass in Westcott and Garrison bays were discovered by the Washington State Department of Fish and Wildlife while conducting an annual Pacific herring spawn survey (Wyllie-Echeverria, Mummford, Jr, Gaydos and Buffum, 2003). Because eelgrass populations expand in spring and summer and decrease during fall and winter, the sites were surveyed again in May 2003. Prior documentation of bottom cover exists for Westcott Bay because it was randomly selected for the Submerged Vegetation Monitoring Project conducted by the Washington Department of Natural Resources in 2000 and 2001. It appears that approximately 35 out of 45 hectares of eelgrass have been lost. Quantifying the loss in Garrison Bay is more difficult. However, the results of the 2003 survey indicate patches south of Bell Point are virtually gone when compared to the DNR 1992 aerial photo of the bays (Wyllie-Echeverria et al., 2003). An explanation for the loss has not been determined. However, Washington State has a no net loss policy to protect eelgrass and the resources associated with it. When eelgrass beds are negatively impacted, mitigation is required to compensate for the loss. Currently, the Westcott Bay Taskforce is seeking out funding sources in order to continue studying the decline.

Wetland Habitat

Wetland is an all-encompassing word to describe any land habitat substantially saturated with water. As some of the most productive ecosystems in the world, wetlands provide important habitat functions such as protecting shorelines during storm events, cycling nutrients, and they store water, which alleviates flooding (Krukeburg, 1991). In addition, they function as natural reservoirs during droughts, they are nurseries for a variety of fish species including salmonids, and the moisture provided by wetlands is essential in the survival of reptile and amphibian species. Fresh and salt water wetlands occur in both units of the park.

Twenty-six wetland sites are scattered throughout the American Camp unit. Common emergent vegetation includes Hooker's willow (*Salix hookeriana*), Pacific crabapple (*Malus fusca*), nootka rose (*Rosa nutkana*), salmonberry (*Rubus spectabilis*), and a variety of sedges and rushes. There are several small seeps and springs located along the southern boundary where river otter (*Lutra canadensis*) tracks and/or scat was observed (Holmes, 1998). Red-tailed hawk (*Buteo jamaicensis*) and bald eagle (*Haliaeetus leucocephalus*) nests were noted at other sites with larger trees. Important feeding and nesting grounds are located around the three temperate marine lagoons on Griffin Bay.

These lagoons are sites where fresh and salt water mix. The salinity in the lagoons is often lower than that in the bay. Vegetation associated with the lagoons and surrounding salt marshes include sharpfruited peppergrass (*Lepidium oxycarpum*), Nuttall's quillwort (*Isoetes nuttallii*), and erect pygmy-weed (*Crassula connata*), which are listed by the state as sensitive species (Washington Natural Heritage Program, 2003). Other plants unique to the salt marsh plant communities include saltgrass (*Distichlis spicata*) and pickleweed (*Salicornia virginica*). The ecology of these wetlands is linked to the eelgrass and microorganism communities in the bay, which are fundamental to the marine food web (Heater et al., 2000). Specialized algae, bacteria, snails, and anemones are just a few of the organisms contributing to this ecology (Kozloff, 1993).

At English Camp, nine wetland sites have been identified and recorded, and the primary emergent vegetation is red alder (*Alnus rubra*). These sites provide significant feeding, resting, and breeding grounds for a variety of resident and migratory birds including the black brant (*Branta nigricans*), great blue heron (*Ardea herodias*), and osprey (*Pandion haliaetus*) (Larkin, 1998). The red-legged frog (*Rana aurora*) and the Pacific treefrog (*Hyla regilla*) have been observed at a significantly wet site in the northern portion of the unit (Holmes, 1998). Marshes and tidal mudflats occurring along the shore are important to the ecology of the bays.

Terrestrial Habitat

The upland habitat in the park can be categorized into four habitat types: dry forests, wet forests, open Garry oak woodlands, and grasslands. Physical conditions including temperature, precipitation, sun exposure, wind, and soil type are factors that determine the type of vegetation growing at a particular location. Because the island is in the rain shadow of the Olympic Mountains, the drier moderate climate allows for dry habitats that are not common in the Puget Sound Lowland region.

At American Camp, grasslands are the predominant habitat owing to low rainfall, well-drained soil types, southern exposure, and relatively windy conditions near the Strait of Juan de Fuca. American Camp prairie, like most prairies around Puget Sound, was the first choice for pastures and farms. As a result, its native species have been reduced and replaced by non-native pasture grasses and a host of weed species. In spite of that, some high quality remnants of native prairie remain, providing beautiful spring vignettes of blooming camas, chocolate lilies, and buttercups. Along with native grasses such as Roemer's fescue and Alaska brome, a number of other uncommon plant species are found in the prairie. These areas of native vegetation are becoming less common regionally and will serve as a valuable source of genetic material for restoration work at American Camp. The warrens of the European rabbit (*Oryctolagus cuniculus*) disrupt the soil composition in much of the American Camp prairie, which, in turn affects the hydrology associated with the prairie. Other non-native animal species inhabiting the prairie include the red fox (*Vulpes vulpes*) and feral cats. Northwestern garter snakes (*Thamnophis ordinoides*) and Townsend's vole (*Microtus townsendii*) occupy these grasslands, and a variety of birds utilize this area for foraging. Most importantly, from an ecological standpoint, the prairie is habitat for many invertebrates, including several butterfly species that are declining in the region because of habitat loss.

The transitional open Garry oak woodland at English Camp is also relatively dry. The soil is thin and has low moisture holding capacity. However, slightly more moisture is required to sustain a Garry oak woodland than a prairie. Garry oak woodlands are comprised of trees including Garry oaks (*Quercus garryana*), Pacific madrones (*Arbutus menziesii*), and rocky mountain juniper (*Juniperus scopulorum*) scattered throughout a prairie landscape with a variety of wildflowers present in the open understory. These woodlands are often in the transition zone between open prairie and coniferous forest landscapes, and they are susceptible to invasion by Douglas-fir. Historically, fire has played a role in maintaining these open stands by burning young Douglas-fir and thick shrubbery. Garry oak woodlands are known for their biological diversity and are host to butterfly and insect species, amphibians, reptiles, and a wide variety of birds. Because they have significantly declined in extent, Garry oak woodlands (larger than one acre) are considered state priority habitats.

Wet and dry coniferous forests occur in both park units. Dry coniferous forests are more common to the island due to its geographical location. These forests are dominated by Douglas-fir (*Pseduotsuga menziesii*) with a sparse understory of shrubs. They tend to occur on southerly slopes, including Mount Finlayson, where exposure to sun and wind occurs. Wet coniferous forests are also dominated by Douglas-fir (*Pseduotsuga menziesii*) with a mix of western hemlock (*Tsuga heterophylla*) and western red cedar (*Thuja plicata*). Thickets of salal (*Gaultheria shallon*) and sword fern (*Polysticum munitum*) are common to the understory, and mosses and lichens cover trees, rocks, and soil. These closed canopy forests are common to northern slopes, including Young Hill and Mount Finlayson, where the environment is cool and moist.

The habitat value of both forest types is substantial. They provide nesting, breeding, and foraging opportunities for birds. Woodpeckers and flickers are attracted to the insects living in snags or standing dead trees. Some larger trees are suitable for marbled murrelet (*Brachyramphus marmoratus*) nesting, although this species has not been observed in the park. Reptiles and amphibians rely on moist, fallen trees rotting on the forest floor.

Natural Quiet and Night Sky

The NPS mission emphasizes the preservation and restoration of park natural resources, including natural sounds, referred to as soundscape. Due to the park's rural nature and island setting, the natural ambient sound is generally quiet at the park. Heard from many of the trails, natural quiet sounds include birdcalls, wildlife rustling in the underbrush, and the movement of wind in the trees and grasses. Louder natural sounds such as the crashing of waves are associated with the bluffs and beaches. The natural quiet preserved at the park appeals to many visitors, and it contributes to the purpose of their visit. Air traffic is the number one source of sound pollution in the park. Other noises include vehicles, boating activities in

Garrison Bay, and routine ground maintenance.

Dark night skies are also considered an intrinsic natural resource protected by management policies in the National Park Service. Due to the absence of artificial light, portions of the park are good places to view the night sky. Park programs highlight interpretation and education of the values derived from a dark night sky. Although park hours include day use only, one annual program invites visitors to walk to the from the American Camp visitor center at night to view the dark sky after a talk introducing the fundamentals of astronomy. However, night light pollution from Victoria, British Columbia, is considerable and increasing. This pollution impairs views in the western quadrant of the sky.

Fire

Fire History

Most forest, shrub, and grass ecosystems rely on fire to maintain their vegetative structure and species composition. Lightning-caused fires, though infrequent on San Juan Island, were undoubtedly a part of the park's fire history. Historical accounts have also established that Native Americans burned grasslands and oak woodlands to create habitat for game animals and promote the growth of weaving materials and foodstuffs (Agee, 1987). The frequency with which a given area burned depended most directly on a number of natural and human ignited fires. Other factors affecting fire frequency and fire intensity include plant community types, changes in topography (such as slope and aspect), varying fuel accumulations, and variation in seasonal precipitation.

Nearly a century of active fire suppression has disrupted the ecosystem-regulating effects of recurrent natural and aboriginal fire. This, along with human activity in the area, has resulted in changes to the fuel structure that can potentially generate unnaturally large and intense wildland fires that may threaten human life and property and have negative effects on natural ecosystems.

Between 1980 and 2003, 111 fires were reported in the park. All but five of these were human-caused. Most resulted from camp fires or warming fires that were not built in established fire rings and were not extinguished properly. The largest fire occurred in 1981 and burned 77 acres at American Camp. Most fires occur during the summer months with the majority of ignitions occurring in June, July, and August when conditions are generally warm and dry with little precipitation.

Prescribed fire activities in the park prior to 2003 were limited to pile burning to dispose of materials generated from hazardous fuel reduction activities and/or maintenance activities. In July 2003, after several years of planning, a 25-acre prescribed fire was conducted on Young Hill, a crucial step in a long-term program to bring back fire as an ecological component of that ecosystem. Douglas fir trees had been thinned from the understory of the Garry oak woodland on the south slope of Young Hill several years earlier to release oaks from competition. The fire was successful in reducing fuel accumulations that had built up from a century of fire suppression and Douglas fir invasion. Fire effects monitoring plots, where fuel loads and a variety of ecological indicators were measured prior to and following the burn, showed enough successful results that prescribed fires have been ignited in two other management units on Young Hill in subsequent years

The park is bordered mostly by privately owned lands, although DNR land borders the southeast portion of English Camp and the eastern boundary of American Camp. Fire protection for the park is provided through a Memorandum of Understanding with San Juan Fire District #3 and DNR.

Current Fire Management

The park completed a fire management plan and environmental assessment in 2005, consistent with NPS Management Policies and Director's Order #18. The plan considers fire management activities over a five year period, and assists park managers in meeting



Prescribed fire treatment at American Camp. NPS Photo.

cultural and natural resource management goals while ensuring that firefighter and public safety are not compromised.

The FMP for the park provides a full range of management options with respect to fire. All unplanned wildland fires will be suppressed immediately upon detection. Mechanical/manual fuel reduction will be used to reduce the risk of wildland fire to life and property and help restore natural vegetative conditions. Prescribed fire will be used in conjunction with manual fuel treatments to reduce fuel accumulations, restore and maintain historical landscapes/view sheds, and manage exotic vegetation.

Under this plan, the fire management program would maintain an organization that would contain 95 percent of all wildland fires in the park within one operational period. Manual fuel treatment objectives would include treating 80 percent of the park's developed zones to change fuel conditions so that predicted flame lengths during a wildland fire under extreme conditions would be less than four feet.

Hazard fuel reduction projects would reduce by 40 percent the fuel accumulations on at least 50 percent of the areas identified at high risk of wildland fire due to fuel accumulations resulting from natural build up and human activities. The goal of the FMP is to meet these standards by 2008.

Prescribed fire will be used to reduce fuel accumulations and help restore natural vegetative conditions in the following areas:

- American Camp Grasslands – Prescribed fire would be one of a number of tools used to restore the grasslands currently dominated by non-native annual grasses and forbs and some sections being invaded by Douglas-fir seedlings. Periodic burning will help control invading weed species, increase biodiversity among native plants, and reduce accumulations of ground fuels. Under this alternative, a minimum 20 percent (approximately 120 acres) of the park's grasslands would be targeted for treatment with prescribed fire by 2009.
- English Camp Oak Woodland – The Garry Oak woodland will be restored using a combination of manual cutting of invading Douglas-fir and prescribed fire. The oak woodland will be burned periodically to remove any regenerating Douglas-fir seedlings that would compete with oak reestablishment. Under this alternative, a minimum 40 percent (approximately 40 acres) of the park's Garry oak woodlands would be targeted for treatment with prescribed fire by 2009.
- Mature Forests at Both Camps – The mature mixed conifer stands at both camps will be burned to regulate the amount of woody fuel accumulations on the forest floor, promote species diversity, improve wildlife habitat by encouraging growth of plant and shrubs, maintain insect and disease populations at local normal levels, and provide ashy nutrients to the forest. Under this alternative, a minimum 5 percent (approximately 25 acres) of the park's mature mixed conifer forests would be targeted for treatment with prescribed fire by 2009.

Consistent with NPS policy, fire management plans are reviewed and updated as needed every five years.

Fire Camp

The fire camp for the park is presently located at American Camp along Cattle Point Road north of the visitor center. The camp, which is essentially an open area in a field, is a special use camping area that is utilized by groups for up to approximately two months at a time. Fire crews, up to about 20 people, are assembled from other parks to work on projects, such as prescribed burns or vegetation projects. The crew parks, camps, and stores equipment at this location. Facilities needed include tents, portable restrooms and showers. At this time, chemical toilets are brought in when needed and showers are available only in town.

Recreational Resources

Recreational Activities at San Juan Island National Historical Park

At San Juan Island National Historical Park, beachcombing, picnicking, bird watching, viewing and photographing wildlife, hiking, fitness walking, general sightseeing and attending park interpretive programs are popular activities. A small number of residents engage in horseback riding at American Camp.

On Garrison Bay, public shellfishing is permitted on roughly 900 feet of shoreline within the park. A 94-foot dingy dock is available for access to the park from the water.

The park is a day-use only area. Campgrounds are not available at either American or English camps. Hunting is not allowed in the park. Off-road travel by car, truck, motorcycle, or bicycle, is not allowed in the park. Pets are permitted as defined by the compendium and must be under physical (not voice) control.

Recreational Activities on the San Juan Islands

The San Juan Islands offer a wide variety of recreational activities. Water-based recreation includes whale watching excursions, sea kayaking, scuba diving, sailing and power boating, freshwater and saltwater fishing, windsurfing and clamming.

There are two county parks on San Juan Island. Rueben Tarte County Park is a four-acre day-use park east of Roche Harbor on the north end of the island. The park features a north-facing forest slope and two small beaches on either side of a rocky peninsula. Amenities include two beaches and a walking path with views across Rocky Bay.

San Juan County Park is a 12-acre park on the west side of the island on Smallpox Bay. Amenities include a campground with 20 campsites and a group camp area, restrooms, a day-use area, beach, and a boat launch. There are views across Haro Strait to Vancouver Island and the Strait of Juan de Fuca. The park is popular for kayak users and is one of three county campgrounds designated as Cascadia Marine Trail campsites.

Five thousand-acre Moran State Park on Orcas Island offers 150 campsites, 30 miles of hiking trails, lake swimming and fishing and panoramic views from 2,400-foot Mount Constitution. Whale watching is a popular activity at Lime Kiln Point State Park; Spencer Spit State Park on Lopez Island has trails, beaches and camping. Eleven marine state parks with mooring buoys have opportunities for camping, picnicking and hiking. A dozen county parks and recreation sites are available for picnicking, some with camping facilities. San Juan County Park has ready water access and is popular with kayakers. The 140-mile long Cascadia Marine Trail for kayakers, which extends from the



Children hike the trail to English Camp Cemetery. NPS Photo.



Sign at Mt. Finlayson NPS boundary. NPS Photo.

Canadian border south to Olympia, Washington, has a number of stopover sites in the San Juans.

The islands are also a popular destination for bicyclists and moped riders. Visitors and residents are able to enjoy golfing and lawn bowling. Skateboarding parks are located on San Juan and Orcas islands. The Whale Museum in Friday Harbor is a year-round attraction for visitors. Each of the four main islands has a historical museum.

Regional Recreational Activities

A ferry ride to the mainland opens up still more recreational opportunities. Three national parks—North Cascades, Olympic and Mount Rainier—are each within a one-day drive, as is Ebey's Landing National Historical Reserve on nearby Whidbey Island; so too are Mount Baker-Snoqualmie National Forest, Olympic National Forest and Mount St. Helens National Volcanic Monument. A host of other federal preserves are also nearby, including the Padilla Bay National Estuarine Reserve, Ebey's Landing National Historical Reserve and the Dungeness Spit National Wildlife Refuge. Deception Pass State Park and myriad other state and local parks, historical sites and attractions are also present. Together these recreation sites have hundreds of campsites and hundreds of miles of frontcountry and backcountry trails for day and extended hiking for persons of all experience levels.

Many hikers trek sections of the Pacific Crest Trail as it winds through the Cascade Range. Challenging rock climbing sites are available and the area's lofty and rugged alpine zones draw mountain climbing enthusiasts from around the world. Snowboarding, downhill, and cross-country skiing are found at Mount Baker. All manner of boating and water sports are available on the area's many lakes as well as rafting on the Skagit River. Hunting, fishing, horseback riding, mountain biking and a host of guiding and outfitter services are available to the public. The annual Skagit Valley Tulip Festival attracts thousands in April. The Skagit Valley is fast becoming a birding hot spot: over-wintering flocks of trumpeter swans and snow geese draw hundreds of viewers; hundreds more crowd the shores and waters of the Skagit River in winter to watch bald eagles feed on salmon. Indian gaming casinos in Anacortes and along the I-5 corridor attract crowds year round.



Saltwater fishing is a popular San Juan activity. NPS Photo.

Seattle lies a short 80 miles to the south and contains a variety of museums, theaters, cultural and sporting venues. Lakes, parks, trails and greenways are scattered throughout the city. Attractions include the Woodland Park Zoo, Seattle Aquarium, Pike Place Market, the University of Washington's Arboretum and Burke Museum, and historic Pioneer Square with the Seattle unit of Klondike Gold Rush National Historical Park.

British Columbia's Vancouver Island is an hour and a half away by Washington State ferry. Here one can explore the rural Saanich Peninsula and the quaint waterfront community of Sidney, BC. Ferries to Vancouver, the Gulf Islands, and northern coastal towns depart from nearby Swartz Bay. Victoria, capital of British Columbia, lies an hour south of Sidney. With its distinctly British flavor and Old-World feel, Victoria has excellent shopping venues and an Inner Harbour ringed with attractions and artisan stands. The Parliament buildings are nearby, as are the world-class Royal British Columbia Museum and Butchart Gardens. Less than a day's drive away is Vancouver, British Columbia, with spectacular Stanley Park and the Vancouver Aquarium, a vibrant international district and Chinatown, the University of British Columbia, the world-renowned Museum of Anthropology, and many cultural and sporting venues. It is the gateway community to a vast outdoor recreational world of parks and natural areas and the Whistler-Blackcomb ski area.

The incredible number and variety of opportunities found in this corner of the Northwest are more than enough to satisfy the year-round recreational needs of any individual or group, whatever their age, activity or skill level.



Aerial View of Friday Harbor. Photo By Robert Demar.

Scenic Resources

The San Juan Islands are the tops of a submerged mountain range creating varying elevations of topography ranging from sea level plains to gently rolling hilltops. The combination of water, rocky outcrops, forested hills and plains create stunning scenery. The islands are well known for their beauty, rural landscape character, and, since harder to reach, slower pace of life.

Friday Harbor Setting

Friday Harbor is a small town located above a sheltered harbor. The daily ferry traffic determines the amount of car and pedestrian activity. As the county's main transportation and commerce center, the majority of businesses, government offices, and organizations are located here. Views are of early 20th century small town structures, the ferry terminal, surrounding islands and residences and boats docked in the harbor.

English Camp Setting

English Camp is located on the northern and wetter portion of the island. Here, the trees grow taller and denser. Deciduous trees mix with evergreens. Once outside the forest, there are views out across the bay to forested Guss Island and the opposite shore, the parade ground, and to the historic garden and buildings. Remains of sun-bleached clamshells, some ancient, lie scattered on the beach. Bird life is abundant and the occasional deer can be seen. The only reminders of modern life are the residences lining the bay and boats anchored in the water. An entry from an 1860 diary described the camp:

> ...Captain Bazalgette & three other officers are here in charge. With the former I walked round to see the economy of the arrangements. I was struck with the richness of the soil & abundant fruitfulness of the vegetables which filled the gardens. Game of several sorts is plentiful. Deer can be had whenever wanted. Some of the post go out to shoot them, or Indians bring them. Wild fowl is abundant. There were hanging up in the larder of the kitchen geese, ducks, the common wild duck & canvas back,



VIew of English Camp. NPS Photo.

> teal & wild muscovy. A fine wild goose can be had for a half a dollar if you buy one, later they will be made much cheaper." (Bagstraw, 1996: p.242)

Walking along the Bell Point Trail the visitor has views out across Garrison Bay. Shell middens are abundantly evident. Visitors can be observed clamming at the public beach or boating in the water.

English Camp cemetery is reached by walking up the slope of Young Hill through the tree canopy. Situated on a former clearing are the headstones of seven graves within a picket fence. It is a quiet and contemplative place with views across the oak woodland. Further up, the trail ends on a rocky granite outcrop with views over Haro Strait, Vancouver Island, numerous islands, and adjacent forests and farmland. The summit of Young Hill is 650 feet in elevation. On October 10, 1860, Anglican Colonial Bishop George Hills noted in his diary a description of the landscape adjacent to English Camp:

> We had luncheon, after which I rode out with Lieutenant Sparshot to a lofty spot wherein could be seen the whole lower part of the island spread out, as well as the various islands of the lovely archipelago. In the distance to the east & south were the magnifcent elevations of Mount Baker & Rainier. The former some fifty miles, the latter 100 miles distant, being respectively 11,000 & 13,000 feet high. The light played upon the snowy heights & formed all sorts of colours. Upon the elevated ground which runs through the island I had a view of the lower portion which is more open. There were large flocks of sheep & settlers' houses. The American Camp lay also at a distance before me some twelve miles... (Bagstraw, 1996: p.242)



View of American Camp. NPS Photo.

American Camp Setting

American Camp has the longest undeveloped stretch of beach on the island and has become a favorite destination of both local residents and visitors. People come here for various recreational activities, including whale watching. Up the slope, an ancient prairie lies between the beach and its cliffs and the summit of Mount Finlayson. This vast open space offers outstanding scenic vistas to Mount Baker, the Cascade Mountains, the Olympic Mountains, Mount Rainier (on exceptionally clear days), the Strait of Juan de Fuca, Vancouver Island, and other islands. These views get more expansive as one travels up the slope to the top of Mount Finlayson, which is 290 feet in elevation.

> A high bluff quite heavily timbered lies at the east. The valley south of us affords excellent grazing and has been used for that purpose by the Hudson's Bay Company who have had flocks of sheep on it. There are but few trees (oaks) scattered on the southern grassy slope of the mountains (Warren, 1860).

The scenery changes dramatically on the north slope of Mount Finlayson. Here, the forests are thick, cool, and moist. A trail system has been developed within the park for hiking. Trails lead to lagoons and driftwood beaches with views out over Griffin Bay. A report from Henry Custer, Assistant on a U.S. reconnaissance of American Camp in 1859 states:

> The harbor of San Juan, formed by a deep indentation of the south east shore of the island, is according to statement of sea faring men, one of the best and safest on the whole sound, with good anchorage almost everywhere. Small vessels will find excellent harborage in the north west part of the harbor; larger vessels can anchor with perfect safety in the southeast part of it in soundings varying from five to fifteen fathoms. I endeavored to locate the harbor and its islands and rock more correctly than heretofore represented on the maps.

From the eastern boundary of the park the trails continue onto county and state land. Residential development on both the east and west boundaries of the park is visible from some areas within the park.

Interpretation

Interpretation at the park has been guided for many years by an Interpretive Prospectus written in 1984. That plan focused primarily on interpretation of the military period. More recently, park interpretation has evolved to incorporate a broader range of themes, including pre-European history and the natural environment. It is expected that a long-range interpretive plan, as part of on overall comprehensive interpretive plan, will be produced shortly following this general management plan. It should incorporate the broader range of themes as identified in Chapter 2, "Foundation for Planning and Management," "Primary Interpretive Themes," as well as current audiovisual technology and recent developments in professional interpretation.

Interpretive Programs and Opportunities

Wayside signs, exhibits, park publications, ranger programs, self-guided walks and all interpretive programs and media that communicate messages are derived from the Primary Interpretive Themes. Current interpretive programs and opportunities include the following:

Website

The park website provides interpretive materials including:

- Special resources for educators and teachers
- History of American and English camps
- The boundary dispute
- Nature and science resources
- Research materials and information
- Archaeological information

Anacortes Ferry Terminal

The Anacortes Ferry Terminal is run by Washington State Ferries. It serves as the departure point for the ferries to the San Juan Islands and is the primary route to the park from the mainland. Most visitors arrive at the terminal to drive onto the ferry, park their vehicles and walk or ride bicycles. The terminal offers one of the first opportunities to interpret the park. A new wayside exhibit is located at the north of the terminal by the passenger entrance. This exhibit introduces the park to those who may not be familiar with it, and offers photographic snapshots of various park sites. An identical wayside also is located by the restrooms in the vehicle embarkation parking area.

American Camp

American Camp has the only year-round visitor center inside the park. The facility is a 1979 double-wide trailer that houses interpretive exhibits and a small retail operation where visitors may purchase books, postcards and gifts. The trailer was moved to the site in 1979 as a temporary facility until a permanent building could be constructed. Interpretive opportunities at American Camp include the following:

- A historical self-guided walk is offered at American Camp. A self-guided nature walk is available at Jakle's Lagoon.
- Ranger and volunteer guided walks covering historical and natural themes are scheduled during the summer season and intermittently in winter.
- A full range of interpretive programming covering historical and natural themes is provided during the summer season. Programs include demonstrations of pioneer cooking, Indian use of natural materials in daily life, historical lectures, archaeological and nature walks, 19th century folk music.
- Interpretive displays and exhibits in the American Camp visitor center focus on the peaceful resolution of the Oregon Boundary Dispute, the joint military occupation of San Juan Island and the connections of each to local historical themes. An archaeology exhibit features more than 125 artifacts from the historical period.
- An interpretive slide program on laser disc is presented in the American Camp visitor center.
- Fifty-five pre-historical objects from the park's



Re-enactors interpreting encampment history. NPS Photo.

Burke Museum collection are available for viewing.
- Access is provided to the library and archives by appointment at American Camp.
- Reenactments of life during the joint occupation are scheduled at American Camp on weekends during the summer season.

English Camp

The English Camp Royal Marine Barracks (barracks) serves as the visitor contact station during the summer season. At English Camp, the following opportunities can be explored:

- Within the barracks, visitors may watch an interpretive slide show on laser disc and view a "then and now" photography exhibit.
- A historical self-guided walk is offered at the English Camp parade ground.
- Ranger and volunteer guided walks covering historical and natural themes are scheduled during the summer season.
- A full range of interpretive programming covering historical and natural themes is provided during the summer season. Programs include demonstrations of pioneer cooking, Indian use of natural materials in daily life, historical lectures, nature walks, and 19th century folk music.
- Reenactments of life during the joint occupation are scheduled at English Camp on weekends during the summer season.
- The major summer season event at the park is Encampment at English Camp during which re-enactors from throughout the Pacific Northwest gather to celebrate the peaceful resolution of the boundary dispute. Reenactors stay on the parade ground in historic tents and play historic camp roles. Many activities are offered over the long weekend.
- Though not currently interpreted, the nearby Crook house may provide future interpretive and visitor contact opportunities.



2007 Encampment at Dusk. Photo by Paul Goldberg.



Needlework demonstration at 2007 Encampment. Photo by Ron Garner.

Other Programs

School Programs

Curriculum-based programs are offered from third through fifth grade and discuss peaceful resolution of conflict, natural history, 19th century history, American Indians, and civics. A teacher's guide was produced in 1999 that explores the boundary dispute and peaceful arbitration. Service learning opportunities are provided for a myriad of activities, including prairie restoration, beach clean-ups and the planting of the formal garden at English Camp. Other service learning projects are in the planning stages.

Junior Ranger Program

The park offers a booklet of historical and nature activities for children to complete while visiting. A junior ranger badge is awarded on completion of the booklet.

Educational Camp

The Oregon Museum of Science and Industry, among others, offers educational camps in the park. Students are taught by trained educators and naturalists who provide safe, high-quality outdoor learning experiences for children of varying ages. Programs vary in topics but include natural and cultural history and marine science. At San Juan Island National Historical Park, these programs are tied to the primary significance of the park and include the cultural and natural resources of the park. Sessions vary in duration from one to two weeks and are located in camping facilities at English Camp.

Volunteers in Parks Program

More than 200 volunteers, including 46 Canadian citizens, spend 10,000 hours annually serving the park in a variety of ways, but primarily in interpretation. For example, during summer reenactments, volunteers demonstrate blacksmithing, spinning and weaving, cooperage, military and naval skills and frontier cookery, in addition to staffing the information counters. Volunteers also provide valuable assistance in resource management, historical research, gardening and carpentry.

Regional Theme-related Sites

Fort Rodd Hill and Esquimalt Naval Station

Fort Rodd Hill, a national historic site in British Columbia, Canada, is a coast artillery fort built in the late 1890s to defend Victoria and the Esquimalt Naval Base on Vancouver Island, though there is also a strong connection to an earlier period. The naval base dates back to the 1850s when ships sailed from Vancouver Island to the San Juans and were part of the boundary conflict. The base maintains a museum and archives of value to historical research at San Juan. The Fort includes three gun batteries, underground magazines, command posts, guardhouses, barracks and searchlight emplacements. There are numerous interpretive signs and audio-visual stations, as well as period furnished rooms and friendly, knowledgeable staff. Visitors can explore gun batteries and underground magazines, searchlight emplacements, command posts and other features built a century ago (FortRoddHill.com, 2006). Reenactors from the fort partner with San Juan Island National Historical Park and participate in Encampment.

Gulf Islands National Park Reserve of Canada

The southern Gulf Islands are located in one of Canada's most heavily developed and urbanized natural regions—the Strait of Georgia Lowlands of British Columbia. The national park reserve was established on May 9, 2003 to protect the ecological integrity of a representative portion of this region. It is the first new national park reserve of the twenty-first century and includes thirty-five square kilometres of land and intertidal area spread over fifteen islands and numerous islets and reefs and approximately twenty-six square kilometres of marine areas. One of the most significant achievements of the Pacific Marine Heritage Legacy initiative of the governments of Canada and British Columbia, the new national park reserve offers a variety of opportunities for Canadians to learn about and experience an exceptional coastal island landscape and the cultures of the people who live there (Parks Canada, 2006).

Visitor Use

Visitor Use Patterns

The NPS Cooperative Park Studies Unit in Moscow, Idaho conducted a Visitor Services Project at San Juan Island National Historical Park in 1994. This standard NPS method for obtaining information about park visitors and visitation patterns took place during August 10-16, 1994. Of 518 questionnaires distributed, 406 were returned.

Results showed that visitors were often in family groups (64 percent). Groups often consisted of two people (35 percent) or three to four people (38 percent). The most common visitor ages were 36-50 years old (37 percent) and 15 years or younger (21 percent). Most (68 percent) were first-time visitors to the park. International visitors were often from Canada (55 percent) and the United Kingdom (12 percent). United States visitors came from Washington (49 percent), California (13 percent) and Oregon (9 percent) and 37 other states. Twelve percent of the visitors lived on San Juan Island either year round or part of the year.

Just over half of the visitors (51 percent) said they were aware of the existence of the park. Most visitors learned about the park from maps/brochures (32 percent), travel guides (25 percent), friends and relatives (24 percent) and several other sources.

Common activities for visitors were sightseeing (94 percent), walking/hiking on trails (78 percent), taking photographs (70 percent) and viewing wildlife (45 percent). The most visited sites in the park were the historical camp at English Camp (72 percent), the American Camp visitor center (57 percent), the historical camp at American Camp (50 percent) and the redoubt/earthen fort (40 percent). One fourth of the visitors went to the Friday Harbor visitor center before visiting the other park sites.

Most visitors (87 percent) used the ferry to get to San Juan Island. To get to the park, most visitors (65 percent) used a private vehicle, followed by rental cars/vans (16 percent). The park was not a primary destination for 80 percent of the visitors. Visitors said their reasons for visiting were to view scenery (87 percent) and learn about history (64 percent). The most used interpretive services were the historical buildings/features (86 percent), visitor centers (72 percent) and outdoor exhibits (71 percent). The

San Juan Island National Historical Park Visitation

Year	Total Visitation	English Camp	American Camp	Friday Harbor
1993	228,817	73,962	154,851	22,171
1994	200,253	76,128	124,125	17,281
1995	205,001	84,233	120,768	15,598
1996	225,954	80,763	145,191	23,603
1997	225,626	80,435	145,191	23,517
1998	250,285	105,092	145,191	19,708
1999	270,668	125,477	145,191	16,923
2000	261,716	115,967	145,749	18,010
2001	286,935	128,025	158,910	14,892
2002	255,077	120,752	134,325	14,594
2003	223,433	73,649	149,784	14,305
2004	270,968	67,827	203,141	9,000
2005	246,779	62,942	183,837	(Closed)*
2006	258,801	68,066	190,736	(Closed)

(NPS Public Use Statistics Office 2007)

subjects visitors would most like to learn about in the future are natural history (68 percent), Native American inhabitants (64 percent) and the history of early settlers (63 percent). The most preferred methods of learning about the cultural and natural history in the future are trailside exhibits (63 percent) and visitor center exhibits (62 percent).

Over one-third of the visitors (38 percent) estimated their total expenditures during this visit as up to $100. Twenty percent said they spent $251 or more. The average visitor group expenditure during the visit was $169; the average per capita expenditure was $51.

According to statistics reported by the park to Washington DC, visitation has been generally trending upward. The most reliable traffic counter is at English Camp, where counts have increased 69 percent over the past ten years.

June, July and August are the months of highest visitation at the park (about 40,000 per month). There is substantial visitation in the shoulder seasons as well (March through May, and September through October). During the slower winter months of November through February, the park typically receives about one-quarter the monthly visitation of summer.

The San Juan County Public Works Department did a traffic estimate on Cattle Point and American Camp roads in 2000. Their sampling estimated that approximately 253,000 cars travel the road on an annual basis. About 100,000 of those cars go solely to park locations and 153,000 travel as far as the Cape San Juan residential area. These counts suggest that the park may be somewhat underestimating visits to American Camp. The county AADT (annual average daily traffic) predicts an annual traffic increase of 7.46 percent for this area. A new traffic counter was installed at American Camp in summer 2003. Tests in the fall of 2003 will determine the data-gathering protocols that will be used to determine the visitation at that unit.

According to the NPS Social Science Program, tabulations generated by running the NPS Money Generation Model show that the annual economic benefits to the community from San Juan Island National Historical Park are $15,415,000 in Fiscal Year 2005, based on a visitation of 248,831. Based on this benefit, it is estimated that approximately 337 jobs in the tourism and service sector are tied to the presence of the park (NPS Social Science Program 2005).

Park Special Uses

The park manages the type, size, and location of group activities (larger than 20 persons) through a special use permit system. The goals are, generally, to limit conflicts between users, to prevent unacceptable impacts to natural or cultural resources, and to keep group sizes within the capacity of park facilities. Weddings comprise the largest percentage of special use permits. In recent years, the park has limited weddings to specific locations such as the English Camp parade ground (after regular hours), Fourth of July Beach, and South Beach, with a maximum group size of 75 persons. Because of limited parking, car pooling is strongly encouraged and a parking plan may be required of the applicant. Horseback riding at American Camp is also regulated by special use permit and is governed by a specific set of park regulations. The park often gets requests for groups to hold larger special events. It is clear that a demand exists on the island for large open-space activities. A percentage of these could be accommodated if parking and toilets were improved, particularly at Fourth of July Beach. Many school groups now use that area for field trips and strain its capacity.

Facilities are not the sole limiting factor. Visual intrusion and potential resource impacts may weigh as much or more heavily in the decision to permit a particular large group activity in the park. For additional information, see the “Carrying Capacity” section in the “Alternatives Chapter”.

Federal Lands Recreation Enhancement Act

The National Park Service is participating in a program called the Federal Lands Recreation Enhancement Act (Public Law 108-447), formerly known as the Recreation Fee Demonstration Program. The program allows participating parks to retain generated income from fees and to use them for their own park operation and maintenance. San Juan Island National Historical Park is participating in this program through the shared 20 percent pool for smaller parks. The focus of this program is for improved visitor experience. The park does not charge recreational fees.

Park Hours and Seasons of Operations

The park is a day use park and is open from dawn until 11:00 pm. The administrative headquarters and the visitor center at American Camp are generally open year-round from eight until five o'clock.

Socioeconomic Factors

Regional Setting

San Juan Island National Historical Park is located in northwestern Washington State, approximately 80 highway miles north of Seattle, 18 water miles west of Anacortes, Washington, and 49 miles by ferry and highway from Victoria, British Columbia.

The San Juan Islands are bordered on the west by Vancouver Island and separated from that island by Haro Strait. To the east, Rosario Strait separates the islands from the Washington mainland. The Canadian Gulf Islands lie to the northwest and, to the north, the Gulf of Georgia and mainland British Columbia. The Strait of Juan de Fuca separates the islands from the Olympic Peninsula to the south.

San Juan County contains 172 named islands and islets. In San Juan County, about 20 islands have year-round residents, with the majority living on the four islands served by the state ferry system (Future Directions, Inc., 1999: p.13).

The San Juan Islands are bordered on the west by Vancouver Island and separated from it by Haro Strait, a major shipping channel to Vancouver BC, the largest city in western Canada. To the east, Rosario Strait separates the islands from the Washington mainland. The Canadian Gulf Islands lie to the northwest and, to the north, the Gulf of Georgia and mainland British Columbia. The Strait of Juan de Fuca separates the islands from the Olympic Peninsula to the south.

The park is located on San Juan Island, the second largest of the islands at 55.3 square miles. The other principal islands served by the ferries are Orcas, Lopez, and Shaw.

The park is within Washington's Second Congressional District in San Juan County, Washington.

Location and Access

The park's administrative headquarters is located in Friday Harbor, approximately one-half mile from the San Juan Island Ferry Terminal. Friday Harbor, population 2,040 (Washington State Office of Financial Management, 2003), is the county seat and is the only incorporated town in the San Juan Islands. The American Camp unit of the park is located six miles south of Friday Harbor on Cattle Point Road. The English Camp unit is located on West Valley Road, 9 miles northwest of Friday Harbor and 12 miles from American Camp. English Camp can also be accessed by boat by using the dock the park maintains on Garrison Bay.

Washington State ferries run between Friday Harbor and the mainland a half-dozen or more times a day; inter-island ferries transit Friday Harbor a similar number of times. An international ferry travels once daily to Sidney, British Columbia on Vancouver Island. From there one can travel by road to Victoria, or by road and BC ferry to Vancouver, British Columbia.

The San Juan Islands are popular for bicycling as well, Washington State ferries report that over 38,000 bicyclists ride onto the ferry in Anacortes annually, and a substantial number are carried by vehicles onto the ferry to the San Juan Islands (San Juan County, Nonmotorized Transportation Plan, 2004).

Two commercial airlines and a seaplane service plus several charter airlines serve Friday Harbor. An airport at Friday Harbor accommodates commercial and private planes; private aircraft can also land at a small airstrip at Roche Harbor.



Float plane landing at Friday Harbor. NPS Photo.

Land Use and Ownership Patterns

Though somewhat remote and difficult to reach, San Juan County is one of the fastest growing counties in the Washington State. Natural beauty, solitude, and pleasant weather have attracted many, particularly West Coast residents, to move to the island for recreation or retirement. This interest has prompted an active real estate market promoting purchases of waterfront and view property. The result has been increased subdivision of farms and forests. Conversion to non-rural use is one of the greatest impacts to the open space resources of the county.

There are a limited number of motels and restaurants on the island. The nature of the island and ferry service force either an overnight stay on the island or a rushed visit in order to be on board the last ferry back to the mainland. Long lines of cars waiting for the ferry are common on busy weekends and during the summer tourist season.

NPS Management Zoning

All lands within the boundary of San Juan Island National Historical Park were park-zoned by the NPS in the 1979 *San Juan Island National Historical Park General Management Plan*. The NPS zoning is for management purposes. There are no private in-holdings within the park. Local government zoning does not apply to federal land. Both English and American camps are broadly zoned Historic, thus protecting the historical integrity of these sites. Peripheral areas of the park units are zoned Park Development, for administrative and secondary recreational uses. To maintain the sanctuary qualities of the area for eagles, deer, and marine life, an area in the northeast portion of American Camp is zoned Natural, Environmental Protection Subzone.

Adjacent Town and County Government Zoning

Park Headquarters

In 2004, the headquarters for the park moved from Spring Street in downtown Friday Harbor approximately one-half mile west to Mullis Street. The building is leased by the NPS from a private owner through the General Services Administration. Land use is governed by the town's zoning code. The park's headquarters is located outside the downtown core and is zoned commercial.

English Camp

English Camp, encompassing 529 acres, is situated on Garrison Bay in the northwest section of the island. Lands adjacent to the boundary of English Camp are used for ranching, shellfish farming, timber production, recreation, and home sites. Roche Harbor Resort is located across Westcott Bay from English Camp. The park is situated in the center of the Westcott-Garrison Bay Watershed.

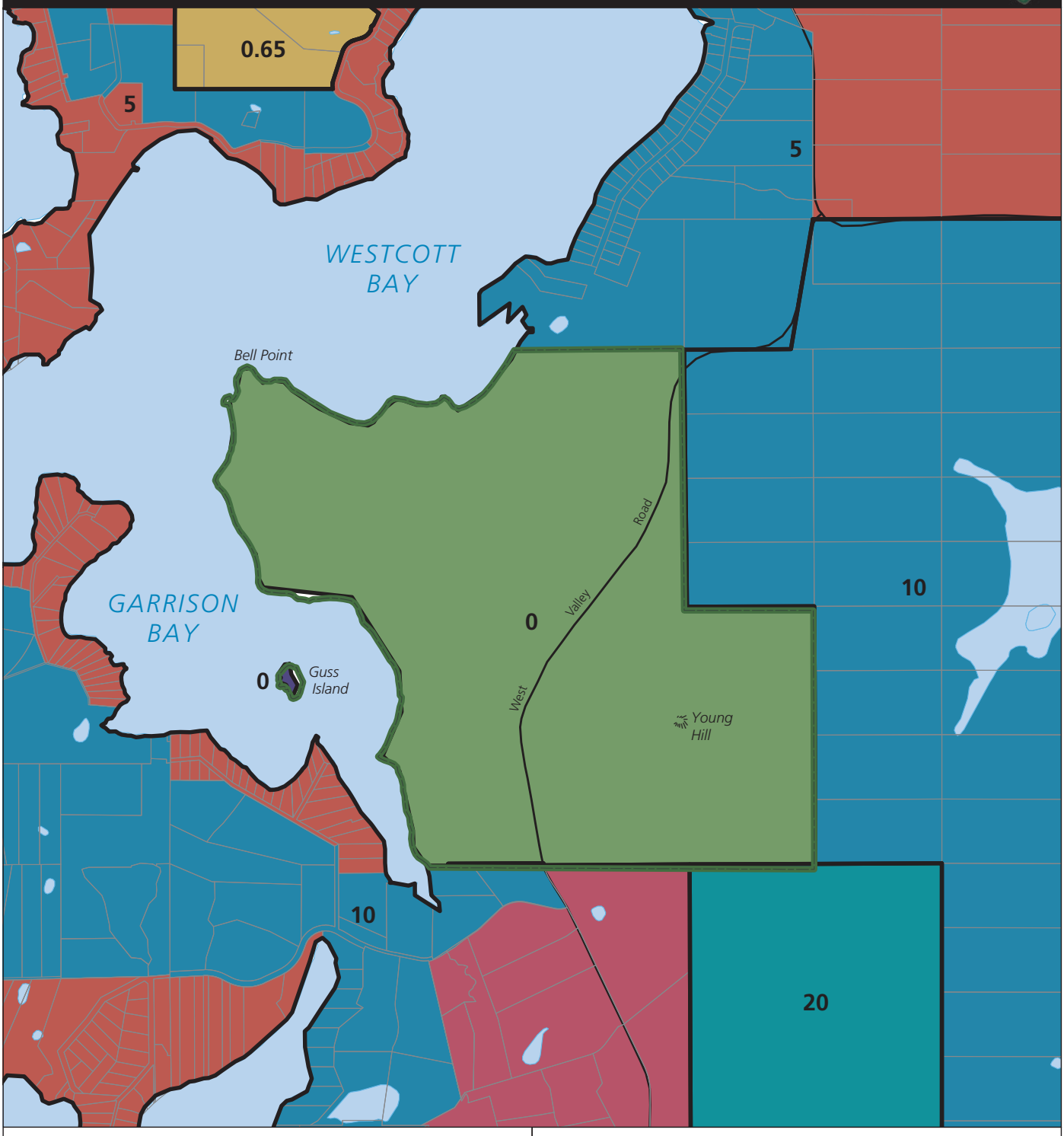
According to the Westcott-Garrison Bay Watershed Assessment Report, the park is recognized by San Juan County under a land use classification entitled Special Districts under the Conservancy designation. This class of lands was developed to "protect, conserve, and manage existing natural conditions, resources, and valuable historic, scenic, education, or scientific research areas for the benefit of existing and future generations without precluding compatible human uses" (San Juan County, *Westcott-Garrison Bay Watershed Assessment Report,* 1999: p.20).

The majority of the watershed is classified as Rural Land under two land use designations: Rural Farm Forest and Rural Residential. The Rural Farm Forest Land designation is designed to provide landowners with the opportunity for small-scale farming and forestry practices while maintaining the rural character of the land. The Rural Residential designation allows for varying densities of residential development. The 200-foot shoreline areas both north and east of the park allow for one residential unit every one-half acre. To the north of the park, the non-shore adjacent land is zoned one residential unit for five acres. Adjacent land to the east and south of the park is zoned one unit for ten acres. (See Figure 21: English Camp: County Zoning.) (Please note that residential density is indicated by a number, such as "10" which means one unit per 10 acres.)

The Roche Harbor Resort, on the northwest coast of San Juan Island, hired an architecture and community planning firm to develop a design plan for the future of the 2,200 acre resort. The plan was completed in 1994 and updated in 1996 in response to some community concerns about the physical scope of the village development and the possibility of including non-resort based commercial activities. The plan includes six districts with a core resort district and a variety of surrounding resort and rural residential areas. It also includes a district for existing subdivisions. Zoning in the Existing Subdivisions district ranges from one unit per .5 acres to two acres; however, the total number of dwelling units for this 500 acre zone is not known.

English Camp: County Zoning

San Juan Island National Historical Park GMP/EIS



Land Use

- Agricultural Resource
- Conservancy
- Forest Resource
- Master Planned Resort
- Natural
- Rural Farm Forest
- Rural Residential

- Density*
- Parcel
- Park Boundary
- Primary Road

*Residential Density is indicated by a number, e.g. ***10*** = 1 unit per 10 acres
0 = Publicly Owned Conservancy Lands

Note: Some smaller parcels predated the currently allowed residential densities.

Figure 21

0 500 1,000
Feet

N

Produced by: National Park Service
PWRO-Seattle GIS Group

Date Created: February 28, 2007

Data Sources: NPS - lakes, park boundary, roads, shoreline

San Juan County - density, land use, parcels, roads

i:\gis\arcmapdoc\sajh\gmp\ec_county_zoning_v4.mxd

Zoning for the additional five districts ranges from one unit per .65 acres for the 177 acre Resort Core district to one unit per ten acres in the 1,430 acre Rural Farm Forest district, and allows for a total of 739 residential units over 2200 acres (Hewitt-Isley, 1996)

Development of shoreline lots on Garrison Bay and Westcott Bay and addition of boat docks are having increasing impacts on the English Camp cultural landscape.

Mitchell Hill Trust Land

The drainage basin also includes designated Resource Lands. One of these tracts, a 312.32-acre property on Mitchell Hill contiguous to the southern boundary of English Camp, is managed by the Washington State Department of Natural Resources (DNR) and is designated as Forest Resource Land. These lands are designated to "protect and conserve forest lands of long-term commercial significance for sustainable forest productivity and provide for uses which are compatible with forestry activities while maintaining water quality, and fish and wildlife habitat" (San Juan County, *Westcott-Garrison Bay Watershed Assessment Report*, 1999: p.24).

Washington State Department of Natural Resources manages the site as one of the "Common School Trust Lands" for the benefit of public schools. Much of this site is forested with trees ranging from seedlings to 120 years old. Grazing occurred in the past and timber was harvested in the 1940s and 1990s. A portion of the historic military road from English Camp bisects the northern edge of property (San Juan Islands Trust Land Advisory Committee, 1985).

In 1983, the San Juan Islands Trust Land Advisory Committee, established by the Commissioner of Public Lands, considered alternatives for this site. One alternative recommended adding it to San Juan Island National Historical Park. The recommended alternative suggested multiple-use forest management, including rehabilitation and reclamation, and compatible recreational activities such as walk-in or bicycle campgrounds, primitive cabins, and other uses. There was interest expressed from the county and local residents to convert the old military road to a general hiking trail connecting to other off-site trails. In recent years, subsequent discussions between the DNR, the San Juan County, and other groups, led to a consensus that Mitchell Hill should be added to San Juan Island National Historical Park.

American Camp

American Camp totals 1,223 acres and is located on the southeastern tip of the island. Adjacent lands are used for watershed and natural resource protection, recreation, and residential housing.

On the eastern boundary of the park unit are five publicly owned parcels, described in more detail in the next section. One is jointly owned by the San Juan County Land Bank and the Washington Department of Natural Resources. Three others are owned by the DNR. The fourth parcel is owned by the Bureau of Land Management (BLM).

To the east and north of the DNR properties are the Cattle Point Estates and Cape San Juan residential subdivisions. There are approximately 150 potential lots. One-half of these have been developed. Lot sizes vary from half an acre to nearly six acres, the larger lots being located in Cattle Point Estates. The subdivisions are served by several community wells and a desalinization plant located in parcel 2. Parcel 2 is owned by the Cattle Point Water District. This parcel contains a reverse osmosis treatment facility to serve certain residential portions of Cattle Point Estates. The major of the tract is in a wooded setting that surround the treatment facilities and an associated utility access road.

Each home has an individual septic system. Past water availability problems and saltwater intrusion issues have caused development to be limited to five units per phase in order to monitor the effect of water use on already developed adjacent properties. The current county zoning in Cattle Point Estates is R-3, Rural Residential, which allows an average density of one unit per three acres. Cape San Juan is zoned at one unit per half acre.

On the western boundary of the park are the Eagle Cove and Eagle Cove Estates residential subdivisions. Both subdivisions total 43 single-family lots, averaging approximately one acre in size. Over one-half of the lots have been developed. County zoning is Rural Residential, which allows an average density of one unit per five acres. Both were platted before enactment of the county zoning ordinance.

Under the current zoning ordinance, which is based on performance standards, industrial and commercial uses are permitted only as a conditional use subject to approval by the San Juan County Commissioners. County adherence to recent state Growth Management legislation is expected to

retain a somewhat rural status for lands surrounding both English and American camps. However, building density already platted before that act could greatly alter the character of the landscape. To date, availability of water has been a limiting factor in development; that could easily change anywhere on the island, as it did several years ago when a desalinization plant was built to supply residents at Cattle Point Estates.

Effects on San Juan Island National Historical Park include the increasing visual impact of homes along the western boundary of American Camp, particularly viewed from the redoubt, portions of the trail system and from the site of the former Belle Vue Sheep Farm. Visual impacts of housing are also increasing to the east side of American Camp. Increased residential development in the area has also resulted in increased vehicular traffic along Cattle Point Road. (See Figure 22: American Camp: County Zoning.) Increased development, with its increase in hardened surfaces, can affect surface water runoff, water recharge, and water quality. The addition of wells and increased water extraction is known to contribute to salt water intrusion into underground aquifers. Development can also fragment wildlife habitat and cause a number of other negative impacts to neighboring conservation properties.

Cattle Point Public Lands

The Washington Department of Natural Resources manages three parcels at Cattle Point, Parcels 1, 3, 4, and 7. Parcel 1 (20.08 acres) is known as the Third Lagoon Preserve and is jointly owned and managed by DNR and the San Juan County Land Bank. This property was acquired in 2000 using county and Interagency Committee (IAC) funds. It includes upland forest and 1100 feet of shoreline and is 20 acres in size.



Parcel 3 (39.84 acres) and Parcel 4 (38.77 acres) are both contiguous to American Camp and include 1,430 feet of beach on the southern boundary of the Strait of Juan de Fuca. Both parcels were originally school trust lands, but DNR transferred (or more accurately, purchased and divested) the parcels out of that program and the parcels are now managed as the Cattle Point Natural Resource Conservation Area (NRCA). Natural Resource Conservation Areas in Washington State are lands designated to maintain, enhance or restore ecological systems and habitat for threatened, endangered, sensitive plants and animals while providing opportunities for education and low-impact public use.

Parcel 7 is a 10.29-acre site, known as the Cattle Point Interpretive Area with 1,265 feet of waterfront and



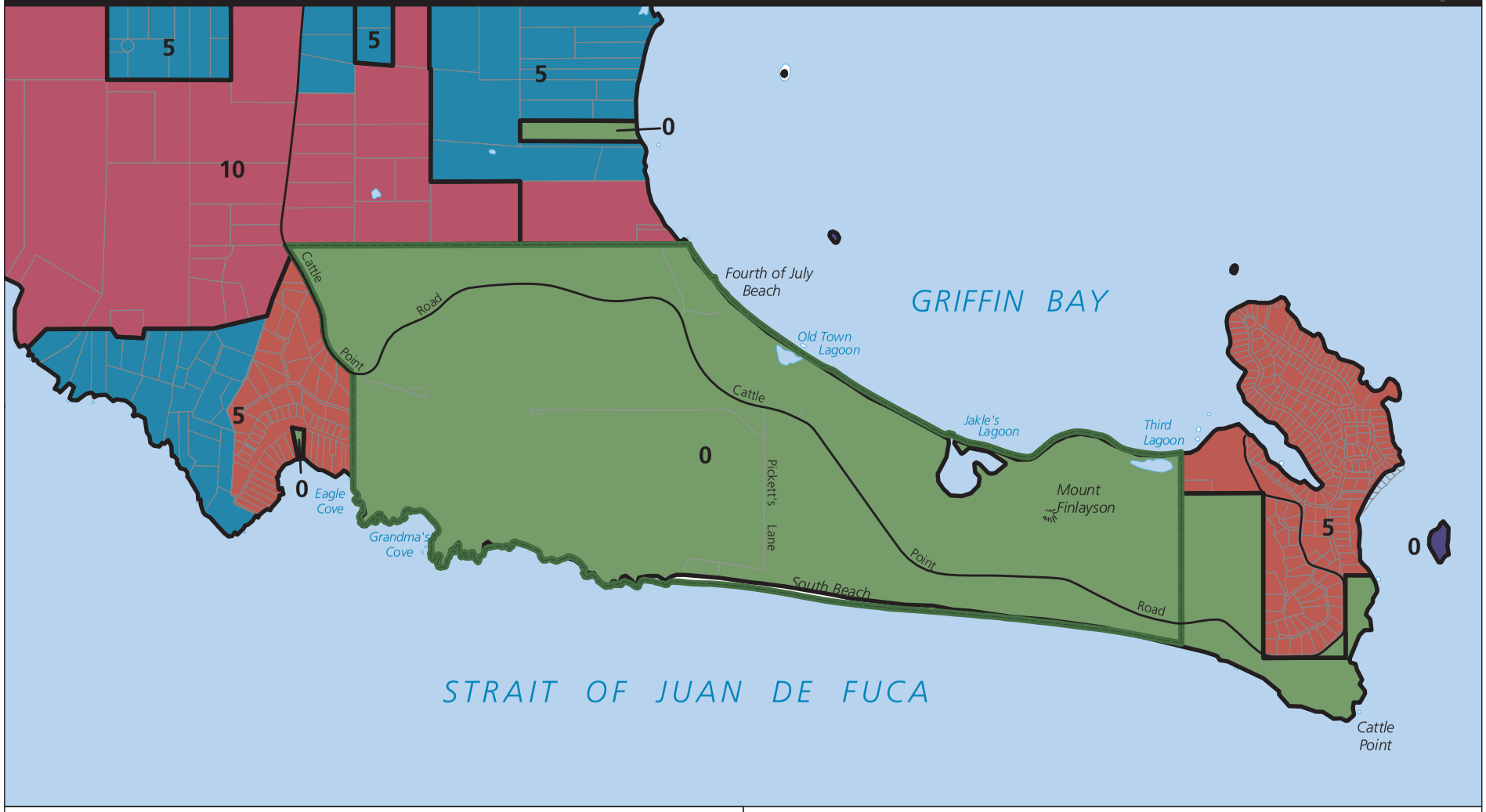
Laundress house and development to the west. NPS Photo.



Housing developments to the east of American Camp. NPS Photo.

American Camp: County Zoning

San Juan Island National Historical Park GMP/EIS



Land Use
- Agricultural Resource
- Conservancy
- Natural
- Rural Farm Forest
- Rural Residential

- Density*
- Parcel
- Park Boundary
- Primary Road
- Secondary Road

0 0.25 0.5
Miles

N

*Residential Density is indicated by a number, e.g. ***10*** = 1 unit per 10 acres
0 = Publicly Owned Conservancy Lands

Note: Some smaller parcels predated the currently allowed residential densities.

Figure 22

Produced by: National Park Service, PWRO-Seattle GIS Group

Date Created: February 28, 2007

Data Sources: NPS - lakes, park boundary, roads, shoreline

San Juan County - density, land use parcels, roads

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is located on the eastern edge of the Cape of San Juan. It consists of a former U.S. Navy radio compass station recently converted to a picnic shelter with trails leading to the beach. (The U.S. Navy radio compass station was established at Cattle Point in 1921 and operated during the 1920s. Other stations were located on New Dungeness Spit and Smith Island, which allowed triangulation. Ships used this service to figure out where they were, even in dense fog.)

Parcel 5 at Cattle Point is owned by the BLM. The DNR has a non-monetary Recreation and Public Purpose lease from BLM on the property and manages it similarly to its neighboring parcels. This 27-acre property has about 1,500 feet of shoreline and a Coast Guard navigation aid station, sometimes referred to as a lighthouse.

The DNR and NPS both manage the forests on Mount Finlayson, which according to the San Juan Island Trust Advisory Committee report, are the "largest expanse of natural forest land on the southern part of San Juan Island." The stabilized sand dunes on the southern portion of the site are part of a fragile ecosystem and "should be considered as a possible Natural Area Preserve." The committee stated that there is a strong ecological and spatial relationship of this ecosystem with adjacent NPS lands. Certain DNR parcels were identified as having "special biological values or natural undisturbed features that represent San Juan County before human disturbance," and should be preserved. Cattle Point, due to its grasslands and shoreline, was identified as having "Preserve potential" (San Juan Islands Advisory Committee, 1983: p.xv). Those recommendations led to the transfer of the school trust parcel into the NRCA program and eventually to acquisition of the Third Lagoon parcel, whose land was cited as an "outstanding example of a freshwater marsh with a high priority for acquisition" in The Nature Conservancy's 1977 inventory (San Juan Islands Advisory Committee, 1983: p.113). Because of legal obstacles, The Nature Conservancy opted not to purchase the property, which was later bought by the Land Bank and DNR.

An easement exists with Cape San Juan Associates (the community to the east of the DNR parcel) for a water pipeline right-of-way from DNR to the Cape San Juan community. The right-of-way includes the pipeline route, well, and storage tank. The well has been the only water source for part of the community and is located in an aquifer recharged by rainwater. Maintaining the quantity and quality of the water supply was stated as a concern of the community. The Cattle Point Water District owns a 2.36-acre parcel sandwiched between Parcel 1, the Third Lagoon Preserve, and Parcel 3. The water district maintains a desalinization plant there, along with a pipeline to saltwater and an easement across the Third Lagoon Preserve for that pipeline.

One alternative recommended by the San Juan Islands Trust Land Advisory Committee in 1983 was for DNR to donate its land to the NPS. This alternative acknowledged that a transfer would have to be initiated by DNR and that the NPS may not want to acquire land with an encumbrance such as the Cape San Juan well. When Third Lagoon was acquired in 2000 by DNR and San Juan County Land Bank, the county's stated intent was to transfer it in time to the NPS.

Population Trends

San Juan County

San Juan County, the smallest of Washington's 39 counties, has a population of just over 14,000 people (U.S. Census Bureau, 2000). Agriculture, which took the form of fruit production and row crops, especially peas and potatoes, was a dominant use of the land early on but has shrunk to a few remaining livestock operations and a growing number of small farms catering to organic and specialty markets. Wholly agricultural lands constitute only 12 percent of the total county acreage. In addition to agriculture, the island economy was also fueled in earlier days by commercial fishing, timber harvesting, and limestone mining. All have given way in the post World War II era to tourism and recreation services, which are by far the largest contemporary industries in the county (San Juan County Profile, September 1999. Labor Market and Economic Analysis Branch, Washington State Employment Security Department).

Population forecasts for San Juan Island are provided by the Office of Financial Management, Washington State. In 2010, the population on San Juan Island is expected to reach 8,869 and by the year 2015, reach 10,065.

Tourism has a large impact on the county population. On an average day in August, county population can increase by approximately 60 percent, and if spreading out the number of tourist-days over the full year effectively increases the county population as much as 35 percent (San Juan County 2005. Washington State

Ferries reported that 717,372 people arrived in Friday Harbor by ferry in 2006.

Approximately 15 percent of San Juan Island is classified as open space, which includes parklands and other natural reserves; the remaining 85 percent of the land base is characterized as residential or potentially residential space.

Socially or Economically Disadvantaged Populations

Population Trends

San Juan County is one of the fastest growing counties in Washington. During the 20-year period 1980-2000, the population grew by nearly 80 percent (from 7,838 to 14,077); no other county grew at a faster rate. From 1990-2000, the rate was slightly over 40 percent; only Clark County expanded more quickly. By contrast, state population levels increased only half as fast—by 43 percent for the period 1980-2000 and by 21 percent from 1990-2000.

For the period 1980-2000, San Juan County gained 6,239 residents. Of that number, 378 or just 6 percent were the result of natural population increase (2,079 births and 1,712 deaths); the remaining 5,872 (94 percent) resulted from net in-migration. Projections for 2000-2025 show a gain of 8,457 residents; even though the natural population is expected to decrease by 3,477 (3,063 births and 6,540 deaths) during that time, these figures will be more than offset by an expected net in-migration of 11,934 people. (U.S. Census Bureau, Census 2000 and Washington State Office of financial Management, 2002)

The demographics of population change in the San Juans are unusual. Given the attraction of the islands, most people do not move there to work; they move there to live. In addition, many of the migrants are retirees. San Juan Island has the highest proportion of elderly people in the state.

Demographics

The gender makeup of San Juan County remained relatively constant between 1990 and 2000. Females accounted for 50.5 percent of the population in 1990 and 51.3 percent in 2000. Racial composition of the population changed subtly from 1990-2000. Whites comprised nearly 98 percent of the residents in 1990; ten years later, their estimated share size of the population had decreased to 95 percent.

While white residents only decreased a few points in share size, they increased by 36 percent in actual numbers during 1990-2000. During the same period the nonwhite population increased by 55 percent, but the actual numbers for this group are small. There were only slightly over 400 non-whites in the county in 2000. All racial groups registered positive growth during the period.

People of Hispanic origin can be of any race and are tallied separately. During the decade, the county's Hispanic population grew by 180 percent, increasing from 121 to 338. Their total population share size remains small, however, at only 2.4 percent.

When compared to statewide racial statistics, Hispanic, Asian and African American populations are significantly underrepresented in San Juan County and in the park's visitor population. The percentage of American Indians is also less than the state average (0.8 percent vs. 1.6 percent). Native American youth are occasional visitors to the park in educational groups; they are specifically recruited as students in the Oregon Museum of Science and Industry's summer science camp based at the park's English Camp unit. (U.S. Census Bureau, Census 2000)

Economically Disadvantaged Demographics
The most recent and readily available source for unemployment data characterized by race and gender is the 2000 Census. While Census data are valuable because they are one of the few sources for this type of information, the data were gathered at a single moment in time. The information from this "snapshot" of the population, therefore, should not be interpreted as annual averages.

According to the 2000 Census, the San Juan County civilian labor force totaled 6,822 individuals. Of this total, 2.4 percent of the male population of working age was unemployed; for females, the figure was 4.0 percent. Taken together, the county average unemployment rate was 3.2 percent. Unemployment rates are highest for Native American males (12.9 percent) and Hispanic females (13.8 percent), but these individuals comprise only a small portion (less than 1 percent) of the total labor force. Unemployment rates for all groups in San Juan County were less than those for Washington as a whole; statewide unemployment averaged 6.2 percent in 2000, rising to 14.7 percent for American Indians and 12.5 percent for the Hispanic population.

Statistics indicate that 6.0 percent of the families in San Juan County are in poverty; statewide, this figure is 7.3 percent. The rate for individuals in poverty is similar: 9.2 percent for San Juan County versus 10.6 percent for the state as a whole. For individuals over 65, the poverty rate falls to 3.1 percent, significantly lower than the state rate of 7.5 percent and likely a reflection of the relatively affluent retired segment of the county's population.

No survey or interview data exist for the percentage of park visitors who are unemployed or whose income is below the poverty line. Moreover, the park does not have current data on the racial makeup of its visitor population. Casual observations and the impressions of park staff who contact visitors are that park resources are enjoyed by a mix of visitors, including the economically disadvantaged. In this regard, it may be important that the park does not charge any entrance or recreational use fees that could operate as a barrier to visitation.

Contemporary Tribal Communities

Contemporary tribal communities descendent from indigenous populations of San Juan Island include residents of American Indian reservations; a federally recognized tribe without a reservation; First Nation reserves in Canada; and a small number of families still living in the San Juan Islands who are not federally recognized as tribes. At least some of the island American Indians are registered as members of other tribes, such as the Samish. In the United States, the Lummi and Swinomish Nations have reservations that are closest to San Juan Island. The Lummi reservation is 35 miles northeast on the mainland, north of Bellingham. The Swinomish reservation is about 25 miles east on Fidalgo Island, south of Anacortes and west of La Conner.

The land base of both the Lummi and Swinomish reservations was created by the 1855 Point Elliott Treaty and modified by an Executive Order in 1873. In contrast, the Samish were not identified in the final draft of the Point Elliott Treaty and they did not receive a portion of the Swinomish reservation in 1873 that was supposed to have been established for them. Some Samishes took up residence on the Lummi and Swinomish reservations where they intermarried, but others lived outside of reservations entirely. A Samish village on Guemes Island was occupied until 1912 when economic pressures led tribal members to sell land they had homesteaded (Suttles, personal communication). Throughout the early twentieth century, the Samish lived at various places on the mainland and continued to use fishing villages in the San Juan Islands. Some resided outside of reservations, while others returned to Lummi and Swinomish reservations or even moved to more distant reservations such as Tulalip. Federal recognition of a group known as the Samish Nation took place in May 1996. Tribal headquarters are in Anacortes, but the tribe does not have a reservation.

There are three separate Klallam (also known as Clallam and S'Klallam) reservations in their primary historic homeland in the United States on the south side of the Strait of Juan de Fuca. Under the terms of the Point No Point Treaty of 1855, the Klallam were entitled to share a reservation with the Skokomish on the Hood Canal. Instead, they stayed in their traditional area and continued to travel to the San Juan Islands for fishing and other purposes. One group of Klallam families purchased acreage east of Port Angeles in 1874 and received federal recognition as the Jamestown S'Klallam Tribe in 1980. Another group maintained residency on the Kitsap Peninsula near the lumber mill town of Port Gamble where they acquired acreage purchased on their behalf by the federal government in the mid 1930s. At the same time, a third group that came to be known as the Lower Elwha Tribal Community received acreage near Port Angeles. Port Gamble and Lower Elwha received both federal recognition and land pursuant to the Indian Reorganization Act of 1934.

There are several First Nation reserves north of San Juan Island where descendents of the Songhees and Saanich tribes live. In British Columbia, Canada, west of Victoria, the Songhees reside on two reserves at Esquimalt. North of Victoria, there are Saanich living on four reserves on the Saanich Peninsula. The ancestors of both the contemporary Songhees and Saanich used fisheries on the west side of San Juan Island into the early 1900s. Likewise, their ancestors are among the ancestors of individuals in two federally non-recognized tribes that still reside on San Juan Island, the Mitchell Bay Band and the San Juan Tribe of Indians.

Mitchell Bay is a short distance south of Garrison Bay and the English Camp unit of San Juan Island National Historical Park. A survey was conducted between 1916 and 1918 to determine the number of Indians who were living outside of reservations (Roblin, 1919). It identified the following tribes and number of individuals as San Juan Island residents: "Mitchell Bay, 41; Klallam, 48; San Juan Tribe, 6;

Lummi, 4; Swinomish, 1" (as presented in Boxberger, 1994: p.39). Mitchell Bay and San Juan Indian Tribes may have been two distinct names used by certain individuals and families in earlier times to refer to their descent from certain individual tribes or different sets of Canadian and United States tribal groups such as the Songhees, Saanich, Samish and Lummi. Both the Mitchell Bay and San Juan groups pursued land claims and federal recognition, but by 1982 "the Department of the Interior defined the Mitchell Bay Indians, as a 'group' of Indians who are similar to the San Juan Island Indians" (Ruby and Brown, 1986: p.133). It is said that the membership was 110 individuals in 1989 (Suttles, 1998: p.22).

A *Seattle Post-Intelligencer* newspaper article in 2002 said that an extended family with Indian heritage continued to live on San Juan Island and nearby Stuart Island. At the time, one gentleman who was 72 years old and had "one-quarter Indian blood" lived in Friday Harbor and continued to own and use a reef net at Reid Harbor on Stuart Island near where his 94-year old aunt lived. She recalled a scene from her youth on Stuart Island: "Along this beach here there was nothing but Indian camps. Saanich, from Canada, used to come up in big long canoes." A 50-year old nephew of the Friday Harbor resident also lived in Friday Harbor and said he had "three-sixteenths Indian and was an associate member of the Swinomish Tribe." The younger man's 80-year old aunt and Friday Harbor neighbor commented on herself and other Indians she knew:

> There isn't any of them left here on the island except our family. We didn't get any allotment land in San Juan County. It's sad. There isn't any recognition of our ever being a tribe. That's what I am. I am a San Juan Indian (Shukovsky, 2002).

As mentioned above, a number of island residents identify themselves as belonging to the Mitchell Bay Band or the San Juan Tribe, which are not federally recognized tribes. Many of these individuals maintain membership in federally-recognized tribes such as the Samish or Swinomish.

Legal Agreements

The following are legal agreements between the park and others to help with the management of collections, visitors, and fire.

- 1993 Memorandum of Agreement (MOA) between North Cascades National Park Service Complex and the park for curatorial assistance and collections management.
- 2003 MOU between the Burke Museum and the park for curatorial collections management.
- Memorandum of Understanding (MOU) between NPS and San Juan County regarding American Camp road vacation.
- 2002 General Agreement between the San Juan County Sheriff's Office and the park for law enforcement and mutual aid.
- 1994 MOU between the San Juan County Fire District #3 and the park for fire management.
- 1987-2007 Interagency Agreement between Washington State Department of Natural Resources and the park for placement of a dingy dock on state-owned aquatic land.
- MOU between Department of Interior Biological Resources Division and the North Coast and Cascades Network, which includes the park, for conducting research and inventory and monitoring activities.
- Memorandum of Agreement between San Juan County Public Works Department and the park for federal compliance and planning for the Cattle Point Road Environmental Impact Statement.
- Memorandum of Agreement between the National Park Service and Oregon Museum of Science and Industry for OMSI to use land at English Camp for a summer educational programs of mutual benefit to OMSI and the park.

Land Use Documents and Related Plans

Washington State Documents

Recommended Management Guidelines for San Juan Islands Trust Land

This document was published by the San Juan Islands Trust Land Advisory Committee in May 1985. In 1983, after growing concerns by the San Juan County Commissioners regarding DNR proposals in the county, the Commissioner of Public Lands established a committee to develop a long-range management plan for the Trust Lands in San Juan County. The purpose of the commission was to "provide a forum for discussion of issues and areas of concern regarding the wise and prudent multiple uses of DNR-managed lands." The committee involved participation with state and local agencies, the general

public, and committee members on "how to integrate DNR trust obligations for environmentally sound land management with educational and recreational opportunities and with the concerns of island and regional residents" (p.x).

The committee's recommendations were guided by five factors that included sound resource management and protection of public resources, multiple use provisions compatible with basic Trust obligations, and San Juan County plans and policies.

There are two DNR properties adjacent to San Juan Island National Historical Park: Mitchell Hill, which shares its northern border with English Camp; and Cattle Point NRCA, which shares its western border with American Camp. Both of these properties are discussed in the previous "Land Use and Ownership Patterns" subsection.

San Juan County Documents

San Juan County Comprehensive Plan

The *San Juan County Comprehensive Plan* is a set of goals and policies to achieve the vision for the future of San Juan County. It guides the physical, economic and community development of the county for the next twenty years. The Comprehensive Plan was adopted by San Juan County in October 2000 and is periodically updated.

The plan establishes five principal land use classes for the county. Each class permits a different level of activity. These five are Growth Areas (urban lands), Activity Centers (including areas of more intense rural development), Rural Lands, Resource Lands, and Special Districts which include Conservancy and Natural designations). There are districts within each class, which are individual land use categories. These land use classes and districts have been developed based on the needs and expressed desires of the community, existing land use patterns, natural systems and land capability, and coordination with the Shoreline Management Act and the Shoreline Master Program. The Unified Development Code identifies the uses and activities, which are allowed or prohibited within each land use district.

The goals of the Conservancy and Natural designations are to "protect, conserve, and manage existing natural conditions, resources, and valuable historic, scenic, educational, or scientific research areas for the benefit of existing and future generations without precluding compatible human uses", and "to preserve indigenous plant and animal species and ecosystems in a natural state for the benefit of existing and future generations.." San Juan Island National Historical Park is zoned under the Conservancy Land district. (For further analysis on land classification around the park, see the "Land Use and Ownership Patterns" section.)

Parks, Recreation, and Preserved Lands Plan for San Juan County, 1999-2004

This plan was prepared by Future Directions, Inc. for San Juan County and adopted by the county in May 1999. The plan provides a six-year direction to San Juan County Parks, Public Works, and the Land Bank "for the identification, development and management of parks, recreation, and reserved lands for 1999-2004" (p.3). The document's goal was to inventory existing parks, road ends, and preserved lands, analyze demand and need, and develop an action plan.

The San Juan County Land Bank was established by voters in 1990 to identify and preserve the important conservation lands in the county through property acquisition. This program is funded through a one-percent real estate transfer tax paid by purchasers of property in the county. Since January 2003, the Land Bank has acquired a total of 413 acres in fee acquisition (purchase price $6,135,861) on San Juan Island and other 243 acres in conservation easements (purchase price $579,659) (Land Bank website). In 2000, in partnership with the DNR, the Land Bank purchased a significant 19-acre day-use hiking area, called the Third Lagoon Preserve, on Mount Finlayson adjacent to American Camp and the Cattle Point Natural Resources Conservation Area.

According to the *Parks, Recreation, and Preserved Lands Plan for San Juan County*, the Public Land Inventory for San Juan County lists 26 parcels of public land managed by San Juan County, Department of Natural Resources, Port of Friday Harbor, Washington State Parks, Town of Friday Harbor, and the National Park Service. The Town of Friday Harbor manages 10 parcels within the town limits (p.25-27).

In the Master Plan of Strategies by Year—1999, the NPS is listed as participating with the county in developing a comprehensive trail survey that would assist with local prioritization of resources, as new trails are desired by the community (p.79).

Plan for Parks, Recreation and Preserved Lands for San Juan County, 2005-2010; Section II: County Parks, Land Bank, and Public Works Overview

This plan is an update of the *1999-2004 Plan for Parks, Recreation and Preserved Lands for San Juan County*. The purpose of the plan is to provide direction to three county departments for parks, recreation and preserved lands. These departments are Parks, Public Works, and the Land Bank.

In 2004 since the last plan was written, the Land Bank joined with the San Juan Preservation Trust to develop a strategic plan to guide both land conservation organizations in establishing conservation priorities through the San Juan Islands. The Land Bank owns more than a dozen properties on San Juan Island and has conservation easements on many more. (In 2005, the Land Bank and DNR purchased a 70-acre parcel on the northern boundary of American Camp.)

The plan addresses community involvement in determining the existing resources of the county and how these resources are managed. A media campaign was developed to encourage public participation and public meetings were held. In addition, a survey was mailed to residents to randomly selected households within the county. The results of this survey revealed a community desire and need to improve existing parks (65 percent of respondents); that trails and bikeways should be an integral park of transportation planning for the county (82 percent) and that trails and bikeways should be a critical consideration in public land acquisition projects (71 percent). In addition, for land acquisition priorities, 87 percent assigned a moderate to high priority to land purchase for watershed conservation, preserving scenic views and habitat protection. The greatest desire was for beach and tideland access with or without parking availability (p.61-62).

In the "Master of Strategies" section, the National Park Service is listed as assisting the county in the following categories:

- developing trails and bikeway plans for Orcas, Lopez, and San Juan islands, identifying and prioritizing specific projects and resources
- maintain, improve, and expand trail systems on public lands
- preserve cultural and historic resources existing in county parks
- and maintain public ownership of Washington State DNR Trust Lands In the county through interagency cooperating and implementation of multi-agency transfer package developed in 2003.

San Juan County Nonmotorized Transportation Plan

This plan is an element of the *San Juan County Transportation Plan* and was published in December 2004. The plan's purpose is to implement state and county directives that address nonmotorized transportation requirements, including alternative transportation, while addressing and incorporating public needs.

The San Juan Islands are beautiful and enticing environments. It is presently difficult for visitors and residents to access popular destination and parts of the islands without a vehicle. Many of the roads are challenging for biking and there are few walking corridors for public use. County staff and advocacy groups have worked together to develop specific goals projects which are represented in the plan.

The following policy and goals were developed as part of the plan that included input from the bicycle-pedestrian advisory groups from the three major islands:

- Promote the development of a safe and convenient non motorized transportation system in San Juan County that serves the needs of residents and visitors alike.
- Provide safe, integrated pedestrian and bicycle linkages between ferry terminals, village centers, parks, schools and major island destinations.
- Coordinate nonmotorized transportation planning with other county departments, agencies and organized island groups that may be part of a unified solution.
- Provide, as a minimum funding level, no less than 2 percent of the annual construction program budget for the construction of nonmotorized transportation projects.

While specific projects and goals were listed in the plan, the following general countywide needs should be addressed:

- Placement of bicycle staging areas and informational materials at each of the ferry terminals.
- Provision of linkages between ferry terminals and activity centers.
- Development of wider shoulders on main corridors, roads leading to schools or touring routes.

- Consideration of a broad range of safety-related issues including crossing improvements, pathways that link island destinations and school walk route improvements.

The remainder of the plan addresses design guidelines, to help mitigate visual impact of new facilities; increased maintenance needs; and county management and coordination to administer the plan.

San Juan County Open Space and Conservation Plan

The Open Space and Conservation Plan was prepared for the Board of County Commissioners by the San Juan County Planning Department and the Open Space and Conservation Committee in May 1991. The plan began as a grassroots effort to protect open space.

In 1990, San Juan County with help from the San Juan Preservation Trust initiated an open space and conservation planning process. The Board of County Commissioners appointed an Open Space and Conservation Committee to develop a plan to identify and protect open spaces, vistas, and view corridors that substantially contributed to the rural quality of the landscape. In addition, the committee was to address important natural resources whether they contributed to the visual quality or not. The plan addressed methods used in identification, any degrading factors, and effectiveness of existing conservation tools and presented recommendations for actions to conserve open space resources.

The analyses show which open space resources are significant to the community and how sensitive those resources are to adverse change. In the San Juan District, San Juan Island was divided into 27 units (areas) based on topography, vegetation, and cultural patterns. Each unit was analyzed using the nine following criteria: pastoral landscapes, water/mountain view landscapes, prominent geographic features, rural development pattern, diversity, landscape contrast, uniqueness, visual accessibility, and contributing to existing resource conservation areas. Each criterion for each unit was ranked. The units were then scored and ranged from highest to lowest. American Camp scored the highest and English Camp fifth highest. The score weighting reflects the general importance of the resource to the community.

San Juan County Shoreline Master Program

The Shoreline Master Program was originally adopted in 1976 in accordance with the Washington State Shoreline Management Act of 1971. The plan applies to all shorelines in the county except federal land, to the area 200 feet landward from the ordinary high water mark and to tidal waters. It is the intent of this program to manage the use and development of the shorelines giving preference to water-dependent and water related uses and to encourage development and use in harmony with natural conditions.

In response to the public's demand for greater marine habitat protection, a shoreline designation termed Marine Habitat Management Area Environment was added to the Shoreline Master Program. This area is designed to preserve and restore critical marine habitat areas and may be applied as an overlay to other shoreline environment designations.

All National Park Service plans need to meet federal requirements under the Coastal Zone Management Act. This general management plan will be reviewed by the Federal Consistency Coordinator for the Washington State Department of Ecology. The plan must meet the Washington State Coastal Zone Program to the maximum extent possible.

San Juan County Unified Development Code

This code is the tool for implementing the goals and policies of the *San Juan County Comprehensive Plan* in conformance with Washington State's Growth Management Act, Shoreline Management Act, Subdivisions Code, and State Environmental Policy Act. Development regulations and land use regulations are contained within this document. Zoning adjacent to the park is discussed in detail in the "Land Use and Ownership Patterns" section.

San Juan Island Trails Plan

The San Juan Island Trails Committee finalized this plan in September 2006. The intent of this plan is to foster the coordination of trail groups, both public and private, in the creation of a network non-motorized trail system. It is envisioned that this trail system would connect users to important destinations and key resources on the San Juan Island. The target user groups are walkers, bicyclists, and equestrians.

A number of new conceptual trails were developed during the planning process and listed as either Priority I or Priority II depending upon factors such as

expense of developing the trail, timing, and logistics. The following trails link to either English Camp or American Camp at San Juan Island National Historical Park. The following trail descriptions are excerpted directly from the *San Juan Island Trails Plan (p. 24-26)*:

Proposed Priority I Trails

"Friday Harbor—American Camp Link

Identified as the top priority by respondents to the Committee's 2005 Trails Survey, this proposed trail route would use National Park Service land, the public right-of-way along Cattle Point Road, and the new Terminal Trail at the airport to connect Friday Harbor with American Camp. If owners of private property along the route agree to participate, the trail may, in places, cross private land as well. This trail, approximately 7 miles long, is envisioned to be used mainly by walkers. Newly widened shoulders along most of Cattle Point Road provide a safer roadway for bicyclists to travel between Friday Harbor and American Camp."

"Roche Harbor—Roche Harbor Highlands—English Camp Link

This proposed walking trail would connect Roche Harbor Resort and English Camp, via Roche Harbor Highlands. It could use National Park Service land, Roche Harbor Village property, and property owned by Saltchuk Resources, as well as the public right-of-way along Roche Harbor and West Valley roads. Much of the 5-mile trail already exists."

"A Cross-Island Trail

Utilizing publicly owned land and willing landowners, this trail would connect the Roche Harbor-Mitchell Hill-English Camp area with Egg Lake Road through the center of the Island. This may be a component of the Friday Harbor-Roche Harbor Link. Being cross-country in nature, it might possibly accommodate walkers, horses, and mountain bikes. The creation of this trail would require significant cooperation of private landowners."

Proposed Priority II Trails

"English Camp—American Camp Link

During the 19th century, while soldiers of England and the U.S. were concurrently stationed on San Juan Island, and before most of our current public roads existed, there was a roadway that connected the two camps. Commonly referred to today as the historic military road, or the Old military road, only remnants of this roadway exist, as well as sections that are now contiguous with modern roadways, both public and private. There has been much interest as well as controversy on the Island about the Old military road over the last twenty or more years. The San Juan County Department of Public Works conducted an extensive trail feasibility study of it in 1990. Much of the road travels across what is now private property, and the possibility of reviving or restoring it has been greeted with great interest on the part of some and great resistance by others. The allure of recreating an historic trail across this lovely countryside is very compelling, but the potential for controversy and rancor discourages the Committee from pursuing this very aggressively as we would rather create trails (and supporters) in more feasible ways and locations."

Historic Old Military Road, Trail Feasibility Study, Final Report

This study was produced by San Juan County in November 1990. The purpose of the study was to assess the feasibility of restoring the historic military road, constructed between 1860 and 1875 by the British Royal Marine Engineers, as a trail link between American and English camps. The military road eventually fell into disuse possibly due to population shifts on the island. Using historic surveys the route can be traced accurately.

The study team produced three trail design options defined by the type and intensity of use: pedestrian, bicycle, and equestrian. Three major alignments of the trail were developed and evaluated; these were defined as the Historic Route, Cady Mountain Historic Route, and Existing Road Route. A new alternative was developed after public involvement and labeled Alternate Route. The report also included a preliminary estimate of construction costs.

Though the route of the trail varied slightly, in all alternatives the two primary trailheads were located at English Camp and American Camp. The document states that the county would work cooperatively with the National Park Service.

Approximately 100 people attended two public meetings. Most people commenting on the plan agreed that a trail would alleviate safety hazards that are present when using the existing roads. Though the Historic Route maintains the historic integrity of the military road, it would have the most impact on private lands. Of the property owners that attended the meetings, all of them said that if the trail crossed their property, that they would not support it. However, most of them said that they would support a trail if it did not affect private property.

Most of the participants agreed that the Existing Road Route, which predominately used the right-of-way along the existing road system, would be preferred. Most of the public supported a minimum use unpaved trail that would be for hiking purposes only, the underlying reason being that this type of trail would most be used by local residents and not by island visitors.

The public felt that the trail does not have to follow the historic route but that the location of the historic route should be noted on a map or in a display at American and English camps. It could also be commemorated at locations where the trail crossed the historic route.

Westcott-Garrison Bay Marine Habitat Management Area Plan

This document is a marine habitat management plan and watershed plan for the Westcott and Garrison bays, published in July 2001 by the San Juan County Planning Department. One of several critical marine habitat areas on San Juan Island, the Westcott-Garrison marine complex was selected by the Board of County Commissioners as the first critical marine habitat area to be considered under the new Marine Habitat Management Area Environment in the county's Shoreline Master Program. The purpose of the report is to establish and present San Juan County's goals, policies and programs for the stewardship of the marine environment of Westcott and Garrison bays. The role of the plan serves to coordinate various county department actions into a comprehensive program to protect the marine resources. It provides background information about resources, the regulatory context, and potential development.

Under the "Management Plan Strategies" section, an interpretive display is proposed for English Camp. The plan proposes to work with the NPS to "provide an interpretive display at English Camp to inform the public about the marine resources of Westcott and Garrison bays, human impacts, and sustainable boating, nature visitation and watershed management practices" (p.17). In addition, a trail and interpretive center is proposed for the Mitchell Hill Trust Land. Under the Conservation Action Strategies, the plan seeks to "encourage the transfer of the Mitchell Hill DNR school trust land into a public conservation land status" (p.19).

There are plans to establish a Marine Habitat Management Area stewardship committee. As a land manager within the watershed, NPS has an opportunity to participate.

Westcott-Garrison Bay Watershed Assessment Report

This assessment was prepared by San Juan County Planning Department, San Juan County, Washington, in January 1999. It describes the physical environment, land uses within the watershed, resources and water quality, and the potential impacts to these resources.

San Juan Island National Historical Park is mentioned as being located in the center of the watershed. A description of the recreational use, facilities, and infrastructure of the park are discussed in the report (p.27). The document also mentions the initiation of the park's general management plan.

San Juan County Watershed Management Action Plan

This watershed management plan was approved by the Board of County Commissioners in 2000 and was developed by the Watershed Management Committee, a citizens' advisory committee to meet the requirements of the Puget Sound Water Quality Management Plan. This plan identifies important water quality resources and uses, identifies pollution sources and management issues, and presents over 100 strategies to prevent water quality degradation in the county and Puget Sound from non-point pollution.

Town of Friday Harbor Documents

Town of Friday Harbor 2002 Comprehensive Plan

The comprehensive plan was adopted in September 2002 by the Town of Friday Harbor. It was developed in accordance with the Growth Management Act and represents the community's plan for guiding growth and development for the next 20 years. The Land Use Element establishes policies to guide growth and development. There are eight land use categories: Single Family Residential, Multi-Family Residential, Professional Service Commercial, Commercial, Shoreline Public Accommodation, Industrial, Public Service, and Utility.

The headquarters for San Juan Island National Historical Park are located within the part of town zoned Commercial. The goals and policies for downtown Friday Harbor are intended to promote the downtown's role as the commercial, civic and cultural center of the county. The town's vision is to

preserve the small town character and offer "a full range of personalized commercial and public services in an attractive and convenient pedestrian-oriented environment" (p.10). American and English camps are outside the town and within San Juan County jurisdiction.

Other Related Plans

San Juan Islands Community Opinion Survey

This document was prepared for The Friends of the San Juans and The San Juan Islands Economic Development Council by The Madrona Group in March 1990. This study was conducted to assess community attitudes on issues, focusing on quality of life, and to determine the community's future goals. Questions that were analyzed included growth, the physical, social, and cultural environment, the economy, jobs, transportation and housing. A total of 1,060 questionnaires were sent to residents and 72 percent responded.

In general, the survey confirmed the importance of the environment to local residents. Protection of the natural environment was the highest priority for future goals for residents. Most were concerned about growth and "wanted population growth to slow or stop". In addition, residents wanted restrictions placed on growth and development. Open space preservation was a top priority, as well as improving the ferry system. In the written comments supplied, the most frequently mentioned issue was about growth and its effects on the lifestyle and environment (Executive Summary, p.i-iii).

Related National Park Service Plans

National Park Service Ocean Park Stewardship 2005-2008 Action Plan

The 2001 National Park System Advisory Board Report, "Rethinking the National Parks for the 21st Century," raised concerns about "dramatic declines in the health of marine ecosystems" and called for the NPS to focus more attention on stewardship and protection of ocean resources in the national park system. Responding to these concerns, NPS recently developed a strategy to increase its emphasis on marine resource management and conservation. The Ocean Park Stewardship Action Plan identifies critical issues and ways to address these concerns cooperatively with federal, state, and private partners. The action plan seeks to:

- Establish a seamless network of ocean parks, sanctuaries, refuges, and reserves
- Discover, map, and protect ocean parks
- Engage visitors in ocean park stewardship
- Increase NPS technical capacity for ocean exploration and stewardship

Accomplishing these goals requires that the NPS address complex issues and shared authorities that extend across park boundaries. The NPS recognizes that real conservation and science-based management result from collaboration between federal agencies, states, citizens, local communities, and academia, all working to protect a shared ocean heritage. The National Park Service has begun to strengthen its science-based foundation for managing marine resources, working with the U.S. Geological Survey (USGS), National Oceanic and Atmospheric Administration (NOAA), states, universities, and other partners.

The critical keys to improved ocean conservation in the national park system are partnerships with other ocean-concerned agencies and communities to facilitate cooperation, collaboration, and communication. Connecting people to ocean parks may be one of the most important tasks ahead to build awareness and support with park stakeholders and the public.

The *Ocean Park Stewardship Action Plan* essentially offers a call to action for the NPS to continue fulfilling its leadership role as an ocean conservation agency and to actively collaborate with other agencies such as NOAA to promote management activities in four general categories listed in the action plan. San Juan Island National Historical Park is one of the networks of ocean parks and will be actively participating as this initiative develops. Establishing detailed mechanisms, such as cooperative agreements, will be crucial to the success of these interagency programs. At San Juan Island National Historical Park, the existing framework of the Northwest Straits Commission and the Marine Resources Committee already provide a base upon which such agreements can be built.

Assessment of Coastal Water Resources and Watershed Conditions at San Juan Island National Historical Park

This technical report was prepared by Dr. Terrie Klinger, Dr. David Fluharty, Kirsten Evans and Carrie Byron, School of Marine Affairs, University of Washington for the NPS Water Resources Division in Fort Collins, Colorado. The assessment provides a summary of the status of freshwater and marine

aquatic resources at San Juan Island National Historical Park. The report examines existing information pertaining to water quality, the condition of aquatic habitats and their biota, sources of point and non-point pollution in the region, and threats to the park's aquatic resources.

Fort Vancouver National Historic Site General Management Plan

The *Fort Vancouver National Historic Site General Management Plan* was produced by the NPS in October 2003. Fort Vancouver National Historic Site was established to preserve the site of the original Hudson's Bay Company stockade and surrounding historic features of the area. Fort Vancouver served as the headquarters, principal supply depot for the Columbia Department, and initial administrative center of the Puget Sound Agricultural Company.

Both San Juan Island National Historical Park and Fort Vancouver National Historic Site share the same period of history and Hudson's Bay Company themes. Both were shaped by the on-going competition between Britain and the United States over control of the region. The Hudson's Bay Company archaeological artifacts for San Juan Island National Historical Park are currently stored at Fort Vancouver National Historic Site.

Existing Park Development and Programs

San Juan Island National Historical Park totals 1,752 acres. It is comprised of two units: English Camp totaling 529 acres on the northwest section of the island, and American Camp totaling 1,223 acres on the southern tip of the island. The park headquarters are located in a leased building in the town of Friday Harbor on the east side of the island.

Roads and Parking

Paved Roads

San Juan Island National Historical Park has a total of ten roads. Approximately four and one-half miles of these roads are paved road surfaces inside the park boundary. At American Camp, a 1,400 linear foot paved road leads from the main entrance road to the visitor center, ending in an 8,000 square foot parking lot. The NPS maintains a mile and one-half stretch of road along Cattle Point Road from the park's entrance to the intersection at Pickett's Lane. San Juan County maintains one and one-half miles of the Cattle Point Road from Pickett's Lane to the eastern boundary. In addition, the county maintains the half-mile long Pickett's Lane, extending from its intersection with Cattle Point Road to South Beach. The NPS maintains the 16,000 square foot parking area at South Beach. (Refer to Figure 4 and Figure 5 for road locations).

At English Camp, the county maintains one and one-half miles of paved county road along West Valley Road within the park. West Valley Road is the main road connecting Roche Harbor with the west side of the island. The park also maintains a 9,068 square foot parking lot at the maintenance shop.

Gravel Roads

There are approximately four miles of gravel road surfaces in the park. At Cattle Point Road, a 600 linear foot road leads to the Fourth of July Beach picnic area. This road splits off to the north as an 800 linear foot spur to a horse trailer parking. The road beginning from the parking area at South Beach paralleling the beach, known as Salmon Banks Road, is 1,520 feet long. It has two spurs, each 120 feet long, leading to the beach. The redoubt road from Pickett's Lane to the redoubt is 4,100 feet long and ends in a parking area 14,250 square feet in size. The parking lot capacity is about 15 vehicles. The service road, which runs through the woods on the north side of Mount Finlayson, is one and a half miles long, but only foot traffic, park, and emergency vehicles are allowed on it.

The entrance to English Camp is a gravel road 1,790 linear feet with a 21,165 square foot parking area at the end. The service road from the maintenance facility to the back of the parade ground is 2,670 feet long and serves the VIP sites, the OMSI summer camp, the Crook house, the backside of the parade ground and the English Camp well house.

Signs

There are 78 park signs that are used for interpretation, safety, and direction throughout the park on roads, trails, buildings, and boundaries.

Trails

There are approximately nine miles of dirt and gravel trails in the park. At American Camp, five miles are available and mapped for general hiking. English Camp has four miles of trails.

Buildings and Facilities

The park has nine major structures managed by the National Park Service.

Headquarters

In 2004, the park's administrative offices were relocated from Spring Street to a new leased space by the General Services Administration on Mullis Street in the Town of Friday Harbor. There is approximately 1,400 square feet total of office space. The administrative offices are used by five permanent employees.

American Camp

Visitor Center

The park's primary and year-round visitor center is located at American Camp. The visitor center is 1,400 square feet and consists of a double-wide trailer constructed in 1979 to serve as a temporary visitor center. The interior of the building is divided into three sections: an 800 square foot public interpretive area, a 350 square foot office, and a 250 square foot office. Three employees work in the offices year-round with as many as six employees in the summer. Two accessible restrooms are connected to the building by a deck and are 40 square feet each.

Fire Cache

The fire cache was acquired with a 4.2-acre tract of land in 1968. It consists of a wood framed building with plywood siding and an asphalt shingle roof that is used for equipment storage, natural resource supplies and tools, and fire fighting equipment. It is approximately 900 square feet in size and is located off the American Camp entrance road adjacent to the VIP hook ups.

Historic Structures

Of the original 28 buildings constructed by the American military, only two remain onsite, the officers' quarters and the laundress' quarters.

Officers' Quarters HS 11—the officers' quarters were built around 1860. It is a one-story duplex building with 1,221 square feet of living space and 540 square feet of covered porch. The construction style is typical of most buildings at both camps. There is no internal wall framing. The walls are composed of vertical planks covered by horizontal external siding. This style is known as plank or box construction. As with all camp buildings, it has a cedar shake roof. It is not open to the public.

Laundress' quarters HS 6—the laundress' quarters was built in 1860 and is 351 square feet. It is a one-story box construction building with board and batten siding (not typical) and a cedar shake roof. It is not open to the public.

English Camp

Maintenance Facility

The maintenance facility was built in 1990 and contains a shop and office building 3800 square feet in size. Adjacent is an 800 square foot metal shed with a 200 gallon (approximate) above-ground storage tank for storing diesel and gasoline.



Laundress' quarters at American Camp. NPS Photo.

Historic Structures

Of the original thirty primary buildings constructed by the Royal Marines only four remain. Another historic building, the Crook house, was built after the encampment period.

Blockhouse HS 1—the blockhouse is a two- story log structure measuring 250 square feet on each level. It was built in 1860 and was made primarily of interlocking stacked logs, what many people would refer to as "log-cabin" style. The upper level is set diagonally across the lower room. The lower floor is open for viewing from May to September.

Barracks Building HS 2—the barracks is a one-story rectangular building. It consists of two rooms and is 1600 square feet. It was built in 1860, using plank construction. Open from May until September, it serves as the English Camp public contact station and is staffed primarily by park volunteers.

The Commissary HS 3—the commissary building is a one-story, one room, gabled structure measuring 800 square feet built in 1860. It is not open to the public and is used primarily for storage of reproduction tools and tents for living history programs.

Hospital HS 18—the hospital is a one-story, rectangular building with a gable roof measuring 480 square feet. Built in 1860, it has three rooms. It is not open to the public.

Crook House—the Crook house is situated on a slope above the historic military structures. It was built between 1887 and 1903. The two-story, wood-frame structure (1587 square feet) has a second story covered porch on the west side. An additional one-story wing was added onto the east side in the 1960s (397 square feet), making the total square footage 1984. Though not from 1853 to 1871, the period the park commemorates, it is of local historical significance as an example of an early San Juan Island farmhouse. It is now inhabited by a maternal colony of bats. No one is allowed inside the house due to possible histoplasmosis infection. It was determined eligible for the National Register of Historic Places in 1984.

Dingy Dock—the Dingy Dock, located on Garrison Bay, was donated by a Canadian organization in 1984. It was completed and dedicated in 1986 and is used by many boaters. The dock has four sections measuring 6 feet wide by 20 feet long and two sections measuring 8 feet side by 16 feet long for a total length of 112 feet. The park staff maintains it.

Formal Garden—the restored formal garden, a key visitor site and of historical significance, is approximately 2,000 square feet, round in design and sectioned into 12 pie-shaped areas by 16 inch tall box hedges. The water source is a hand dug well next to the Young Hill trail.

English Camp Cemetery—the English Camp cemetery is located on the slope of Young Hill above English Camp. It is a small plot surrounded by a white picket fence. Headstones in fair condition mark seven graves. A Royal Canadian Navy marker designating the site was installed in 1964.

Vault Toilets

There are four vault toilet comfort stations located in the park. One is located at American Camp at South Beach and another at Fourth of July picnic area. At English Camp, there is one at the visitor parking lot and another sited at the north end of the English Camp parade ground.



Commissary at English Camp. NPS Photo.

Utilities

Electricity to the park is supplied to the park units by Orcas Power and Light Cooperative. Century Tel provides telephone service.

At American Camp, water is supplied by one well. The system consists of a drilled well, submersible pump, continuous chlorination and a contained air hydropneumatic tank. This system serves two Volunteer-in the-Park (VIP) trailer pads, restrooms at the visitor center, and a drinking fountain. Most of the system components were replaced in 2006, including the pump, the chlorinator, the pumphouse, the tanks, and the water lines. The well itself was cleaned, but not replaced.

At English Camp, the public system is served by a low yield drilled well, hypochlorinator, a submersible pump that pumps chlorinated water to an above ground polyethylene chlorine contact tank. A high service pump takes the water from the contact tank to hydropneumatic storage for distribution. This system serves two VIP trailer pads, a summer youth camp and a drinking fountain. A second well and submersible pump serves the maintenance shop. The well water in the shop is not chlorinated, so it is not potable. Drinking water is delivered by a service company and kept in a cooler in the shop office.



Asset Business Plan for San Juan Island National Historical Park

Asset Business Plans are recent NPS planning efforts to implement improved facility management systems in the NPS. The purpose of these plans is to provide insight about the facility asset portfolios of each park in the NPS inventory. Data supporting the plans has been taken directly from the NPS Facility Management Software System (FMSS), as well as other supporting business tools and systems managed and supported by NPS.

The collection and dissemination of this type and level of asset management information is unprecedented for a public organization with an asset portfolio comprising the size and scope of NPS. The asset business plans represent a sound, businesslike approach to making smarter decisions about how to best utilize resources. They meet the requirements of Executive Order 13327—Federal Real Property Asset Management, as well as Department of the Interior guidance to create site specific asset business plans.

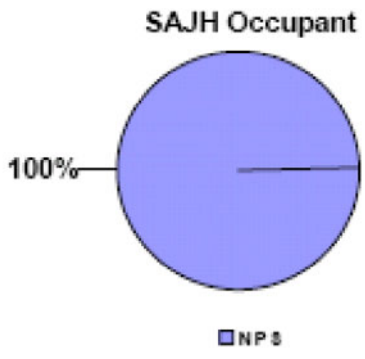
Park Asset Management Plans provide a 10 to 15 year asset management strategy for park units. More importantly, this NPS approach also helps park units and the NPS manage the gap between what should be spent on facilities using a life cycle-total cost of ownership approach, and what is actually being spent. The plans address facility management and asset issues, but also address the natural and cultural resources that are mission critical for the NPS.

These plans contain important information such as who occupies NPS assets, how important each asset is in supporting the park purpose, operations and maintenance funds spent at each park, and key information about current replacement values, quantities, condition based on the facility condition index (FCI), and amount of deferred maintenance. The plans also provide contextual information about the relative condition of each asset in comparison to how important the assets are in supporting the purpose of the park. Finally, the plans discuss predictive, future system replacement needs (component renewal), out-year project development, and planned disposition of unneeded park assets.

These plans are intended to help planners and park managers better understand asset portfolios in order to make more informed decisions about how to best maintain and sustain large asset inventories. Specifically, the use of this information will help managers make informed investment and resource utilization decisions about the future direction of the park's asset portfolio.

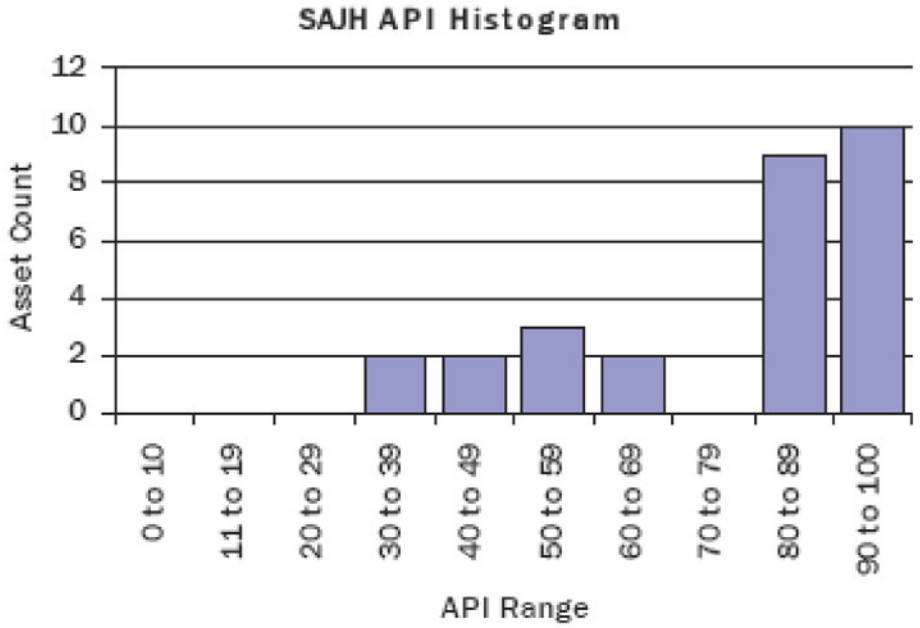
Strategic Asset Planning

The *Asset Business Plan* (ABP) has been developed to help parks better understand and manage their assets. Using the data on 'industry standard assets' (includes roads, trails, campgrounds, buildings, housing, water systems, and waste water systems) from the Facility Management Software System (FMSS), the ABP is a sub-section of the larger Park Asset Management Plan (PAMP). The ABP allows park managers to review their inventories, conduct analyses, and document requirements for operating and sustaining their portfolio of assets. This process supports budget formulation and is the first step in determining which resources are required to bring the portfolio up to acceptable condition and properly sustain it over time.



Asset Prioritization

Asset prioritization, using the Asset Priority Index (API), is a key element to improving the management of a large portfolio of assets. Understanding the relative importance of assets enables leadership to make critical budgetary and programmatic decisions, using resources efficiently. The NPS API ranks assets on a low to high scale ranging from 0 to 100. The API scores (banded in units of 10) and a summary of the inventory is shown below.

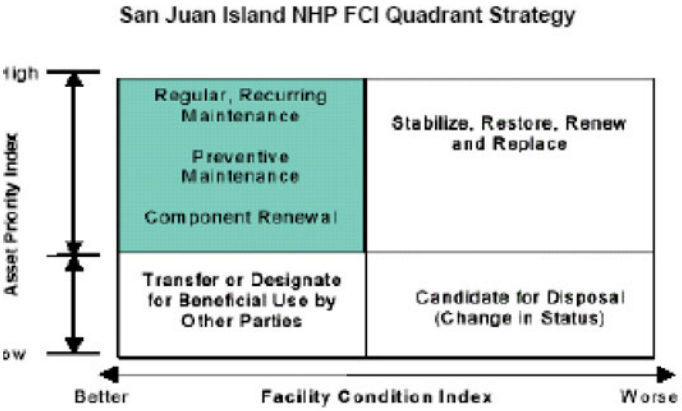


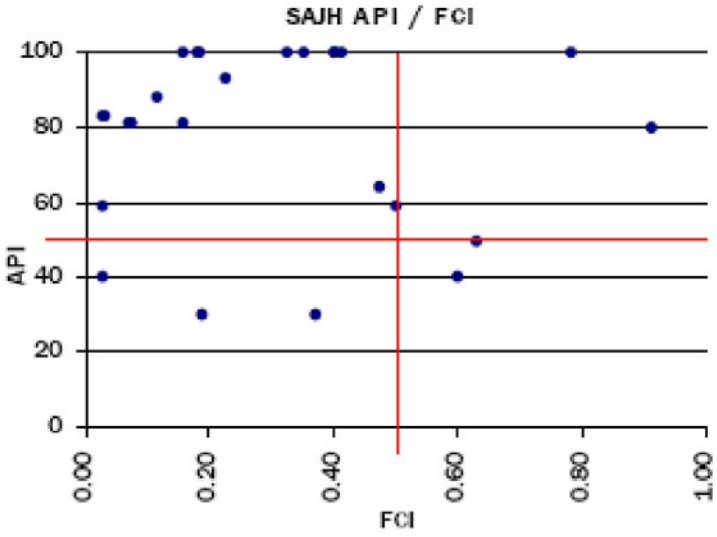
San Juan Island NHP Asset Summary

Asset Code	Asset Count	Total Quanity	Total DM (000)	Total CRV (000)	Average FCI
1100 - Roads	5	4	$140	$702	0.20
1300 - Parking Area	6	61,948	$36	$437	0.08
2100 - Trails	2	47,770	$33	$1,131	0.03
3100 - Maintained Landsc	2	13	$211	$1,266	0.17
4100 - Building	19	14,099	$1,067	$3,965	0.27
5100 - Water System	3	800	$155	$408	0.38
6300 - Marina / Waterfront	1	27	$17	$78	0.22
Total	**38**		**$1,660**	**$7,986**	**0.21**

Facility Condition Index

The Facility Condition Index (FCI) is a simple measurement of a facility's relative condition at a particular point in time. The FCI uses a numeric rating system to rank assets. Dividing the collective value of all deficiencies (deferred maintenance) by the Current Replacement Value (CRV) equals the FCI. The calculated FCI is recorded within FMSS to document an asset's relative condition. The weighted Facility Condition Index (FCI) by asset type is shown along with a summary of the inventory. It should be noted that figures for deferred maintenance on park trails, maintained landscapes, and maintained archeological sites are known to be incomplete at this date.





The vertical bar along the graph's left side represents the API point value. A lower API indicates the asset's contribution is less significant in relation to accomplishing the purpose of the park. Conversely, a high API indicates that the asset contributes significantly to the purpose of the park. The horizontal bar represents the FCI. A lower FCI indicates the asset is in better condition; a higher FCI point value indicates the asset is in worse condition. Using the API and FCI together, park managers can begin to identify their highest priority assets that are in the worst condition by plotting the API and FCI. San Juan Island National Historical Park's API/FCI chart is shown on the right. The top ten high-priority assets with a high level of deferred maintenance are shown in the following table.

SAJH - High Priority Assets with High DM

Asset	Description	DM (000)	CRV (000)	FCI	API
45941	BLDG Crook House	$276	$352	0.78	100
81050	UTIL SAJH Radio System	$98	$107	0.91	80

Operations and Maintenance (OM)

O&M includes work activities performed to meet daily park operational needs, as well as recurring and preventive maintenance activities. There are two critical steps in the O&M development process: 1) establishing requirements at the constructed asset level using O&M models or historical park records and 2) comparing the requirements to existing O&M actuals so that O&M priorities can be set and executed. The table below includes the park's O&M estimated actuals (FRPP Actuals), the modeled O&M requirements, and the variance between those totals.

Component Renewal, also known as recapitalization, is the planned replacement of a component or system that will reach the end of its useful life based on condition and lifecycle analysis within the facility's lifetime. Using lifecycle data (the year of last replacement, estimated design life, year to be replaced, and replacement cost), parks can predict and proactively plan for the replacement of components within their portfolios. Examples of component renewal include roof systems, utility components, pavement, and other major equipment. Understanding the component renewal requirements is a critical aspect of documenting and accounting for the total cost of ownership. A complete and accurate system inventory in FMSS, including lifecycle data fields, is key to this process. San Juan Island National Historical Park's component renewal profile for the next ten years is shown. Because this program is relatively new and certain definitions and procedures are still being implemented, this data is not considered complete for all park assets, particularly trails and maintained landscapes.

SAJH O&M Summary

Asset Code	FRPP Actuals			Modeled Requirements		
	Operations	Maintenance	Total	Operations	Maintenance	Total
1100 - Roads	$16,796	$11,445	$28,241	$49,748	$39,034	$88,782
2100 - Trails	$13,443	$9,042	$22,485	$61,192	$87,636	$148,829
4100 - Building	$42,037	$25,206	$67,244	$58,667	$17,496	$76,163
5100 - Water System	$5,648	$2,526	$8,174	$3,456	$913	$4,368
Total	**$77,923**	**$48,220**	**$126,144**	**$173,062**	**$145,079**	**$318,142**



Project Development

All NPS projects are recorded in the Project Management Information System (PMIS). The list below represents the park's top ten projects by priority. The list of projects can be expected to grow as more complete information is incorporated about trails, maintained archeological sites, and maintained landscapes.

Rank	SAJH Project Title and Funding Year	Request Amount
1	Replace Fire Cache-2009	$299,750.00
2	Pave English Camp Entrance Road-2006	$260,035.00
3	Develop Group Camping Site at English Camp for OMSI Summer Camps-2008	$108,560.00
4	Use EarthCorps to Involve Public with Land Stewardship – PLC-2012	$24,000.00
5	Use EarthCorps to Involve Public with Land Stewardship – PLC-2013	$24,000.00
6	Use Wash Conserv Corps to Restore American Camp Prairie for Public Benefits-2013	$22,000.00
7	PLC Use WCC to Restore American Camp Prairie Landscape for Public Benefits-2012	$20,000.00
8	Ccm - Replace Deteriorated Elements of American Camp Laundress' quarters-2008	$54,300.00
10	Ccm - Replace Deteriorated Elements of English Camp Barracks-2009	$61,900.00
11	Conduct Phased Removal of Exotic European Rabbits from American Camp Prairie-2008	$30,000.00
11	Conduct Phased Removal of Exotic European Rabbits from American Camp Prairie-2009	$30,000.00
13	Ccm - Replace Deteriorated Elements of Historic English Camp Hospital Building-2008	$36,300.00
14	R/R - Replace Non-potable Water System at English Camp-2010	$48,008.00
15	Rcm - Gravel English Camp Service Road-2008	$38,000.00
16	Ccm - Stabilize Cultural Landscape Features at American Camp-2010	$33,000.00
17	Rcm - Reroute Sections of American Camp Prairie Trails-2008	$12,100.00
18	Ccm - Stabilize English Camp and Sandwith Homestead Cultural Landscapes-2009	$32,000.00
18	Ccm - Stabilize English Camp and Sandwith Homestead Cultural Landscapes-2011	$33,000.00
19	Rcm - Reroute Steep Section of Finlayson Trail-2008	$15,640.00
20	PLC Use EarthCorps to Involve Public with Land Stewardship - 2010	$22,000.00

Asset Disposition

There are no assets at the park under consideration for disposal, based on API, FCI, and expertise at the park.





Chapter 6: Environmental Consequences

This chapter describes the environmental consequences or impacts of implementing each of the three management alternatives previously described. Each management action that could affect resources or resource uses has been analyzed, and the conclusions of those analyses are described by alternative below. Since the alternatives are broad and conceptual in nature, the following environmental analysis is general as well. Many of the action items presented in the document would require additional analysis during the implementation planning phase prior to implementation. Many items would also require additional compliance with federal, biological, and cultural resources laws and regulations.

The National Environmental Policy Act (NEPA) requires that environmental documents discuss the environmental impacts of a proposed federal action, feasible alternatives to that action, and any adverse environmental effects that cannot be avoided if a proposed action is implemented. In addition, the effects on historic properties are considered in accordance with the National Historic Preservation Act (NHPA). In this case, the proposed federal action would be the adoption of a general management plan for San Juan Island National Historical Park.

The alternatives in this general management plan provide broad management direction. Thus, this environmental impact statement should be considered a programmatic document. If and when specific developments or actions are proposed subsequent to this general management plan, appropriate detailed environmental and cultural compliance documentation will be prepared in accord with NEPA and NHPA requirements.

This chapter begins with a discussion of terms and definitions, followed by policy related to cumulative impacts and the projects that make up the cumulative impact scenario, followed by a discussion on impairment. The second part of this chapter describes the methods and assumptions used for each impact topic and the effects or impacts of the alternatives on the impact topic. The impacts of the alternatives are analyzed by resource topic in the order they appeared in the "Alternatives" chapter. Each impact topic includes a description of the impact of the alternative, a discussion of cumulative effects, and a conclusion. Where data are limited, professional judgment has been used to project environmental impacts. Professional judgment was based, in part, on observation, analysis of conditions, and responses in similar areas.

At the end of the impacts of each alternative, there is a brief discussion of unavoidable adverse impacts, irreversible and irretrievable commitments of resources, and the relationship of short-term uses of the environment and the maintenance and enhancement of long-term productivity.

The impacts of each alternative are also summarized in the "Summary of Impacts" chart at the end of the "Alternatives" chapter.

Terms and Definitions

The following section defines the terms used for determining the environmental consequences of the actions in the alternatives. The environmental consequences to each impact topic are defined based on impact type, intensity, and duration, and whether the impact would be direct or indirect. Cumulative effects are also identified.

Impact Type

The effects that an alternative would have on an impact topic may be either adverse or beneficial. Adverse impacts involve a change that moves the resource away from a desired condition or detracts from its appearance or condition. Beneficial effects are those that involve a positive change in the condition or appearance of a resource or a change that moves the resource toward a desired condition. In some cases, the action could result in both adverse and beneficial effects for the same impact topic.

Intensity

Defining the intensity or magnitude of an impact is taken directly from Director's Order 12: Conservation Planning, Environmental Impact Analysis and Decision-making (National Park Service, 2001).

Impact intensity is the magnitude or degree to which a resource would be beneficially or adversely affected. Each impact was identified as negligible, minor, moderate, or major in conformance with specific definitions included at the beginning of each impact topic. Due to the broad nature of actions called for in this GMP, most intensity findings are expressed qualitatively.

Duration

Duration refers to how long an impact would last. The planning horizon for the GMP is approximately 15 years. Unless otherwise stated, impacts that would occur within five years or less were classified as short-term effects and long-term effects would last for more than five years.

Direct versus Indirect Impacts

Direct effects would be caused by an action and would occur at the same time and place as the action. Indirect effects would be caused by the action and would be reasonably foreseeable but would occur later in time, at another place, or to another resource.

Cumulative Impacts

Cumulative impacts result from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time.

Cumulative impacts are considered for all impact topics and alternatives. The National Park Service assumes the types of use that are occurring now will continue, but there may be new or different future uses. These actions are evaluated in conjunction with the impacts of each alternative to determine if they have any cumulative effects on a particular resource. For most of the impact topics, the geographic area defined for the analysis was the broader San Juan Islands. In some cases, the area of consideration was the Pacific Northwest.

To determine potential cumulative impacts, projects in the area surrounding the park were identified. Projects included in this analysis were identified by examining other existing plans and by calls to local governments and to state and federal land managers. These projects were considered regardless of what agency, organization, or person undertakes them. Projects included in the cumulative impact analysis do not affect all resources equally.

The following plans and actions make up the cumulative impact scenario:

Cattle Point Road EIS – A portion of Cattle Point Road located in the park is threatened by erosion. Coastal wind and wave action is eroding the base of the bluff that supports the road. At current estimated rates, the road will fail in 5 to15 years; however a large storm event could cause immediate failure. Failure of the road would terminate vehicular access and severely impact non-motorized access to Cattle Point.

Cattle Point Road provides the only road access to the Cattle Point area. The Cattle Point area includes lands within the park as well as state and privately owned land on the Southeast tip of the island. The road allows visitors traveling by vehicles, bicycles and as pedestrians to enjoy the features of the area, including the park, and is the only road between the privately owned residences and the rest of the island. As a result, the Federal Highway Administration (FHWA) and National Park Service (NPS) are considering relocation of a section of the road to avoid the threatened area.

Olympic Games in Vancouver, British Columbia in 2010 – The next Winter Olympic Games are scheduled to be held in Vancouver, British Columbia in 2010. The games will attract additional visitors to the Pacific Northwest, and likely have a short-term impact on visitation to San Juan Island and the park.

Snohomish County Public Utility District (PUD) Tidal Energy Permits - In Puget Sound there are currently 10 proposed projects located at 8 different sites by 4 different proponents. Tacoma Power is proposing to develop tidal energy at the Tacoma Narrows and Washington Tidal Energy Company is proposing development at Deception Pass. Public Utility District Number 1 of Snohomish County (SnoPUD) has proposed a competing project proposal for Deception Pass as well as Admiralty Inlet, Agate Pass, Guemes Channel, Rich Pass, San Juan Channel and Spieden Channel. The City of Port Townsend has also proposed a competing project for Admiralty Inlet.

Tacoma Power has a three year study permit issued by the Federal Energy Regulatory Commission (FERC). SnoPUD also has study permits issued for five of their projects: Agate Passage, Guemes

Channel, Rich Passage, San Juan Channel, and Spieden Channel. All the other proposed projects have study permit requests pending with the FERC. The scope of activities to be covered under this request for a preliminary permit (P-12692-000) include site selection; equipment selection; design, performance and cost estimates of both a demonstration test installation and a commercial scale plant; environmental effects; and permitting issues (www.pstidalenergy.org, 2007).

As described in the permit applications, each site in the San Juans would host an array of about 130 turbines, or so-called "tidal in-stream energy conversion devices," which combined could meet the demands of about five percent of Snohomish County, Washington's 600,000 residents. Though submerged, the turbines would generate electricity in much the same fashion as windmills, with rotating blades up to 66 feet in diameter and approximately 100 feet tall (Rasmussen, "Green Light for Tidal Study," 2007: p.4A).

Tidal energy has the benefits of being a renewable energy source that is predictable in time, duration, and production levels for the foreseeable future with a high level of accuracy. It could also displace the need for other non-renewable energy sources that contribute to global warming.

However, there are also a lot of unknowns about the effects of tidal energy development on marine resources. Studies have not been conducted to identify the effects of these energy projects on marine life, marine habitat, and tidal flows. As projects are planned and developed in the United States and in Canada, studies will need to be conducted to analyze the potential effects (www.pstidalenergy.org, 2007). Washington state, San Juan County, and Friends of the San Juans all "intervened" in the federal regulatory process in response to the PUD applications, entitling each entity to receive relevant information in both the preliminary phase and be a participant if the utility pursues a federal license (Rasmussen, "Green Light for Tidal Study," 2007: p4A).

Rosario Resort Master Plan Final Environmental Impact Statement – The proposed action is the adoption by the San Juan County Council of the Rosario Resort Master Plan. Rosario Resort is an established destination resort located on the shoreline and uplands adjacent to Cascade Bay on Orcas Island in San Juan County, Washington. Adoption of the master plan is a non-project action under the Washington State Environmental Policy Act (SEPA) and the EIS is the first phase of a phased environmental review under SEPA of planned future development at Rosario Resort. Under the County's Master Planned Resort regulations (SJCC 18.80.060.A.2), existing resorts that were designated as Master Planned Resorts are required to prepare a resort master plan for review and approval by San Juan County before any substantial additional resort development is allowed. The Rosario Resort Master Plan has been submitted by the applicant for adoption by the County to fulfill the requirement of San Juan County Code.

The applicants' preferred alternative would result in a family oriented destination resort comprised of a mixture of resort accommodations and vacation residential units located on different parts of the site, supplemented by new food and beverage venues, an expanded marina (from 34 to 165 slips), complementary retail opportunities, a renovated Moran Mansion, an expanded spa and fitness center, and a variety of indoor and outdoor recreational activities for adults, teens, and children. Implementation of this plan could increase visitation to the San Juan Islands in general, whether from day trips from the resort or additional visitors seeking vacation opportunities in the area (Rosario Resort Master Plan, 2006).

Impairment of Resources

In addition to determining the environmental consequences of the alternatives, NPS policies require that potential effects be analyzed to determine whether or not proposed actions would impair park resources or values. An evaluation of impairment is not required for topics related to visitor use and experience, operations or the socioeconomic environment.

The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. NPS managers must seek ways to avoid or minimize adverse impacts on the resources and values to the greatest degree practicable. However, laws do give the NPS management discretion to allow impacts on the resources and values when necessary and appropriate to fulfill the purposes of a unit, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the NPS this management discretion, it is limited by the statutory requirement that the NPS must leave the

resources and values unimpaired unless a particular law directly and specifically provides otherwise.

Impairment is an impact that in the professional judgment of the responsible NPS manager would harm the integrity of the resources and values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. An impact on any resource or value may constitute impairment. An impact would most likely constitute impairment if it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the unit or to opportunities for enjoyment of the unit; or
- identified as a goal in the general management plan or other relevant NPS planning documents.

Impairment might result from NPS activities in managing a unit, visitor activities, or activities undertaken by concessionaire, contractors, and others operating in the park. Actions that occur outside park boundaries could cause impairment, but this would not be a violation of the Organic Act unless the National Park Service was in some way responsible for the action. A determination on impairment is made in this chapter in the conclusion section for each required impact topic related to the park's resources and values. When it is determined that an action(s) would have a major or significant adverse effect, a justification of non-impairment is made. Impacts of negligible, minor, or moderate intensity would by definition not result in impairment.

Effects on Cultural Resources

Methodology and Assumptions

Cultural Resources Listed, or Eligible to be Listed, in the National Register of Historic Places

The following discussion of cultural resources includes analyses of potential impacts to the cultural landscape, historic buildings and structures, and archaeological resources. These physical components of the cultural resources at San Juan Island National Historical Park were described separately in the "Affected Environment" chapter. However, the intensity definitions are discussed together here, because of the interconnectedness of these resources. For example, the historic structures, vistas, and historic vegetation obviously contribute to the cultural landscape, and yet the full extent of the archaeological resources, many of which also contribute to the cultural landscape, are not known. The park's cultural resources are composed of all these elements, which also contribute to the cultural landscape as a whole. In addition, many of the management actions proposed in the alternatives affect a combination of two and sometimes all three of these resources. Thus, the effects of each alternative on all three types of cultural resources are discussed below.

Information used in this assessment was obtained from relevant literature and documentation, maps, and consultation with cultural landscape preservation experts, as well as from interdisciplinary team meetings, field trips, and site visits. The National Historic Preservation Act requires agencies to take into account the effects of their actions on properties listed in or eligible for listing in the National Register of Historic Places (NRHP). The process begins with identification and evaluation of cultural resources for NRHP eligibility, followed by an assessment of effects on eligible resources. In Washington, this process includes consultation with the state historic preservation officer (SHPO). If an action could change in any way the characteristics that qualify the resource for inclusion in the National Register, it is considered to have an effect. No adverse effect means there could be an effect, but the effect would not be harmful to the characteristics that qualify the resource for inclusion in the National Register. Adverse effect means the action could diminish the integrity of the characteristics that qualify the resource for the National Register. For the purposes of this analysis under the National Environmental Policy Act and Section 106 of the National Historic Preservation Act, the intensity of impacts on cultural resources was defined as follows:

Negligible: The effects on cultural resources would be at the lowest levels of detection, barely measurable without any perceptible consequences, either beneficial or adverse to cultural landscape resources, historic buildings or structures, or archaeological resources. For the purposes of Section 106 and the National Historic Preservation Act, the determination of effect would be no adverse effect.

Minor: The effects on cultural resources would be perceptible or measurable, but would be slight and localized within a relatively small area. The action would not affect the character or diminish the features of a NRHP eligible or listed cultural landscape, historic structure, or archaeological site, and it would not have a permanent effect on the integrity of any such resource. For the purposes of Section 106 and the National Historic Preservation Act, the determination of effect would be no adverse effect.

Moderate: The effects would be perceptible and measurable. The action would change one or more character-defining features of a cultural resource, but would not diminish the integrity of the resource to the extent that its NRHP eligibility would be entirely lost. For the purposes of Section 106 and the National Historic Preservation Act, the cultural resources' NRHP eligibility would be threatened and the determination of effect would be adverse effect.

Major: The effects on cultural resources would be substantial, discernible, measurable, and permanent. For NRHP eligible or listed cultural landscapes, historic structures, or archaeological sites, the action would change one or more character-defining features, diminishing the integrity of the resource to the extent that it would no longer be eligible for listing in the National Register. For purposes of Section 106, National Register eligibility would be lost and the determination of effect would be adverse effect.

The relationships between definitions of effects, including beneficial effects, and treatments of cultural resources, are analyzed in the impact analysis for each of the alternatives. Levels of beneficial effect are not directly linked to specific types of treatments; rather they depend on the particular treatment of given cultural resources. All treatments proposed under all of the alternatives would be in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. All treatments proposed under all of the alternatives would have no adverse effect on known cultural resources.

Museum Collections

Museum collections (prehistoric and historic objects, artifacts, works of art, archival documents, and natural history specimens), are generally ineligible for listing in the National Register, and are not subject to Section 106 of the National Historic Preservation Act. The intensity of impacts on museum collections is defined as follows:

Negligible: Impact is at the lowest levels of detection — barely measurable with no perceptible consequences, either adverse or beneficial, to museum collections.

Minor: Adverse impact — would affect the integrity of few items in the museum collection but would not degrade the usefulness of the collection for future research and interpretation.

Beneficial impact — would stabilize the current condition of the collection or its constituent components to minimize degradation.

Moderate: Adverse impact — would affect the integrity of many items in the museum collection and diminish the usefulness of the collection for future research and interpretation.

Beneficial impact — would improve the condition of the collection or protect its constituent parts from the threat of degradation.

Major: Adverse impact — would affect the integrity of most items in the museum collection and destroy the usefulness of the collection for future research and interpretation.

Beneficial impact — would secure the condition of the collection as a whole or its constituent components from the threat of further degradation.

Impacts from Alternative A

Cultural Landscape

The historic landscape report would be updated under this alternative and a resource stewardship strategy that provides direction for cultural as well as natural resources would be completed. This document would provide additional guidance about natural resources that possess cultural significance, resulting in more integrated management of cultural and natural resources that are important to maintaining the cultural landscape. Current stabilization measures and preservation maintenance would continue on the cultural landscapes within the park. The removal of non-historic exotic species and the continued use of prescribed fire as a tool to maintain the cultural landscape would enhance the resource. This continued program of cultural resource management in the park, including stabilization and preservation activities and the integration of natural and cultural resource management, would have minor to moderate beneficial impacts on the cultural landscape. All treatments proposed would be in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

Pursuing island-wide trail connections and extending the ADA trail at English Camp from the Crook house to the parade ground would have negligible impacts on the cultural landscape. The addition of Mitchell Hill would incorporate remnants of the historic military road at English Camp, providing protection for this cultural landscape feature, a long-term moderate beneficial effect.

Cumulative Impacts

Over the years, the cultural landscapes in the park have been adversely affected by natural processes and wear and tear associated with visitor access, park administrative use, and deferred maintenance. In a few instances, placements of trails and parking lots have had some adverse effects on cultural landscapes. In addition, many of the buildings and structures that were part of the cultural landscape during the historic period were removed prior to NPS presence on the island. Other historic buildings that were part of the post-encampment period have been altered or are in a state of decline, creating moderate adverse effects. In the future, management direction would continue to place emphasis on preservation of existing historic structures. Resource management activities would continue to consider the natural resource values of cultural landscapes as well as their culturally important character-defining features and patterns.

Overall, the cumulative effects would be long-term, minor, adverse and beneficial. This alternative would provide some beneficial effects to cultural landscapes and would not contribute to adverse cumulative effects.

Conclusion

The implementation of the No Action Alternative would have no adverse effect on the cultural landscapes of the park. The continued program of cultural resource management in the park, including stabilization and preservation activities and integration of natural and cultural resource management, would have minor to moderate beneficial impacts on the cultural landscape. This alternative would provide some beneficial impacts to cumulative effects of cultural landscapes and would not contribute to the adverse cumulative effects. There would be no impairment of this resource or value as a result of implementing this alternative.

Historic Buildings and Structures

The emphasis in this alternative is on preservation of existing historic structures, and no historic buildings from the encampment period would be repatriated. All preservation maintenance on historic buildings and structures would be consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, and be a minor impact on those properties. The barracks at American Camp would continue to be used as a primary visitor contact station and the blockhouse would continue to be open to the public. Other buildings, including the commissary, laundress' quarters, officers' quarters, and Crook house would continue to be interpreted as outdoor exhibits. The non-historic addition to the Crook house would be removed and efforts to remove bats from the house would continue. Subsequent hazardous material remediation could allow for additional adaptive reuse of the house in the future. These actions could have moderate benefits to the Crook house.

Cumulative Impacts

Over the years, historic structures have been adversely affected by natural processes and natural wear and tear from both visitor and administrative use. Some historic structures were removed from their historic settings and modified prior to the establishment of the park.

Maintenance on buildings outside the park has likely not been consistent with the Secretary of the Interior's Standards, resulting in moderate adverse effects. Implementing this alternative could be a minor, long-term beneficial contribution to cumulative impacts by preserving historic structures remaining in the park.

Conclusion

The implementation of the No Action Alternative would have no adverse effect on historic buildings and structures in the park. The emphasis on preservation of existing historic structures, and actions to remove the non-historic addition and bats from the Crook house would have minor to moderate benefits. All preservation maintenance on historic buildings and structures would be consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. This alternative has a minor, long-term beneficial contribution to cumulative effects by preserving historic structures. There would be no impairment of this resource or value as a result of implementing this alternative.

Archaeological Resources

Most of the park has been surveyed and an updated archaeological overview and research design study would be prepared. Developing an archaeological base map as part of this project would provide the park additional location data and would enhance protection of archaeological resources. Archaeological resources close to or easily accessible from major use areas and trails would continue to be vulnerable to disturbance or inadvertent damage. Known archaeological resources would continue to be avoided to the greatest extent possible, and as appropriate.

The park would also conduct archaeological surveys or monitoring to the greatest extent possible to protect these resources prior to any ground disturbing activities, such as trail construction, road maintenance, and parking improvements. If National Register-eligible or listed archaeological resources could not be avoided, the park would develop appropriate mitigation through consultation with both interested tribes and the SHPO and would complete documentation of resources prior to proceeding with projects.

Cumulative Impacts

Past actions and processes that have likely had adverse impacts to archaeological resources include natural processes such as fire, climate change, and shoreline erosion; past development or construction; maintenance of trails and roads; visitor use; unintentional disturbance; artifact hunting, and vandalism. Development of residential areas outside the park may have had adverse impacts to archaeological resources on San Juan Island. Implementing the No Action Alternative would not contribute to adverse cumulative impacts and may have minor benefits to archaeological resources.

Conclusion

Implementation of the No Action Alternative would result in no adverse effects to archaeological resources. The overall cumulative impacts would be adverse; however, implementing this alternative would not contribute to adverse cumulative effects. There would be no impairment on this resource or value as a result of implementing this alternative.

Museum Collections

The park's collections would continue to be maintained at off-site locations including North Cascades National Park Service Complex, the Burke Museum in Seattle, and at Fort Vancouver National Historic Site. A few dozen objects would be available for showing in display cases at American Camp. These facilities meet NPS museum standards and provide adequate curatorial facilities. However, curatorial staffing is limited to approximately three pay periods per year from a shared curatorial position at North Cascades National Park Service Complex, resulting in ability to meet the basic requirements of annual reporting, housekeeping, minimum custodial care and correspondence. The additional park needs of processing loans, research permits, artifact conservation, condition documentation, interaction with the Burke Museum, and outreach can not be fulfilled, resulting in a minor adverse impact on museum collections.

Cumulative Impacts

As the park collections have grown, adequate space to ensure their proper curation was needed. That space has not been available at the park and has resulted in collections being stored in multiple locations. The Pacific West Region recently completed a collections facility strategy which called for the park's collections

to be stored and administered outside the park, with the prehistoric material and biological specimens at North Cascades National Park Service Complex and the Burke Museum, and the historic material at North Cascades and Fort Vancouver National Historic Site. This strategy provides for long-term storage and curation of current and future collections, a long-term benefit to these resources.

Conclusion

The overall effect of implementing Alternative A and maintaining the museum collections at facilities off-site would result in minor benefits, limited by current curatorial staffing. The planned cumulative activities would result in moderate long-term benefits. There would be no impairment of this resource or value as a result of implementing this alternative.

Impacts from Alternative B

Cultural Landscape

Implementation of Alternative B would include a variety of techniques to enhance the cultural landscapes after adequate research was completed and by restoring the native prairie at American Camp. At English Camp, actions taken to partially restore the Crook family orchard and the Sandwith orchard respectively would help depict historically accurate orchards. Visitors would have opportunities to better understand the historic significance of these orchards, and researchers would have opportunities for further study. These activities would have moderate benefits to the cultural landscapes by adding or improving features that enhance the integrity of the cultural landscapes.

Construction of the new visitor center at American Camp would introduce a relatively large, non-historic feature in close proximity to the historic scene and within the cultural landscape, which allows the visitor easy access. Although proposed to be situated behind a grove of trees, this new building could be perceived as visually intruding on the historic scene. While the current visitor is also within the cultural landscape, it is in an area that already has non-contributing features to the cultural landscape. Short-term impacts from construction activities would be minor and adverse while long-term impacts could be minor to moderate and adverse.

Alternative B expands the scale at which the cultural landscape is emphasized, contributing minor to moderate long-term benefits.

Cumulative Impacts

Cumulative impacts are the same as Alternative A. Implementation of Alternative B would have an overall greater long-term benefit toward cumulative impacts with expanded techniques to enhance the cultural landscape, rehabilitation and restoration of the orchards, and prairie restoration. This alternative could contribute a minor to moderate adverse impact toward the cultural landscape by placing a new visitor center closer to the historic core of the cultural landscape. The contribution of impacts from construction related activities in the short-term would be minor.

Conclusion

Implementation of Alternative B would have overall long-term moderate benefits to the cultural landscape through expanded techniques to enhance the cultural landscape, rehabilitation and restoration of the orchards, and the prairie restoration. This alternative could contribute a minor to moderate adverse impact toward the cultural landscape by placing a new visitor center closer to the historic core of the cultural landscape. The contribution of impacts from construction related activities in the short-term would be minor. This alternative would also provide some additional long-term benefits to cumulative impacts on the cultural landscape. There would be no impairment of this resource or value as a result of implementing this alternative.

Historic Buildings and Structures

The impacts on historic structures are the same as Alternative A, with the exception of the Crook house and the barracks at English Camp. Alternative B proposes to rehabilitate the Crook house once the bats are relocated and bat guano is removed. This alternative proposes to use the ground floor as a visitor contact facility and to convert the second floor for administrative use. The process of bringing the house up to current health and safety standards for staff and visitors involves cleaning up after the bats are removed. It would require modification of the interior as well as some exterior additions. The non-historic addition that is removed would need to be replaced with another non-historic addition that would accommodate a staircase meeting current building

codes because the main house does not have adequate space to provide a code-compliant staircase. Impacts to the Crook house would occur from the addition of this non-historic element, however this adaptive reuse would ultimately have long-term benefits to the historic building.

Alternative B also calls for using a portion of the barracks at English Camp for a display with period furnishings. This action would have no negative impacts and could have some long-term benefits to historic building preservation through interpretation and keeping the buildings in service. As in Alternative A, all preservation maintenance on historic buildings and structures would be consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

Cumulative Impacts

Cumulative impacts are the same as Alternative A. Implementation of Alternative B would have a greater long-term benefit to cumulative impacts on historic structures by providing for adaptive reuse of the Crook house as well as additional use of the barracks.

Conclusion

Implementation of Alternative B would have similar impacts as Alternative A; however proposals for adaptive reuse of the Crook house and added interpretation at the barracks at English Camp would have greater long-term benefits to historic structures. All preservation maintenance on historic buildings and structures would be consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

There would be no impairment of this resource or value as a result of implementing this alternative.

Archaeological Resources

In addition to the impacts from Alternative A, Alternative B calls for a number of actions, which could impact archaeological resources. Archaeological surveys would precede all ground-disturbing activity in all proposed project locations, consistent with park-wide mitigation measures. If archaeological resources were identified during surveys, appropriate mitigation strategies would be developed in consultation with the SHPO and associated American Indian Tribes, as appropriate, to minimize impacts to underground resources.

Alternative B proposes a new visitor center and parking lot at American Camp, which would increase the likelihood of disturbing unknown archaeological resources. Archaeological surveys would precede ground disturbance associated with these activities; however, the area has not been surveyed to date. Given the location, there is a greater chance of discovering prehistoric as well as historic sites. If these resources could not be avoided, minor to moderate adverse impacts to those resources could occur.

Development proposed at English Camp includes a loop road connecting the existing parking lot with the administrative road, formalizing two parking areas, and developing a kayak or canoe landing on Westcott Bay connecting to the existing trail system. Archaeological surveys would precede ground disturbance associated with these activities as well; however if sites could not be avoided, they would be documented and some additional minor to moderate adverse impacts could occur.

Cumulative Impacts

Cumulative impacts would be similar to Alternative A. The construction activities with Alternative B could be a minor, long-term contribution to adverse impacts to archaeological resources.

Conclusion

Overall, implementation of Alternative B could result in minor to moderate adverse impacts to archaeological resources from the development of the visitor center near the redoubt at American Camp and the construction of the loop road, parking, and kayak/canoe landing at English Camp. Cumulative impacts would be similar to Alternative A, with construction activities contributing minor long-term adverse impacts to archaeological resources. There would be no impairment to this resource or value as a result of implementing this alternative.

Museum Collections

Implementation of Alternative B calls for a portion of the collections to be moved to the park. This would be located in a collections study room in a new 5,400 square foot permanent visitor center at American Camp. Natural resources and cultural resources including prehistory and military era collections would be represented. This collections room would meet NPS collections management standards and would require oversight by staff trained in museum

collections management. Housing the portion of the collections on-site and the addition of a journeyman level curator position to the staff would have moderate benefits, by enabling the staff to interpret and display these collections in the context of their original location. Having these collections on-site, and being able to readily rotate them through displays at the visitor center, could build additional knowledge, support, and understanding with the visiting public, a moderate to major benefit for collections and other cultural resources. Having a small portion of collections nearby would also facilitate access by serious researchers and enhance interpretation and educational programs.

In addition, adding a full-time equivalent of a journeyman curator would expand the ability of the park to manage collections beyond the basic requirements. Additional staff would enhance opportunities for processing research requests, artifact conservation, loans, and additional coordination and interaction with other operations managing collections and result in a minor to moderate long-term benefit to collections.

Cumulative Impacts

The cumulative impacts under Alternative B would be similar to those described under Alternative A.

Conclusion

Collectively, the actions proposed in Alternative B would result in moderate long-term benefits by providing adequate space for collections and the ability to interpret them within their historic context as well as additional staff to provide for care of collections beyond the basis requirements. Contributions of this alternative to cumulative impacts are similar to those in Alternative A. There would be no impairment of this resource or value as a result of implementing this alternative.

Impacts from Alternative C

Cultural Landscape

Impacts to the cultural landscape would be the same as Alternative B, plus added benefits from the repatriation of two historic buildings and structures to the park when appropriate. These additional structures could help enhance the cultural landscape by restoring features that add to the integrity of the camps. Although the treatment of the Sandwith orchard calls for a partial restoration, the difference in impacts to this resource from a partial versus more complete restoration would be negligible to minor.

Cumulative Impacts

Cumulative Impacts would be the same as Alternative B. Repatriation of historic structures would contribute added long-term benefits to the cultural landscape.

Conclusion

Implementation of Alternative C would result in impacts to the cultural landscape the same as Alternative B, plus added benefits from the repatriation of historic buildings and structures on the island back to the camps. There would be no impairment of this resource or value as a result of implementing this alternative.

Historic Buildings and Structures

The effects on historic structures would be similar to those in Alternative B and all preservation maintenance on historic buildings and structures would be consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. Under Alternative C, after the bats are relocated, the Crook house would be rehabilitated for use as an exterior exhibit only, with interpretive signs and displays about the Crook family era. This rehabilitation would require fewer modifications to the building but would still have some benefits to the building. The barracks and other buildings at English Camp would be treated the same as Alternative A, and impacts would be the same as Alternative A.

Under Alternative C, the officers' quarters at American Camp and hospital at English Camp would be opened to the public. If exhibits and interpretive material were proposed to include furnishings for the hospital, significant research would be required before historically accurate displays could be provided. While there would be no physical adverse impacts to the buildings, there would be research problems to solve. Other interpretation techniques could be used with less detailed information.

For the officer's quarters, half would be rehabilitated for use as an interpretive exhibit that shows a typical officers' quarters and the other half would be available for research and academic study. Any exhibits would need to be designed and constructed to resist interior changes in climate given the challenges of bringing heating and electricity to the building. The exterior walls are single plank depth, leaving no interior wall

space to run electrical wires or plumbing. Opening both these structures at American Camp to the public could have long-term moderate benefits to historic structures by increasing additional public interest and opportunities for research.

Alternative C also calls for the repatriation of historic structures once located at American and English camps to the park. Additional research would be required to verify what the structures are, determine their integrity and potential contribution to the cultural landscape, and evaluate their condition. Repatriation efforts would have moderate long-term benefits to historic structures by returning them to their historical context which contributes to their integrity.

Cumulative Impacts

Cumulative impacts would be the same as Alternative B, plus the potential repatriation of historic structures to the park would contribute added long-term benefits to the cumulative effects on these resources.

Conclusion

Implementation of Alternative C would have some additional long-term benefits to the preservation of historic structures through the opening to the public of additional buildings at American Camp and repatriating historic buildings to the park if possible. All preservation maintenance on historic buildings and structures would be consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. This alternative would also have some additional benefits to cumulative impacts through these same actions. There would be no impairment of this resource or value as a result of implementing this alternative.

Archaeological Resources

Implementation of Alternative C would have fewer adverse impacts on archaeological resources than Alternative B. Although Alternative C also calls for a new replacement visitor center at American Camp, the proposed location in this alternative is on a previously disturbed site that has been surveyed for archaeological resources. This proposed area is further away from documented archaeological sites than areas proposed near the redoubt. Any archaeological resources inadvertently discovered during construction would likely be disturbed ephemera of the camp thereby reducing the data potential of archaeological objects. Compared to the proposed redoubt site in Alternative B, this location would likely have minor adverse impacts.

Potential impacts to archaeological resources at English Camp are also less than those from Alternative B. The scale of development at English Camp is less than that proposed in Alternative B, with no loop road and no kayak/canoe landing proposed. Impacts from proposed development in Alternative C with the expanded education camp along the administrative road are less likely to have significant impacts on archaeological resources given the distance from known sites and the water. Impacts to archaeological resources at English Camp would likely be minor.

Alternative C also calls for the repatriation of two historic buildings to the camps. Repatriation would entail moving buildings to their historical location. Mitigation measures for archaeological surveys and site specific mitigation would precede these actions as with all potentially ground disturbing activities to minimize impacts to archaeological resources.

Cumulative Impacts

Cumulative impacts are similar to those in Alternative A; however, implementation of Alternative C would have a negligible contribution to long-term cumulative impacts on archaeological resources.

Conclusion

Implementation of Alternative C could have minor, long-term, adverse impacts to archaeological resources, given the location of the proposed visitor center on a previously disturbed site further from documented significant archaeological sites at American Camp and the smaller scale development at English Camp. Implementation of Alternative C would have a negligible contribution to long-term adverse impacts on these resources. There would be no impairment of this resource or value as a result of implementing this alternative.

Museum Collections

Alternative C proposes maintaining a collections study room for natural and cultural resources located at either park headquarters or in the 5,400 square foot permanent visitor center. The collection would contain a portion of the military-era collections, including some non-military items. The effects on museum collections would be similar to Alternative B, providing long-term moderate benefits to these resources.

Cumulative Impacts

Contributions to cumulative impacts to museum collections are the same as Alternative B.

Conclusion

Implementation of Alternative C would have similar moderate long-term benefits to museum collections as Alternative B by providing a collections study room in the new visitor center or at park headquarters and additional curatorial capacity. There would be no impairment of this resource or value as a result of implementing this alternative.

Effects on Natural Resources

Methodology and Assumptions

Vegetation

The area of consideration for vegetation is park-wide. All available information on vegetation in the park was compiled. Defining potential impacts from management actions is based on professional judgment and experience with similar actions and impacts were assessed qualitatively. The thresholds of change for the intensity of an impact are defined as follows:

Negligible: The impact on vegetation (individuals or communities) would not be measurable. The abundance or distribution of individuals or communities would not be affected or would be slightly affected. Ecological processes and biological productivity would not be affected.

Minor: The action would not necessarily decrease or increase an area's overall biological productivity. An action would affect the abundance or distribution of individuals or communities in a localized area but would not affect the viability of local or regional populations or communities.

Moderate: The action would result in a change in overall biological productivity in a small area. The action would affect a local population sufficiently to cause a change in abundance or distribution, but it would not affect the viability of the regional population or communities. Changes to ecological processes would be of limited extent.

Major: The action would result in a change in overall biological productivity in a relatively large area. An action would affect a regional or local population of a species sufficiently to cause a change in abundance or in distribution to the extent that the population or communities would not be likely to return to its formal level (adverse), or would return to a sustainable level (beneficial). Key ecological processes would be altered.

Wildlife

The area of consideration for wildlife is the San Juan Islands. Impacts on wildlife are closely related to the impacts on habitat. The evaluation considered whether actions would be likely to displace some or all individuals of a species in the park or would result in loss or creation of habitat conditions needed for the viability of local or regional populations. All available information on wildlife populations was compiled. Predictions about short and long-term impacts were based on previous studies or impacts to natural resources and recent monitoring data from the park. The thresholds of change for the intensity of an impact are defined as follows:

Negligible: Effects on wildlife would be at or below the level of detection, would be short-term, and the changes would be so slight that they would not be of any measurable or perceptible consequence to the species' population.

Minor: Effects on wildlife would be detectable, but localized, small, and of little consequence to the species' population. Mitigation measures, if needed to offset adverse effects, would be simple and successful.

Moderate: Effects on wildlife would be readily detectable but localized, with consequences at the population level. Mitigating measures, if needed to offset adverse effects, would be extensive and likely successful.

Major: Effects on wildlife would be obvious and would result in substantial consequences to the wildlife populations at a regional level. The change would result in a severely adverse or major beneficial impact,

and possible permanent consequence on the species. Extensive mitigating measures would be needed to offset any adverse effects and their success would not be guaranteed.

Special Status Species

The area of consideration for special status species is the suitable and known occupied habitat on the San Juan Islands. Information on threatened, endangered, candidate species, and special species of concern was gathered from responsible agencies, research, and specialists. Known locations of habitat associated with threatened, endangered, candidate species, and species of special concern were compared with locations of development and facilities, and modifications of existing facilities. The thresholds of change for the intensity of an impact are defined as follows:

Negligible: The action would have no measurable effect to a listed species, suitable, potential, or critical habitat, resulting in a no effect determination.

Minor: The effects of the action would be discountable (extremely unlikely to occur), insignificant (not able to be meaningfully measured, detected, or evaluated), or completely beneficial. Any change would be small and localized and of little consequence, and result in a may affect, not likely to adversely affect determination and require informal consultation with the U.S. Fish and Wildlife Service.

Moderate: An action that would result in some change to a population or individuals of a species or designated critical habitat. The change would be measurable and of consequence but would most likely result in a may effect, not likely to adversely affect determination and require informal consultation with the U.S. Fish and Wildlife Service.

Major: An action that would result in a noticeable change to a population or individuals of a species or designated critical habitat. Any adverse affect to the species that may occur as a direct or indirect result of the alternative and the effect is not discountable, insignificant, or completely beneficial. Incidental take is anticipated to occur as a result of the action. The change would result in a may effect, likely to adversely affect determination and require formal consultation with the U.S. Fish and Wildlife Service.

Soils and Geologic Resources

The area of consideration for soils and geologic resources is park-wide. Available information on geological resources and geologic processes in the park was compiled. Potential impacts from management actions are based on professional judgment and experience with similar actions. The thresholds of change for the intensity of and impact are defined as follows:

Negligible: An action that could result in a change to a geologic feature or process, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: An impact that could result in a change to a geologic feature or process, but the change would be so small that it would not be of any measurable or perceptible consequence.

Moderate: An action that would result in a change to a geologic feature or process; the change would be measurable and of consequence.

Major: An action that would result in a noticeable change to a geologic feature or process; the change would be measurable and the level of disturbance would be severe.

Coastal Water Resources and Hydrologic Systems

The area of consideration for water resources is park-wide. Available information on coastal water resources, hydrologic systems and ecological links to these resources was compiled. Potential impacts from management actions are based on professional judgment and experience with similar actions as well as studying effects from previous actions. The thresholds of change for the intensity of an impact are defined as follows:

Negligible: Effects on coastal water resources and hydrologic systems would be at or below the level of detection, would occur in a small area, and the changes

would be so small that they would not be of any measurable or perceptible consequence.

Minor: Effects on coastal water resources and hydrologic systems would be detectable, but localized, small, and of little consequence.

Moderate: Effects on coastal water resources and hydrologic systems would be readily detectable and have localized consequences to the health and functioning of an intertidal area or a measurable change to a hydrologic system.

Major: Effects would be obvious and would have widespread, substantial consequences on coastal water resources and hydrologic systems that would result in either a severely adverse or major beneficial impact with regional consequences.

Air Quality

The area of consideration for this topic is the San Juan Islands. Impacts on the park's air quality would be based on anticipated changes from base data and national standards as measured at authorized stations. The thresholds of change for the intensity of an impact are defined as follows:

Negligible: There would be no perceptible visibility impacts. The first highest three-year maximum for each pollutant would be less than the national ambient air quality standards (NAAQS).

Minor: There would be slightly perceptible visibility impacts on less than 180 days per year. The first highest three-year maximum for each pollutant would be less than the national standards.

Moderate: There would be moderately perceptible visibility impacts on less than 180 days per year or slightly perceptible visibility impacts on 180 days or more per year. The first highest three-year maximum for each pollutant could be greater than national standards.

Major: There would be highly perceptible visibility impacts on 180 or more days per year. The first highest three-year maximum for each pollutant would be greater than national standards.

Soundscapes

The area of consideration for soundscapes is parkwide. Context, time, and intensity together determine the level of impact for an action or activity. Noise for a certain period and intensity would be a greater impact in a highly sensitive context, and a given intensity would be a greater impact if it occurred more often, or for longer duration. For example, in low level ambient soundscapes, noises can be much more audible, thereby having greater impact intensities. It is usually necessary to evaluate all three factors together to determine the level of noise impact.

Negligible: Impacts would not be detectable and would have no effect on ambient noise environment.

Minor: Impacts would be slightly detectable and in close proximity to the source, but are not expected to have an appreciable effect on ambient noise levels.

Moderate: Impacts would be clearly detectable and could have an appreciable effect on ambient noise levels; moderate adverse impacts may include introduction of noise associated with an activity or facility into an area with little or no ambient noise.

Major: Impacts would be clearly audible against ambient noise levels; or would have a substantial, highly noticeable effect on ambient noise levels.

Impacts from Alternative A

Vegetation

Implementing Alternative A would provide some long-term benefits to vegetation. The park would develop a vegetation management plan to guide overall vegetation management as well as restoration of prairies and forests. This plan would benefit vegetation by providing management direction that recognizes the cultural significance of these resources as well as their natural resource values. Expanded interpretive programs would increase public understanding of the park's historic natural resources, such as camas beds and prairies, encouraging awareness and stewardship of these resources and the broader natural environment. The park would also continue to implement management actions and programs, such as fire management and exotic species removal, that restore, maintain, and promote these resources.

Specifically, maintaining the Garry oak woodland through thinning and prescribed fire would have a moderate to major benefit on this resource because Garry oak is a regionally declining resource.

Implementing Alternative A would also result in some disturbance to vegetation from regular park operations, such as road maintenance and establishing trail connections. As visitation continues, trampling in localized areas, mostly around developed areas and along trails, can adversely affect vegetation.

Cumulative Impacts

Inside the park, vegetation has been disturbed in localized areas for facilities and infrastructure associated with necessary visitor services and park operations. Vegetation has been impacted in the past from construction of a visitor center and parking areas. Currently, the park maintains vegetation along roads and trails, and occasionally removes hazardous trees for public safety.

Prairies are an increasingly rare vegetation resource in the San Juan Islands and greater Pacific Northwest. Prairies in the Northwest have been adversely impacted from conversion to agriculture and the introduction and continued presence of exotic species, including rabbits which overgraze prairie grasses and dig warrens, creating likely areas for the establishment of invasive plant species. Increasing development has also impacted prairies. The current and future prairie restoration at the park, though it would occur over a long period of time, would have a long-term beneficial effect on northwest prairies.

Past logging had an impact on the forests at the park, both during the historical period and after. Most forests in the park are second growth or later succession. These actions have had adverse impacts on native vegetation in the park. Along the Pacific Northwest coast, forests have also likely been adversely impacted by global climate change. Increased temperatures, changed precipitation patterns, and increased severity of storms caused by climate change could have moderate to major impacts on vegetation communities in the region, including forests and prairies.

The overall effect of the cumulative actions would be minor to moderate and adverse. The contribution from implementing Alternative A would include minor long-term adverse impacts. This alternative, when considered with other actions, would have a small contribution to the overall cumulative impacts on vegetation.

Conclusion

Implementing Alternative A would result in long-term, moderate benefits to vegetation through ongoing resource management actions, expanded interpretation, and implementation of a vegetation management plan. Maintaining the Garry oak woodland through thinning and prescribed fire has a moderate to major benefit on this resource. Continuing park operations and sustained or increasing visitation would have some negligible to minor adverse impacts to vegetation. The overall effect of the cumulative actions would be minor to moderate and adverse; however the contribution from this alternative would be small. There would be no impairment to vegetation or its values as a result of implementing this alternative.

Wildlife

Implementing Alternative A would result in some actions that could change the condition of wildlife populations. Implementing a program to control or eliminate exotic and invasive species would result in moderate benefits to ensure the long-term survival of the native ecosystem and the integrity of the cultural landscape. There would be beneficial effects to small mammals, raptors, and other species of wildlife from the habitat provided by the park and additional public land protection.

Impacts to the exotic population would be moderate and adverse. Additional ongoing park operations are likely to have localized, short-term, negligible to minor impacts on wildlife.

The park would continue to construct and install bat houses in an effort to relocate the colony of bats from the Crook house. This action would have some short-term minor impacts to bats from the disturbance associated with relocation, but would have long-term benefits by providing a more sustainable location for the bats.

Cumulative Impacts

There has been past disruption to wildlife in the park from the historic development of San Juan Island, including habitat loss and fragmentation, introduction of exotic species, and introduction of pathogens from domestic livestock. It is highly likely that most wildlife remaining in the park is accustomed

to human presence, including visitation, associated infrastructure and park operations. Ongoing park operations are likely to have localized, short-term, minor impacts on wildlife.

Continued development outside the park on San Juan Island results in additional habitat fragmentation for the remaining wildlife. Impacts from habitat loss which can cause displacement of individuals would be moderate and adverse. Introduction of exotic species has also had moderate adverse impacts to wildlife. Exotic species can alter the habitat for native species and impact the population dynamics through competition.

The overall cumulative impacts to wildlife populations would be minor to moderate and adverse. The contribution from implementing this alternative to cumulative impacts would be small.

Conclusion

Implementation of Alternative A would have overall long-term, moderate benefits to wildlife by promoting a plan to remove exotics to ensure the long-term survival of the native ecosystem and its associated wildlife. Providing alternative bat houses to relocate the colony of bats would have short-term, minor, adverse impacts but long-term benefits by providing a more sustainable location. There would be minor to moderate adverse cumulative impacts to wildlife mostly resulting from ongoing development, continued presence of exotic species, and habitat fragmentation; however the contribution from implementing this alternative would be small. There would be no impairment to this resource as a result of implementing this alternative.

Special Status Species

Implementing Alternative A would result in minor to moderate short-term impacts to bald eagles. The bald eagle is no longer a federally threatened species, but is still protected under the U.S. Bald and Golden Eagle Protection Act. The management and potential removal of exotic species, such as European rabbits, may have temporary minor adverse impacts to raptor predation habits. However, the native grasslands that would result from prairie restoration would result in a natural, long-term population of small native rodents and other species, providing a different prey base for these and other raptors.

While the marbled murrelet is generally known to use the waters of the San Juan Islands, results of recent surveys at the park indicate that although murrelets may be feeding in waters off the islands, they do not nest in the park. The most suitable potential nesting habitat within the park was identified at the eastern boundary of the park, within American Camp and adjacent to DNR land (Hall, 1999). Implementation of Alternative A could have a negligible to minor impact on murrelets from continued visitation in the area. Because recreation on trails in this area is limited to non-motorized uses, impacts would likely be no more than minor.

Beneficial impacts from the continued protection of sensitive species, including bald eagles and marbled murrelets, and their habitat within the park, would continue under this alternative. Potential reintroduction of the golden paintbrush and streaked horned lark would have additional benefits by providing habitat for additional sensitive status species.

Continuation of vegetation management programs and prairie restoration efforts under Alternative A would result in minor adverse impacts to the island marble butterfly resulting in some level of mortality to individual butterflies. However, continuing with these programs at the current scale and following the principles outlined in the Conservation Agreement and Strategy for the Island Marble Butterfly would have minor to moderate long-term benefits for the island marble from habitat restoration.

Cumulative Impacts

The development of San Juan Island has resulted in habitat fragmentation, introduction of exotic species, and overall loss of habitat which has had past adverse impacts to sensitive species. Park operations would continue to have localized, short-term, negligible impacts to bald eagles. These impacts would likely result primarily from noise associated with roads and the areas of the park where visitation is concentrated and mechanized equipment may be used. Mitigation associated with timing activities during critical periods for these species would reduce the level of impacts to negligible. Overall, cumulative impacts to sensitive species are long-term minor to moderate and adverse. The contribution of this impact would be very small.

Conclusion

Implementation of Alternative A could contribute minor, short-term, adverse impacts to bald eagles from the reduction or removal of exotic species and

potential minor impacts to marbled murrelets, if they are nesting on the island. Protection of both the species and habitats would continue to provide long-term benefits to bald eagles and marbled murrelets. Cumulative impacts would be minor to moderate from past habitat fragmentation and habitat loss. Impacts from prairie restoration would also have short-term minor adverse effects coupled with overall long-term, minor to moderate benefits to the island marble butterfly by improving habitat. There would be no impairment to this resource as a result of implementing this alternative.

Soils and Geologic Resources

Implementing Alternative A would not result in any additional impacts on geologic features or processes. Adverse impacts now occurring from natural erosion, existing development, and wave action would continue.

Continuing park operations and sustained visitation would result in negligible to minor, long-term impacts to soils from trampling, grading, or small scale removal. Continued use of the well-developed warrens and new burrowing by rabbits would result in excessive churning and compaction of soil. This activity impacts the soil-water relationship because infiltration is reduced and runoff increases with soil compaction. Burrowing also disrupts the texture of the surface soil by bringing subsurface soil and gravel to the surface, creating a soil environment that is conducive to establishment by exotic plant species as opposed to native prairie grasses (Biggam, 2003) and perpetuating adverse impacts to the entire prairie ecosystem. This alteration of the soil environment would result in moderate, long-term, adverse impacts to soils.

Cumulative Impacts

The preferred road alternative proposed in the current version of the unpublished Cattle Point Road Draft Environment Impact Statement involves realignment of the roadway away from the bluff to increase the life expectancy of the road. The total length of the realignment is approximately 5,100 feet and would involve cuts and fills using heavy equipment to fit the road onto sloping ground. Retaining walls may be needed to reduce the size of cuts and fills. The cuts and fills would result in moderate, long-term, adverse impacts to the natural benches formed by glacial rebound processes. The cut sections would also disturb the mounded ridge, creating moderate, adverse long-term impacts to the natural topography. Soils would also be disturbed from construction of the Cattle Point Road realignment. Soil disturbance from cuts and fills could also create potential erosion issues, most severe in the short-term during the actual construction period. Best management practices would be used, including soil stabilization and a silt fence, and other means to control runoff to minimize impacts to soils. The alternative is also designed to require minimal need for imported rock and soil, and a restoration plan would be designed to encourage establishment of native plants and reduce the potential for long-term soil erosion. In the long-term impacts to soils would be minor and adverse. Implementation of Alternative A would have a negligible contribution to cumulative impacts (Federal Highway Administration and National Park Service, 2007).

Conclusion

Implementing Alternative A would not result in any additional impact on geologic features or processes. Long-term, minor to moderate adverse impacts to soils would continue from ongoing park operations and burrowing activity from rabbits. Cumulative impacts to geologic landforms from the Cattle Point Road proposed realignment would be moderate, long-term and adverse while impacts to soils from this project would be minor, long-term and adverse. Implementation of Alternative A would have a negligible contribution to cumulative impacts. There would be no impairment to soils or geology or their value as a result of implementing this alternative.

Coastal Water Resources and Hydrologic Systems

Implementing Alternative A would not result in any direct change to coastal water resources, including intertidal areas (the strip of beach between high and low tides), or hydrologic systems, including wetlands and floodplains. Existing conditions and impacts from current development and human activities, such as trampling and harvesting of organisms, would continue. The condition of water resources in Westcott and Garrison bays would continue to be influenced by relatively low rates of flushing, seasonally high use by recreational boaters, and by land use practices, including agriculture and discharge from residential septic systems in the watershed. These activities combined could cause major impacts to water quality in the vicinity of English Camp (Klinger et al, 2006: p.110).

The south-facing shore of American Camp is exposed to the eastern Strait of Juan de Fuca, resulting in a higher flushing than the interior bays at English Camp. While used by recreational boaters for fishing and wildlife viewing, it is not used for overnight anchoring. Residential development along the south-facing shore is also relatively sparse, limited primarily to Eagle Cove and Cattle Point Estates. These activities combined have minor impacts and water quality at American Camp remains relatively high (Klinger et al, 2006: p.113-114).

No development would occur along any shoreline, and wetlands and saltwater marshes would be preserved, which would be a benefit to water resources and hydrologic systems. The park would continue to maintain passive management of intertidal areas, which could contribute to further decline of eelgrass beds in Westcott and Garrison bays or other loss of habitat associated with intertidal resources. This alternative does not provide for further protection for the intertidal areas and could result in long-term moderate adverse impacts to the intertidal community.

Continued restoration of the native plant communities on San Juan Island would have moderate benefits to hydrologic systems. Native plant species are more drought resistant and will retain surface soil better, resulting in less erosion into hydrologic systems. Restoration of native plants will also increase infiltration and decrease runoff, resulting in fewer pollutants entering the hydrologic system and marine ecosystem.

Cumulative Impacts

The rapid dispersal of non-indigenous or exotic species has been identified as one of the most severe environmental threats facing the Pacific Northwest. The spread of these species could lead to drastic changes in the ecology of marine estuarine and freshwater systems, and produce significant economic impacts on water dependent industries, such as aquaculture and hydro power. One such species of concern to the park is the European green crab (Carcinus maenas). From 2000 to 2002, park staff monitored the intertidal zone of Griffin Bay and Garrison Bay with no detections of this species. However, green crabs are present in Willipa Bay and Grays Harbor on the coast of Washington and are found on Vancouver Island, British Columbia. Native to Europe, the green crab most likely arrived in ship ballast or in seaweed used as packing material for bait. This species is an aggressive predator that feeds on a variety of organisms including bivalve mollusks, polychaetes, and small crustaceans. It disrupts and negatively impacts the native ecosystem by out competing the Dungeness crab and other native crab species, and by heavily feeding on clams and oysters. Additionally, it is host to a parasitic worm that may affect the health of local shore birds (Washington Department of Fish and Wildlife, 2007).

Coastal water resources and hydrologic systems on the Pacific Coast have also been and are being affected by natural geologic processes, fragmentation of habitats, by pollution and disturbance in watersheds and human activities. These resources are also impacted by global climate change which causes changes in coastal erosion, salinity, precipitation, the range of environmental variation, and species diversity (Flora, 2007: p.7). In many areas along the Pacific Coast, ocean resources are impaired, declining, and rapidly approaching critical levels beyond which recovery may not be possible.

In the San Juan Islands, impacts from Snohomish Public Utility District potential use of tidal energy are currently unknown, but could range from minor to major. The underwater turbines could have impacts on marine life and habitat, shorelines, and tidal flows. Impacts will be better assessed following the studies proposed by the public utility district.

Hydrologic systems and wetlands have been affected by past construction of roads, parking lots, culvert placement, and other facilities within and outside the park. Of particular note is a county road that bisects English Camp. This county road is contributing negligible impacts to the hydrologic resources at English Camp. Overall, these actions would result in minor cumulative impacts to hydrologic systems.

Conclusion

Implementing Alternative A would have no direct, adverse impact on coastal water resources or hydrologic systems, including wetlands. Water resources in Westcott and Garrison bays would continue to be influenced by relatively low rates of flushing, recreational boaters, and by land use practices, which combined could cause major impacts to water quality in the vicinity of English Camp. Water quality at American Camp would remain relatively good, with minor impacts from recreation activities. Continued restoration of the native plant communities would have moderate benefits to hydrologic systems. Cumulative impacts would be moderate and adverse and could be major and adverse based on potential tidal energy development programs and invasion of

the European green crab. The contributions to these effects from this alternative would be very small. There would be no impairment to these resources as a result of this alternative.

Air Quality

Under Alternative A, there would be no notable changes to future air quality trends due to park management or park operations. The park would continue to have no site-specific monitoring for additional air quality data.

Cumulative Impacts

Past and present sources of impacts on air quality in the park are motor vehicles and equipment, campfires, prescribed fires, and generators and heating systems. Most air pollution affecting the park comes from outside the park, notably the Shell Oil Products and Tesoro oil refineries near Anacortes and Bellingham, Washington and the Port Townsend Pulp and Paper Mill in Port Townsend, Washington. As population growth continues, particularly in western Washington, additional cars, marine vessels, and infrastructure will increase air pollutant emissions, and could result in minor to moderate adverse impacts to park air quality. Implementing Alternative A would not alter any trends in population growth or air quality and therefore would not contribute to cumulative impacts.

Conclusion

Implementing Alternative A would not result in any adverse impacts to air quality. Cumulative impacts associated with population growth and increased pollution primarily from motor vehicle emissions would contribute minor to moderate adverse impacts to park air quality. Implementing Alternative A would not alter any trends that impact air quality and therefore would not contribute to cumulative impacts. There would be no impairment to this resource or value as a result of this alternative.

Soundscape

Implementation of Alternative A would include development of an overflight management plan and establishing a noise baseline for planes flying over the park, generally to and from the airport in Friday Harbor. Establishing this baseline and implementing a plan for overflights would have long-term benefits to the park soundscape.

Impacts to soundscape from ongoing park operations such as road maintenance would be negligible.

Cumulative Impacts

Impacts to park soundscape generally come from overflights and boat traffic. Planes flying over the island impact the soundscape at both American and English camps. Currently, there are no plans to expand the airport at Friday Harbor for increased commercial traffic; however, increased development on the island could result in additional residents with private planes flying over the park.

At American Camp, commercial fishing and whale watching boats can often be heard, in addition to private boats. At English Camp, most boat traffic is from private boats. As development expands on Garrison Bay, there is potential for additional larger boats or yachts on the water, which could result in moderate adverse impacts to soundscape. Noise associated with larger boats would not be considered compatible with the historic scene and relatively pastoral setting. Alternative A would have a minor contribution to cumulative impacts.

Conclusion

Implementation of Alternative A would have long-term benefits to soundscape though development of an overflight management plan and establishment of a noise baseline for planes flying over the park. Cumulative impacts are largely from overflights and boat traffic and could be moderate and adverse in the long-term as development on Garrison Bay expands. Alternative A would have a minor contribution to cumulative impacts. There would be no impairment to this resource or value as a result of this alternative.

Impacts from Alternative B

Vegetation

Implementing Alternative B would provide some similar long-term, moderate benefits to vegetation, including the Garry oak woodland and prairie, as in Alternative A from the continuation of park resource management actions and programs. Under Alternative B, the park would expand efforts to restore the prairie at American Camp, providing restoration of a rare resource, enhancing critical habitat for the island marble butterfly as well as the historic scene. These efforts would have a moderate to major, long-term benefit to the prairie, restoring this rare resource in

the Pacific Northwest. The park would also expand partnerships in Alternative B, which could provide additional volunteers and funding to increase the number of projects the park is able to accomplish for vegetation management each year.

However, implementing Alternative B would also result in localized moderate adverse impacts to vegetation at American Camp from the construction of a permanent visitor center in a previously undeveloped location. This construction would result in vegetation removal for the new facility, parking lot, and access road; however, no sensitive vegetation species or large diameter trees would be affected. There would also be short-term impacts to vegetation from the staging of construction equipment required. The long-term increase in vehicular and pedestrian traffic would also adversely impact vegetation by increasing possibilities of trampling and introduction of exotic species.

The relocation of the road and parking lot at English Camp would also result in moderate adverse impacts to vegetation. Construction would result in long-term impacts from vegetation removal, consisting mostly of underbrush and small trees; however, no large diameter trees would be removed. Short-term impacts could also result from staging equipment.

Cumulative Impacts

Cumulative impacts are similar to Alternative A. Implementation of Alternative B would have a greater contribution to long-term benefits from prairie restoration efforts at American Camp, but would also have a greater contribution to the adverse cumulative impacts in the short and long-term from the staging for construction and permanent removal of some vegetation from actual construction at both camps.

Conclusion

Implementation of Alternative B would have similar moderate long-term benefits as Alternative A from the continuation of park resource management actions and programs. Alternative B provides some additional benefits from the expansion of partnerships; however Alternative B would also result in localized moderate adverse impacts to vegetation from the construction of a new permanent visitor center and associated infrastructure on a previously undeveloped site at American Camp and relocation of the road and parking lot at English Camp. Cumulative impacts are similar to Alternative A; however Alternative B has a greater contribution to long-term, adverse cumulative impacts. There would be no impairment to this resource or value as a result of this alternative.

Wildlife

Implementation of Alternative B would have similar impacts as Alternative A from managing exotic species and relocating the bat colony from the Crook house. In addition, Alternative B would result in moderate adverse impacts to wildlife from the construction of a new visitor center and associated infrastructure on a previously undeveloped site at American Camp and relocation of the road and parking lot at English Camp. Construction activities would cause short-term disruptions to wildlife species and could cause long-term habitat fragmentation. Although habitat would be fragmented, it is likely that wildlife would adapt to the new permanent visitor center, new road development, and other infrastructure over time. The increased visitor facilities and infrastructure would likely attract new visitors. The increase in visitation could also result in minor long-term impacts to wildlife from unintentional visitor or vehicle conflicts.

Prairie restoration under Alternative B would have long-term benefits to some species of wildlife by restoring a large area of habitat for native species. Small rodents populations would likely increase, providing a prey source for raptor populations.

Cumulative Impacts

Cumulative impacts are similar to Alternative A; however Alternative B has a greater contribution to long-term adverse cumulative impacts associated with habitat fragmentation.

Conclusion

Implementation of Alternative B would have similar impacts on wildlife as Alternative A from the continuation of park resource management actions and programs, with some additional long-term benefits from prairie restoration. Alternative B would also result in moderate adverse impacts to wildlife from the construction activities, including a new visitor center and associated infrastructure on a previously undeveloped site at American Camp and relocation of the road and parking lot at English Camp. Cumulative impacts are similar to Alternative A; however Alternative B has a greater contribution to long-term adverse cumulative impacts. There would be no impairment to this resource or value as a result of this alternative.

Special Status Species

Implementing Alternative B would result in similar impacts to bald eagles and marbled murrelets as Alternative A, with some additional short-term minor to moderate impacts, most likely resulting from noise associated with construction projects. Noise and construction activities may also disrupt behavior. Beneficial impacts from the continued protection of sensitive species and their habitat within the park would continue under this alternative.

Expanded prairie restoration efforts would have long-term benefits to bald eagles and the island marble butterfly. Larger scale prairie restoration would increase native grasslands which would serve as habitat for small rodents, a prey source for bald eagles. Native grasslands restored through this action also include a mustard plant which commonly serves as host to island marble larvae. The increase in native prairie habitat should result in stronger island marble populations (National Park Service and U.S. Fish and Wildlife Service, 2006) and long-term moderate benefits to the species.

Cumulative Impacts

Cumulative impacts are similar to Alternative A. The contribution of this alternative to cumulative impacts on special status species from noise disturbance would be greater than Alternative A; however, these impacts would not exceed moderate adverse impacts. In addition, this alternative contributes moderate long-term benefits to cumulative impacts from the increase in habitat from prairie restoration.

Conclusion

Beneficial impacts from the continued protection of sensitive species and their habitat within the park would continue under this alternative. Implementing Alternative B would result in some additional short-term minor to moderate impacts, most likely resulting from noise associated with construction projects. Expanded prairie restoration efforts would have a long-term moderate benefits to bald eagles and long-term moderate to major benefits to the island marble butterfly. The contribution of this alternative to cumulative impacts from noise disturbance would be greater than Alternative A; however, this alternative contributes beneficial effects from increasing prairie habitat through restoration efforts. There would be no impairment to this resource or value as a result of this alternative.

Soils and Geologic Resources

Implementing Alternative B could potentially result in some minor impacts to geologic resources from construction activities related to improving parking areas at Young Hill and Jakle's Lagoon. However, prominent geologic features would be avoided during construction at both camps and most construction would not impact geologic processes in the long-term.

Prairie restoration efforts, including the control or elimination of invasive species, could have long-term moderate benefits to soils. Reducing or eliminating the burrowing activity from rabbits would improve soil infiltration. Similarly, restoring native grasses to the prairie would improve the soil environment, creating long-term benefits to soils at American Camp.

Soils would be adversely impacted from construction activities from all construction, including the new permanent visitor facility at American Camp and the road re-route at English Camp. Short-term impacts associated with increased erosion potential due to the removal of plants, rocks and soils would be moderate. Mitigation measures following construction would reduce any long-term impacts to soils from erosion or runoff.

Cumulative Impacts

Cumulative impacts are similar to Alternative A regarding the Cattle Point Road Draft EIS unpublished alternatives. Alternative B would have a greater contribution to adverse impacts to soils than Alternative A, but the effects would not exceed moderate impacts and be short-term. Alternative B would also contribute moderate long-term benefits to cumulative impacts by restoring the prairie ecosystem.

Conclusion

Overall, implementation of Alternative B would result in some minor short-term adverse impacts from construction activities, with no long-term impacts to prominent geologic features and processes. Soils would also be moderately affected from construction in the short-term; however, there would be long-term benefits to soils from prairie restoration efforts. Cumulative impacts are similar to Alternative A regarding the Cattle Point Road Draft EIS alternatives. Alternative B would contribute short-term moderate adverse impacts for cumulative impacts from construction as well as long-term benefits from prairie

restoration. There would be no impairment to this resource or value as a result of this alternative.

Coastal Water Resources and Hydrologic Systems

Under Alternative B, the park would utilize partnerships with the DNR and others to aid the management of the intertidal zone. Taking on a more active management role in intertidal areas would have long-term moderate benefits by focusing more attention on management of this resource. Expanded interpretation of about the value of bays and coastal water resources would have long-term benefits by increasing public awareness and stewardship of the importance this resource.

Alternative B proposes development at American Camp with a new permanent visitor center and access road closer to the redoubt. The area in which the new access road traverses and some of the location of the visitor center and parking is characterized as wet. Development on this site could have minor to moderate adverse impacts to hydrology in this localized area.

Alternative B proposes a loop road at English Camp that could have varying degrees of impacts depending on the alignment chosen. The wetness classification of the area at English Camp ranges from dry to very wet; however, it is impossible to connect to the parking lot without traversing some very wet terrain. When constructing in wet and very wet areas, it is necessary to have adequate drainage to maintain total hydrologic continuity, of both surface and subsurface water, across the road. This can be accomplished by use of bridges, or adequately compacted fill, with what may appear to be a surfeit of cross-draining structures (Kennard, 2006).

Site specific analysis would follow selection of an actual alignment. Impacts would range from minor if a route just north of the existing parking lot was chosen where the terrain transitions from dry to moist, to moderate to major impacts if the loop road provided vehicle access directly to the Crook house and crossed wet to very wet land (Kennard, 2006). Maintenance of a road across wet or very wet areas would have long-term impacts due to the greater intensity of these activities.

Cumulative Impacts

Cumulative impacts would be similar to those in Alternative A. The construction of the visitor center at American Camp and the loop road at English Camp both would be located in some wet areas, contributing additional minor to moderate impacts to hydrologic systems from construction in the short-term and in the long-term due to the potential disruptions to surface and subsurface water flow and maintenance activities required to support them.

Conclusion

Implementation of Alternative B would result in long-term benefits to coastal water resources by having the park staff engage more actively in management of the intertidal zone. This alternative would also contribute minor to moderate adverse impacts to hydrologic systems in the short and long-term from construction at both American and English camps. Cumulative impacts would be similar to Alternative A, with additional minor contributions. There would be no impairment to hydrologic systems or coastal water resources or their values as a result of this alternative.

Air Quality

Implementation of Alternative B would result in some short-term minor to moderate adverse impacts to air quality from construction of facilities and roads at American and English camps. Construction would result in additional exhaust from construction equipment as well as dust and increased particulates from construction activities. These impacts would be moderate and short-term with no long-term impacts.

Cumulative Impacts

Cumulative impacts are similar to Alternative A. Alternative B would have a greater contribution to cumulative impacts in the short-term, but long-term contributions to impacts as a result of implementing this alternative would be negligible to minor.

Conclusion

Implementation of Alternative B would result in some short-term minor to moderate adverse impacts to air quality from construction of facilities and roads at American and English camps. Alternative B would have a greater contribution to cumulative impacts in the short-term, but long-term contributions to impacts as a result of implementing this alternative would be very small. There would be no impairment to this resource or value as a result of this alternative.

Soundscape

Implementation of Alternative B would have the same actions and impacts as Alternative A, plus additional long-term benefits from conducting baseline acoustic monitoring through the NPS soundscapes program. Data from this monitoring would provide park management with important information about natural sounds and ambient noise levels that could guide future decisions.

Alternative B would also result in additional moderate short-term impacts to soundscapes as a result of the additional construction activities at both camps. There could be some additional minor long-term impacts from increased traffic through English Camp due to the road continuing through the unit, potentially in hearing range from the parade ground. The expanded capacity at American Camp from the new visitor center and enlarged parking could also result in noise from the increased number of vehicles in the area.

Cumulative Impacts

Cumulative impacts would be the same as Alternative A. Alternative B would have a greater contribution to cumulative impacts than Alternative A. However, the contribution would still be very small.

Conclusion

Implementation of Alternative B would result in similar impacts as Alternative A, plus additional long-term benefits from conducting baseline acoustic monitoring. Additional moderate short-term adverse impacts would also occur from construction activities at both camps. Cumulative impacts are the same as Alternative A, but this alternative would have a slightly greater contribution to cumulative impacts. There would be no impairment to this resource or value as a result of this alternative.

Impacts from Alternative C

Vegetation

Implementation of Alternative C would have similar benefits as Alternative B from resource management programs, prairie restoration efforts, and expanded partnerships which would assist in vegetation management. Alternative C also includes the park playing a more active role in partnerships related to coastal resource management and implementing the recommendations of the coastal watershed assessment, which would provide additional long-term benefits to vegetation through improvements in the broader ecosystem.

Alternative C calls for less development than Alternative B, with the visitor center construction at American Camp occurring on the existing site and limiting road improvements at English Camp to the existing entrance road. This development would result in fewer impacts to vegetation, and adverse impacts could be moderate in the short-term, but minor in the long-term.

Cumulative Impacts

Cumulative impacts are the same as Alternative B; however, implementation of Alternative C would contribute fewer adverse impacts to vegetation.

Conclusion

Implementation of Alternative C would have similar benefits as Alternative B from resource management programs, prairie restoration and expanded partnerships, with additional long-term benefits from the park's more active role related to coastal resource management. Adverse impacts from smaller scale construction would be less than Alternative B, and would be minor to moderate in the short-term and minor in the long-term. Cumulative impacts are the same as Alternative B, with this alternative contributing fewer adverse impacts to cumulative effects. There would be no impairment to this resource or value as a result of this alternative.

Wildlife

Implementation of Alternative C would have similar benefits to wildlife as Alternative B, notably from prairie restoration efforts and other resource management programs; however, adverse impacts under this alternative would be less than Alternative B. The construction of the visitor center at American Camp would be confined to the already developed area and there would be no loop road at English Camp, reducing the amount of habitat disturbed by construction.

Cumulative Impacts

Cumulative impacts are the same as Alternative B; however, implementation of Alternative C would contribute fewer adverse impacts to cumulative effects than Alternative B.

Conclusion

Implementation of Alternative C would have similar long-term benefits to wildlife from prairie restoration efforts and other expanded resource management programs. Adverse impacts are less than Alternative B due to less construction of facilities and roads, and would be minor to moderate in the short-term, and would likely not exceed minor in the long-term. Cumulative impacts are the same as Alternative B, although Alternative C would contribute fewer adverse impacts to cumulative effects. There would be no impairment to this resource or value as a result of this alternative.

Special Status Species

Bald eagles nest near the visitor center site in Alternative C, but also regularly utilize habitat near the visitor center site in Alternative B. Eagles near the existing visitor center appear to be habituated to a certain level of human activity, so the two alternatives are likely to have similar impacts on special status species from visitor center construction. Elimination of the loop road at English Camp in Alternative C would result in fewer additional disturbances to habitat for special status species.

Cumulative Impacts

Cumulative impacts are the same as Alternative B.

Conclusion

Implementation of Alternative C would have similar impacts to special status species as Alternative B; however, the more limited construction activities in this alternative would reduce adverse impacts related to noise. Cumulative impacts are the same as Alternative B. There would be no impairment to this resource or value as a result of this alternative.

Soils and Geologic Resources

The effects on geologic resources and processes would be the same as Alternative B.

Implementation of Alternative C would contribute fewer impacts to soil resources as a result of less development at both American and English camps. Soil impacts and intensity would be the same as Alternative B; however the amount of area adversely impacted would be less than Alternative B.

Cumulative Impacts

Cumulative effects are the same as Alternative B, with Alternative C contributing fewer adverse jmpacts to the cumulative effects on soils due to the smaller scale of development.

Conclusion

Impacts on geologic resources and processes would be the same as Alternative B. Impacts to soils would be the same as Alternative B in terms of intensity and duration, but a smaller amount of soil area would be impacted. Cumulative effects are the same as Alternative B; however, Alternative C does not contribute as much long-term adverse impacts to soil resources. There would be no impairment to this resource or value as a result of this alternative.

Coastal Water Resources and Hydrologic Systems

Implementation of Alternative C calls for additional actions that would benefit coastal water resources and hydrologic systems. Implementation of the Ocean Stewardship Strategy, recommendations of the Assessment of Coastal Water Resources and Watershed Conditions, in addition to engaging in additional partnerships with the University of Washington Friday Harbor Labs and agencies for both education and management of coastal resources would have moderate to major long-term benefits.

In addition, the construction of the visitor center at American Camp would be in an area that where soils are not as wet, creating less of an impact to hydrologic systems. Elimination of the loop road at English Camp would also reduce hydrologic impacts in that area.

Cumulative Impacts

Cumulative impacts are the same as Alternative B; however, Alternative C contributes fewer adverse impacts and additional long-term benefits to coastal water resources and hydrologic systems than the other two alternatives.

Conclusion

Implementation of Alternative C would result in additional moderate to major long-term benefits to coastal water resources through additional management actions and partnership opportunities. Adverse impacts to hydrologic systems would be less than Alternative B due to the location of the

visitor center at American Camp on the existing site. Cumulative impacts are the same as Alternative B, with Alternative C having fewer contributions to adverse effects and greater contributions to long-term benefits. There would be no impairment to this resource or value as a result of this alternative.

Air Quality

Implementation of Alternative C would result in some short-term minor to moderate adverse impacts to air quality from construction of facilities and roads at American and English camps. However, impacts would be somewhat less than Alternative B due to the more limited development at English Camp, notably from the omission of constructing a new loop road. Construction for Alternative C would also result in additional exhaust from construction equipment as well as dust and increased particulates from construction activities. These impacts would be moderate and short-term with no long-term impacts.

Cumulative Impacts

Cumulative impacts are the same as Alternative B. Omission of the loop road at English Camp could result in a negligible to minor change in the contribution of this alternative to adverse impacts on air quality.

Conclusion

Implementation of Alternative C would have similar impacts to air quality as Alternative B. The more limited development, especially the elimination of the loop road alternative at English Camp, would contribute fewer direct and cumulative adverse impacts to air resources. Adverse impacts would be moderate and short-term, with no long-term impacts. There would be no impairment to this resource or value as a result of this alternative.

Soundscape

Alternative C would have similar impacts as Alternative B; however, there would be fewer noise intrusions due to the smaller scale of construction, resulting in less adverse impacts to park soundscapes.

Cumulative Impacts

Cumulative impacts are the same as Alternative B.

Conclusion

Implementation of Alternative C would have similar impacts as Alternative B, with fewer adverse short-term impacts due to the smaller scale of construction. There would be no impairment to this resource or value as a result of this alternative.

Effects on Visitor Experience

The following discussions of effects on the visitor experience cover the effects on interpretation (which includes the elements of visitor information and orientation), education, recreational opportunities, soundscapes and scenic resources.

Methodology and Assumptions

The area of consideration for visitor experience is the San Juan Islands. To evaluate the potential impacts on the visitor experience, impact intensities for visitor experiences related to interpretation and education, recreation opportunities, and scenic resources were defined as follows:

Negligible:	Impacts would be barely detectable to the visitor and expected to have no discernible effect related to interpretation and education, recreation opportunities, and scenic resources.
Minor:	Impacts would be slightly detectable to the visitor, though not expected to have an overall effect on the visitor experience related to interpretation and education, recreation opportunities, and scenic resources.
Moderate:	Impacts would be clearly detectable to the visitor and could have an appreciable effect on the visitor experience related to interpretation and education, recreation opportunities, and scenic resources.
Major:	Impacts would be substantial, have a highly noticeable influence on the visitor experience and could permanently alter access to and availability of various aspects of the visitor experience related to interpretation and education, recreation opportunities, and scenic resources.

Impacts from Alternative A

Interpretation, Education, and Outreach

Under Alternative A, the primary interpretive facilities would continue to be the existing visitor center at American Camp and the barracks building would continue to serve as a visitor contact station at English Camp. These facilities would not be expanded in the short-term, and visitors would find the area crowded during peak periods. Some visitors may be unable or unwilling to use the visitor center due to crowds. A limited number of park programs would continue to be provided to park visitors at American Camp and English Camp. The Volunteers in Parks program would continue to focus primarily on supporting interpretation, helping with summer reenactments, demonstrations, and staffing information counters. Some visitors and visiting school groups may not be able to participate in park programs due to limited staffing and the subsequent timing of programs not fitting into all schedules.

Interpretive media would continue to focus primarily on historical themes, with some additional displays and programs on the significance of the park's natural resources. Updated and improved exhibits in the ferry terminal, on the ferries, and in Friday Harbor, created and maintained through partnerships, would have a moderate to major benefit by providing interpretive and orientation information prior to arrival at the park. These exhibits would reach visitors who may be vacationing on San Juan Island but may not be aware of the park and opportunities the park provides.

Limited staffing and funding would prevent the further expansion of interpretive programs and media and limit visitor contact with park interpretive rangers, a long-term moderate adverse impact to interpretive opportunities.

Cumulative Impacts

Current and past park activities have maintained a coherent interpretive message about the historic events on San Juan Island, including the Pig War crisis. There are limited opportunities to obtain detailed, specific information outside the park. Journalists and students contact park staff for information on the Pig War crisis for media stories and school projects. As the current generation's interests change, the story of lasting peace is often overshadowed by the story of the Pig War crisis, making it imperative that interpretation is precise and focused in all of its products and programs.

These activities result in moderate long-term beneficial cumulative impacts on interpretation and educational opportunities for visitors.

Conclusion

The effects of proposed actions under Alternative A would have moderate long-term benefits on interpretation and education. There would also be moderate, long-term adverse impacts to visitor understanding and park resources. Although visitors would enjoy the park, they would experience crowding and limited access to key interpretive opportunities as a result of overcrowded facilities during peak periods. Limited staffing and funding would prevent further expansion of interpretive programs and limit visitor contact with park interpretive rangers. As a result, visitors may not understand the sensitivity of park resources and the complexity of the interconnections of the park's natural and cultural resources. Park programs, facilities, and staff would continue to contribute moderate long-term benefits to cumulative impacts on interpretation and education about park resources and values, but could be hampered by overcrowding, limited staffing, few interpretive programs, and static funding.

Recreational Resources

There would be several enhancements to recreation under the No Action Alternative. Closing the non-historic redoubt road (approximately 2800 linear feet) at American Camp to motorized vehicles and converting it to a trail would provide an additional recreation opportunity in the park and be beneficial to the cultural landscape. People would be more likely to use this route as a trail if there is no potential for conflicting uses with motorized vehicles. In addition, establishing the former military road at English Camp as a trail would offer another new recreation opportunity to park visitors. However, closing the redoubt road does create a longer trip by foot for those visitors with limited ability which is a potential minor to moderate adverse impact for those user groups.

The park would continue limited involvement with local efforts to establish island-wide trail connections and would continue to work with the county to improve bicycle routes along roads, and improving public safety. The park's trails provide the infrastructure to which other trails on the island strive

to connect. Many of these trails provide visitors the experience of walking along historic corridors used by the military and subsequent settlers after the joint occupation, a moderate to major benefit to recreation. Recreation opportunities for equestrian use would not change under Alternative A. Equestrian use would continue to be allowed in defined areas.

The park's shoreline areas would continue to provide the longest and most varied expanse of publicly accessible shoreline in the San Juan Islands. Continuing to provide public access to these areas would benefit recreation, providing opportunities for water-based activities such as walking, beachcombing, swimming, and fishing. However, continuing the current style of management of the tidelands may have some minor to moderate adverse impacts to these areas, as park staff will have limited authority and jurisdiction, and the DNR has minimal presence on the island.

Cumulative Impacts

Continuing growth in San Juan County and increasing numbers of visitors are resulting in congestion along established recreation corridors during peak periods. Consequently, local and county efforts are underway to improve bicycle access by establishing wider road shoulders and developing partnerships to create an island-wide trail network. These efforts have had, and are expected to continue to have, a moderate benefit to recreation opportunities.

The park continues to be a primary source of recreation for both park visitors and island residents. In a rapidly growing and developing region, the park provides public access to a wide variety of recreational opportunities that are vital to the health and enjoyment of the population. As private development throughout the San Juan Islands continues, there is an ever shrinking land base for public recreation, making the recreational opportunities provided by the park's public lands even more important. Implementation of Alternative A contributes moderate to major benefits to the cumulative impacts on recreation opportunities.

Conclusion

The effects of proposed actions under Alternative A would have moderate long-term benefits to recreational opportunities. Continuing limited involvement with local efforts to establish island-wide trail connections and working with the county to improve bicycle routes along roads would have moderate benefits to recreation and contribute to improving public safety. Maintaining publicly accessible shorelines would have moderate benefits to recreation, limited by the passive management of the intertidal areas. Implementation of Alternative A contributes moderate to major benefits to the cumulative impacts on recreation opportunities.

Scenic Resources

Historic views contribute to the significance of the landscape at San Juan Island National Historical Park. Continuing to protect scenic resources in accordance with law and policy and continuing to educate the public through programs on dark night sky would benefit these resources. Cooperating with adjacent landowners to implement scenic protection measures such as design guidelines through the use of vegetative screening and other techniques would also benefit scenic resources.

Cumulative Impacts

Continued development outside the park but viewable from within the park and historic viewpoints would continue to have an adverse impact on scenic resources. Potential additional development of homes and docks at Garrison Bay adjacent to English Camp and additional homes developed at Eagle Cove adjacent to American Camp could have long-term adverse impacts to scenic resources by altering the rural context of the areas outside the park. Construction of a new Cattle Point Road at American Camp would have short-term adverse impacts to scenic resources from the construction activities, but impacts would be minor to moderate over the long-term. Development of tidal energy turbines by Snohomish Public Utility District could also have long-term adverse impacts to scenic resources if they are within sight of the park. Implementation of Alternative A would contribute moderate benefits to scenic resources.

Conclusion

The effects of proposed actions under Alternative A would have moderate long-term benefits to scenic resources. These benefits would occur through management of scenic resources within the park and working with adjacent landowners and others to minimize impacts to scenic resources from cumulative actions outside the park but within the historic viewshed. Implementation of Alternative A would not result in an impairment of park resources or values.

Impacts from Alternative B

Interpretation, Education, and Outreach

Under Alternative B, the park would construct a new visitor center at American Camp north of the redoubt closer to the historic scene. This new visitor center would have a major benefit to interpretation by providing the park with the additional space needed for visitors to access interpretive media throughout the year, including during peak visitation periods. The new visitor center would also offer the park opportunities to update all the displays, and expand the interpretive messages. By locating the visitor center closer to the historic scene, it would improve access to many of the historic sites for visitors with limited abilities and mobility.

Alternative B also calls for the rehabilitation of the Crook house as a visitor contact station once the bats are removed. Reuse of the Crook house would provide an additional venue for interpretive information at English Camp, and it would improve visitor understanding of the distinction between the encampment era and the subsequent Crook family era at the site. In addition, the park could use the upstairs for offices for employees or volunteers.

Expanded partnerships would also enhance the park's ability to communicate interpretive themes to the public. However, these partnerships require sufficient guidance and oversight from NPS staff to ensure a consistent message is being shared. Reaching a broader audience through partnerships would have a moderate to major beneficial impact to interpretation.

Cumulative Impacts

Cumulative impacts are similar to those described in Alternative A. The addition of an enlarged visitor center at American Camp and adaptive reuse of the Crook house for a visitor contact station at English Camp, as well as the expansion of educational programs through enhanced partnerships will contribute moderate to major benefits to cumulative impacts.

Conclusion

Development of a new, enlarged visitor center closer to the historic scene at American Camp and adaptive reuse of the Crook house at English Camp would have moderate to major long-term benefits to interpretation. Expanded partnerships would also contribute moderate to major long-term benefits by reaching a larger audience. This alternative also contributes moderate to major long-term benefits to cumulative impacts on visitor understanding of park resources.

Recreational Resources

Under Alternative B, the park would seek more active involvement with the county to establish new long-distance trail connections on San Juan Island. The park's trails provide the main infrastructure to which many other trails on the island strive to connect. Active involvement to establish additional trails on park lands that connect with existing and future long-distance trails would have major benefits to recreation by expanding this trail network. Similar to Alternative A, many of these trails provide visitors the experience of walking along historic corridors used by the military and subsequent settlers after the joint occupation, a moderate to major benefit to recreation.

Under Alternative B, the park would also actively partner with the county to improve bicycle use along existing roads. If the Mitchell Hill property is acquired, bicycle use along those existing multi-use trails would be permitted. The park would also partner with other groups to establish and maintain bicycle trails. This partnership would also involve enforcement of proper use of trails, which would minimize potential conflicts between bicycles and other prohibitive use. These partnerships would build a larger coalition of support for bicycle use and provide moderate to major benefits to recreation.

Under this alternative, the Mitchell Hill property, if acquired, would permit equestrian use. This expanded use would have additional benefits to recreation.

Implementation of Alternative B would result in major-long-term benefits to recreation related to the public shoreline areas. Seeking more active management of the intertidal areas would provide major benefits to shoreline management and ensure long-term protection of these areas. Expanded or re-delineated parking lots in close proximity to trails leading to the shorelines would also improve visitor access to these locations.

Cumulative Impacts

Cumulative impacts are the same as Alternative A. Implementation of Alternative B would have a greater contribution to major long-term benefits to recreation than Alternative A through more active partnerships

for long-distance trail connections and seeking more active management of the intertidal areas.

Conclusion

Implementation of Alternative B would result in major long-term benefits to recreation. These benefits are realized through more active participation in the expansion of island-wide trail connection and partnerships to improve bicycle use and access. The park's active management of the intertidal zone would result in the long-term preservation of the shoreline areas which are a critical recreation resource. The addition of Mitchell Hill and other properties would also expand recreational opportunities.

Scenic Resources

The effects on scenic resources from ongoing park activities and education programs would be the same as Alternative A. In addition, the implementation of photovoltaic systems on any new facilities would minimize light pollution because solar-powered lights produce a dimmer light and have a beneficial impact to an important scenic resource, the dark night sky. Designing and directing outdoor lighting to minimize light pollution, including the use of lights with low lumens and motion sensors, will provide addition beneficial impacts to scenic resources sky by reducing the amount of artificial light that compromises dark night sky.

At American Camp, restoration of the prairie would provide an added scenic benefit in addition to a resource benefit. In addition, removal of the non-historic redoubt road would improve the scenic aspects and benefit the cultural landscape of American Camp by removing cars from the scene as well as dust generated by cars driving along the road. The parking areas at the relocated redoubt parking lot, South Beach and Jakle's Lagoon would all be reconfigured, and the Jakle's Lagoon parking would potentially be expanded, resulting in short-term impacts from some limited construction, and minor to moderate long-term impacts.

Construction of a new visitor center at American Camp would have moderate adverse impacts in the short-term on scenic resources; however, long-term impacts would be minor due to trees surrounding the site and the overall design, color and low profile of the building. It is not anticipated that the visitor center would be seen from key vistas such as the top of Mount Finlayson.

At English Camp, construction activities associated with developing a one-way loop road would create moderate, short-term adverse impacts to scenic resources; however, long-term impacts would be negligible as the road would not be visible from the historic scene or other popular overlooks such as the top of Young Hill.

Cumulative Impacts

Cumulative impacts in Alternative B are the same as those in Alternative A. Implementation of Alternative B would contribute some greater short-term adverse impacts to scenic resources by relocating the visitor center at American Camp and reconfiguring the parking areas. However, the long-term contributions of the cumulative actions to scenic resources would be minor.

Conclusion

Implementation of Alternative B would result in some additional short-term moderate adverse impacts to scenic resources from construction of a new visitor center and enlarged parking at American Camp and construction of a one-way loop road at English Camp. Removing the non-historic redoubt road at American Camp and converting it to a bicycle and pedestrian trail would have long-term benefits to scenic resources and the cultural landscape. Alternative B would also result in some long-term benefits from the use of new photovoltaic systems and lighting techniques that would enhance dark night skies.

Impacts from Alternative C

Interpretation, Education, and Outreach

Under Alternative C, the park would construct a permanent visitor center at American Camp. However, in contrast to Alternative B, the permanent visitor center under this alternative would be located in the same location as the existing temporary visitor center. Similar to the effects of Alternative B, this permanent visitor center would have a major benefit to interpretation by providing the park with the additional space needed for visitors to access interpretive media throughout the year, including during peak visitation periods. The permanent visitor center would also offer the park opportunities to update all the displays, and expand the interpretive messages.

Alternative C calls for the stabilization and preservation of the Crook house for use as an exterior exhibit, with signs and displays interpreting the Crook Family era. Interpreting the role of the Crook family in caring for the site would give visitors information on the post encampment period. This use of the Crook house would improve visitor understanding of the distinction between the encampment period and subsequent Crook family occupation and use of the site; however, the options for interpretive media would be more restricted with an exterior exhibit only. In addition, visitors would have less contact with interpretive rangers than Alternative B given that the Crook house would not be a staffed visitor contact station. Use of the Crook house in Alternative B would contribute moderate long-term benefits to interpretation and education.

Expanded partnerships would also enhance the park's ability to communicate interpretive themes to the public and result in the same benefits to interpretation as Alternative B.

Cumulative Impacts

The cumulative impacts are the same as Alternative B. Implementation of Alternative C would contribute the same moderate to major benefits to cumulative impacts as Alternative B.

Conclusion

The addition of a new, expanded visitor center at the existing site of the current visitor center would have a major long-term benefit to interpretation. Reuse of the Crook house as an exterior exhibit would improve visitor understanding of the distinction between the encampment era and the subsequent Crook family era at the site and contribute additional moderate benefits to interpretation. Expanded partnerships would also enhance the park staff's ability to communicate interpretive themes to the public. Implementation of Alternative C would also contribute the same moderate to major benefits to cumulative impacts.

Recreational Resources

Under Alternative C, the effects on recreational resources would be the same as in Alternative B. In addition, actively supporting efforts to implement the concept of a historic military road trail as part of a partnership with the county to establish new long distance trail connections would be an added benefit to recreation opportunities. This trail would connect the two camps along an historic alignment, providing an additional recreation opportunity within the historic context of the park.

Cumulative Impacts

Cumulative impacts are the same as Alternative B. Implementation of Alternative C would also have a contribution to major long-term benefits to recreation.

Conclusion

Implementation of Alternative C would result in major long-term benefits to recreation. These benefits are similar to Alternative B, with the added effort to implement the concept of a historic military road trail connecting the two camps.

Scenic Resources

Under Alternative C, the short-term adverse impacts on scenic resources would be less than those in Alternative B. Although a new visitor center is proposed at American Camp, it is smaller in scale and on a previously disturbed location further from the core historic scene than the one proposed in Alternative B. Construction of a new redoubt parking lot for approximately four to five vehicles would be screened by a berm and would have a minor effect. Similarly, the development proposed at English Camp is smaller in scale than Alternative B, with no loop road through the site, creating fewer short-term adverse impacts.

Benefits from implementing photovoltaic lighting on new facilities, prairie restoration, and converting the non-historic redoubt road to a non-motorized multi-use trail are the same as Alternative B. Benefits from working with adjacent landowners and continuing education programs on scenic resources are the same as Alternatives A and B.

Cumulative Impacts

Cumulative impacts are the same as Alternative A. Implementing Alternative B would contribute less to adverse cumulative impacts than Alternative B and provide greater long-term benefits by keeping the scale of development smaller than Alternative B.

Conclusion

Implementation of Alternative C would result in fewer short and long-term impacts to scenic resources due the smaller scale of proposed development of the visitor center and parking lot at American Camp and

eliminating construction of a loop road at English Camp. Alternative C would have similar long-term benefits to scenic resources as Alternative B by removing the non-historic redoubt road at American Camp and converting it to a bicycle and pedestrian trail. There would also be long-term benefits to scenic resources by implementing new systems and techniques for outdoor lighting that would reduce light pollution and enhance dark night skies.

Effects on Visitor Access and Transportation

Methodology and Assumptions

The area of consideration for visitor access is San Juan Island. The impact analysis evaluates how each alternative would change access and visitation and the capacity of park roads and facilities to handle that change.

Negligible:	The effects would not be detectable and would have no discernible effect on the condition of roads and trails and/or traffic flow.
Minor:	The effect would be slightly detectable, but there would not be an overall effect on the condition of roads and trails and/or traffic flow.
Moderate:	Impacts would be clearly detectible, and the action could have an appreciable effect on the condition of roads and trails and/or traffic flow.
Major:	Impacts would be substantial, with a highly noticeable influence, and the condition of roads and trails and/or traffic flow could be permanently altered.

Impacts from Alternative A

Under Alternative A, the park would continue to maintain the existing road systems and parking areas at both American and English camps. The roads at both camps provide visitors with adequate access to historic sites and recreational opportunities. At American Camp, the park would continue to work cooperatively with the state and county to provide access to private land southeast of the park, a benefit to residents and visitors. At English Camp, the two-way park entrance road would continue to be somewhat crowded when tour buses are present, and the road would seasonally continue to occasionally have a washboard surface, making traction challenging for some vehicles.

Parking at English Camp would not be improved and would continue to be crowded during peak seasons and difficult for large buses to turn around when the parking lot is near capacity. Informal shoulder parking at the Young Hill trailhead would continue, making access to the trail challenging at times, and a potential safety hazard.

Linking trails at American Camp and English Camp to the island-wide trail system would have long-term moderate benefits by providing additional access to the park sites by different modes, including hiking. Extending the ADA trail at English Camp from the Crook house to the parade ground would also have long-term moderate access benefits by providing a better connection between key visitation sites for visitors with limited mobility.

Cumulative Impacts

Washington State Ferries predicts all routes in the San Juan Islands corridor are projected to experience a 70 percent system-wide increase by 2030 with walk-on ridership growing at a faster rate than vehicles (Washington State Ferries, 2006: p.1). A number of efforts are underway that would have long-term cumulative benefits to visitor access and transportation on the island. San Juan County Public Works Department prepared a Nonmotorized Transportation Plan in December 2004 that identified policies, goals and projects for a 20 year period to enable members of the public who travel on foot or by bicycle to reach their destinations safely and efficiently (San Juan County Nonmotorized Transportation Plan, 2004: p.1). Implementation of this plan would improve facilities and infrastructure for non-motorized transportation on the island, provide increased access to island destinations which are currently difficult to access without a motor vehicle, and provide holistic transportation planning on the island.

The San Juan Island Trails Committee also developed a San Juan Island Trails Plan in September 2006 that provides a framework and proposed projects for creating a network of non-motorized trails that connect key resources and destinations on the island (San Juan Island Trails Committee, 2006: p.6). Implementation of this plan, which includes proposed trails that link American Camp and English Camp with other island destinations, would create a network of trails suitable for walkers, bicyclists, and equestrians, or a combination of users, and improve island-wide

circulation and transportation by providing additional infrastructure to access key island destinations.

In anticipation of the increased vehicles, and in response to current congestion in Friday Harbor from vehicles arriving by ferry, the state has prepared a Draft Final Master Plan for the Friday Harbor Ferry Terminal. The plan identifies short, intermediate, and long-term improvements to reduce dwell times (the time the ferry stays in the ferry terminal), eliminate pedestrian and vehicle conflicts during off-loading and improve vehicle off-loading and egress from the holding area and through the local street system.

Implementation of these plans and projects would have major long-term cumulative benefits to visitor access and transportation on the island, by expanding infrastructure and improving access for non-motorized travelers as well as improving the access from the ferry for vehicles.

Alternative A, with the maintenance of the existing road infrastructure at both camps and pursuing development of an island-wide trail system if other public or private entities lead the initiative would contribute minor benefits to cumulative impacts.

Conclusion

Implementation of Alternative A would have minor long-term benefits to visitor access and transportation due to the limited improvements to parking and maintenance of existing road systems at American and English camps. Alternative A would contribute some moderate long-term benefits from linking with the island-wide trail system and extending the ADA trail at English Camp. There would be major long-term benefits from cumulative impacts including the implementation of the county's Non-Motorized Transportation Plan, San Juan Island Trails Plan and Master Plan for the Friday Harbor Ferry Terminal.

Impacts from Alternative B

The effects on visitor access and transportation from implementing Alternative B would be of greater long-term benefit than Alternative A. Construction of the new permanent visitor center closer to the redoubt, the addition of a small parking area for about four to five vehicles at Pickett's Lane following the removal of the redoubt road for motorized vehicles, and parking improvements proposed at other locations at American Camp would improve long-term access to key areas for visitors. There would be some short-term adverse impacts to access from construction; however, these impacts could be negligible to minor if timed for off-peak visitor use.

Improvements at English Camp would also provide long-term benefits to visitor access and transportation. Creating several formalized parallel parking spaces at Young Hill would provide easier, safer access to the trailhead. Reconfiguring the road system as a one-way loop road would improve traffic through English Camp and eliminate the conflicts of wide vehicles passing each other. The additional of a new parking area north of the Crook house with ADA parking spaces adjacent to the house would improve access to the site, and reduce the distance visitors with disabilities would need to cross in order to access the historic building. Restoration of the existing parking lot to more natural conditions would reduce the overall impact of the new parking area.

Cumulative Impacts

Cumulative impacts are the same as Alternative A. The expanded tour routes and need for parking generated by the visitor contact station at English Camp would have a negligible effect on cumulative impacts. The proposed changes to the road system at English Camp and placement of the new visitor center at American Camp in closer proximity to the historic scene, and parking improvements at both camps, would contribute minor to moderate long-term benefits to cumulative impacts.

Conclusion

Implementation of Alternative B involves a number of improvements that would contribute minor to moderate to major, long-term benefits to visitor access and transportation at both American and English camps. Construction of a new permanent visitor center closer to the historic scene and enhancements to parking areas at American Camp, coupled with the improved parking at Young Hill and the one-way loop road at English Camp provide moderate to major benefits. These actions would contribute a moderate long-term benefit to cumulative impacts island-wide.

Impacts from Alternative C

The effects on visitor access and transportation would be similar to Alternative B, but with two main differences. At American Camp, the permanent visitor center would be developed on the existing site, further from the historic scene. Visitors would have to park

farther away from the historic scene and access would be primarily by foot or bicycle. With the removal of vehicles from the redoubt road and conversion to non-motorized transportation, adverse impacts could be moderate for some visitors with limited mobility. Those visitors who prefer alternative opportunities for exclusive non-motorized options may perceive these impacts as benefits. Long-term benefits from improvements to other parking areas at American Camp would be the same as Alternative B.
In Alternative C, at English Camp, the existing entrance road would be maintained and improved for two-way traffic by providing two to three informal turnouts for passing cars. Certain sections of road would be chip-sealed or paved to improve traction for vehicles exiting the park. Improvements would be made to the visitor parking lot at English Camp to increase drainage during rainfall and to minimize the general seasonal wetness of the area. This alternative would preserve the historical alignment of access to English Camp, providing visitors with a more authentic historic entry and exit from the site. The administrative road would be used for park operations and educational camp use only, concentrating traffic on the main entry road. These improvements would provide moderate long-term benefits to access, transportation and circulation. Long-term benefits from improving parking to the Young Hill trailhead would be the same as Alternative B.

Cumulative Impacts

The cumulative impacts will be similar to Alternative B, with the expanded tour routes and need for parking generated by a new visitor center on the existing location at American Camp contributing a negligible effect on cumulative impacts. The proposed changes to the roads and parking at both American Camp and English Camp would contribute moderate long-term benefits to cumulative impacts.

Conclusion

Implementation of Alternative C would involve improvements that would contribute moderate long-term benefits to visitor access and transportation at both American and English camps. Construction of a permanent visitor center on the existing site and enhancements to parking areas at American Camp, coupled with the improved parking at Young Hill and improvements to the existing entrance road at English Camp would have moderate benefits. These actions would contribute a moderate long-term benefit to cumulative impacts island-wide.

Effects on Socioeconomics

This section identifies the potential impacts on the social and economic impacts that might result from implementing each alternative.

Methodology and Assumptions

Socioeconomic impacts were determined based on applied logic, professional expertise, and professional judgment. The factors considered to identify and discuss potential impacts were economic data, historic visitor use data, projected visitor use, and future developments within the park. A mostly qualitative analysis is sufficient to compare the effects of alternatives for decision-making purposes. For the purposes of socioeconomic analysis, short-term impacts would last less than three years and long-term impacts would last more than three years and may be permanent.

The following thresholds were defined for analyzing impacts to socioeconomic conditions:

Negligible:	No effects occur or the effects on socioeconomic conditions are not detectable.
Minor:	The effects on socioeconomic conditions are small but detectable, and only affect a small number of businesses and/or a small portion of the population. The impact is slight and not detectable outside the affected area.
Moderate:	The effects on socioeconomic conditions are readily apparent. Any effects result in changes to socioeconomic conditions on a local scale (e.g. a gateway community) within the affected area.
Major:	The effects on socioeconomic conditions are readily apparent. Measurable changes in social or economic conditions at the county or regional level occur. The impact is severely adverse or exceptionally beneficial within the affected area.

Impacts from Alternative A

The visitor industry is one of the economic anchors of San Juan County, with tourism generating about 20 percent of all county employment and tax receipts (Barney and Worth, p.17). Revenue generated through tourism offsets the costs of providing services county-

wide and provides income for residents from all parts of the islands. In addition, San Juan County ranks second among Washington counties in terms of the percentage of overall employment earnings that are generated through travel and tourism, with 15.7 percent of county-wide earnings travel-generated. In 2005, travelers spent approximately $118.8 million in San Juan County, supporting more than 1,800 jobs (Barney & Worth Inc., 2007: p.17).

As demonstrated through the NPS Money Generation Model, San Juan Island National Historical Park has a major socioeconomic benefit to the local region, defined as a 50 mile radius around the park (Stynes, 2006: p.2). In fiscal year 2005, the park received 248,831 recreation visits, with visitor spending contributing more than $15.8 million to the economy and supporting approximately 319 jobs (Stynes, 2006: p.23). These visits have a direct benefit to the local area through visitor spending on lodging, food and beverages, amusements, and retail shopping. The local area also directly benefits from NPS employees spending their salaries and wages in the local area. Part-time and full-time non-NPS jobs are also supported by both visitors and NPS employees' spending money in the local areas around the park. Special events at the park, such as the annual encampment event, also provide benefits to the local community by creating social events for which the community members as well as the visiting public engage. These events can be significant social events for the local community and maintain awareness of the importance of the park in the community's history. Park staff also participate in other civic events and organizations, including the local theatre company, which contribute to the sense of small community on the island.

The No Action Alternative calls for some improvements in facilities and trails and the continuation of popular interpretation and education programs. The contributions of the park by continuing to bring visitors to the island result in major long-term benefits to the local economy around the park.

Cumulative Impacts

The Olympic Games are being held in Vancouver, British Columbia in 2010. This event will very likely attract additional visitors to the San Juan Islands and to the park. These visitors will have a major short- term benefit on socioeconomics by bringing even more tourism and tourism-related income and jobs to the local economy.

The proposed additional development at Rosario Resort on Orcas Island could also attract additional visitors to San Juan Island who are interested in exploring other islands nearby during their stay, or in addition to their stay. Income from this additional tourism would also have a long-term benefit to the local economy.

The cost of housing on San Juan Island has been increasing at an accelerated rate, making it increasingly difficult for people to afford to live and work on island. The median cost of a home in San Juan County was $290,000 in 2000. By June 2006, the median home price had climbed to $640,000, and the average price of a home was over $750,000, the highest in Washington State (Walker, 2006: p.1A). While these prices are affordable for those with independent income sources seeking retirement on the island, affordability for families earning an income on the island has become increasingly difficult. By 2006, the "affordability index" of San Juan County, which measures the ability of a middle-income family to handle a mortgage on a median-priced home, ranked last among the 39 counties in Washington State (Rasmussen, "Affordable housing returns to center stage," 2007: p.3A). The continuation of the gap between wage increases and cost of homes would make it difficult to attract and maintain employees for both park staff and positions in the local community. Potential negative impacts to the local community could result if those supporting the tourism industry, and the park staff themselves, can not afford the cost of housing on the island. It may become difficult for businesses to hire enough employees to support the local tourist industry if staff must commute long distances via ferry from Anacortes.

Conclusion

Implementation of Alternative A would continue to have a major long-term benefit to the local economy through a sustained stream of tourism dollars and jobs supported by park-based recreation. The continuation of park facilities, infrastructure and programs would also contribute major long-term benefits to the local community and area economy. Potential adverse cumulative impacts could result from rising home prices and the gap between wage earnings and the median cost of a home. Other cumulative impacts include economic benefits from the 2010 Olympic Games and on-going development at Rosario Resort on Orcas Island. Implementation of Alternative A would contribute moderate long-term benefits to cumulative impacts.

Impacts from Alternative B

Alternative B calls for a new permanent visitor center, expanded trail connections, and other recreational improvements which would likely attract additional visitors to the island. In addition, visitors may be encouraged to extend their stay on the island given the additional recreational and educational opportunities provided by the park. These visitors would have an additional benefit to the local economy by bringing additional income to the tourism-based economy. Alternative B also calls for more extensive interpretive programs and additional partnerships to enhance interpretation and education. These programs and partnerships would provide additional opportunities for island residents to engage in park activities and would help foster the sense of community on the island.

Implementation of Alternative B would also result in major, long-term benefits to the area.

Cumulative Impacts

Cumulative impacts are the same as Alternative A. The addition of the new visitor center and improvements to recreation would have a moderate contribution to the major long-term cumulative benefits to socioeconomics.

Conclusion

Implementation of Alternative B would also continue to have a major long-term benefit to the socioeconomic environment through a sustained stream of tourism dollars and jobs supported by park-based recreation. The addition of a new permanent visitor center, improved facilities, and expanded recreation and education opportunities could result in additional tourists as well as community-based opportunities and a greater long-term benefit than Alternative A.

Impacts from Alternative C

Impacts to socioeconomics from Alternative C would be similar to those major long-term benefits of Alternative B. Although the scale of the permanent visitor center and parking area at American Camp would be smaller in scale, it would not likely affect the projected additional visitation. The expanded recreational opportunities, most notably additional trails, would still attract additional visitation and benefit socioeconomics.

Cumulative Impacts

Cumulative impacts from Alternative C are the same as Alternative B.

Conclusion

Implementation of Alternative C would result in similar major long-term benefits to socioeconomics to Alternative B from expanded recreation and education opportunities, as well as new and expanded facilities that could attract additional visitors and bring increased tourism revenues to the local economy.

Effects on Park Operations

This section identifies the potential impacts on park operations that might result from implementing each alternative.

Methodology and Assumptions

Park management and operations refers to the current management structure of the park to provide policy direction for the protection, public use, and appreciation of the park, and the ability of park staff to adequately protect and preserve vital resources and provide for an effective visitor experience. The discussion of impacts to park management, operations and staffing focuses on the type of management structure, the amount of staff available to ensure visitor and resident safety, and the ability of staff to protect and preserve resources given current funding and staffing levels. Staffs knowledgeable about the management and operations of the park were consulted to evaluate the impacts of implementing each alternative. Definitions of impact levels are as follows:

Negligible:	Park operations would not be affected or the effect would be at low levels of detection.
Minor:	The effect would be detectable, but would be of a magnitude that it would not have an appreciable adverse or beneficial effect on park operations.
Moderate:	Impacts would be readily apparent and would result in a substantial adverse or beneficial change in park operations in a manner noticeable to staff and the public.
Major:	Impacts would be readily apparent and would result in a substantial adverse or beneficial change in park operations

in a manner noticeable to staff and the public and would be markedly different from existing operations.

Impacts from Alternative A

Under Alternative A, there would be no immediate change to park infrastructure and development. The 1979 double-wide trailer serving as a temporary visitor center at American Camp would continue to require periodic and extensive maintenance due to its age and that it was intended to be a temporary structure. Funding for staffing levels would be inadequate to meet the needs of resource management, interpretation, visitor protection and safety, and administrative needs of the park, resulting in long-term moderate adverse impacts to park operations.

Cumulative Effects

Past and ongoing projects, including road and facility maintenance and repairs, have had long-term moderate beneficial impacts on park operations by maintaining the inventory of park structures. Aging facilities and utilities would continue to be replaced or modified as needed when funds are available. Eventually, more sustainable and efficient facilities and utility systems would replace existing, less sustainable systems, resulting in moderate, beneficial impacts over the long-term.

Conclusion

Alternative A would result in no immediate change to park infrastructure and would continue a level of inadequate funding and staffing, resulting in long-term minor adverse impacts to park operations. As projects are completed to replace or maintain aging facilities or replace them with more sustainable infrastructure, the ongoing maintenance needs will decrease. Completing these projects would result in cumulative moderate long-term benefits. Overall, there would be short-term minor to moderate adverse impacts and long-term cumulative moderate benefits to park operations.

Impacts from Alternative B

Alternative B calls for a number of infrastructure improvements, most notably a 5,400 square foot new permanent visitor center north of the redoubt to replace the double-wide trailer serving as a temporary visitor center at American Camp. Replacement of this visitor center would benefit operations by providing a structure that can more appropriately accommodate the function of serving visitors. The permanent visitor center would be designed with increased display space and allow visitors more personal contact with park staff. While a more significant capital investment would be required, long-term cyclic maintenance costs would be more sustainable. Construction of the visitor center on a previously undeveloped site would minimize short-term disruptions to park operations because the current visitor center could remain open and operational during the construction period. Alternative B also calls for additional facilities including a maintenance storage area, formalized fire camp and enlarged VIP sites at English Camp. These enhancements would provide the park with needed facilities to meet current operational needs, a benefit to park operations.

Alternative B also calls for additional staff that would benefit park operations by providing an adequate number of personnel to provide visitor services, resource management, and maintain park administrative functions. Staff and budget levels proposed in this alternative would bring the park more in line with comparable parks based on acreage and levels of visitation.

Cumulative Effects

Cumulative impacts are the same as Alternative A.

Conclusion

Implementation of Alternative B would have long-term benefits to operations by improving infrastructure and providing a new permanent visitor center that appropriately meets the needed function of the park. Construction of this facility at a different location than the existing visitor center would minimize short-term disruptions to the visitors because the existing building could remain operational while the new facility was being constructed. Additional staff and budget proposals would have long-term benefits by providing adequate staff to meet park needs. Cumulative impacts are the same as Alternative A.

Impacts from Alternative C

Implementation of Alternative C would have similar long-term benefits from infrastructure improvements and would replace the temporary visitor center with a 5,400 square foot permanent visitor center that meets current and future needs. Construction on the existing site would have more short-term disruptions to park operations, as staging and construction for the

permanent visitor center would occur on the same site as the existing visitor center.

Alternative C calls for similar additional facilities as Alternative B, providing similar benefits to park operations.

Additional staff and budget proposed would have similar benefits as Alternative B.

Cumulative Effects

Cumulative impacts are the same as Alternative A.

Conclusion

Implementation of Alternative C would have similar long-term benefits by improving the visitor center and other park infrastructure. This alternative would have greater short-term impacts to park operations from construction occurring in the same location as the primary visitor contact function at American Camp. Additional staff and budget would have similar benefits as Alternative B. Cumulative impacts are the same as Alternative A.

Unavoidable Adverse Impacts

Unavoidable adverse impacts are defined as moderate to major impacts that cannot be fully mitigated or avoided

Unavoidable Adverse Impacts under Alternative A

Unavoidable adverse impacts are defined as moderate to major impacts that cannot be fully mitigated or avoided.

There would be little potential for unavoidable adverse impacts because there would be no major new development in Alternative A. Roads and facilities within the park would remain in their existing locations and alignments.

This alternative would have little potential for unavoidable adverse impacts on cultural resources because historic structures would be adaptively used throughout the park. Historic structures would be protected by means of stabilization measures, preservation maintenance, restoration, and rehabilitation.

Unavoidable Adverse Impacts under Alternative B

There would be little potential for unavoidable adverse impacts under Alternative B. While this alternative would have some adverse impacts from construction activities, these impacts would be site specific and short-term. None of the impacts of this alternative would adversely affect resources or values to a degree that would prevent the NPS from fulfilling the purpose of the park or threaten the park's natural and cultural resources to the degree that the integrity of these resources are compromised.

Unavoidable Adverse Impacts under Alternative C

Similar to Alternative B, there would be little potential for unavoidable adverse impacts to natural and cultural resources.

Irreversible and Irretrievable Commitments of Resources

Irreversible commitments of resources are actions that result in the loss of resources that cannot be reversed. Irretrievable commitments are actions that result in the loss of resources but only for a limited time.

Irreversible or Irretrievable Resource Commitments under Alternative A

No actions taken as a result of this alternative would result in more than a negligible consumption of nonrenewable natural resources or in the use of renewable resources that would preclude other uses. Thus, there would be no irreversible or retrievable commitments of resources in the park by the National Park Service.

No actions would be taken that would result in irreversible or irretrievable effects on historic structures. The park would continue to conduct appropriate cultural resource management in accordance with the Secretary's Standards and NPS policies.

Irreversible or Irretrievable Resource Commitments under Alternative B

Same as Alternative A.

Irreversible or Irretrievable Resource Commitments under Alternative C

Same as Alternative A.

Short-term Use vs. Long-term Productivity

Under all of the alternatives the park's cultural and natural resources would be protected and would continue to be used by the public. The National Park Service would continue to manage the park under all the alternatives to preserve the cultural resources associated with the historic setting, maintain ecological processes and native and biological communities, and to provide for appropriate recreational activities consistent with the preservation of natural and cultural resources. Previously disturbed areas would be restored where possible to return these areas to productivity. Any actions the National Park Service takes in the park would be taken with consideration to ensure that uses do not adversely affect the productivity of biotic communities.

Short-term Use vs. Long-term Productivity under Alternative A

Under Alternative A, there would be no appreciable loss of ecological productivity because there would be little new development. Existing developed areas would remain.

Short-term Use vs. Long-term Productivity under Alternative B

Under Alternative B, there would be greatest potential risk to long-term productivity because it allows the greatest amount of development. There would be some short-term impacts to ecological productivity from development of a new permanent visitor center on a previously undeveloped site at American Camp, and changes to the road system at English Camp. However, the restoration of the existing visitor center site and prairie restoration program would have a positive effect on long-term productivity of ecological system. This alternative would yield the greatest long-term benefits to visitor use and experience.

Short-term Use vs. Long-term Productivity under Alternative C

Under Alternative C, the Preferred Alternative, the smaller scale of development for the visitor center at the existing location, would result in some minor short-term changes, but there would be no long-term adverse changes in ecological productivity because the scale of new development would not affect long-term productivity. Prairie restoration and more active participation in the management of coastal water resources could yield the greatest benefits to long-term ecological productivity.



Chapter 7: Public Involvement

Public involvement and consultation efforts were ongoing throughout the process of preparing this GMP/EIS. Public involvement methods included submitting Federal Register notices, sending press releases, conducting public meetings and workshops, holding stakeholder meetings, distributing newsletters, and posting to appropriate websites. Public involvement is a necessary and important part of the planning process that provides valuable information.

A Notice of Intent to prepare an environmental impact statement for San Juan Island National Historical Park was published in the *Federal Register* on February 5, 2003 (Volume 68, Number 24, page 5919-20). In the spring of 2002, the National Park Service organized an interdisciplinary planning team consisting of staff at San Juan Island National Historical Park and the NPS Pacific West Regional Office in Seattle, Washington to begin a GMP for the park. The last general management plan was prepared in 1979.

The official public scoping process began in March 2003 when the NPS produced and mailed a newsletter to 216 people on the park's mailing list. In addition, 4,000 copies of the newsletter were inserted into the *The Journal of the San Juan Islands*, which reaches 3,000 residents on the island and approximately 1,000 residents off-island. In addition, approximately 2,500 copies were distributed to libraries, civic buildings, businesses, churches, museums, universities, communities, dignitaries and elected officials. The newsletter was also placed on the park's website to reach a wider audience.

The purpose of the newsletter was to encourage participation and comment on critical park issues that should be addressed in a new management plan. The GMP planning team described issues that the GMP would need to address for the park to carry out its mission of preservation and visitor use. Providing relevant information about the park, the newsletter stated the function of a general management plan and environmental impact statement, and a schedule of the planning steps including dates, time, and location for the public meetings.

Public Scoping Meetings

On April 2, 2003, the National Park Service hosted an afternoon and evening public scoping workshop at the Mullis Senior Center in Friday Harbor, Washington. On the evening of April 3, 2003, the NPS held another meeting at the Recreational Equipment Inc. (REI) building in downtown Seattle. Presentations were made about the National Park Service, the historic significance of the camps, an overview of current site conditions, and the planning process. Small group work sessions allowed people to present and discuss issues, experiences, and ideas for the park. Approximately thirty-nine people attended the San Juan Island workshops in Friday Harbor, with another four attending the workshop in Seattle.

Eighteen written responses were collected. These included letters, e-mails, and newsletter questionnaires that were filled out and submitted. While most letters came from the local community in Friday Harbor and San Juan Island, several responses were received from nearby Anacortes, Seattle, Issaquah, Olga, Washington, and from El Paso, Texas. Overall, a total of 224 oral and written comments were received.

In addition to formal public scoping meetings, members of the planning team met with the following agencies and organizations during the public scoping period:

- Friends of the San Juans, Executive Director
- Roche Harbor Resort, Manager
- San Juan County Land Bank, Executive Director
- San Juan County Planning Department, Planning Director
- San Juan County Public Works Department, Director
- San Juan Preservation Trust, Executive Director
- Town of Friday Harbor, Land Use Administrator
- University of Washington, Friday Harbor Labs, Research Scientist

Summary of Scoping Comments

A second newsletter was produced and mailed to the public in November 2003 with the same distribution (both mail and website) as the first newsletter. The purpose of this newsletter was to summarize the written and verbal comments received during the scoping period. The NPS received input from a diverse group of people including former park historians, community leaders, American Indian groups, and San Juan Island residents and organizations from the surrounding San Juan County community.

The comments covered a broad range of issues, concerns, personal experiences and recommendations for the park. When compiled, over 224 different comments or ideas were represented. These comments were used in developing the alternatives for the GMP. Though many new actions and ideas were suggested by the public during the public comment period, no new issues were identified. They can be broadly organized in the following four topics: resource preservation and management; visitor experience and services; park facilities, operations, management, and maintenance; and park administration and planning.

Resource Preservation and Management

The public commented on NPS management of cultural and natural resources such as the monitoring of sites of archaeological significance, preservation activities on historic buildings and features, museum/artifact collection management, control of invasive vegetation, forest health, water quality, coordination of research and youth services projects, and ensuring compliance with laws enacted to preserve the park's natural and cultural resources.



Gathering input at a public scoping meeting. NPS Photo.

- Many commentors emphasized the importance of protecting the natural and cultural resources in American and English camps. The public was especially concerned with the preservation of the diverse landscapes and habitats in the park through various means of management and protection.
- A few people emphasized the need for resource protection from park operations and visitor activity. They believed that recreational activity on park property should remain "low key and low impact." The high quality of natural habitat on the island was mentioned as valuable and should be spotlighted in the GMP.
- Use of prescribed fire to protect the Garry oak landscape was encouraged and could be used to interpret the Native American story. Other cultural resources associated with American Indians should be protected.
- The protection of shoreline ecological areas was a large concern for many commentors.
- The protection of viewsheds and the "scenic assets" on NPS property was a concern expressed by many.
- The preservation of the Crook house was emphasized by several commentors. They were concerned that, with the dissolution of the Crook Historical Society, the house would not be protected as part of the encampment/military period story.
- The retention and display of artifacts found in the camps was recommended by many. Along with this recommendation, commentors also mentioned the need for a better display of artifacts at one of the camps or at the park unit's Friday Harbor headquarters office.
- The preservation and rehabilitation of historic structures was encouraged by a few. Others expressed interest in interior rehabilitation within historic structures such as the officers' quarters.
- Many commentors were supportive of some means to commemorate the historic military road that once connected the two camps. While they all recognized the difficulties in reconstructing an actual route, many felt that the significance of the road should be included in interpretive programs and potentially include historic markers or waysides along the route.

Visitor Experience and Services

The following comments include staff and volunteers' provision of on and off-site interpretive/educational programs, publications and exhibits, special events, visitor center operations, public safety patrols, emergency response, and special use permits.

- Many commentors were concerned about the recent trend of privatization within the National Park Service and did not want to see their access to the park compromised. Many commentors were specifically concerned about being charged a fee to visit the park.
- Commentors wanted to see "pockets of learning" throughout the park, including information focusing on the natural and cultural history of English and American camps rather than recreation.
- The public wanted to see the connection between the natural and cultural resources in the park emphasized in the interpretive programs. A commentor stated that "historic connections lead to natural connections" throughout the island and that these connections should be interpreted.
- Many also wanted the interpretive program of the park to be expanded to include American Indian history and cultural practices, which would add some "historic realism and interpretive balance" to park programs. If the NPS chose to use the "historic period" of the encampment as a base for preservation, many suggested that a broader historic period be considered, highlighting the change over time on San Juan Island. Additionally, commentors wanted interpretation to educate the public on the geology and ecology of the park.
- A few commentors expressed their desire to see the NPS presence in Friday Harbor maintained, and to some degree, expanded, to help orient visitors to the island. They wanted a larger, more pedestrian friendly office, which was more visible and provided more services than are present now. Artifact displays and other exhibits were encouraged. One commentor suggested something as simple as moving the receptionist to the front of the office, which would greatly improve visibility. Other commentors suggested an alternative to locate administrative offices at the camps. Others suggested establishing offices with other organizations, such as the historical museum, county agencies, and Washington State Department of Transportation, in Friday Harbor would be ideal.
- Another commentor suggested more energetic interpretation of park resources. They felt that the historical reenactments were a great idea and should be continued.
- Several commentors suggested an increased level of interpretive signage be included in the park. They wanted to know the simple, little details, such as where the pig was killed that started the tension between the United States and Great Britain or the exact location of Jakles Lagoon.
- Suggestions for off-site interpretive efforts focused on the development of partnerships with local businesses and organizations. Bed and Breakfasts, Suzie's Mopeds, and Elderhostels were a few mentioned as potential areas to focus efforts.
- A few commentors were concerned about visitor safety. Traffic control along Cattle Point Road, the removal of creosoted timber from the coastal areas, glass, and other litter, and the occurrence of red tide in the summer were a few of the concerns mentioned.

Park Facilities, Operations, Management, and Maintenance

The following comments include preventive and routine maintenance on historic structures, historic/cultural landscapes, and a wide array of support facilities and infrastructure, including a water treatment plant, a network of trails, park roads, picnic areas, and grounds.

- Many commentors were concerned with trail use and potential trail connections to other recreation areas on San Juan Island. Access from Roche Harbor, Cattle Point and Young Hill were emphasized. Suggestions for trail locations focused on the protection of natural and cultural resources from trail use and the separation of vehicular and pedestrian traffic where possible.
- Many commentors wanted the NPS to recognize the open space on park property in relation to the total amount of recreation and open space on San Juan Island as a whole. A few commentors wanted to see a balance between providing public access and resource protection. They felt that the provision of recreation activities on NPS property protected other sensitive areas on the island by limiting recreational activity there.

- Resource degradation through visitor activities, such as the removal of driftwood and artifacts, was a major concern expressed by many commentors. While they valued the recreational activities afforded them at the park, they also saw the value in the diverse natural and cultural resources at the camps. They felt that the park property provided island residents with a "sense of place" and needed to be protected.
- Enforcement of regulations and activities was also a concern. Clamming along coastal areas, the disturbance of archaeological sites, and other undesired visitor activities were discouraged. Monitoring unwanted activities and environmental degradation, as well as the development of protective regulations through federal, state, or county agencies, was encouraged as a long-term solution for resource protection. While many emphasized this point, a few respondents wanted to maintain the opportunity to beachcomb and collect driftwood.
- If new facilities were to be provided, these should not impact the natural and cultural resources, viewsheds, and ecologically sensitive areas of the park.
- Management of exotic flora and fauna, especially in marine and tidal areas, was suggested. It was suggested that foxes, rabbits, and invasive species of marine plants be removed. Additionally, the survey and protection of endangered or threatened species was encouraged.
- Another concern expressed by commentors was the level of accessibility to park property by the elderly and disabled. While some felt new parking areas were needed, others felt that a higher level of construction was not preferable. Several commentors suggested the need for an Americans with Disabilities Act (ADA) accessible trail to the parade ground from the current English Camp parking lot.
- The provision of mass transit and the exploration of non-motorized means of moving visitors around the island were encouraged.
- Several commentors said that they would like to see the NPS acquire the Mitchell Hill property managed by DNR, to protect resources associated with English Camp. Additionally, commentors expressed support for the NPS to explore options of acquiring the DNR land near American Camp.

Park Administration and Planning

The following comments include the general oversight of all park operations, including resource management, visitor and resource protection, interpretation, maintenance, partnership development, long-range planning, external programs, and community relations.

- Partnerships for stewardship with various state and county agencies were encouraged. Trails groups, San Juan County and state land management agencies, and Native American tribes from the area were enthusiastic about an increased level of participation in the park's planning process. The creation of a "Friends" group for the park was encouraged by a few commentors.
- Increased opportunities for partnerships with Parks Canada were mentioned.
- Commentors encouraged the inclusion of the public in the planning process.
- A few commentors were concerned about the need to continue access to Cattle Point after Cattle Point Road is realigned.
- Additional concerns regarding funding for resource protection and park operations were expressed by several respondents.

Agency Consultation and Coordination

The following discussion documents the consultation and coordination efforts undertaken by the NPS during the preparation of the draft GMP/EIS. Consultation is considered an on-going effort for development of a GMP/EIS. All local governments, tribal governments, and federal and state agencies with resource management responsibilities or interests in San Juan Island National Historical Park were informed of the planning effort and encouraged to participate. The planning team also made several presentations at key stakeholder group meetings, as well as provided information through newsletter mailings and personal calls. Congressional officials were kept updated by newsletter mailings and informal briefings. These letters are on file.

Section 106 Compliance

Consultation with Native American Tribes

In keeping with the provisions of Section 106 of the National Historic Preservation Act, Native American tribes within the vicinity of the park were contacted. During public scoping the Jamestown S'Klallam Tribal Council (Sequim, Washington), the Lower Elwha Tribe (Port Angeles, Washington), the Lummi Indian Tribe (Bellingham, Washington), the Port Gamble S'Klallam Tribe, (Kingston, Washington), the Samish Indian Nation (Anacortes, Washington), and the Swinomish Indian Tribe (LaConner, Washington) were informed about the initiation of the GMP. Subsequently, tribal staff met with the NPS regional anthropologist and the park superintendent on several occasions to get further information and to provide comments and recommendations.

Consultation with the Washington State Historic Preservation Officer and the Advisory Council on Historic Preservation

The State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation must be consulted concerning any resource management proposals that might affect a cultural property listed on or eligible for the National Register of Historic Places. The NPS initiated consultation with the Washington State SHPO and the Advisory Council for Section 106 of the National Historic Preservation Act, as amended, in January 2003 during the public scoping period. These letters are on file.

Consultation

Consultation with U.S. Fish and Wildlife Service

The Endangered Species Act of 1973, as amended, authorizes federal agencies to enter into early consultation with the USFWS to ensure that any federal action would not jeopardize the existence of any listed species or destroy or adversely modify its habitat. Consultation with the USFWS for species information relating to the park was initiated in January 2003 and updated in May 2007. (See Special Status Species in the Affected Environment.)

Consultation with Washington State Natural Resource Agencies

In addition to federal consultation, the NPS contacted the Washington State Department of Fish and Wildlife and the Washington Natural Heritage Program (within the Washington State Department of Natural Resources) in December 2000 and again in May 2007 for species information for the park. This information was used in conjunction with the USFWS species information.

Consultation with Washington State Coastal Zone Management Program

According to NOAA and Washington State Department of Ecology, the National Park Service does not need to consult with the Washington State Coastal Zone Management Program for determination of federal consistency. "Washington State's Coastal Zone Management program excludes lands the federal government owns, holds in trust, or otherwise has sole discretion to determine their use. These "excluded federal lands" include all lands within National Parks, including private inholdings." (Washington State Department of Ecology, 2001).

Following release of this draft GMP/EIS, there will be a 60-day public review period including public meetings, after which time the comments received will be gathered, analyzed, and used to complete the proposed plan and produce the final GMP/EIS. The final GMP/EIS will then be released for a 30-day no-action period. The NPS Regional Director will sign a Record of Decision and a final plan will be released to the public. The plan is then implemented, subject to funding and additional environmental analysis for site-specific actions.

List of Draft GMP/EIS Recipients

Federal Agencies and Officials

Advisory Council on Historic Preservation, Lakewood, CO
Honorable Maria Cantwell, U.S. Senate, Washington, D.C.
Honorable Patty Murray, U.S. Senate, Washington, D.C.
Honorable Rick Larsen, U.S. House of Representatives, Washington, D.C.
National Oceanic and Atmospheric Administration, National Marine Protected Areas Center, Monterey, CA
National Park Service, Death Valley National Park, Death Valley, CA
National Park Service, Denali National Park, Denali Park, AK
National Park Service, Ebey's Landing National Historical Reserve, Coupeville, WA
National Park Service, Geologic Resource Division, Denver, CO
U.S. Army Corps of Engineers, Washington, D.C.
U.S. Army Engineering Waterways Experiment Station, Vicksburg MS
U.S. Bureau of Land Management, Wenatchee, WA
U.S. Bureau of Land Management, District Office, Spokane, WA
U.S. Department of Transportation, Federal Highway Administration, Vancouver, WA
U.S. Environmental Protection Agency, Region 10, Seattle, WA
U.S. Fish and Wildlife Service, Lacey, Washington

Tribes

Jamestown S'Klallam Tribal Council, Sequim, WA
Lower Elwha Tribal Community Council, Port Angeles, WA
Lummi Cultural Department, Bellingham, WA
Lummi Indian Business Council, Bellingham, WA
Lummi lndian Tribe, Bellingham, WA
Port Gamble S'Klallam Tribe, Kingston, WA
Samish Indian Nation, Anacortes, WA
Swinomish Indian Tribal Community, LaConner, WA

State and Local Agencies and Officials

Cape San Juan Fire, Friday Harbor, WA
Honorable Jeff Morris, 40th Legislative District Representative, Olympia, WA
Honorable Dave Quall, 40th Legislative District Representative, Olympia, WA
Honorable Harriet A. Spanel, 40th Legislative District Senator, Olympia, WA
Lime Kiln State Park, Friday Harbor, WA
Mayor of Friday Harbor, Friday Harbor, WA
San Juan County Board of County Commissioners, Friday Harbor, WA
San Juan County Conservation District, Friday Harbor, WA
San Juan County Land Bank, Friday Harbor, WA
San Juan County Marine Resource Commission, Friday Harbor, WA
San Juan County Noxious Weed Control Board, Friday Harbor, WA
San Juan County Parks, Friday Harbor, WA
San Juan County Permit Center, Friday Harbor, WA
San Juan County Planning Department, Friday Harbor, WA
San Juan County Public Works Department, Friday Harbor, WA
San Juan Fire District #3, Friday Harbor, WA
San Juan Island Park and Recreation, Friday Harbor, WA
Town of Friday Harbor, Land Use Administrator, Friday Harbor, WA
Washington Department of Ecology, Bellingham, WA
Washington Department of Ecology, Federal Consistency Program, Olympia, WA
Washington Department of Natural Resources, Northwest Region, Sedro Woolley, WA
Washington State Historic Preservation Office, Olympia, WA

Organizations

Cape San Juan Commission, Friday Harbor, WA
Cattle Point Water District, Friday Harbor, WA
Center for the Study of Coast Salish Environments, Anacortes, WA
Friends of the San Juans, Friday Harbor, WA
Humane Society of the U.S., Washington, D.C.
Islands' Oil Spill Association, Friday Harbor, WA
National Parks Conservation Association, Seattle, WA
Sierra Club, Northwest Chapter, Seattle, WA
San Juan Island Chamber of Commerce, Friday Harbor, WA
San Juan Island Visitors Bureau, Friday Harbor, WA
San Juan Islands Audubon Society Deer Harbor, WA

San Juan Preservation Trust, Lopez, WA
San Juan Trails Committee, Friday Harbor, WA
Sierra Club, Cascade Chapter, Seattle, WA
Sierra Club, Cascade Chapter, Mount Baker Group, Bellingham, WA
Surfrider Foundation, Friday Harbor, WA
The Friday Harbor Whale Museum, Friday Harbor, WA
The Nature Conservancy, Seattle, WA
The Nature Conservancy, Marine Conservation Program, Seattle, WA
The Trust for Public Land, Seattle, WA
Washington Environmental Council, Seattle, WA
Washington Native Plant Society, Friday Harbor, WA
Washington Native Plant Society, Olga, WA

Business and Industry

Coastal Geologic Services, Bellingham, WA
ECO Resource Group, Seattle, WA
Garrison Bay Plantation
Haff Engineering and Management Services
HDR Engineering, Inc., Bellevue, WA
Puget Sound BioSurvey, Friday Harbor, WA
Roche Harbor Village, Friday Harbor, WA
The Onyx Group, Poulsbo, WA

Schools, Libraries, and Institutions

Coastal Engineering Research Board, Atlanta, GA
Oregon Museum of Science and Industry Marine Science Camps, Portland, OR
Oregon Museum of Science and Industry, Science Camps, Redmond, OR
San Juan Island Library, Friday Harbor, WA
San Juan Nature Institute, Friday Harbor, WA
University of Washington, Archaeology Department, Seattle, WA
University of Washington, Burke Museum, Seattle, WA
University of Washington, Friday Harbor Labs, Friday Harbor, WA
University of Washington, School of Oceanography, Seattle, WA
Washington State University, Cooperative Extension, San Juan County, Friday Harbor, WA
Western Washington University, Huxley College of Environmental Studies, Bellingham, WA

Media

San Juan Journal, Friday Harbor, WA
The Island's Sounder, Eastsound, WA
The Seattle Post-Intelligencer, Seattle, WA
The Seattle Times, Seattle, WA



Appendices

Appendix A: San Juan Island National Historical Park Legislation

Appendix B: Pertinent Laws, Policies, and Procedures

Appendix C: Analysis of Boundary Adjustment and Land Protection

Appendix A: San Juan Island National Historical Park Legislation

An Act to authorize the establishment of the San Juan Island National Historical Park in the State of Washington, and for other purposes. (80 Stat. 737)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior is authorized to acquire on behalf of the United States by donation, purchase with donated or appropriated funds, or by exchange, lands, interests in lands, and such other property on San Juan Island, Puget Sound, State of Washington, as the Secretary may deem neecssary for the purpose of interpreting and preserving the sites of the American and English camps on the island, and of commemorating the historic events that occurred from 1853 to 1871 on the island in connection with the final settlement of the Oregon Territory boundary dispute, including the so-called Pig War of 1859. Lands or interests therein owned by the State of Washington or a political subdivision thereof may be acquired only by donation.

Sec. 2. The property acquired under the provisions of the first section of this Act shall be known as the San Juan Island National Historical Park and shall commemorate the final settlement by arbitration of the Oregon boundary dispute and the peaceful relationship which has existed between the United States and Canada for generations. The Secretary of the Interior shall administer, protect, and develop such park in accordance with the provisions of the Act of August 25, 1916 (39 Stat. 535; 16 U.S.C. 1 et seq.), as amended and supplemented, and the Act of August 21, 1935 (49 Stat. 666; 16 U.S.C. 461 et seq.).

Sec. 3. The Secretary of the Interior may enter into cooperative agreements with the State of Washington, political subdivisions thereof, corporations, associations, or individuals, for the preservation of nationally significant historic sites and structures and for the interpretation of significant events which occurred on San Juan Island, in Puget Sound, and on the nearby mainland, and he may erect and maintain tablets or markers at appropriate sites in accordance with the provisions of the Act of August 21, 1935 (49 Stat. 666; 16 U.S.C. 461 et seq.).

Sec. 4. There are hereby authorized to be appropriated such sums, but not more than $3,542,000 for the acquisition of lands and interests therein and for the development of the San Juan National Historical Park.

Approved September 9, 1966.

Legislative History

House Report No. 1665 accompanying H.R. 2623 (Committee on Interior and Insular Affairs)
Senate Report No. 510 (Committee on Interior and Insular Affairs).
Congressional Record:
Vol. 111 (1965): July 29, considered and passed Senate.
Vol. 112 (1966):
July 18, considered and passed House, amended, in lieu of H.R. 2623.
Aug. 25, Senate concurred in House amendments.

Appendix B: Pertinent Laws, Policies, and Procedures

This section summarizes the laws, executive orders, NPS policies, and operational procedures related to the preparation of park planning documents. The following section highlights those that are most pertinent to the planning for the future protection, use, and management of San Juan Island National Historical Park.

Americans with Disabilities Act of 1990

This act states that all new construction and programs will be accessible. Planning and design guidance for accessibility is provided in the Architectural and Transportation Barriers Compliance Board (36 CRF Part 1191). Additionally, NPS Special Directive 83-3 states that accessibility will be proportional to the degree of development, i.e., areas of intense development (visitor centers, museums, drive in campgrounds, etc.) will be entirely accessible and areas of lesser development, (backcountry trails and walk-in campgrounds) may have fewer accessibility features.

Antiquities Act of 1906

As the Archeological Resources Protection Act's forerunner, the Antiquities Act (, P.L. 59-209, 34 Stat. 225, 16 U.S.C. §§431-433 and 43 CFR 3) constituted the first general act providing protection for archeological resources. It protects all historic and prehistoric ruins or monuments on federal lands and prohibits their excavation, destruction, injury or appropriation without the departmental secretary's permission. It also authorizes the President of the United States to proclaim as national monuments public lands having historic landmarks, historic and prehistoric structures, and other objects of historic or of scientific interest. The Antiquities Act authorizes the President to reserve federal lands, to accept private lands, and to accept relinquishment of unperfected claims for that purpose.

The Act authorizes the departmental secretary to issue permits to qualified institutions to examine ruins, excavate archeological sites, and gather objects of antiquity. Regulations at 43 CFR Part 3 establish procedures for permitting the excavation or collection of prehistoric and historic objects on federal lands. ARPA permits replace Antiquities Act permits. It is superseded by the Archeological Resources Protection Act (1979) as an alternative federal tool for prosecution of antiquities violations in national park system areas.

Archeological Resources Protection Act of 1979

This act (P.L. 96-95, 93 Stat. 721, 16 U.S.C. §470aa et seq. and 43 CFR 7, subparts A and B, 36 CFR 79) secures the protection of archeological resources on public or Indian lands and fosters increased cooperation and exchange of information between the private/governmental/professional community in order to facilitate the enjoyment and education of present and future generations. The act regulates excavation and collection on public and Indian lands. It defines archeological resources to be any material remains of past human life or activities that are of archeological interest and are at least 100 years old and requires notification of Indian tribes who may consider a site of religious or cultural importance prior to issuing permit. It was amended in 1988 to require the development of plans for surveying public lands for archeological resources and systems for reporting incidents of suspected violations.

Bald and Golden Eagles Protection Act, as amended, Act of June 8, 1940

This act (16 U.S.C. 668a-d) prohibits the taking, possessing, and trade in bald and golden eagles. It provides criminal and civil penalties.

Director's Order – 28

Authority for cultural resource management activities derives from a variety of laws, including the 1916 NPS Organic Act. Also fundamental are the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation. Director's Order-28 states basic principles governing the management of cultural resources in the national park system, consistent with law and the Secretary's Standards and Guidelines for Archaeology and Historic Preservation. Director's Order 28 directs the NPS to follow the cultural resources management guidelines relative to policy standards.

Director's Order – 77

The NPS Natural Resources Management Guideline, Director's Order – 77, is a comprehensive guideline on natural resource management, combining existing guidance with documentation of unwritten practices and procedures of NPS natural resource management. It guides the actions of park managers so that natural resource activities planned and initiated in the parks comply with federal law, regulations, and the Department of the Interior and NPS policies.

Endangered Species Act

The Endangered Species Act of 1973 (ESA), as amended, directs federal agencies to ensure that any action it authorizes, funds, or implements is not likely to jeopardize the existence of any listed species or destroy or adversely modify critical habitat (50 CFR 400). When a project or proposal by a federal agency has the potential to impact a known endangered, threatened, or candidate plant or animal species, Section 7 of the Endangered Species Act requires that agency to enter into consultation with the U.S. Fish and Wildlife Service. National Park Service Management Policies (4.4.3.4 Management of Threatened or Endangered Plants and Animals) direct the NPS to give the same level of protection to state-listed species as is given to federally listed species. Prior to implementing any development proposals at the park, the NPS will consult with the USFWS to obtain species listings, and to ascertain the need to prepare a biological assessment of the proposed actions. Similar contact will be made with the appropriate state agencies. (National Park Service 2006: p.35)

Executive Orders 11988 and 11990

The objectives of Executive Orders 11988 (Floodplains Management) and 11990 (Protection of Wetlands) are to avoid, to the extent possible, the long and short-term adverse impacts associated with the occupancy and modification of floodplains and wetlands. Application of the final NPS procedures for implementing those executive orders will occur if an NPS proposal affects the 100-year floodplain (500-year for critical actions), coastal high hazard zone, flash flood area, or wetland. If a proposed action involves adverse impacts to a floodplain or wetland areas (at the scale identified by the Executive Orders), a Statement of Findings (SOF) will be prepared that documents the rationale for determining that there will be no practicable alternative to locating in or impacting these areas. The SOF is prepared for concurrence signature by the Chief, NPS Water Resources Division (WRD), and approval by the appropriate NPS Regional Director.

Executive Order 12898

Executive Order 12898 requires an analysis of impacts on low-income populations and communities, as appropriate. The Department of the Interior's policy on environmental justice (No.ECM95-3) is based on this Executive Order. It requires the NPS, in all environmental documents, to "…specifically analyze and evaluate the impacts of any proposed projects, actions, or decisions on minority and low income populations and communities, as well as the equity of the distribution of the benefits and risks of those decisions." If significant or no impacts are predicted on minority or low-income populations, then this should be stated and the reasons provided.

Executive Order 13007: Indian Sacred Sites

To the extent practicable, permitted, and consistent with essential agency functions, all federal land management agencies must accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoid adversely affecting the physical integrity of such sacred sites. Consistent with this executive order, if a federal action may affect the physical integrity of, the ceremonial use of or the access to these sites by Native American religious practitioners in federally recognized tribes, then the Superintendent will consult with the tribe as part of the planning and approval process.

Executive Order 13112

The objectives of this executive order are to restrict the introduction of exotic species into the natural ecosystems on federal lands and to encourage states, local governments, and private citizens to prevent the introduction of exotic species into natural ecosystems of the United States. This order provides a legal basis for the NPS to conduct vegetation management activities to restrict the introduction of those exotic species, which do not naturally occur within the park, and provides the basis for the park to work with others to restrict the introduction of exotic species.

This order does not pertain to plantings that are historically appropriate for the period or event commemorated. National Park Service Management Policies (4.4.2.5 Maintenance of Altered Plant Communities) state that where necessary to preserve and protect the desired condition of specific cultural resources and landscapes, plants and plant communities generally will be managed to reflect the character of the landscape that prevailed during the historic period. Efforts may be made to extend the lives of specimen trees dating from the historic period being commemorated. An individual tree or shrub known to be of historic value that is diseased beyond recovery and has become hazardous will be removed and may be replaced. While specimen trees or shrubs that need to be perpetuated are still healthy, their own progeny will be propagated from seed or through vegetative reproduction, such as cuttings (National Park Service, 2006: p.36).

Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds

This executive order defines federal agency responsibilities to protect migratory bird populations, in furtherance of the purposes of the migratory bird conventions, the Migratory Bird Treaty Act (16 U.S.C. §§ 703-711), the Bald and Golden Eagle Protection Acts (16 U.S.C. §§ 668-668d), the Fish and Wildlife Coordination Act (16 U.S.C. §§ 661-666c), the Endangered Species Act of 1973 (16 U.S.C. §§ 1531-1544), the National Environmental Policy Act of 1969 (42 U.S.C. §§ 4321-4347), and other pertinent statutes.

This executive order directs each federal agency taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations to develop and implement, within 2 years, a Memorandum of Understanding (MOU) with the Fish and Wildlife Service that shall promote the conservation of migratory bird populations.

General Authorities Act of 1970

This act defines the national park system as including "…any area of land and water now or hereafter administered by the Secretary of the Interior through the NPS for park, monument, historic, parkway, recreational, or other purposes…" (16 USC 1c[a]). It states "…each area within the national park system shall be administered in accordance with the provisions of any statute made specifically applicable to that area…" (16 USC 1c[b]) and in addition with the various authorities relating generally to NPS areas, as long as the general legislation does not conflict with specific provisions.
Historic Sites Act of 1935

This act (P.L. 74-292, 49 Stat. 666, 16 U.S.C. §§461-467, and 36 CFR 65) establishes a national policy "to preserve for public use, historic sites, buildings, and objects of national significance for the inspiration and benefit" of the American people. The act authorizes the designation of national historic sites and landmarks, authorizes interagency efforts to preserve historic resources, and establishes fines for violations of the act. It authorizes surveys of historic and archeological sites, buildings, and objects to determine which remain significant, and provides for the restoration, reconstruction, rehabilitation, preservation, and maintenance of historic and prehistoric properties of national significance. The act authorizes the Secretary of the Interior, through the National Park Service, to conduct surveys and studies, to collect information, and purchase significant historic properties. The Secretary may also restore, preserve, maintain, and rehabilitate structures and sites; establish museums; and operate and manage historic sites, and develop educational programs.

Migratory Bird Treaty Act

This act (P.L. Chapter 128, 40 Stat. 755, 16 U.S.C. §703 et seq.) prohibits the taking, possession, and trade of migratory birds, except as permitted by regulations. Provides search, arrest, and seizure authority to authorized employees; provides for civil and criminal penalties for violation; allows states to impose more restrictive measures to protect migratory birds; and allows for taking for scientific and propagating purposes.

National Environmental Policy Act of 1969

The National Environmental Policy Act of 1969 (NEPA) requires the preparation of either an environmental assessment or environmental impact statement for all federal proposals that may have significant environmental or sociological impacts, or both, on park resources or adjacent areas.
A policy memorandum dated February 22, 1991 from the NPS Associate Director for Planning and Development specified that EISs are to be prepared in conjunction with general management plans. That position reinforces the policies and procedures of the Departmental Manual, which state that EISs will be the normal rule in preparing GMPs rather than the exception. This EIS describes potential impacts that might result from implementation of any of the alternatives discussed. Following public and agency review of the draft and final EIS, the Superintendent, Deputy Regional Director, and the Regional Director of the NPS Pacific West Region, will sign a Record of Decision indicating the proposed action and the rationale for its selection. Implementation of the GMP may then proceed.
National Historic Preservation Act of 1966

The National Historic Preservation Act (NHPA) of 1966 (as amended) requires that proposals and alternatives relating to actions that could affect cultural resources both directly and indirectly, and the potential effects of those actions, be provided for review and comment by the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO), and the Advisory Council on Historic Preservation. Therefore, the document will be submitted to the appropriate offices for review and comment according to the procedures in 36 CFR Part 800 and delineated in the 1995 Programmatic Agreement signed by the NPS, the National Conference of State Historic Preservation Officers, and the Advisory Council on Historic Preservation.

NHPA Section 106

Section 106 states that any federal agency having jurisdiction over a proposed federal undertaking, and any federal department or independent agency having authority to license an undertaking must take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. This must be done prior to the approval of spending federal money. In addition, the agency must allow the Advisory Council on Historic Preservation (established under Title II of this Act) a reasonable opportunity to comment on this undertaking.

NHPA Section 110

Section 110 of the National Historic Preservation Act gives federal agencies positive responsibility for preserving historic properties in their ownership or control. Agencies are directed to establish preservation programs to identify, evaluate, protect, and nominate to the National Register historic properties, whether they are of significance at the local, state, or national level. It calls for them to use such properties, where feasible and compatible with their preservation, in preference to acquiring, constructing, or leasing others. The law emphasizes cooperation with SHPOs in establishing such programs.

NHPA Section 111

This section of law states that federal agencies, after consultation with the Advisory Council on Historic Preservation, will establish and implement alternatives for historic properties that are not needed for current or projected agency purposes. Federal agencies may lease historic properties owned by the agency to any person or organization, or exchange any property owned by the agency with comparable historic property, if the agency determines that the lease or exchange will adequately ensure the preservation of the historic property.

NHPA Section 112

This section of the law provides that each federal agency having responsibility for the protection of historic resources, including archaeological resources, will ensure that all actions taken by employees or contractors will meet professional standards. These standards will be guided by regulations developed by the Secretary of the Interior in consultation with the Advisory Council on Historic Preservation, other affected agencies, and appropriate professional societies of the disciplines involved. Agency employees or contractors will also meet qualification standards established by the Office of Personnel Management in consultation with the Secretary of the Interior and appropriate professional societies. Section 112 also provides that records and data are permanently maintained in appropriate databases and made available to potential users.

National Park Service Management Policies 2006

The NPS has detailed written guidance to help managers make day-to-day decisions. The primary source of service-wide policy is contained in the recently updated publication Management Policies 2006, revised and published in 2006 by the National Park Service. These policies state that all parks are complex mixtures of values and resources, each with its own unique qualities and purposes, each requiring specific treatment in the development and implementation of management strategies and operational plans. However, the managers of all parks are required to apply policies in a consistent and professional manner to achieve the congressional mandate for management of the national park system.

The management policies further state that the NPS will conduct planning activities for the following: to evaluate possible additions to the national park system; to identify how park resources will be preserved and how parks will be used and developed to provide for public enjoyment; to facilitate coordination with other agencies and interests; and to involve the public in decision-making about park resources, activities, and facilities. The NPS plans will represent the agency's commitment to the public and to Congress on how parks will be managed.

National Park Service Organic Act

The NPS Organic Act of August 25, 1916 (16 USC 1) established the National Park Service. "The service thus established shall promote and regulate the use of the Federal areas known as national parks, . . .by such means and measures as conform to the fundamental purpose of said parks, . . .which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

National Park Service Strategic Plan

A park's strategic plan tiers off the general management plan and program management plans, making decisions about which of the desired conditions identified in the GMP and respective strategies in the program management plan (for example, resource stewardship strategy) should be the highest park priorities over the next three to five years. Information in park strategic plans is used to compile servicewide achievements and to meet requirements of the Government Performance and Results Act of 1993 (GPRA).

National Parks and Recreation Act of 1978

Public Law 95-625, the National Parks and Recreation Act of 1978, requires the preparation and timely revision of general management plans for each unit of the national park system. The NPS Management Policies (National Park Service, 2006) calls for each GMP to "…set forth a management concept for the park [and] establish a role for the unit within the context of regional trends and plans for conservation, recreation, transportation, economic development, and other regional issues…." Congress has also specifically directed (16 USC 1a-7[b][4]) the NPS to consider, as part of the planning process, what modifications of external boundaries might be necessary to carry out park purposes.

Native American Graves Protection and Repatriation Act of 1990

The Native American Graves Protection and Repatriation Act (NAGPRA) provides protection to native gravesites on tribal and federal lands. The intent of NAGPRA is to "provide for a process whereby Indian tribes…have an opportunity to intervene in development activity on federal or tribal lands in order to safeguard Native American human remains, funerary objects, or objects of cultural patrimony… [and to afford] Indian tribes…30 days in which to make a determination as to appropriate disposition for these human remains and objects." Under certain conditions, culturally affiliated Indian tribes or lineal descendants will have ownership and control over human remains and cultural items, which are located on federal lands.

A permit must be obtained from the managing land agency where the burial site is located to excavate a burial site. If the site is located on federal lands, the site may be excavated only after consultation with the appropriate tribe. If buried cultural items are discovered during other activities, such as construction, all activities must stop and the responsible federal agency notified, who in turn, notifies the appropriate tribe. This act applies to any federally managed land within the park.

Park Planning Standards

The Park Planning Standards is a companion to Chapter 2 of the NPS Management Policies 2006 and to the Planners' Sourcebook for General Management Planning issued by the Associate Director for Park Planning, Facilities, and Lands in 2004. These two documents had been combined in Director's Order 2: Park Planning, which is now obsolete. Together, the current policies and standards provide the basic policy requirements for all levels of park planning and decision making, from general management planning to program management planning, strategic planning, and implementation planning.

Redwood Act of 1978

The Redwood Act (16 USC 1a-1) in 1978 further states "…that these areas, though distinct in character, are united through their interrelated purposes and resources into one national park system as cumulative expressions of a single national heritage… The authorization of activities shall be construed and the protection, management, and administration of the areas shall be conducted in light of the high public value and integrity of the national park system and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as they have been or shall be directly and specifically provided by Congress."

San Juan Island National Historical Park Legislation

On September 9, 1966, an act established San Juan Island National Historical Park (80 Stat. 737). The Secretary of the Interior was authorized to acquire "by donation, purchase with donated or appropriated funds, or by exchange, lands, interests in lands, and such other property on San Juan Island, Puget Sound, State of Washington, as the Secretary may deem necessary for the purpose of interpreting and preserving the sites of the American and English camps on the island, and of commemorating the historic events that occurred from 1853 to 1871 on the island in connection with the final settlement of the Oregon Territory boundary dispute, including the so-called Pig War of 1859. Lands or interests therein owned by the State of Washington or a political subdivision thereof may be acquired only by donation."

Section 2 states that the above referenced property will be known as "the San Juan Island National Historical Park and shall commemorate the final settlement by arbitration of the Oregon boundary dispute and the peaceful relationship which has existed between the United States and Canada for generations." The Secretary will "administer, protect, and develop the park" in accordance with the provisions of the Organic Act (39 Stat. 535; 16 U.S.C. 1 et seq.) and the Act of August 21, 1935 (49 Stat. 666; 16 U.S.C. 461 et seq.).

Section 3 calls for the Secretary to "enter into cooperative agreements with the State of Washington, political subdivisions thereof, corporations, associations, or individuals, for the preservation of nationally significant historic sites and structures and for the interpretation of significant events which occurred on San Juan Island, in Puget Sound, and on the nearby mainland, and he may erect and maintain tablets or markers at appropriate sites in accordance with the provisions of the Act of August 21, 1935 (49 Stat. 666; 16 U.S.C. 461 et seq.)."

Washington Coastal Zone Management Act

Congress passed the federal Coastal Zone Management Act in 1972 to encourage the appropriate development and protection of the nation's coastal and shoreline resources. The Coastal Zone Management Act gives states the primary role in managing these areas. To assume this role, the state prepares a Coastal Zone Management Program (CZMP) document that describes the state's coastal resources and how these resources are managed. Washington was the first state to receive federal approval of a Coastal Zone Management Program in 1976. The Washington Department of Ecology's Shorelands and Environmental Assistance Program is responsible for implementing Washington's program.

Under Washington's program, federal activities that affect any land use, water use or natural resource of the coastal zone must comply with the enforceable policies within the six laws identified in the program document. The six laws are the Shoreline Management Act (including local government shoreline master programs), the State Environmental Policy Act (SEPA), the Clean Water Act, the Clean Air Act, the Energy Facility Site Evaluation Council (EFSEC), and the Ocean Resource Management Act (ORMA). Activities and development affecting coastal resources, which involve the federal government, are evaluated through a process call "federal consistency". This process allows the public, local governments, tribes, and state agencies an opportunity to review federal actions likely to affect Washington's coastal resources or uses. Three categories of activities trigger a federal consistency review: activities undertaken by a federal agency, activities that require federal approval and activities that use federal funding.

Appendix C: Analysis of Boundary Adjustment and Land Protection

As one of the provisions of Public Law 95-625, the National Parks and Recreation Act of 1978, Congress directed that the National Park Service consider, as part of a planning process, what modifications of external boundaries might be necessary to carry out park purposes. Subsequent to this act, Congress also passed Public Law 101-628, the Arizona Desert Wilderness Act. Section 1216 of this act directs the Secretary of the Interior to develop criteria to evaluate any proposed changes to the existing boundaries of individual park units. Section 1217 of the act calls for the NPS to consult with affected agencies and others regarding a proposed boundary change, and to provide a cost estimate of acquisition cost, if any, related to the boundary adjustment.

National Park Service Management Policies state that the NPS will conduct studies of potential boundary adjustments and may make boundary revisions:

- to include significant resources or opportunities for public enjoyment related to the purposes of the park,
- to address operational and management issues such as boundary identification by topographic or other natural features,
- to protect park resources critical to fulfilling park purposes.

NPS policies instruct that any recommendation to expand park boundaries be preceded by determinations that the added lands will be feasible to administer considering size, configuration, ownership, cost and other factors, and that other alternatives for management and resource protection have been considered and are not adequate.

The following is a review of the criteria for boundary adjustments for Alternative C, the Preferred Alternative, as applied to San Juan Island National Historical Park. This analysis is included as supporting documentation for the preferred alternative of the plan, which includes a recommendation for boundary changes to both American Camp and English Camp units of the park.

This boundary change would not require congressional authorization beyond what already exists. The language in the enabling legislation for the park specifically states:

> "That the Secretary of the Interior is authorized to acquire on behalf of the United States by donation, purchase with donated or appropriated funds, or by exchange, lands, interests in lands, and such other property on San Juan Island, Puget Sound, State of Washington, as the Secretary may deem necessary for the purpose of interpreting and preserving the sites of the American and English camps on the island, and of commemorating the historic events that occurred from 1853 to 1871 on the island in connection with the final settlement of the Oregon Territory boundary dispute, including the so called Pig War of 1859. Lands or interests therein owned by the State of Washington or a political subdivision thereof may be acquired only by donation."

In other words, lands proposed to be added to the park boundary do not need new authorizing legislation as long as the Secretary deems it necessary and funding is available.

1. Significant Resources or Opportunities for Public Enjoyment Related to the Purpose of San Juan Island National Historical Park

Under Alternative C, the addition of 312.32 acres of land on Mitchell Hill to the park would protect important cultural, natural and scenic resources of English Camp. These lands are directly adjacent to the southeast park boundary and have a strong historic, ecological, and spatial relationship with English Camp. Mitchell Hill contains part of the original historic military road in its landscape setting and potentially other artifacts dating to the encampment period. Its acquisition would allow protection of the historic road and associated landscape, and would enable the public to experience and learn about how the road was used during the joint occupation period. It would also provide an important link in a planned cross-island trail. The Mitchell Hill property, which is in public ownership and currently managed by the Washington State Department of Natural Resources (DNR), presents many other high-quality opportunities to promote public use and enjoyment of the property including hiking, biking and equestrian trails, and nature study. Its protection would prevent impending sale and development that would negatively affect the scenic/landscape resources, water quality and quantity, and wildlife habitat values of English Camp.

Seven parcels are involved in the boundary modification for Alternative C at American Camp. Four of the seven parcels are managed by DNR, one of them cooperatively with the San Juan County Land Bank. One is owned by the Cattle Point Water District. One is managed by the Bureau of Land Management (BLM) and the last of the seven parcels is privately owned.



Parcel 1

Third Lagoon Preserve is a 20.08-acre parcel jointly owned and managed by DNR and the San Juan County Land Bank. The parcel includes upland conifer forest and 1,100 feet of shoreline. When Third Lagoon was acquired in 2000 by DNR and San Juan County Land Bank, the county's stated intent was to ultimately transfer it to the NPS.

Parcel 2

Parcel 2 is owned by the Cattle Point Water District. This 2.36 acre parcel contains a reverse osmosis water treatment facility to serve certain residential portions of the Cattle Point Estates. The NPS, in cooperation with private non-profit partners, would explore various less than fee title strategies to protect the woodland habitat of the remainder of the tract not dedicated to water treatment use and road access.

Parcel 3 and Parcel 4

Both of these parcels make up 78.61 acres of the Cattle Point Natural Resource Conservation Area (NRCA) managed by DNR. Parcel 3 is 39.84 acres and Parcel 4 is 38.77 acres. Natural Resource Conservation Areas in Washington State are lands designated to maintain, enhance or restore ecological systems and habitat for threatened, endangered, sensitive plants and animals while providing opportunities for education and low-impact public use. Parcel 4 has 1,430 feet of beach on the Strait of Juan de Fuca along the southern portion of the property. These two parcels were formerly school trust lands, but were divested out of that program and are now managed as a NRCA.

Parcel 5

The BLM manages this 27.32-acre site, which includes 1,500 feet of shoreline on the Strait of Juan de Fuca and contains the historic U.S. Coast Guard Cattle Point Lighthouse and Loran Station. The navigation aide is listed in the National Register of Historic Places. The day-to-day management responsibility is by the DNR through a Recreation and Public Purposes Act (RP&P) lease with BLM. This lease is currently up for renewal.

Parcel 6

This 1.9-acre parcel is privately owned by an out-of-state resident. It would be included in the revised park boundary and acquired only under a willing-seller condition. This property is approximately 75 feet from the shoreline and has extensive views of the Strait.

Parcel 7

The Cattle Point Interpretive Area is a 10.29-acre site located on the eastern edge of the Cape of San Juan. It consists of some 1,265 feet or shoreline and is the site of a former Navy Radio Compass Station that has been converted into a public picnic shelter with a trail leading to a nearby beach. Interpretive exhibits are also present at the site. Acquisition of this parcel could also allow the NPS to provide a trailhead and parking area for public access to the Cattle Point Lighthouse. This would greatly improve safety for visitors, who now must walk along the narrow road to reach the other properties. It would also promote public access to the east end of the trail system on Mt. Finlayson, which according to public comment is the most popular set of trails on San Juan Island.

Summary

These proposed American Camp additions were part of the original military reservation where joint occupation activities took place and all of these properties played a role in the boundary dispute and joint occupation that is one of the primary elements in the park's enabling legislation. They are part of the landscape setting crucial to understanding the story of the encampments. Having these lands will allow the NPS to better interpret the park story by having public trails that take the public to these sites.

Transfer of these properties to NPS management also provides for a continuous protected coastline and coordinated management involving a single public ownership from South Beach on the west around to the eastern portion of Cattle Point. The lands proposed for addition to the park are currently managed by the DNR and the BLM. Current management of these lands do not relate to the park's period of significance, and, while social trails now exist, the agencies have never established or maintained formal trails for public use on these properties or considered the historical significance these properties have as part of a larger cultural landscape.

Inclusion of these properties at Cattle Point within American Camp would provide for the permanent protection of archeological sites related to the military occupation period and prehistory related to Native American use of the area. Additionally, the area proposed for inclusion within the park boundary has other historical resources including the Cattle Point Lighthouse and Loran Station site, and the Navy Radio Compass Station; all of which are listed in the National Register of Historic Places. Acquiring these properties would provide public accessibility to three and one half miles of continuous public shoreline between American Camp and the former Navy Radio Compass Station. This would be the longest federally protected coastline in the San Juan Island archipelago, with unrestricted public access.

Acquisition of these lands would allow the NPS to better protect and actively manage natural values of the Cattle Point area including what is considered the largest expanse of natural forest on the southern part of San Juan Island and a fragile prairie and sand dune system contiguous with similar habitat on NPS lands. The BLM and the DNR do not maintain any staffing on San Juan Island, so are not able to provide the type of daily on-site resource protection and visitor management that is necessary for these properties, which are heavily used by the public.

Additionally, these five publicly managed properties at Cattle Point provide additional opportunities for public hiking, viewing nature and intertidal sea and birdlife, and photography of unsurpassed scenic vistas of the Strait of Juan de Fuca across to the Olympic Mountains and southeast toward Whidbey Island and Puget Sound.

With road improvements scheduled for the western portion of Cattle Point Road over the next several years, a small portion of these properties could serve as a trailhead parking area, a trail access point for the coastal and Mount Finlayson trails, and a scenic overlook of the Strait of Juan de Fuca.

2. Operational and Management Issues Related to Access and Boundary Identification by Topographic or other Natural Features

The lands proposed for addition to the boundary of the park have already been surveyed and are easily identified. Of the eight total parcels proposed for the boundary modification at the park, one parcel is at English Camp and seven parcels are at American Camp. All but two of these seven parcels are owned by a unit of local, state or federal government.

At English Camp, a total of 312.32 acres known as Mitchell Hill would be added to the unit and would make a logical and contiguous addition to the park. Unauthorized activities crossing from Mitchell Hill into English Camp are expected to decrease once the property is acquired by the NPS.

At American Camp, the boundary modification would incorporate a total of 140.56 acres. This would include the headland around Cattle Point along with upland wooded areas that are a part of Mount Finlayson, making it a logical boundary addition to the park. The current managers of the DNR and BLM properties are absentee and do not maintain staff on the island. Although both agencies do the best they can with available resources, the NPS often has to deal with day to day issues that arise on their lands. Having these properties under clear NPS management is expected to allow more efficient management and result in fewer problems with illegal or incompatible uses.

These lands make logical additions to the park, and the NPS has the operational and management capability to manage all these lands; if (1) the Secretary deems it necessary, and (2) if the acquisition, or transfer of these lands can be achieved.

3. Protection of Park Resources and Fulfillment of Park Purpose

The proposed boundary adjustments to San Juan Island National Historical Park would fulfill the park purpose and significance by helping to protect important cultural, natural, and scenic resources described in detail in the park Foundation Statement.

Adjacent to English Camp, the addition of the Mitchell Hill property would allow the NPS to protect an intact remnant of the historic 19th century military road, which historically linked English Camp to American Camp and bisects the northern portion of the property. The Mitchell Hill property is contiguous to the eastern boundary of the park along the south flank of Young Hill.

This parcel represents an important component of the largest block of undeveloped land on San Juan Island. Much of the rest of the area already is protected through a variety of ownerships or agreements. Ecologically, Mitchell Hill serves as a genetic and wildlife habitat connection between Garry oak woodlands on Young Hill and Cady Mountain. Water from Mitchell Hill flows into Garrison Bay next to the historic English Camp. Water quality in the bay has been identified as a high priority for the park as well as the county; acquisition would promote collaborative watershed protection as recommended in the park's 2006 Coastal Watershed Assessment.

Since this land is designated by DNR as Forest Resource Land, and as "Common School Trust Lands", these lands are intended to derive income for the benefit of public schools. However, the DNR is in the process of divesting itself of virtually all of its school trust lands in San Juan County because they have been unable to realize sustained income from them. In 2006, they explored the option of exchanging the Mitchell Hill property to a private developer for forest lands in eastern Washington. Divestiture of these lands by DNR in a public land sale (and almost certain subsequent development) would have wide ranging impacts to park management and the park visitor in terms of potential incompatible land use conflicts, noise, visual intrusion into historic views, damage to the historic road, negative impacts to water resources, fragmentation of Garry oak habitat, and loss of recreational access and opportunities.

As a result of the public outcry against that idea, the DNR agreed to a three-year moratorium while interested parties worked on options for keeping the property in public ownership. A land exchange involving the state of Washington and a non-governmental entity (such as a land trust) would preclude sale to private individuals. Eventually, through direct NPS purchase from the non-governmental entity, it would become part of the park, which in turn would help to ensure the long-term protection of these resources.

At American Camp, the park boundary would be modified to include five publicly owned parcels and two private parcels for a total of 140.47 acres. The lease from BLM for one of the publicly owned parcels is subject to renewal and may not be renewed by DNR if the NPS boundary adjustment goes forward. The addition of the BLM property at Cattle Point to the park would provide permanent protection to the historic Cattle Point Lighthouse and Loran Station and would provide visual and resource protection of 3.5 miles of contiguous coastline along the Strait of Juan de Fuca, forming a logical and visual assemblage of land from American Camp to the end of Cattle Point.

The transfer of the three parcels of DNR lands at Cattle Point would achieve several objectives:

- Enhanced interpretation of the encampment period and historic events. These proposed American Camp additions were part of the original military reservation where joint occupation activities took place. They are part of the cultural landscape setting crucial to understanding the story of the encampments. Having these lands will allow the NPS to better interpret the park story by having public trails that take the public to these sites.
- Preserving the natural topography and interpreting how the landscape influenced military strategies. All of these properties were part of the historic U.S. Military Reservation at American Camp and played a role in the boundary dispute and joint occupation that is one of the primary elements in the park's enabling legislation.
- Consistent protection and management of a cultural landscape while providing additional consistent public recreation access. Transfer of these properties to NPS management also provides for a continuous protected coastline and coordinated management involving a single public ownership from South Beach on the west around to the eastern portion of Cattle Point. The lands proposed for addition to the park are currently managed by the Washington State DNR and the Bureau of Land Management. Current management of these lands has nothing to do with the park's period of significance, and, while social trails now exist, the agencies have never established or maintained formal trails for public use on these properties.
- Cultural and archeological resource protection related to the military occupation. NPS stewardship of these sites would provide for the permanent protection of archeological resources located there, along with the protection of other cultural resources including the historic Navy Radio Compass Station, Adding these resources to the park would also provide permanent protection to some upland forested areas adjacent to the existing park boundary.

Furthermore, the acquisition of the single private parcel from a willing seller would achieve park purposes by providing uninterrupted public access between the Cattle Point headland and the Navy Radio Compass Station site to the lighthouse and connections to Mount Finlayson trails.

4. Feasibility to Administer the Lands Added through Boundary Adjustment

The proposed additions to the park are feasible to administer given their limited infrastructure and locations immediately adjacent to the park. The areas proposed for inclusion in the park are contiguous with the existing park boundary at both camps. The park has a history of willing partners and a volunteer cadre on the island. Any volunteer or partnership efforts would then be realized as cost savings. It would be feasible for NPS to administer these additional areas with the additional staff requested in the proposed alternative. It is projected that the staffing needs for these additions would require one additional seasonal maintenance laborer and one seasonal ranger. These added staffing requirements have been reflected in the staffing chart that is included in the Preferred Alternative (Alternative C) of the document.

The implementation of this or any other alternative will depend on future NPS funding and service-wide priorities and on partnership funds, time, and effort. The approval of the boundary adjustment does not guarantee that funding and staffing needed to implement the plan will be forthcoming.

5. Protection Alternatives Considered

Other alternatives considered in the general management plan include Alternative A, the No Action Alternative, which would not add any additional property to the park boundary.

Alternative B would add Mitchell Hill at English Camp and the three DNR properties, a single piece of private property from a willing seller, and the BLM property at American Camp, but not the 20.08-acre DNR/San Juan County Land Bank property or the property owned by the Cattle Point Water District.

Alternative C would add the properties in Alternative B, plus the DNR/San Juan County Land Bank property and the Cattle Point Water District parcel. It would also encourage the acquisition of conservation easements, by private nonprofits, local government, or others, from willing sellers on farmland located at the northern boundary of American Camp.

Various alternative strategies for protecting Mitchell Hill have been discussed, beginning in the 1980s with the San Juan Islands Trust Lands Management Plan (Washington DNR, 1986) and continuing to the present. Although many meetings have been held with a wide variety of stakeholders, no private conservation group has come forward to protect the property, in part because of its high real estate value due to its development potential. The same high value would apply to a conservation easement on the property. San Juan County (County Parks or Land Bank) do not have the resources to purchase or manage the property. The property does not qualify for the Washington State Trust Land Transfer program because of the high ratio of land value to timber value. Basically, the only remaining alternatives are 1) development, or 2) protection by the NPS.

Although the three DNR properties, the BLM property, and the DNR/San Juan County Land Bank property at American Camp are presently in some form of protective status, the management goals differ from those of the park. Cooperative management of these properties between the NPS and the other agencies was considered as an alternative to acquisition. At present, the DNR and BLM do not have staff on the island, which leaves the daily responsibility, particularly for visitors, to the NPS. Many park visitors and neighbors assume the NPS owns the property now and it is common for issues to be brought first to NPS staff because of their presence on site. This is problematic because the NPS does not have legal jurisdiction. Inclusion of these lands within the park boundary under Alternative C would simplify jurisdiction. It would also promote more efficient, consistent management of the area than presently occurs, resulting in benefits to visitors and improved protection of resources. For these reasons, acquisition is preferred over cooperative management.

6. Proposed Additions to the Park Boundary and Other Adjustments

A total of 452.79 acres would be added to the park boundary. New lands would adjoin both English Camp and American Camp under the Alternative C, the Preferred Alternative.

All the lands proposed for addition to the park, except for the one private parcel are already in public ownership and not on the tax rolls. Therefore, the impact to San Juan County in terms of loss of future property tax revenues would be negligible. Regarding the DNR lands, only the Mitchell Hill property is within the designated Forest Resource Lands category, which is set aside to provide income to public schools within the state. However, there has been substantial public interest in precluding future timber harvesting activities on the Mitchell Hill property, so the prospect of future loss of revenue from the transfer of the property to NPS management is very low. Additionally, as the state of Washington is compensated for the Mitchell Hill property, the state may acquire other more suitable lands which would provide more long-term income to public schools in the state over the limited ability for the state to generate income from the Mitchell Hill property in the future.

Therefore, except for the small amount of property tax loss anticipated for San Juan County through the acquisition of the1.9-acre private parcel near Cattle Point, there would be no significant property tax implications for San Juan County as a result of the proposed boundary change to English Camp and American Camp. Additionally, the payment in-lieu of taxes or PILT program would provide property tax income to San Juan County for a five-year period following the willing seller acquisition of the private land parcel by the United States of America.



Glossary

Accessibility: the provision of NPS programs, facilities, and services in ways that include individuals with disabilities, or makes available to those individuals the same benefits available to persons without disabilities.

Acquisition: the act or process of acquiring fee title or interest other than fee title of real property (including acquisition of development rights or remainder interest).

Advisory Council on Historic Preservation: the Advisory Council on Historic Preservation (ACHP) is an independent federal agency that promotes the preservation, enhancement, and productive use of the nation's historic resources and advises the president and Congress on national historic preservation, enhancement, and productive use of our nation's historic resources as well as national historic preservation policy. As directed by the National Historic Preservation Act of 1966 as amended, the council serves as the primary federal policy advisor to the president and Congress; recommends administrative and legislative improvements for protecting our nation's heritage; advocates full consideration of historic values in federal decision-making; and reviews federal programs and policies to promote effectiveness, coordination, and consistency with national preservation policies.

Air quality designations: Class I areas are those areas designated under the Clean Air Act that are afforded the highest level of protection from air pollutants, generally consist of wilderness areas, national parks, and wildlife refuges. Class II areas are areas not designated Class I. In Class II areas, additional air pollutant inputs may be permitted up to certain levels.

Airshed: a geographic area that shares the same air.

Archaeological resource: any material remains or physical evidence of past human life or activities that are of archaeological interest, including the record of effects of human activities on the environment. An archaeological resource is capable of revealing scientific or humanistic information through archaeological research.

Alternatives: sets of management elements that represent a range of options for how, or whether to proceed with a proposed action.

Aquifer: a saturated, permeable sediment or rock that can transmit significant quantities of water under hydraulic gradients.

Candidate species: species not currently protected under the Endangered Species Act but under consideration by the U.S. Fish and Wildlife Service for inclusion of the list of federally threatened or endangered species.

Climate change: a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods (UN Framework Convention on Climate Change).

Code of Federal Regulations (CFR): a publication that codifies the general and permanent rules or regulations published in the Federal Register by the Executive branch departments and agencies of the federal government, and which carry the force of law. The citation 36 CFR 1.1 refers to part 1, section 1, of title 36.

Consultation: a discussion, conference, or forum, in which advice or information is sought or given, or information or ideas are exchanged.

Cultural landscape: a geographic area, including both the cultural and natural resources and the wildlife or domestic animals therein, associated with an historic event, activity, or person, or exhibiting culture or aesthetic values. A way of seeing landscapes that emphasizes the interaction between human beings and nature over time. There are four overlapping types of cultural landscapes: historic sites, historic designed landscapes, historic vernacular landscapes, and ethnographic landscapes.

Cultural resource: an aspect of a cultural system that is valued by or significantly representative of a culture, or that contains significant information about a culture. A cultural resource may be a tangible entity or a cultural practice. Tangible cultural resources are categorized as districts, sites, buildings, structures, and objects for the National Register of Historic Places, and as archaeological resources, cultural landscapes, structures, museum objects, and ethnographic resources for NPS management purposes.

Cumulative impact: the effect on the environment that would result from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Cumulative impacts can result from similar projects or actions, as well as from projects or actions that have similar impacts (40 CFR 1508.7)

Densic: a soil type that features a cemented horizon (layer) of glacial lake sediment, which serves to restrict root and water penetration through the soil profile.

Desired future conditions: used to describe the future condition of resources needed to meet a management objective. Desired future conditions are based on ecological, social, and economic considerations during the land and resource management planning process.

Developed area: an area managed to provide and maintain facilities (such as roads, campgrounds, housing) serving park managers and visitors. Includes areas where park development or intensive use may have substantially altered the natural environment or the setting for culturally significant resources.

Draft environmental impact statement (DEIS): a draft version of an environmental impact statement. The draft is available to the public for comment for a minimum of 60 days.

Easement: a right or privilege one may have on another's land.

Ecosystem: a functioning system composed of a community of animals, plants, and bacteria and its interrelated physical and chemical environment.

Effect: the result of actions on natural and cultural resources, aesthetics, economic, social or human health and safety. Effects can be direct, indirect, or cumulative. Used interchangeably with "impact."

Endangered species: any animal or plant species in danger of extinction throughout all or a significant portion of its range. These species are listed as threatened or endangered by the U.S. Fish and Wildlife Service under provisions of the Endangered Species Act.

Environmental impact statement (EIS): a detailed National Environmental Policy Act (NEPA) analysis document that is prepared when a proposed action or alternatives have the potential for significant impact on the human environment.

Erosion: the wearing away of land surface either by natural weather processes (including water, wind, or ice) or human or animal activities.

Ethnographic resource: a site, structure, object, landscape, or natural resource feature assigned traditional, legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it.

Evapotranspiration: the process of transferring moisture from the earth to the atmosphere by evaporation of water and transpiration from plants.

Executive orders, memoranda, or proclamations: regulations having the force of law issued by the President of the United States to the Executive branch of the federal government.

Exotic species: an animal or plant species that is not a part of an area's original fauna or flora.

Fauna: the animal life of an area.

Federal Register: a daily publication of the National Archives and Records Administration that updates the Code of Federal Regulations, in which the public may review the regulations and legal notices issued by federal agencies. Source citations for the regulations are referred to by volume number and page number of the Federal Register and the date of publication (example: 65 FR 2984, January 19, 2000).

Final environmental impact statement (FEIS): the document that responds to public comments on the draft environmental impact statement and may include corrections and revisions as a result of public comment.

Fire management plan: an implementation plan that details how the natural fire regimes and prescribed fires will be managed in the parks.

Fire suppression: all work and activities associated with fire extinguishing operations, beginning with the discovery and continuing until the fire is completely extinguished.

Floodplain: level streamside land that may be subject to flooding.

Flora: the plant life of an area.

Gateway community: a town in the areas nearby or adjacent to a national park unit. Such towns often serve as entrance points for visitors to the unit.

General management plan (GMP): a plan that clearly defines direction for resource preservation and visitor use in a park, and serves as the basic foundation for decision-making. GMPs are developed with broad public involvement and usually guide parks for 15- 20 years. GMPs are accompanied by a draft and final environmental impact statement.

Geographic information system (GIS): GIS is both a database designed to handle geographic data and a set of computer operations that can be used to analyze the data.

Glacial erratic: in geology, a glacial erratic is a boulder carried by glacial ice and deposited some distance from its place of origin.

Glacial striation: scratches on the surface of the bedrock were caused by stones and gravel at the bottom of the moving ice.

Groundwater: water that has percolated downward from the ground surface through the soil pores.

Habitat: the natural abode of a plant or animal, including all biotic, climatic, and all factors affecting life.

Herbaceous: pertaining to or characteristic of an herb (fleshy-stemmed plant), as distinguished from the woody tissue of shrubs and trees.

Historic context: a unit created for planning purposes that groups information about historic properties based on a shared theme, specific time period, and geographical area.

Historic property: a district, site, building, structure, or object significant in the history of American archaeology, architecture, culture, engineering, or politics at the national, state, or local level.

Hydrology: the study of water on the surface of the land, in the soil and underlying rocks, and in the atmosphere.

Impact: see effect.

Impact topic: a specific category of analysis for impacts, such as wildlife, vegetation, or historic structures. Impact topics are identified through public scoping and a determination of what aspects of the human environment would be affected if an action was implemented. Analysis of impacts for a specific topic may be required as a result of a public law or an executive order.

Impairment: an impact so severe that, in the professional judgment of a responsible NPS manager, it would harm the integrity of park resources or values and violate the 1916 NPS Organic Act.

Implementation plan: a plan that tiers off the general management plan and that specifies how one or more of the desired resources conditions, visitor experiences, or proposed actions will be accomplished. An implementation plan may direct a specific project or an ongoing activity.

Indicator: components or attributes of an ecosystem that can be observed and/or measured; an indicator provides evidence of the function, productivity, health, and/or condition of the ecosystem.

Indigenous (species): any species of wildlife native to a given land or water area by natural occurrence.

Infrastructure: a general term describing public and quasi-public utilities and facilities such as roads, bridges, sewers, and sewer plants, water lines, storm drainage, power lines, parks and recreation, public libraries, and fire stations. Infrastructure can also be considered permanent installations such as lighting, sidewalks, buildings, and water systems.

Indian Trust Resources: Indian trust resources are related to federal land that is held in trust for a federally recognized tribe.

In situ: archaeological resources that are left in their natural or original place, such as foundations, artifacts, and features. Usually meaning in the ground.

Integrated pest management (IPM): IPM evaluates alternatives for managing pest populations (insects, plants, and animals), based on the consideration of pest-host relationships.

Integrity: the authenticity of a property's historic identity, evidenced by the survival of physical

characteristics that existed during the property's historic or prehistoric period.

Invasive species: a non-native species (with respect to a particular ecosystem) whose introduction causes or would likely cause harm to the economy, environment, or human health.

Irretrievable: one of the categories of impacts mentioned in the National Environmental Policy Act to be included in environmental impact statements. An irretrievable effect applies to a loss of production or a commitment of renewable natural resources.

Irreversible: a category of impacts mentioned in the environmental impact statement that applies to non-renewable resources, such as minerals and archaeological sites. Irreversible effects can also refer to effects of actions that can be renewed only after a long period of time such as the loss of soil productivity.

Kiosk: a stall set up in a public place where one can obtain information.

Landscape: a large land area composed of interacting ecosystems that are repeated due to factors such as geology, soils, climate, and human impacts.

Management prescriptions: a planning term referring to statements about desired resource conditions and visitor experiences, along with appropriate kinds and levels of management, use, and development for each park area.

Management zone: the geographic location for implementing a management prescription.

Marine Terrace: a wave-cut platform that has been exposed by uplift or by lowering of the water level; an elevated wave-cut bench.

Memorandum of Understanding (MOU): a short written statement outlining the terms of an agreement, transaction or contract between two or more parties.

Midden: the accumulation of debris and domestic waste products resulting from human use, especially an accumulation of shells or of cinders, bones, and other refuse on the supposed site of the dwelling places of prehistoric tribes. The long-term disposal of refuse can result in stratified deposits, which are useful for relative dating.

Minority: defined by the U.S. Census as individuals who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black not of Hispanic origin; or Hispanic.

Mitigation: modification of a proposal to lessen the intensity of its impact on a particular resource; compensation for an impact.

Museum collection: objects, specimens, and archival and manuscript collections that are important resources providing valuable information about processes, events, and interactions among people and the environment.

National Ambient Air Quality Standards (NAAQS): allowable concentrations of air pollutants in the ambient (public door) air specified in 40 CFR 50.NAAQS are based on air quality criteria and divided into primary standards (allowing an adequate margin of safety to protect the public health) and secondary standards (allowing an adequate margin of safety to protect the public welfare).

National Environmental Policy Act (NEPA) process: the objective analysis of a proposed action to determine the degree of its environmental impact on the human (natural and cultural) environment; alternatives to the proposed action; mitigation to reduce or compensate for the impact; and the full and candid presentation of the analysis to, and involvement of, the interested and affected public. This process is required of all federal agencies by the National Environmental Policy Act of 1969.

National Park System: the sum total of the land and water now or hereafter administered by the Secretary of the Interior through the National Park Service for park, monument, historic, parkway, **recreational or other purposes.**

National Register of Historic Places: the federal listing of nationally, regionally, and locally significant buildings, structures, sites, objects or districts. Sites listed in the National Register must be considered when making management decisions if an action could affect that site. Parks are required to assess properties over 50 years old to determine their eligibility for nomination to the National Register.

Native Americans: Native American means "of, or relating to, a tribe, people, or culture that is indigenous to the United Sates" according to the Native American Graves Protection and Repatriation Act. Typically,

the general term is applied to American Indian tribes, Alaska Natives, Native Hawaiians and other Pacific islanders. Federally recognized American Indian tribes and Alaska Natives have a unique status "as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.

Native American consultation: Native American consultation is required by various laws, regulations, executive orders and policies relative to indigenous peoples who may have traditional or contemporary interests in the lands now occupied by parks. Consultation done in compliance with legal requirements is considered to be government-to-government consultation when federally recognized American Indian tribes and Alaska Natives are involved.

Native species: plants or animals indigenous to the area.

Natural quiet: refers to the state of having only natural sources of sound; for example, wind, rustling leaves, water, and animal calls.

Night sky: a sky free of artificial light sources and light pollution.

Non-extant:something no longer existing, such as non-extant structures (no longer standing).

Non-native species: plants or animals that are not indigenous to the area (see also Exotic Species).

Notice of Availability: a notice in the Federal Register of the availability to the public of either a draft or final environmental impact statement or a record of decision on an action.

Notice of Intent: a notice in the Federal Register of the intent to prepare an environmental impact statement on a proposed action.

Open space: land maintained for its intrinsic and/or open space value. Open space can be a feature in a cultural landscape, such as humanly maintained prairie or field, or it can be a natural area as opposed to a developed area.

Paleo-Indian: the culture known to have moved into the new world during the late Pleistocene and early Holocene (13,000: 8,000 years before present).

Park: any one of the more than three hundred areas of land and water administered as units of the national park system. The term is used interchangeably with "unit."

Peak season: usually high-use times from Memorial Day to Labor Day, when most park visitation occurs.

Prescribed fires: those fires ignited by park managers to achieve resource management and fuel treatment objectives.

Preservation: the act or process of applying measures to sustain the existing form, integrity, and material of a historic structure, landscape, or object. Work might include preliminary measures to protect and stabilize the property, but generally focuses on the ongoing preservation, maintenance, and repair of historic materials and features rather than extensive replacement and new work (NPS DO-28).

Public involvement: public input and participation sought in the planning for public lands and required under the National Environmental Policy Act. Comment is sought at the initial scoping (information gathering) and at the draft stages for an EIS and during initial scoping and upon publication of the document for an EA.

Reconstruction: the act or process of depicting, by means of new construction, the form, features, and detailing of a nonsurviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.

Record of decision (ROD): the document that states which alternative analyzed in an environmental impact statement has been selected for implementation and explains the basis for the decision. The decision is published in the Federal Register.

Rehabilitation: the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical or cultural values.

Repatriation: to send back to place of origin. In the case of repatriated structures, these structures would be brought back to their original location.

Restoration: the act or process of accurately depicting the form, features, and character of a property as it

appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.

Regulations: rules or orders prescribed by federal agencies to regulate conduct, and published in the Code of Federal Regulations.

Revegetation: the reestablishment and development of a plant cover either by natural means or by artificial means such as reseeding.

Right-of-way (ROW): a permit or an easement that authorizes the use of public land for certain specified purposes, commonly for pipelines, roads, telephone lines, electric lines, and reservoirs. It is also the reference to the land covered by such an easement or permit.

Section 106 Consultation: also known as the 36 CFR 800 process. Discussions between a federal agency official and the State Historic Preservation Officer, and when necessary, the Advisory Council on Historic Preservation, and other interested parties concerning historic properties that could be affected by a specific undertaking. Section 106 is the part of the National Historic Preservation Act that outlines the procedure. The procedure is codified in 36 CFR 800.

Section 7 Consultation: the requirement of Section 7 of the Endangered Species Act that federal agencies consult with the U.S. Fish and Wildlife Service or the National Marine Fisheries Service if a proposed action might affect a federally listed species or its critical habitat.

Seedling: a tree grown from seed that has not reached a height of 3 feet or a diameter of 1 inch.

Sensitive species: a plant or animal species not yet officially listed, but which is undergoing status review for listing on the U.S. Fish and Wildlife Service's official threatened and endangered list; species whose populations are small and widely dispersed or restricted to a few localities; and species whose numbers are declining so rapidly that official listing may be necessary.

Special park uses: a special park use is a short-term activity that takes place in a park area and provides a benefit to an individual, group, or organization, rather than the public at large. A special park use requires written authorization and some degree of management control from the NPS in order to protect park resources and the public interest. The use must not prohibited by law or regulation and cannot be initiated, sponsored, nor conducted by the NPS.

Special use permit: instrument issued by a superintendent to an individual or organization to allow the use of NPS-administered resources or to authorize activities in 36 CFR Parts 1-7 that require a permit.

Socioeconomic analysis: the task of assessing the impact of a plan or project on a community's or region's social structure, on a community's fiscal health, or a region's economic basis.

Soundscape (natural): the aggregate of all the natural, nonhuman-caused sounds that occur in parks, together with the physical capacity for transmitting natural sounds.

Stabilization: according to NPS management policies, archaeological resources, buildings, structures, and objects subject to erosion, slumping, subsidence, or other natural deterioration will be stabilized using the least intrusive and destructive methods. The methods used will protect natural resources and processes to the maximum extent feasible. Stabilization will occur only after sufficient research demonstrates the likely success of the proposed stabilizing action, and after exiting conditions are documented.

Stakeholder: an individual, group, or other entity that has a strong interest in decisions concerning park resources and values. Stakeholders may include recreational user groups, people with a historic affiliation to the park, permittees, and concessioners. In the broadest sense, all Americans are stakeholders in the national parks.

State Historic Preservation Officer or Office (SHPO): an official in each state appointed by the governor to administer the state historic preservation program and carry out certain responsibilities relating to federal undertakings in the state.

Stewardship: the cultural and natural resource protection ethic of employing the most effective concepts, techniques, equipment, and technology to prevent, avoid, or mitigate impacts that would compromise the integrity of park resources.

Strategic plan: a servicewide five- year plan required by the Government Performance and Results Act (GPRA) in which the NPS states how it plans to accomplish its mission during that time, and the value it expects to produce for the tax dollars expended. Similarly, each park, program, or central office has its own strategic plan, which considers the servicewide mission plus its own particular mission. Strategic plans serve as "performance agreements" with the American people.

Superintendent: the senior NPS official in a park; used interchangeably with "park superintendent" or "unit manager."

Sustainable: the yield of a natural resource that can be produced continually at a given intensity of management is said to be sustainable.

Sustainability: the ability of an ecosystem to maintain ecological processes and functions, biological diversity, and productivity over time.

Threatened and endangered species: as defined in the Endangered Species Act of 1973, as amended (Public Law 93-205; 87 Stat. 884), "endangered species" is "any species which is in danger of extinction throughout all or a significant portion of its range" and a "threatened species" is "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. "Whether a species is threatened or endangered is determined by the following factors: (1) present or threatened destruction, modification, or curtailment of its habitat or range; (2) overutilization for commercial, sporting, scientific, or educational purposes; (3) disease or predation; (4) inadequacy of existing regulatory mechanisms, or (5) other natural or human-made factors.

Understory: the trees and woody shrubs growing beneath the tallest trees or other vegetation in an area.

User capacity: the type and level of visitor use that can be accommodated while sustaining the desired resource and visitor experience conditions in a park without degradation. Management prescriptions in the general management plan conceptually describe user capacity.

Visitor: anyone who uses a park's interpretive, recreational, and educational services, regardless of where such use occurs (such as through Internet access, library, or other methods).

Visitor use: passive or active recreational activity on public land.

Visual resource: a part of the landscape important for its scenic quality. It may include a composite of terrain, geologic features, or vegetation.

Watershed: an area that collects and discharges runoff to a given point. It is often used synonymously with drainage basin or catchment area.

Wetland: areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and which under normal circumstances will support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Typical wetlands include marshes, shallow swamps, sloughs, lakeshores, bogs, wet meadows, river overflows, mud flats, and riparian areas.

Wildfire: an unwanted wildland fire, regardless of ignition source, which is unplanned, has escaped control, or does not meet management objectives and therefore requires a suppression response.

Abbreviations and Acronyms

Americans with Disabilities Act of 1970	ADA
Asset Business Plan	ABP
Asset Priority Index	API
Bureau of Land Management	BLM
Comprehensive Interpretive Plan	CIP
Cultural Landscape Inventory	CLI
Current Replacement Value	CRV
Environmental Impact Statement	EIS
Facility Condition Index	FCI
Facility Management Software System	FMSS
Full time equivalent	FTE
General Management Plan	GMP
Government Performance and Results Act	GPRA
Island Oil Spill Association	IOSA
Long Range Interpretive Plan	LRIP
Marine Protected Area	MPA
Memorandum of Agreement	MOA
Memorandum of Understanding	MOU
Multiple Property Document	MPD
National Environmental Policy Act	NEPA
National Historic Landmark	NHL
National Historic Preservation Act	NHPA
National Park Service	NPS
National Register of Historic Places	NRHP
Native American Graves Protection and Repatriation Act	NAGPRA
Natural Resources Conservation Service	NRCS
Natural Resource Conservation Area	NRCA
Operations and Maintenance	OM
Oregon Museum of Science and Industry	OMSI
Park Asset Management Plan	PAMP
Record of Decision	ROD
United States Department of Agriculture	USDA
United States Fish and Wildlife Service	USFWS
University of Washington Friday Harbor Labs	Labs
Volunteers in the Park Program	VIP
Washington Department of Fish and Wildlife	WDFW
Washington Department of Natural Resources	DNR

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