



## English Camp

### Mitchell Hill and Westcott Bay Development Concept Plan / Environmental Assessment



San Juan Island National Historical Park  
Lee Taylor, Superintendent  
P.O. Box 429  
Friday Harbor, Washington 98250

U.S. Department of the Interior • National Park Service • San Juan Island National Historical Park

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# I. Chapter 1: Purpose and Need

## Background

The Mitchell Hill and Westcott Bay areas are new additions to the English Camp unit of San Juan Island National Historical Park (Figure 1). The Mitchell Hill addition (320 acres) adjoins the unit on the southeast and was acquired on September 2010. Westcott Bay adjoins the English Camp unit on the north and consists of 34.19 acres of waterfront that were acquired on March 2013 and 34.87 acres of upland acquired on December 2013. Combined, these three additions increased the English Camp Unit from 529 acres to 918 acres.

Mitchell Hill is a 320-acre forested property southeast of Young Hill. The park's 2008 General Management Plan (GMP) proposed acquisition of Mitchell Hill as a land protection measure. The acquisition was supported by a broad coalition of park stakeholders, as well as by county, state, and federal agencies, and the Congressional delegation. The park superintendent commented that: **"It is the first major addition to the park since the 1970s, and it ensures that Mitchell Hill will be permanently protected for the benefit of future generations."** There are a myriad of trails and some access roads (formerly used for logging) that allow recreational activities, such as hiking, horseback riding, and mountain biking. The trails on Mitchell Hill have been used by the local community and occasionally by those from outside the area for many years.

The Westcott Bay addition is almost 70 acres and includes 2,500 feet of shoreline. This acquisition was a result of a unique partnership between the National Park Service (NPS), the Conservation Fund (Fund), and the former owners of the property (the Webb Family).

The park and the Fund sought to preserve **"the land's natural state, while enabling the family or subsequent owners of the historic sea farm to continue to use a portion of the tidelands for oyster farming operations"** (Conservation Fund 2013). Upon acquisition of the property the Fund stated: **"The amount of open space on the island that is available to the public is limited and the addition of the Webb property will further allow the NPS to preserve and enhance the outstanding historical, natural, and recreational resources offered at San Juan Island National Historical Park"** (San Juan Journal 2013). **The Webb family retained ownership of five acres,** which were subsequently sold to the operator of the shellfish farm. The Fund retained 7.8 acres of tidelands, some of which are being used for shellfish farming under an agreement between the Fund and business owners.

*Land Use Prior to National Park Service Acquisition:* Prior to the Mitchell Hill property becoming part of San Juan Island National Historical Park (park), the lands were managed by the Washington State Department of Natural Resources (DNR). The state acquired the area as School Trust Land in 1889 and managed it for multiple use to fund education. Between 1976 and 1986, the entire parcel was leased to the Blazing Tree Ranch for sheep grazing (WDNR 1986). Prior to that, the parcel was also logged for many years for the lime kilns at Roche Harbor. In 1983, the San Juan Islands Trust Land Advisory Committee considered alternatives for the area. One alternative recommended adding it to the park, but was rejected at the time because that would mean cessation of logging. The Committee eventually recommended an alternative for 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 also interest expressed from the county and local residents to convert the Old Military Road within the property to a general hiking trail connecting to other off-site trails (WDNR 1986).

Historically, the Webb property – along with Roche Harbor proper – was part of the military reserve charted by Captain George E. Pickett of the U.S. Army and Captain George Bazalgette of the British Royal Marines in 1860, following a low-key dispute over lime deposits at Roche Harbor (Cantwell 2013). Later, the Westcott Bay parcels were purchased by Bill and Doree Webb. These lands were originally part of the Westcott Bay Sea Farm and the Webb Camp-School, a summer camp for boys (Cantwell 2013). The summer camp operated in the 1960s, with the sea farm operation beginning in the late 1970s (San Juan Update 2013).

*County Zoning Prior to NPS Acquisition:* The San Juan County plan classified Mitchell Hill as a “forest resources” land

**use zone. As such, these lands were designated to “protect and conserve forest lands of long-term commercial significance for sustainable forest productivity and to provide for uses which are compatible with forestry activities while maintaining water quality, and fish and wildlife habitat” (Larkin 1999a).** Later, subsequent discussions between the DNR, San Juan County, and other groups, led to a consensus that Mitchell Hill should be added to the park.

According to the Watershed Assessment Report, the entire park, which is located in the center of the Westcott-Garrison Bay Watershed, was recognized by San Juan County as a Special District land use area under the Conservancy designation (Larkin 1999a). This designation 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**” (Larkin 1999a).

According to **the park’s GMP** (NPS PWR 2008), Westcott Bay was formerly classified as Rural Farm Forest. This designation is designed to provide landowners with the opportunity for small-

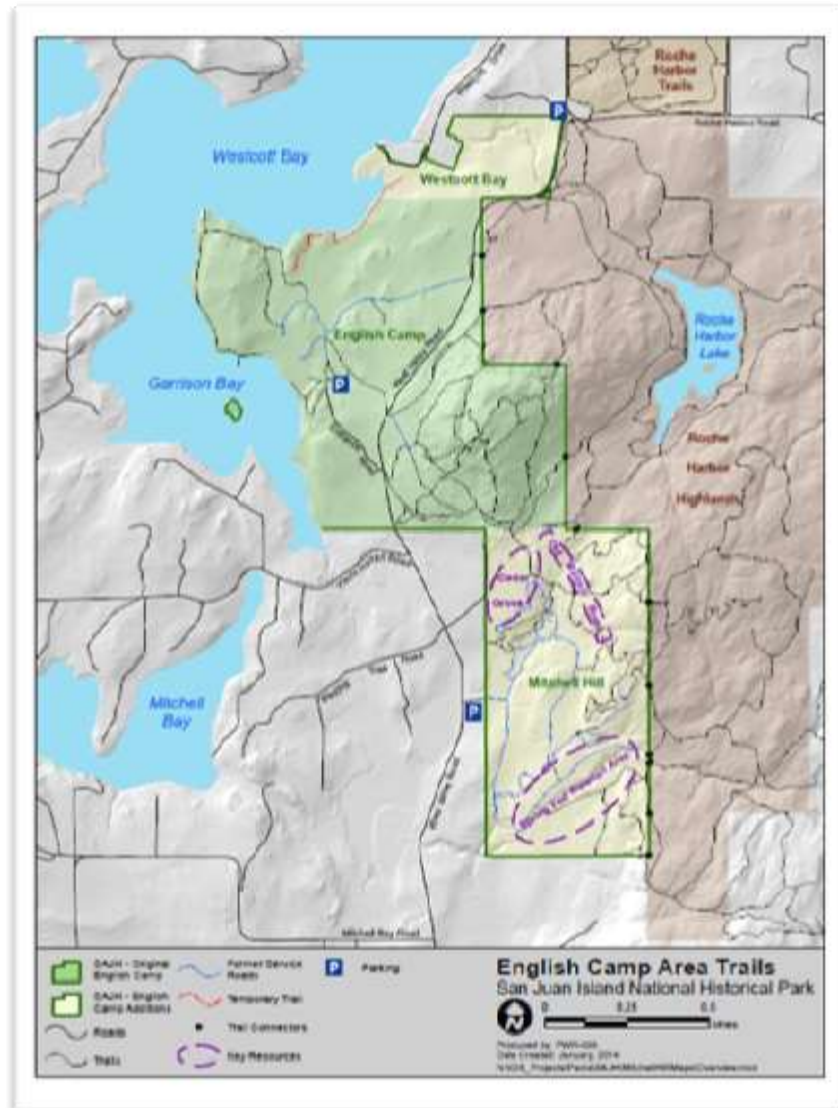


Figure 1: English Camp (including Mitchell Hill and Westcott Bay

scale farming and forestry practices while maintaining the rural character of the land. This was the case for the Webb family and the oyster farm operation. This land use classification also allowed for rural residential development of one unit per five acres, thus the development of the former Webb family home currently part of the Westcott Bay NPS property.

## A. Purpose and Need

Acquisition of Mitchell Hill and Westcott Bay has resulted in a need for the National Park Service to determine how these areas will be used as part of San Juan Island National Historical Park. Both properties were acquired after the General Management Plan for the park was published (NPS PWR 2008). This Development Concept Plan (DCP) provides an opportunity to take a holistic look at English Camp (including historic English Camp, Mitchell Hill and Westcott Bay). It is needed to plan for consistent management of visitor activities, park resources and infrastructure (especially trails) in the two new areas, and also to address related GMP proposals for English Camp.

### • Purpose of the Plan

The purpose of the Mitchell Hill and Westcott Bay Development Concept Plan (DCP) is to:

- Preserve the unique character of Mitchell Hill, including the Garry oak woodlands, cedar grove, stream habitat, and range of recreational opportunities.
- Preserve the unique character of Westcott Bay, including the secluded coastal wetland and tidelands, forested area, and recreation opportunities associated with this landscape.
- Identify key resources to be protected.
- Provide appropriate public access and recreational opportunities in the new lands.
- Retain existing uses where possible and compatible with park purposes.
- Determine the suitability of relocating the education camp at English Camp as called for by the GMP.
- Work with park neighbors and interest groups to accomplish DCP actions as appropriate.
- Implement GMP goals and actions where applicable to new lands, including, but not limited to: preserving views, protecting the quality of the visitor experience, and continuing to allow compatible, non-motorized use on the multiuse trails at Mitchell Hill.

### • Need for the Plan

Needs common to Mitchell Hill and Westcott Bay (including English Camp)

- Zone new areas consistent with GMP zoning definitions.
- Connect Mitchell Hill and Westcott Bay areas to existing park facilities at English Camp.
- Link Mitchell Hill and Westcott Bay Trails to the Island-wide trail system.
- Provide visitor access that is safe, protects park resources, and is coordinated with adjacent landowners.
- Provide parking, where needed and appropriate, with minimal impacts on park resources.
- Provide way-finding information along roads, trails and access points where needed.
- Analyze visitor use and determine need for interpretation and educational services.
- Provide for accessibility where appropriate (parking and trails).
- Inventory and evaluate cultural resources (including prehistoric and historic), and determine best management practices for protection and interpretation.
- Conduct natural resource inventories and assessments to identify ways to protect resource conditions, and enhance protection of sensitive resources such as: wetlands, stream habitats, shoreline, and steep slopes (soils).
- Determine whether to provide visitor facilities.

#### Needs specific to Mitchell Hill

- Inventory trails (location, length, type of use, signage).
- Conduct initial trail condition assessment to determine maintenance and resource protection needs.
- Determine appropriate trail use designations consistent with protection of park cultural and natural resources, including evaluation of Old Military Road use and protection.

#### Needs specific to Westcott Bay

- Determine how to best manage existing facilities.
  - Consider adaptive reuse for the existing non-historic buildings, including suitable administrative or public uses.
  - Add, upgrade, move or replace existing sanitary facilities.

### • Purpose and Significance of San Juan Island National Historical Park

Congress establishes national park system units to fulfill specified purposes based on a park's unique and significant resources. All proposed projects (including this development concept plan) **must be consistent with the park's purpose, thereby conserving resources while providing** for the enjoyment of future generations.

The park's enabling legislation and General Management Plan outline the purpose and significance of San Juan Island National Historical Park.

#### Purpose Statements (Enabling Legislation: 80 Stat. 737; Public Law 89-565)

- The Secretary of the Interior is authorized to acquire property on San Juan Island for the purpose of interpreting and preserving the sites of American and English camps on the island, and of commemorating the historic events that occurred from 1853 to 1871 in connection with the final settlement of the Oregon Territory boundary dispute, including the so-called Pig War of 1859.
- San Juan Island National Historical Park 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 may enter into cooperative agreements 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.

#### Significance Statements (from GMP - relevant to this plan)

- San Juan Island National Historical Park 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 government.
- American and English camps are nationally significant cultural landscapes that preserve the authentic settings of the mid-19<sup>th</sup> century military encampments.
- The park protects significant natural habitats and resources essential to the cultural landscapes, including prairies, wetlands, lagoons, forests, and coastal marine environments.
- **The 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.**
- The park provides educational, research, and volunteer opportunities that support the preservation of park resources and values and contribute to public enjoyment and understanding.

- The park protects and maintains evidence of post military settlement and development of San Juan Island.
- Archeological sites at both American and English camps represent thousands of years of Native American use and occupation of San Juan Island.

- **Planning Context, including Guidance from Other Plans**

The following plans have been reviewed for relevancy to the purpose and need for this DCP.

San Juan Island National Historical Park Draft Trail Sign Plan for Mitchell Hill (NPS SAJH 2014b)

This interim plan provides guidance for signing and naming trails on Mitchell Hill. Trail signing may change as a result of this DCP planning process and the selected alternative.

Draft Trails Vision for Mitchell Hill and Westcott Bay from Public Scoping Trails Workshop January (NPS SAJH 2014a)

The following goals were summarized from those offered by workshop participants.

- Provide a system of non-motorized trails that protects the unique character of the areas.
- Provide trail connections between English Camp and adjacent properties.
- Provide trails that offer a range of recreational opportunities: such as walking/sightseeing, hiking, bicycling, horseback riding, and accessibility for visitors with disabilities, while fostering cooperation among the park, trail users, organized groups, and neighboring landowners.
- Design the trails and associated amenities (signs, benches, etc.) to complement the surrounding environment and to promote a sense of solitude, appreciation, and exploration.
- Develop trail standards for these areas that would be applied parkwide.

San Juan Island National Historical Park General Management Plan (NPS PWR 2008)

A GMP establishes management direction for the next 15-20 years, providing vision and policy guidance for the preservation of park resources, visitor use and experience, the types and general intensities of development, visitor carrying capacities, and opportunities to address management issues, both internal and external to the park. It also provides a policy framework for more site-specific planning. The Mitchell Hill and Westcott Bay DCP is based on the foundation and direction established in the GMP, which identified the potential acquisition of the Mitchell Hill property. Westcott Bay was not specifically addressed in the GMP because acquisition had not occurred, nor was it being discussed; however, the management statements provided for English Camp are broad enough to provide guidance for this area as well.

The GMP broadens the scope of resource management and interpretation programs to emphasize **the connections and interrelationships between the park's natural and cultural resources** (NPS PWR 2008). 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 influence on the settlement and historic events of San Juan Island (NPS PWR 2008).

*GMP Management Zones Applicable to DCP*

The GMP identifies four management zones (administrative, cultural, natural, and visitor services). Each zone provides management prescriptions for natural and cultural resources, visitor opportunities, and desired facilities. For example: the administrative zone allows very limited to no visitor use except for individuals conducting research or working in the park. The cultural zone allows visitor use that is compatible with protecting the cultural resources. The

natural and visitor services zones allow more diverse opportunities for visitor use. Appendix 2 provides a complete description of the management zones.

#### *Cultural Landscapes*

- 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 (p. 48).

#### *Archeological and Historic Resources*

- Archeological sites would be documented, preserved and protected and, if appropriate, interpreted by park staff (p. 37).

#### *Natural Resources*

- 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 elsewhere in the park where farming or forestry occurred prior to acquisition (p. 60).

#### *Interpretation and Education*

- The educational camp would be relocated within English Camp along the administrative road and set back in the woods. (p. 57)
- The education camp would continue to offer programs on park themes to nonprofit groups, such as the Oregon Museum of Science and Industry, and for children of various ages (p. 39).
- 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 (p. 39).
- 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 (p. 62).

#### *Recreation*

- 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 (p. 39).
- The NPS would improve existing roads (such as widening shoulders) for bicycling use, and if additional land is acquired, the park staff would partner with bicycle user groups to establish and maintain bicycle trails, and monitor proper use of trails (p. 50, 62).
- Bicycling would continue along park and county roads within the park (p. 39).
- Horseback riding would continue in designated areas (p. 39).
- Park staff would partner with trail riding groups to maintain horse trails and monitor use of trails in the park (p. 62).
- Park would continue to be a day-use only area (p. 39).
- Overnight camping, hunting, and off-road vehicles would continue to be prohibited on park property (p. 39).
- If additional lands are acquired, prohibit hunting, but continue to allow compatible, non-motorized use along the multi-use trails at Mitchell Hill (p. 62, 82).
- The park would establish one trail connection at English Camp (p. 39).
- 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 (p. 62).

- 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 (p. 62).
- The park would work with partners to establish a trail connection between Roche Harbor and the park along the administrative road (p. 62).

San Juan Island National Historical Park Fire Management Plan (NPS SAJH 2005)

This plan is currently being revised. It guides fire management activities throughout the park. In the future, this plan is intended to include restoration of the Garry Oak woodlands at Mitchell Hill.

Management Plan for San Juan Islands Trust Lands (WDNR 2001)

This plan included Mitchell Hill, formerly the largest state trust land parcel within San Juan County managed by the Department of Natural Resources. Information in this plan provides background and a historical context for previous management actions at Mitchell Hill.

San Juan Island Trails Plan (San Juan Island Trails Committee 2006)

This project was conducted by the San Juan Island Trails Committee with technical assistance from the National Park Service and support from San Juan Island Parks and Recreation and San Juan County Parks. **Its purpose is to “foster coordination between public and private groups and individuals involved in the creation and maintenance of a network of non-motorized trails that connect key resources and destinations on the island. It reflects input from island residents and partnering agencies. Trails within this network will be designated as suitable for walkers, bicyclists, or equestrians, or a combination of these users.” The work of the Trails Committee has resulted in the development of maps and trail maintenance that include park areas.**

Prairie Stewardship Plan (proposed)

This plan includes ongoing management actions at English Camp to restore Garry oak woodlands. It also includes proposed actions at Mitchell Hill to restore Garry oak woodlands. **In conjunction with the park’s Fire Management Plan, this plan is intended to guide restoration of these unique woodlands.**

## B. Planning Issues and Scoping

In NPS planning, an “issue” often describes concerns or “obstacles” related to achieving a park goal (NPS 2001). Public involvement helps identify these issues and is a key part of the planning process. **This opportunity to provide public input is called “scoping.”** Scoping takes place early in the planning process. The general public, federal, state, local agencies, organizations, Native American Tribes, and NPS staff and subject matter experts were provided an opportunity to identify concerns regarding the proposed DCP. Scoping helps the interdisciplinary planning team focus on those issues relevant to the proposed action(s), and it helps focus the environmental analysis on relevant topics. **Some issues raised during scoping may be “outside the scope” of this plan and are identified below as “issues considered, but dismissed.”** A more detailed discussion on public involvement is in Chapter 5: Consultation and Coordination. The Public Scoping Comment Summary Report is available on the **park’s website** at <https://parkplanning.nps.gov/sajh>.

A variety of issues/concerns were identified during internal and public scoping for this plan and environmental assessment. These concerns relate to access and parking, facilities, trails, recreation opportunities and visitor experience, and resource protection. Because both sites are new additions to the park, analysis of the current condition of the resources is incomplete. Therefore information collection and analysis is ongoing. National Park Service standards,

policies and applicable federal laws for natural and cultural resources preservation will be adhered to where they relate to managing these additions and English Camp as a whole.

## 1. Natural Resource Issues

Soils: Some trail placement and use at Mitchell Hill may impact soil stability. For example: trails on steep terrain may result in trail incision and increased soil erosion. In addition, soil erosion along trails that cross streams or are near riparian areas may impact water quality and aquatic species. Proposed developments, including new trails and relocation of the education camp will need to consider impacts to soils.

Water Resources: Water resources (potable, surface and ground water) are critical and sensitive on San Juan Island. Potential surface waters of concern are streams on Mitchell Hill, in particular a stream whose headwaters likely provide habitat for coastal cutthroat trout (a species of concern).



Figure 2: Garry Oak at Mitchell Hill

Potable water at Westcott Bay is provided by the Roche Harbor Water Company. At English Camp potable water for the education camp is from an NPS-owned well which has limited yield, less than 1 gallon per minute. The high seasonal groundwater table and close proximity to the shoreline limit the capacity of the existing Westcott Bay septic system (tank and drain field).

Proposed administrative and visitor use should take into account the limited water resources and potential impacts to water quality and quantity at both sites.

Wetlands and Floodplains: Both Mitchell Hill and Westcott Bay need updated and more detailed information for wetlands, floodplains, sensitive shorelines, and riparian areas. This information will help to protect these resources, and to determine appropriate visitor use opportunities, such as trails and access points. Currently, it is not known if visitor use is impacting wetlands and associated vegetation types and soils. The GMP hydrology map indicates that Westcott Bay is within the 100 year floodplain. As a result, proposed developments or uses may need to include associated mitigation measures.

Vegetation: The vegetation at Mitchell Hill has been heavily altered, primarily from timber harvest. The GMP calls for managing the forest to promote progression toward a multiple species stand more characteristic of natural forest succession (NPS PWR 2008). Vegetation restoration, including fire management techniques, on Mitchell Hill would be addressed in the updated Fire Management Plan/ Environmental Assessment, and the Prairie Stewardship Plan/ Environmental

Impact Statement. As called for by the GMP, the park is committed to restoring the rare Garry oak woodlands on Mitchell Hill and to managing them as a resource that contributes to both the natural and cultural landscape (NPS PWR 2008). Proposed developments or uses will need to consider potential impacts to the Garry Oak woodlands and cedar grove on Mitchell Hill, as well as vegetation in the Westcott Bay area.

## 2. Cultural Resource Issues

Cultural resources at both Mitchell Hill and Westcott Bay have not been fully evaluated. A cursory investigation at Westcott Bay has revealed the presence of a shell midden. Further analysis is important to determine the age and significance of the site.

Old Military Road: The historic military road that traverses the Mitchell Hill property was recommended in 2001 by the San Juan County Trust Lands Committee to be incorporated into a **trail system and be named the “Einar Nielsen Memorial Trail.”** NPS guidelines, however, generally prohibit memorial trails and structures except where congressionally authorized. The military road and surrounding area will be surveyed to determine the best management practices for preserving and interpreting this historical component of the park that connects American and English Camps.

Sandwith Orchard: The Sandwith Orchard area, which is currently within the English Camp **Military Road Corridor and the park’s** GMP Cultural Zone, has been discussed as a possible access to Mitchell Hill from West Valley Road. Issues surrounding this idea include concerns about whether this would require amending the GMP or modifying the Cultural Zone through this process to allow horse and bicycle use.

## 3. Visitor Experience Issues

### Lack of Parking

Mitchell Hill: Currently, visitor access to Mitchell Hill is via Horse Trail Road off West Valley Road. Parking is on the County road outside a locked gate. This public access and trailhead parking provides space for only a few cars and is inadequate for the amount and type of visitor use.

Westcott Bay: On-site visitor parking is not available at Westcott Bay. Currently, there is a gate on Westcott Drive at the joint NPS/Westcott Bay Sea Farm entrance to the Westcott Bay property. The gate is open during summer business hours for the farm, but is otherwise closed. Administrative vehicles may proceed to a small informal administrative parking area, but there is no parking for the general public.

Exclusive Access at Mitchell Hill: Adjacent private landowners are currently accessing the park from private property; however, excluding the general public from those same access routes could be interpreted as “exclusive access.” **The questions related to this issue are:**

- Should the NPS allow private access from private land into the park?
- If this type of access is allowed, what would this mean for other private access routes adjacent to the park boundary?
- Is this an opportunity to work cooperatively with adjacent landowners to allow public access to public lands via private lands?

Limited Access at Westcott Bay: Visitors are currently accessing Westcott Bay by trail from English Camp (approximately one mile), or by parking along West Valley Road and then cross-country hiking through the forest to access the area. These are currently the only options for visitors to access Westcott Bay. This necessarily limits the type and number of visitors, and can pose a safety hazard for visitors who park along West Valley Road.

Increased Traffic at Westcott Bay: The access road for Westcott Bay, Westcott Drive, goes through a residential neighborhood. Residents are concerned about impacts from increased vehicle traffic on this narrow road, especially at the turnoff where it is steep and windy, poses a danger to pedestrians, cyclists and pets in the neighborhood. They are also concerned about the possibility of cars parked along this county road (Westcott Drive), noise, and routine administrative access to the site. **Residents have erected “no park access” signs along the road. These signs do not** promote a sense of feeling welcome, and deter visitors from entering the site. Westcott Drive is a county road that also provides access to the Westcott Bay Sea Farm (where short-term parking is available for those seeking oysters).

Accessibility at Both Sites: There are no fully accessible trails at either Mitchell Hill or Westcott Bay. Some questions related to this issue include:

- Should accessible trails be provided?
- What areas are suitable for accessible trails?

Education Camp Location: The GMP calls for moving the education camp out of its current location at English Camp. The education camp is currently located in a seasonal wetland, which is inconsistent with **NPS Director’s Order 77-1 for managing wetlands. The park’s GMP states that: “the education camp would be established at a new site along the Administrative Road”...** and this **“new camp area would be zoned Visitor Services.”** Where to move the education camp was a public concern because of the potential impacts to fragile resources at Westcott Bay, concerns from Westcott Drive residents, and development and access concerns at Mitchell Hill.

#### Limit Development and Maintain Character

*Mitchell Hill:* Concerns regarding development at Mitchell Hill include what type, how much, where and/or should facilities be developed? There were concerns that the area not be overdeveloped with too many signs and other structures that would impact the naturalness of the area.

*Westcott Bay:* There is a concern about the existing condition of the non-historic structures, and what the NPS plans to do with them. The public does not want the NPS to overdevelop the area, but would rather keep development to a minimum to protect air quality, wetlands, wildlife, and natural quiet. Suggestions included that future use of existing or new facilities be developed in harmony with the character of the area and be used for low impact activities that allow terrestrial and aquatic wildlife to remain undisturbed. One public comment noted that Westcott Bay be kept as an area where visitors can have **“opportunities to experience tranquil and natural sounds, and sweeping vistas of the bay.”**

#### Trails and Trail Connections

*Mitchell Hill:* There is a desire to link the trails on Mitchell Hill to the island-wide trail system. The Old Military Road, which can provide a link to other trails, is an important historical component to **the park’s story and purpose and was part of the impetus for acquisition of Mitchell Hill.** How to protect the historic road and associated features from adverse impacts, while allowing recreational uses is a concern. The area also offers other opportunities to connect park trails to the island-wide trail system, such as the Roche Harbor Highlands trails.

*Westcott Bay:* Many of the issues associated with trails at Westcott Bay are related to access and parking. Trails can and do provide a form of access to the park, and currently this is the only form of public access to Westcott Bay. Visitor parking is available at English Camp. Visitors can hike approximately one mile along the interim connector trail from there, or park along the narrow shoulder of West Valley Road and cross country hike into the site.

There is a desire to connect Westcott Bay to English Camp and to the island-wide trail system. The issues/questions include:

- Should new trails be established?
- What type of uses should be allowed?
- How should visitors access these trails?

#### Mark and Simplify Trails

*Mitchell Hill:* The existing 10 mile trail system at Mitchell Hill arose informally. It includes many social trails or duplicate parallel trails. Some trails were formerly logging roads used by DNR that were subsequently enhanced for and/or by trail use. Social trails may cause erosion, impact vegetation, and may lead visitors to undesired areas. The trails on Mitchell Hill are not properly defined or signed.

*Westcott Bay:* Visitors are currently accessing the “secluded cove” via an array of social trails that may be causing impacts to the shoreline. There is a general concern that trails in Westcott Bay should not be overdeveloped, and that they should not impact the fragile shoreline of the bay.

Identify and Address Trail User Conflicts at Mitchell Hill: There is a concern that multiuse trails at Mitchell Hill may result in conflicts between user groups or safety hazards, such as mountain bicyclists riding too fast on the same trails as hikers and horseback riders.

#### Recreational Opportunities

*Mitchell Hill:* Camping was identified as a new recreational opportunity. The GMP currently does not permit or provide for overnight use. Potentially allowing hike-in or horse-in camping poses the following questions that would need to be considered:

- Should the GMP be amended to allow camping at Mitchell Hill?
- Where and how many campsites should there be?
- Should there be group size restrictions?
- How should use be managed?
- What are the potential resource impacts and how could they be reduced?

*Westcott Bay:* Kayak access and use along Westcott Bay was identified as a desired recreational opportunity. Although providing a formal launch was considered in the non-selected alternative in the GMP, the acquisition of Westcott Bay raised this question again. Currently, informal kayak launching is occurring along Westcott and Garrison bays. Some visitor management questions/issues are:

- Should the park allow kayak use at Westcott Bay?
- If access is authorized and provided, where should it occur?
- How should kayak access and use be managed?

## 4. Health and Safety Issues

Equestrian Access at Mitchell Hill: Equestrians are concerned about potential safety issues as a result of eliminating private access from private property, which may require more equestrians to travel along the busy West Valley Road shoulder to access Mitchell Hill. The parking and circulation at the Horse Trail Road trailhead is small and does not provide enough space to include horse trailer parking or turnaround.

Lack of Basic Amenities at Mitchell Hill: The lack of facilities at Mitchell Hill was a concern. For example there are no sanitary or garbage facilities at the Horse Trail Road trailhead. There is a need to determine what basic safety and comfort amenities are appropriate for the area.

Structures at Westcott Bay: Structure ruins at Westcott Bay are considered a safety hazard for visitors. Surveys of **the area's structures, utilities**, roads, and surface waters are needed to determine their condition prior to allowing use.

## 5. Issues Considered, but Dismissed

Comments and concerns identified during the scoping process are evaluated to determine whether they are substantive (relevant) or non-substantive. Those comments determined to be non-substantive are eliminated from further analysis in the planning process. A non-substantive comment may include: information not related to the issues or impacts; corrections that have no bearing on the analysis; information outside the scope of the plan; information on other projects not related to the document; opinions, personal judgments, grievances, and complaints; support or opposition for a project (including mass mailings of form letters or petitions), factual information with no bearing on level of impacts, and editorial or format changes (NPS 2001).

The following issues were considered, but dismissed from additional analysis because they are outside the scope of this planning process.

County Road (Westcott Drive): Concerns raised about the potential problems associated with the Westcott Drive county road, included that the road:

- is relatively narrow at 20-feet wide,
- contains steep, blind curves,
- has sight distances from both sides that are less than desirable.

There were also concerns for the safety of people, such as schoolchildren and residents, who regularly walk on the road because there are no sidewalks. Although these are valid concerns, the county road is outside the management jurisdiction of the park. The park has conveyed these concerns to San Juan County and will work cooperatively with San Juan County to determine if there are ways it can help to address these concerns.

Westcott Bay Shellfish Company: There were comments about the impacts the oyster farm operation may be having on sensitive resources: shoreline, marsh land, and aquatic habitat in Westcott Bay. The Westcott Bay Sea Farm is **outside the park's boundary. The park has no** authority to manage commercial or non-commercial operations that originate outside the park; however, the park recognizes that some adjacent land and/or water uses may have impacts on the **park's resources**. One of the main purposes in acquiring the Westcott Bay property was to **preserve "the land's natural state, while enabling the family or subsequent owners of the historic** sea farm to continue to use a portion of the tidelands for oyster farming operations (Conservation Fund 2013)." Collaboration between the NPS, the Conservation Fund and the Westcott Bay Sea Farm to minimize impacts is ongoing.

Eelgrass Beds and Other Aquatic Habitat in Westcott Bay: Eelgrass beds in Westcott Bay are a sensitive resource and **important to the overall health of the bay's habitat. Severe losses of eelgrass have occurred in Garrison Bay and south of Bell Point. Washington State has declared a "no net loss" policy to protect eelgrass and the resources associated with it** (NPS PWR 2008). The park acknowledges the importance of protecting eelgrass in Westcott Bay and reducing impacts from visitor use; however, this DCP is focused on the lands and tidelands within the park boundary, not the waters or aquatic habitats in the bay itself. The NPS is working cooperatively with San Juan County, state and federal agencies, and many non-profit organizations involved in marine resource protection efforts for the Westcott – Garrison Bay Watershed. Concerns about the eelgrass beds are outside the scope of this DCP.

Other Issues and Concerns Outside the Scope of this Plan: The park also acknowledges comments that are unrelated to this plan which included, but are not limited to: concern about water supply for firefighting purposes, the potential for impacts to small businesses, concerns about general island vehicle and ferry traffic patterns during the peak season, motorized boating and associated pollution, and hunting and/or boating from the bay. These issues are outside the scope of this plan and are dismissed from further evaluation.

## C. Impact Topics

Specific impact topics were developed to allow comparison of the environmental consequences of each alternative. These impact topics were identified based on federal laws, regulations, and executive orders; *Management Policies: The Guide to Managing the National Park System* (NPS 2006); NPS knowledge of the resources, and comments received from public scoping. A brief rationale for the selection or non-selection of each impact topic is given below. Topics retained for analysis are discussed in more detail in Chapter 3: Affected Environment and Chapter 4: Environmental Consequences. Some additional context information is also provided in Chapter 3.

### 1. Impact Topics Considered

**Soils:** According to *Management Policies* (NPS 2006), the NPS will strive to understand and preserve the soil resources of park units and to prevent, to the greatest extent possible, the unnatural erosion, physical removal, or contamination of the soil, or its contamination of other resources. Soils would be affected from construction activities associated with new trails, relocation of the environmental camp, and parking expansion or new parking areas; therefore, this topic has been retained for detailed analysis.

**Water Quality:** Section 404 of the Clean Water Act authorizes the U.S. Army Corps of Engineers (ACOE) to prohibit or regulate, through a permitting process, discharge of dredged or fill material or excavation within U.S. waters. NPS *Management Policies* requires protection of water quality consistent with the Clean Water Act. Alternatives proposing changes such as new parking areas or expansions, the education camp relocation, and the use of the house at Westcott Bay may affect water quality, thus this topic has been retained for detailed analysis.

**Water Quantity:** None of the alternatives being considered would be expected to substantially change either surface or groundwater flows in the Westcott – Garrison Bay watershed. Water consumption would not be expected to change to the point that there would be a noticeable impact on surface or groundwater flows. No actions would occur that would affect ground flows or drainages in the area. There may be a change in the impermeable paved surfaces within the project area as a result of the alternatives, which could affect the rate but not the quantity of water flows into the soil and bay. Because the education camp consumes water this impact topic was retained for further analysis.

**Wetlands:** Executive Order 11990, “Protection of Wetlands,” requires federal agencies to avoid, where possible, adversely impacting wetlands. Depending on the extent of impacts, proposed actions that have the potential to adversely impact wetlands are addressed in a statement of findings. The National Park Service Policies state the following:

1. **The Service will implement a policy of “no net loss of wetlands.”**
2. The Service will strive to achieve a long-term goal of net gain of wetlands through restoration of previously degraded or destroyed wetlands.
3. When natural wetland characteristics or functions have been degraded or lost due to previous or on-going human actions, the Service will, to the extent practicable, restore them to pre-disturbance conditions” (NPS 2006).

There may be minor, local and temporary impacts to riparian areas and stream habitats during trail construction or improvement projects at both Westcott Bay and Mitchell Hill and as a result this impact topic has been retained for detailed analysis.

**Floodplains:** **Executive Order 11988, “Floodplain Management,”** requires federal agencies to take action to reduce the risk of flood loss; minimize the impact of floods on human safety, health, and welfare; and restore and preserve the natural and beneficial values served by floodplains. A portion of Westcott Bay is within the 100-year floodplain. It is the policy of the National Park Service to preserve floodplain values and minimize potentially hazardous conditions associated with flooding (NPS 2002). **Specifically, the Service will**

- protect, preserve, and restore the natural resources and functions of floodplains;
- avoid the long- and short-term environmental effects associated with the occupancy and modification of floodplains; and
- avoid direct and indirect support of floodplain development and actions that could adversely affect the natural resources and functions of floodplains or increase flood risks (NPS 2006).

Proposed construction or activities within the 100-year floodplain will need to consider **Management Policies, Director’s Order 77-2: Floodplain Management** and the National Flood Insurance Program (44 CFR Part 60), thus this impact topic has been retained for detailed analysis.

**Vegetation, Including Nonnative Plants:** The NPS strives to preserve and restore native plant communities contained in national park units while minimizing human impacts on native plants, animals, and ecosystems (NPS 2006). Because plants would be affected by trail maintenance and construction and other actions called for in this DCP, this impact topic has been retained for detailed analysis.

**Special Status Species:** Plants: The Mitchell Hill site contains the rare Garry oak woodland community. A plant survey conducted in 2012 at Mitchell Hill also identified globally or state imperiled plant associations. Off-trail activities, such as mountain biking could impact these species by disrupting soils and trampling vegetation (Rocchio et al. 2012). Proposed actions in this DCP, such as trail construction, maintenance, and other activities could affect special status plant species; therefore, this impact topic has been retained for detailed analysis.

Wildlife: Coastal cutthroat trout are found in habitat downstream of the park. The stream headwaters originate on Mitchell Hill (Barsh 2014). Inventories of the stream reach on Mitchell Hill have yet to be completed; however, preliminary investigation has led researchers to believe that the fish may be spawning in waters within the Mitchell Hill stream inside the park boundary. Trail construction, maintenance, and visitor use could potentially impact habitat for this fish species of concern; therefore, this impact topic has been retained for detailed analysis.

**Archeological and Historic Resources:** NPS Management Policies direct parks to preserve archeological resources and to take proactive measures to protect them. The National Historic Preservation Act, as amended in 1992 (16 USC 470 et seq.); NEPA; NPS **Director’s Order 28, Cultural Resource Management Guideline** (1997); and other guidelines require the consideration of impacts on historic structures and buildings listed in or eligible for listing in the National Register of Historic Places.

English Camp has archeological and historical features that contribute to its eligibility as a National Historic Landmark. Protecting cultural resources, such as the military road section within Mitchell Hill, the shell midden at Westcott Bay, and the Sandwith orchard at English Camp, is important to the historical context of the area, and to maintaining their eligibility for

listing in the National Register of Historic Places. Proposed developments, including development of trail linkages and trail maintenance activities that cause ground disturbance, and certain types of visitor use activities may cause temporary impacts to these historic resources; therefore, this impact topic has been retained for detailed analysis.

**Cultural Landscapes:** The Sandwith Homestead is representative of the landscape that existed during the period of significance for San Juan Island National Historical Park (NPS PWR 2009). Although the orchard itself has not been determined as eligible for listing in the national register, it represents one of four remaining examples of a late nineteenth-century homestead orchard in the national park system and thus is being managed and maintained by the park (NPS PWR 2009). There may be impacts to this cultural landscape from alternatives that propose a connector trail through this area, thus this topic has been retained for detailed analysis.

**Visitor Use and Experience** (including visitor use access, visitor use opportunities and, interpretation and education, and safety): NPS Management Policies direct the NPS to provide visitor use opportunities that are uniquely suited and appropriate to the purpose for which the park was established, and which can be sustained without causing unacceptable impacts (NPS 2006). The variety of recreational opportunities available on park trails (such as hiking, mountain biking, wildlife viewing, and horseback riding) can lead to natural, cultural, and social resource impacts, which can diminish the overall visitor experience. Changes in recreational, educational and interpretive opportunities may influence the way visitors use and experience the park. How visitors use and experience the park, including how safely, is of concern to both visitors and NPS managers, therefore this topic has been retained for detailed analysis.

**Park Facilities and Operations:** Support facilities for serving visitors and staff require proper planning, design, programming, construction, operations, and maintenance. Facilities should be cost-effective (including for initial and long-term operations and maintenance). Facilities should also integrate sustainable design and have little impact on the landscape and resources of the park. Some proposed actions included in this DCP, such as new visitor facilities, parking, trails, education camp, and new recreational opportunities, could result in impacts to NPS operations; therefore, this topic has been retained for detailed analysis.

## 2. Impact Topics Dismissed from Further Consideration

Some impact topics commonly considered during the planning process were not relevant to the development of this plan because implementing the alternatives would have no or negligible to minor effects on the resource, or because the resource does not occur in the park.

The following impact topics were eliminated from further analysis for the reasons stated below.

**Air Quality:** Section 118 of the 1963 Clean Air Act (42 U.S.C. 7401 et seq.) requires a park unit to meet all federal, state, and local air pollution standards. The Clean Air Act also states that the federal land manager has an affirmative responsibility to protect air quality related values (including visibility, plants, animals, soils, water quality, cultural resources, and visitor health) from adverse pollution impacts. NPS Management Policies direct parks to seek the best air quality possible in order to “**preserve natural resources and systems; preserve cultural resources; and sustain visitor enjoyment, human health, and scenic vistas.**”

The park is designated a Class II area under the Clean Air Act for the purposes of controlling increases in air pollution. There is no proposed development that would impact the park or island’s air quality, other than possibly on a temporary basis, such as from the relocation/ construction of a new education camp. Because mitigation measures would be used to reduce

impacts, overall impacts would remain temporary, localized and negligible to minor, this impact topic has been dismissed from further consideration.

**Geologic Hazards:** Geologically hazardous areas can contribute to potential soil instability and landslides. San Juan County has identified areas of geologic hazards and high soil erosion potential. Analysis of this data show a small area within Mitchell Hill that contain slopes greater than 50%; however, this area does not include any trails proposed for visitor use. There are a few trail sections on Mitchell Hill that pass through slopes greater than 15%, which are proposed for multiuse. NPS staff evaluated LiDAR imagery that revealed trail sections greater than 20% slopes, which depending on type of use and season of use may result in adverse soil impacts, however because no specific hazards were identified associated with the trail system, this impact topic has been dismissed from additional analysis.

**Marine/Estuarine Resources:** The waters of Westcott-Garrison Bay are classified as Type 1 Water by the Forest Practices Board (Larkin 1999a). Type 1 Water is defined as: all waters within their ordinary high-water mark, inventoried as “shorelines of the state.” **San Juan County** has prepared a water assessment report and has drafted a marine habitat management plan and watershed management plan for Westcott-Garrison Bay and the County’s Shoreline Master Program that covers lands within 200 feet of the shore (above ordinary high water). The zone from shore to extreme low tide has a Conservancy Shoreline designation that is intended to protect intertidal resources.

**The park’s GMP affirms the importance of continuing to work with partners to protect the critical marine habitat within Westcott Bay.** The management and preservation of the Westcott-Garrison Bay marine complex is being addressed through other coordinated efforts with San Juan County, the State, and other partnership institutions. There is no major shoreline development proposed in the alternatives and there would be no or negligible impacts on marine resources, therefore this impact topic was dismissed from further consideration.

**Wildlife:** The NPS Organic Act and NPS Management Policies both require the NPS to protect and conserve native wildlife populations that could be affected by visitors, park management actions, and external sources. Other than short-term impacts to wildlife and long-term indirect beneficial effects, no specific impacts to wildlife have been identified from the actions proposed in this plan. As a result, this impact topic has been dismissed from further analysis.

**Museum Collections:** According to **Director’s Order 24:** Museum Collections, the NPS requires the consideration of impacts on museum collections (historic artifacts, natural specimens, and archival and manuscript material), and provides further policy guidance, standards, and requirements for preserving, protecting, documenting, and providing access to, and use of, NPS museum collections. None of the proposed actions would affect museum collections; therefore, this topic was dismissed from further analysis.

**Prime and Unique Farmlands:** In August 1980, the Council on Environmental Quality (CEQ) directed that federal agencies must assess the effects of their actions on farmland soils classified as **prime or unique by the U.S. Department of Agriculture’s Natural Resource Conservation Service (NRCS)**. Prime or unique farmland does not occur within San Juan Island National Historical Park; therefore, this topic was dismissed from further analysis.

**Indian Trust Resources:** Secretarial Order 3175 requires that anticipated impacts on Indian trust resources from a proposed project or action by the U.S. Department of the Interior agencies be explicitly addressed in environmental documents. The lands within the project area are not held in trust by the Secretary of the Interior for the benefit of Indians due to their status as Indians; therefore, this impact topic was dismissed from further analysis.

**Ethnographic Resources and Sacred Sites:** Ethnographic resources are defined by the National Park Service as any “...site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system or group traditionally associated with it” (NPS Director’s Order 28). Ethnographic resources, including sacred sites, have not been identified within the project area. The plan will not restrict access to Indian sacred sites for ceremonial use. Because the project area lacks known ethnographic resources, including sacred sites, this impact topic was dismissed from further analysis.

**Socioeconomics:** The proposed action would neither change local and regional land use nor appreciably impact local business or other agencies. Communities near the park could experience benefits from increased tourism if improved trails and access leads to more visitation, however this is not expected to be a result of this plan. Because there would be negligible impacts on socioeconomics, this topic was dismissed from further analysis.

**Environmental Justice:** Environmental justice analyses determine whether a proposed action would have “disproportionately high and adverse human health or environmental effects...on minority populations and low-income populations.” No aspect of the DCP would result in disproportionately high and adverse human health or environmental effects on minority or low income populations; therefore, this impact topic has been dismissed from further analysis.

**Paleontological Resources:** There are no known paleontological resources within the project area, thus this impact topic has been dismissed from further analysis.

**Energy Resources:** The alternatives do not call for major development. Whenever possible, the park would use energy conservation technologies and renewable energy sources. The alternatives would have negligible effects on long-term energy consumption compared to the current conditions; therefore, this impact topic was dismissed from further analysis.

**Soundscapes:** NPS Management Policies and Director’s Order 47: Soundscape Preservation and Noise Management recognize that natural soundscapes are a park resource and call for the NPS to preserve, to the greatest extent possible, the natural soundscapes of parks. The alternatives would result in a temporary increase in noise from construction-related activities, including noise from excavation equipment, trucks, and worker traffic, but such sounds would be temporary and seasonal, lasting only as long as the construction activity continued. Any noise generated by use of the project areas would be similar to existing conditions, of short-duration and away from potentially affected areas; therefore, this impact topic has been dismissed from detailed analysis.

## II. Chapter 2: Alternatives

An interdisciplinary planning team created the alternatives based on public comments and internal and external scoping. The park conducted scoping with a variety of stakeholders, including community residents, bicyclists, equestrians, and representatives of the San Juan Island Trails Committee as well as city, county, state, and federal agencies, interested organizations and other individuals. Public scoping of the preliminary alternatives also occurred and drew similar members of the public and agency representatives.

A variety of goals guided development of the alternatives:

- Retain the unique character of the new lands, including the western red cedar and Garry oak woodland at Mitchell Hill and secluded coastal wetland and forest at Westcott Bay.
- Provide for visitor use of the new lands.
- Evaluate existing uses and retain these where compatible with park purposes.
- Work with park neighbors and interest groups.
- Integrate trails with island-wide community trail system.
- Develop an education facility to serve park educational and volunteer groups.

The alternatives vary in providing for public use of Mitchell Hill and Westcott Bay. Depending on the alternative, proposed actions provide for a greater or lesser intensity of park management actions, recreational development and visitor use in the areas. All alternatives provide a high degree of resource protection and accommodate appropriate visitor use. All alternatives also include continuation of the park education camp at English Camp.

*Note:* English Camp is included in the overall descriptions of the alternatives because inclusion of management decision-making for the education camp warrants its inclusion. Aside from actions associated with the education camp and the Westcott Bay Connector Trail (and in some alternatives management of kayaking), activities and infrastructure at English Camp would be the same as now occurs.

The alternatives include:

- Alternative 1: No Action (Continue Current Management)
- Alternative 2: Low Impact Visitor Use Opportunities
- Alternative 3: Mix of Development and Visitor Use Opportunities (Preferred)
- Alternative 4: More Accommodation of Visitor Use Opportunities

Alternative 1 is the description of ongoing management actions and provides a baseline with which to compare the other alternatives.

Based on analysis of the benefits of the alternatives (including costs) and the degree of protection offered to park resources, Alternative 3 is **the park's** preferred alternative. Based on public comments and environmental impact analysis, however, the alternative selected in the decision document could be any alternative or could be a hybrid of the alternatives described in this plan.

## A. Alternative 1: No Action (Continue Current Management)

### 1. Overview

#### English Camp

*Visitor Experience:* At English Camp, there would continue to be ongoing historical and natural resources interpretation (walks, talks, etc.). Visitors would continue to take part in low impact activities, such as touring the historic landscape, hiking, bird watching, and small boat use.

*Education Camp:* The education camp would continue to be located at English Camp near the end of the Administrative Road, with ongoing use of the camp by the Oregon Museum of Science and Industry (OMSI).

#### Mitchell Hill

*Access:* There would continue to be a small number of offsite parking spaces on the county easement at the end of Horse Trail Road. Hiking access would also continue to be available from English Camp via the English Camp Connector Trail.

*Visitor Experience:* Since there are no road signs directing visitors to the site, visitors would continue to arrive on their own based on prior knowledge of the site or on recommendations from others. Upon arrival, there is little to identify the site as part of San Juan Island NHP. The 3-5 parking spaces used for informal head-in parking are on the south side of Horse Trail Road. A San Juan Island Trails Committee map is usually available on a signpost near the road gate. The trails committee map shows much of the trail network, including connections to Roche Harbor Highlands trails, and provides some information about mileage. The network of trails, however, is unsigned.

Alternatively, visitors may arrive on foot from English Camp. From English Camp, the Mount Young trails merge seamlessly with the Mitchell Hill trails via the English Camp Connector Trail. Upon arrival at Mitchell Hill, however, there are few indications, other than NPS boundary signs that mark the former boundary, to show entry into the area.

*Trail Designations:* Consistent with former Washington Department of Natural Resources management of the area, existing trails would continue to be open to hiking, bicycling and horseback riding.

#### Westcott Bay

*Access:* There would continue to be offsite parking at English Camp with access on foot to Westcott Bay via the Westcott Bay Connector Trail.

*Visitor Experience:* Public access to Westcott Bay is via the Westcott Bay Connector Trail from English Camp. This trail is accessed off the Bell Point Trail at English Camp. Upon arrival at Westcott Bay, there are few indications that this site is part of the park and no route-finding or site information is available. Because the existing house deck can be seen upon arrival, most visitors head toward it and/or the Point Trail along the lagoon.

Although there is currently no access to Westcott Bay for vehicles via Westcott Drive, it is likely that some visitors attempt to enter the area this way despite the “No National Park Access” sign at the Roche Harbor Road and Westcott Drive junction. If visitors do venture down Westcott Drive, there are some manufactured signs installed by landowners that deter entry, stating “no park access,” “no turnaround,” etc. These signs are on private property that borders Westcott Drive, a county road.

Because the administrative vehicle access to Westcott Bay is shared with the Westcott Bay Oyster Farm, visitors to the oyster farm have been encouraged to go down Westcott Drive to obtain oysters. A sign at the Westcott Drive junction with Roche Harbor Road directs visitors to the oyster farm via Westcott Drive.

*Trail Designations:* All trails at Westcott Bay would continue to be open to hiking only.

## 2. NPS GMP Zoning

The 2008 General Management Plan (GMP) zoned various areas of the park under the following categories: Visitor Services, Cultural, Natural, and Administrative. Therefore, as shown in Figure 3 and described in Appendix 2, zoning at English Camp would be the same as described in the General Management Plan (NPS PWR 2008). English Camp contains a mix of uses, including Visitor Services, Cultural, Natural and Administrative zones. Most of the area would continue to be part of the Natural Zone. The Cultural Zone includes the English Camp military post area as well as Guss Island, the English Camp Cemetery, the Military Road Corridor, and the Sandwith Orchard. The Visitor Services Zone includes the Entrance Road, West Valley Road (within the park) and the proposed education camp location on the south side of the Administrative Road. The Administrative Road, including a small maintenance operations area on the north side of the road, is zoned Administrative.

Because neither Mitchell Hill nor Westcott Bay was part of the park at the time the GMP was written, neither is currently zoned for park uses.

## 1. Access and Parking

English Camp: There would continue to be roadway signs directing visitors to the entrance road and public parking for English Camp. The area is well-signed from both directions of travel from West Valley Road. Upon arrival, visitors would continue to find a large parking area that provides access to the parade ground and the Bell Point Trail, which connects to the interim Westcott Bay Connector Trail. The parking area also provides access to the Young Hill Trail, which connects to the English Camp Connector Trail.

Mitchell Hill: There would continue to be no signs directing visitors to Mitchell Hill via West Valley Road. Public offsite parking for 3-5 vehicles, however, would continue to be available on the county easement at the end of Horse Trail Road. San Juan County has is willing to continue to allow parking at this location.

Hiking trail access to Mitchell Hill would also continue to be available from English Camp via the English Camp Connector Trail.

Mountain bicyclists and some equestrians would also continue to access Mitchell Hill via West Valley Road to Horse Trail Road. Some equestrians also would likely to continue to access Mitchell Hill through private property based on previous consent from adjacent private landowners. There are three private access trails that lead to/exit from Mitchell Hill. There are also approximately nine public access trails that lead to/exit from Mitchell Hill from Roche Harbor Highlands property, which is managed for public trails among other uses.

Figure 3: GMP Zoning



Westcott Bay: There would continue to be no signs directing visitors to Westcott Bay via Roche Harbor Road and no public access or parking via Westcott Drive. There would continue to be offsite visitor parking at English Camp with the opportunity for hiking to Westcott Bay via the Westcott Bay Connector Trail. Signs erected on Westcott Drive by residents that discourage entry and parking would likely remain.

Within the gate, there would continue to be informal administrative access and parking.

## 2. Facilities

Mitchell Hill: There are no facilities except informal unimproved parking (3-5cars) outside the gate at the end of Horse Trail Road (on the county easement). The San Juan Island Trails Committee maintains a small stock of trail brochures on a signpost near the entrance.

Westcott Bay: There would continue to be a house built in 1973 (including septic system and other utilities), as well as an unimproved entrance road at Westcott Bay. A variety of fencing and several former cabin platforms are a safety hazard and would be removed.

## 3. Trail Use

### a. Trail Standards

Since 1988, the park has managed equestrian use via a permit system. In 2012, the park developed an interim equestrian use plan for park trails based on adherence to GMP Zoning and on draft trail standards developed for the park by a North Cascades National Park Complex trail crew survey team. The standards were created in response to multiple requests to reestablish and expand horse use in the park. The standards include guidelines in five key areas: corridor clearance, maximum grade, switchback radius, drainage and trail tread.

### b. Designations

#### English Camp

*Hiking:* All trails would continue to be available for hiking.

*Horseback Riding:* One trail at English Camp has been designated for equestrian use: the English Camp Administrative Road from West Valley Road to the edge of the Parade Ground. No equestrian use is allowed on the Parade Ground.

*Bicycling:* Bicycles are currently allowed only on paved roads at English Camp.

#### Mitchell Hill

*Multiuse:* All logging roads and other trails would continue to be available for hiking, horseback riding and bicycling.

*Hiking:* The English Camp Connector Trail from Young Hill would continue to be available for hiking only.

#### Westcott Bay

*Hiking:* All trails would continue to be available for hiking, including the access trail from English Camp (the Westcott Bay Connector Trail that connects with the Bell Point Trail).

*Horseback Riding/Bicycling:* No trails at Westcott Bay are currently open to these uses.

### c. Trail Linkages

Two relatively new hiking only trails link Mitchell Hill and Westcott Bay with English Camp:

- Westcott Bay Connector Trail
- English Camp Connector Trail

There are also approximately nine trails that link to lands managed for public recreational use, among other purposes, by Roche Harbor Highlands. Although Roche Harbor Highlands manages the area adjacent to Mitchell Hill for public use, these areas are also zoned for development and could, at some future point be developed. Whether or not these trails would remain available for public use would be up to the private landowner (Roche Harbor Highlands).

d. Trail Resource Protection Measures

Although San Juan Island NHP is managed to protect natural and cultural resources, particularly those associated with the Pig War, no specific resource protection measures have been proposed under Alternative 1. Ongoing resource protection measures applicable to English (and American) camps would continue.

e. Trail Signs

English Camp: Parking area signs direct visitors to the Young Hill Trail and to the Parade Ground, where the Bell Point Trail may be accessed.

Mitchell Hill / Westcott Bay: Interim trail signs are proposed for Mitchell Hill and Westcott Bay.

#### 4. Accessibility

English Camp: Upon request, the park provides access for disabled visitors to the Parade Ground at English Camp using golf carts. To facilitate this access, two accessible parking spaces are also provided in the English Camp parking area.

Mitchell Hill / Westcott Bay: There is no designated accessible parking at Mitchell Hill or Westcott Bay. There are also no designated or accessible routes or trails at either site. Accessible parking, however, could be provided upon request at Westcott Bay.

#### 5. Interpretation

English Camp: Existing personal (guided activities) and nonpersonal (signs and exhibits) interpretation would continue at English Camp.

Mitchell Hill / Westcott Bay: Since their acquisition, the park has offered occasional special events and hikes at Mitchell Hill and Westcott Bay, including a ceremony celebrating the acquisition of Westcott Bay.

#### 6. Education Camp

English Camp: As in the *Continue Current Management* alternative, Alternative 1 includes future actions that are part of approved plans. Because there is an approved course of action in the General Management Plan for the education camp, Alternative 1 includes both the current management of the education camp and the proposed move called for by the GMP. The education camp is used by the Oregon Museum of Science and Industry, among others, to offer education programs. Students are taught by trained educators who provide safe, high-quality outdoor learning experiences for children of all ages. Programs also vary, but include natural and cultural history and marine science. These programs are linked with the significance of the park. The sessions are held in the existing outdoor camping facility and vary in length (currently up to two weeks) (NPS PWR 2008: 165).

*Current*: Under current conditions, the education camp would remain in its present location at the end of the Administrative Road at English Camp. The informal site consists of a small cooking trailer, outdoor tables, and a maintenance/storage building, which also offers shelter in inclement weather. Tents are set up adjacent to this area in a seasonally wet meadow. The site also includes

provision of water and power. Restrooms currently consist of portable toilets brought in when the camp is in session.

*Future:* As proposed in the GMP, the education camp would be relocated to the south side of the Administrative Road approximately 0.3 miles east of its current location **and “improved.”** The GMP also notes that it would be **“set back in the woods.”** Actions Common to All Alternatives in the GMP state: “The education 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” (NPS PWR 2008: 39).

At the new site, the education camp would accommodate up to 50 people, including a group of 40 campers. It would consist of a constructed picnic shelter with an enclosed kitchen and would be suitable for use during inclement weather (likely with retractable sides). Approximately 10 group tent sites with elevated platforms would be constructed. In addition, the site would have a nearby amphitheater with a fire pit, suitable for group meetings. A comfort station (likely a vault toilet) would also be constructed. The picnic shelter/kitchen would have water, propane gas, electrical and wastewater disposal utilities. As a result it would need a small septic system and the existing water supply line would need to be extended, including potentially a need for a pump station. A bus turnaround and parking for up to five cars would be provided nearby, possibly near the existing camp. The camp would also have a drop-off/loading zone.

## 7. Resource Protection

There would be no additional resource protection measures added in Alternative 1. These would continue to be the same as identified in the GMP and other park planning documents.

## 8. Special Park Uses (Permit Activities)

Mitchell Hill: Horseback riding is currently managed using a special use permit.

Westcott Bay: There are currently no special park uses at Westcott Bay.

## 9. Kayaking

English Camp: There would continue to be undeveloped access for kayak launching from English Camp (parade ground or dock). Kayak launches are located at Roche Harbor and San Juan County Park. This area is one of three county campgrounds designated as Cascadia Marine Trail campsites. The 140-mile long Cascadia Marine Trail, which extends from the Canadian border south to Olympia, Washington, is a kayaking trail that has a number of stopover sites in the San Juan Islands (NPS PWR 2008: 158).

In the GMP, Alternative 2 included the following statement: “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” (NPS PWR 2008: 50). This alternative action was not selected for implementation because there were concerns with impacts on the Westcott Bay shoreline and because it was part of one of the non-selected alternatives.

Westcott Bay: It is likely that kayakers traveling along the Cascadia Marine Trail or those out for day excursions would continue to use the Westcott Bay shoreline for kayak landing and re-launching. Because there is no designated launch site, and access is limited, it is unlikely that the area would be used as an initial launch site; however there is nothing to prohibit carrying in kayaks by hand via the connector trail.

Figure 4: Alternative 1 Mitchell Hill

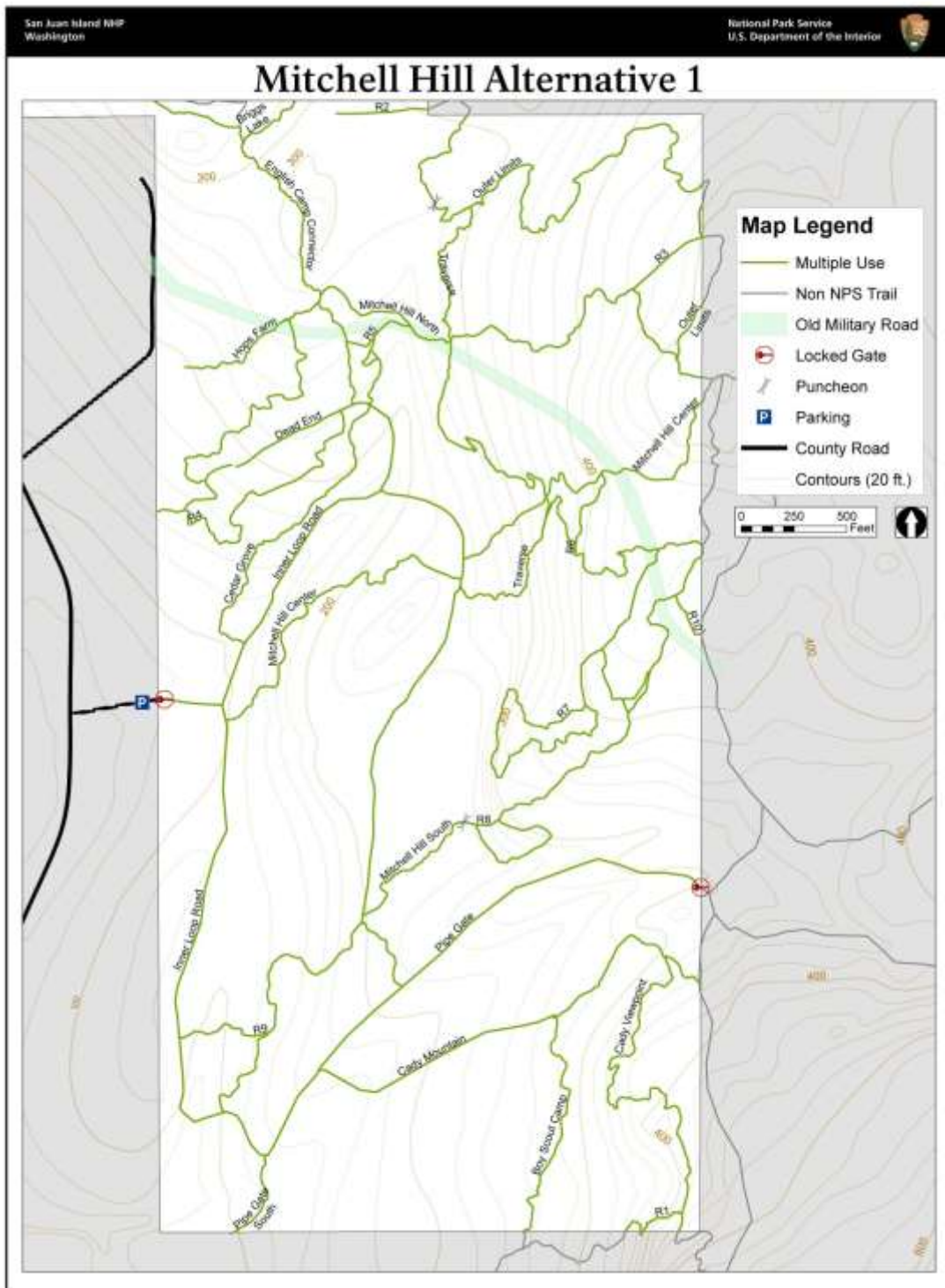
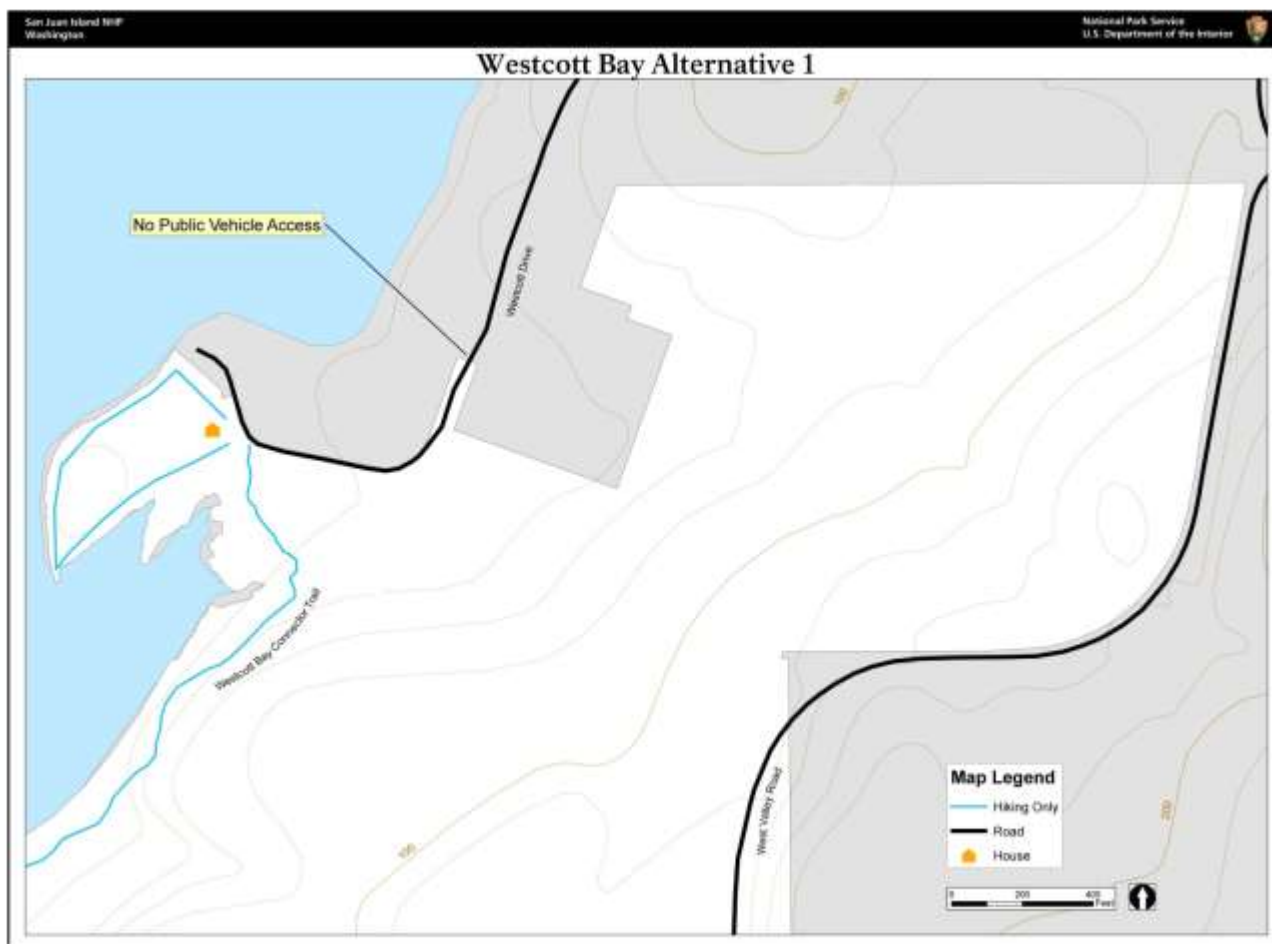


Figure 5: Alternative 1 Westcott Bay



## 10. Camping

Based on the GMP, there would continue to be no public overnight camping in the park: “Overnight camping, hunting, and off-road vehicles would continue to be prohibited on park property” (NPS PWR 2008:39).

## B. Elements Common to the Action Alternatives (ECAA)

The following actions would be common to the action alternatives (2-4).

### 1. Overview

English Camp, Mitchell Hill and Westcott Bay: There would continue to be a range of low impact visitor use activities, including touring historic and cultural sites, hiking, picnicking, and bird watching. Where appropriate accessible trails also would be provided. These activities would continue to be available to individuals and organized groups.

English Camp: The education camp would continue to be located at English Camp.

Mitchell Hill: There would continue to be offsite parking on the county easement and the area would offer hiking, bicycling and equestrian trails.

Westcott Bay: Low impact restrooms, such as vault toilets, would be added.

### 1. Zoning

English Camp, Mitchell Hill and Westcott Bay: Most zoning identified in the GMP for English Camp as described in Alternative 1 would continue. This would include retaining the Sandwith Orchard in the Cultural Zone. Zoning of Mitchell Hill and Westcott Bay would be consistent with the GMP and would be based on existing criteria and definitions. Zoning, however, would vary among the alternatives.

One exception to zoning in Alternative 1 would be relocating the Education Camp Visitor Facilities Zone to the north side of the Administrative Road, from the south side (shown in the GMP).

The Old Military Road through Mitchell Hill also would be zoned as part of the Cultural Zone in all action alternatives (2-4). This DCP would authorize a second exception to the GMP definition of the Cultural Zone by allowing various Mitchell Hill trails that cross the Old Military Road to be multiuse.

### 2. Access and Parking

The park would work with San Juan County under all alternatives to provide roadway directional signs to identify designated public access to Mitchell Hill and Westcott Bay. Designated access points, however, vary in the alternatives.

Mitchell Hill: As in Alternative 1, administrative access would continue via Horse Trail Road and the English Camp Connector Trail would continue to provide access from English Camp.

To enhance access park trails, including the Sandwith Orchard Trail and the English Camp Connector Trail would be improved for designated uses. For instance the Sandwith Orchard Trail would be improved for equestrian use from the parking area to Mitchell Hill and, depending on the alternative; other trails would also be improved to accommodate multiuse. This includes trails

that are too narrow, too steep or that have less clearance than needed to accommodate their proposed multiuse designation.

Westcott Bay: The administrative parking area at the end of Westcott Drive would be improved to accommodate approximately five vehicles. In addition, the park would provide access to Westcott Bay via Westcott Drive for administrative, and/or special uses as well as to accommodate accessible parking.

As in Alternative 1, public parking and a trail linkage would continue to be available at English Camp.

### 3. Facilities

Mitchell Hill: Facilities at Mitchell Hill would include a bike rack and benches along trails, in appropriate areas, such as viewpoints or junctions.

Westcott Bay: The park would provide a bike rack, picnic tables, and benches where appropriate. Low impact public restrooms, such as vault toilets, would also be constructed.

### 4. Trail Use

#### f. Standards

In addition to the criteria used to develop the draft equestrian trail standards, trail standards used in each of the alternatives vary. Depending on the alternative selected through the DCP, those trail standards would be applied to other park trails. Trail standards would be based on NPS guidelines and the trail inventory done for the park by the North Cascades National Park trail crew. For each type of trail (hiking only or multiuse), the standards would include ranges associated with characteristics, such as width, slope/grade and clearance (Table 1).

As shown in Table 1, when the planning team tried to find standards for multiuse trails, instead of finding a single standard for multiuse trails, numerous variations were found. Because there is no one set of standards, the team has applied the range to the range of alternatives in this plan to the trails at Mitchell Hill.

#### g. Designations

In the national park system, for a trail to be designated for bicycle use, that use must be **“consistent with the protection of the park area's natural, scenic and aesthetic values, safety considerations, and management objectives and will not disturb wildlife or park resources”** (NPS 2010:9). A sustainably located, designed and constructed trail can support multiple use with minimal maintenance and no degradation of area resources (NPS 2010: 14).

**NPS Director's Order on resource management** and its technical guide (Resource Management #77) defines a sustainable trail (see Chapter 3 in this plan). Because the existing trails at Mitchell Hill were developed prior to ownership of the area by the NPS, some of the trails may not meet the NPS definition of a sustainable trail. Therefore, under all alternatives, designated trails would be upgraded over time to ensure that they have minimal impacts to area natural and cultural resources (see section on *Trail Resource Protection Measures* below).

English Camp, Mitchell Hill and Westcott Bay: All trails at English Camp, Mitchell Hill and Westcott Bay would continue to be open to hiking. Bicycles would continue to be allowed on paved roads in the park and on some unpaved roads; however no bicycle use would be allowed on the English Camp Administrative Road.

Table 1: Possible Trail Classification System based on Various Available Guidelines

Use Type	Characteristics and Maintenance Type	Grade / Slope / Rating	Clearance	Tread Width	Other Considerations
Hiker, Equestrian Mountain Bicycle	Designed to carry large volumes of high-intensity use with minimal safety hazards and resource impacts. Constructed and maintained of native and imported natural materials for moderate to heavy use. May have variable grades and occasional rock or root protrusions not higher than 2-inches. <sup>#</sup> Trail surfaces unpaved. Trails feature directional signs and structures where needed to minimize safety hazards and protect resources.	0-20% preferred <sup>#</sup>  average 10-12% <sup>^</sup>  20% or less for 100 feet depending on physical and environmental constraints (applies only to equestrian and mountain bicyclist trails) <sup>#</sup>  Easy to Moderately Difficult	Vertical 10 feet <sup>#</sup> Lateral 8 feet (from center) <sup>#</sup>	2-12 feet (variable, depending on origin, use and line of sight)	<ul style="list-style-type: none"> <li>Structures designed to withstand equestrian use</li> <li>Drainage adequate to carry maximum runoff and designed to minimize downslope erosion<sup>#</sup></li> <li>May include crossing cultural zone if designed appropriately</li> <li>Trail not part of Cultural Zone</li> <li>Trails that connect to Island network</li> <li>Line of sight maximized on steep sections. 30-50 feet (two-way)<sup>%</sup></li> <li>No technical trail features</li> </ul>
Hiker / Equestrian	Same as Above	same as above	same as above	same as above	<ul style="list-style-type: none"> <li>Trail not part of Cultural Zone unless modified with special design features</li> </ul>
Accessible *standards from ABA (federal law/reg)	Frontcountry trails constructed and maintained according to Architectural Barriers Act (ABA)/Americans with Disability Act (ADA) standards. Trails typically access primary park features. Trail surfaces hardened. Use of directional and interpretive signs and structural elements to minimize resource impacts and enhance safety.	0-5% (ideal)  5-8.33% for 200 feet* 8.33 – 10% for 30 feet* 10-12% for 10 feet*  Passing zones every	Vertical 8 feet* Lateral 2 feet each side of trail*	3-5 feet*  No passing zones needed on 5-foot wide trails*	<ul style="list-style-type: none"> <li>Drainage designed to minimize ponded water</li> </ul>

		1,000 feet for trails less than 5 feet wide*			
		Easy			
Backcountry Foot (Hiker Only)	Secondary trail, not suitable for stock or mountain bicycle. Constructed and maintained for light to moderate use by visitors with intermediate to high skill levels. Trails maintained primarily to minimize resource impacts. Unpaved trails constructed of local native materials. Trails may have moderate to difficult grades and frequent rock or root protrusions. Trails may feature directional signs and structures where needed to minimize safety hazards and protect resources.	0-15% ideal  May have sections up to 46%+ but should not generally be greater than 20% for long distances^  Average 10-12%  Easy to Difficult	Same as above	1-4 feet except for Old Military Road (6-8 feet)	<ul style="list-style-type: none"> <li>• Drainage designed to minimize downslope erosion</li> <li>• Designed to minimize trail cutting and social trails</li> </ul>
Frontcountry Foot (Pedestrian)	Primary trail accessing key park features. Constructed and maintained for high use by visitors with minimal skills. Trails maintained to avoid impacts to natural and cultural resources. Trail tread may be native or imported material and graded or surfaced. Few to no obstacles in trail surface. Often able to be used by people with baby/jog strollers.	0-10% Easy to Moderate	Same as above	1-10 feet	<ul style="list-style-type: none"> <li>• May include self-guided trails</li> <li>• Designed to accommodate peak season visitation</li> <li>• Drainage adequate to avoid water on trail</li> </ul>

*Footnotes:*

\*ABA Guidelines

#SAJH Trail Survey (NPS NOCA 2002) and/or Interim Horse Use Trail Standards,

^Existing Grandma's Cove American Camp,

^Sustainability of National Park Service Backcountry Trails: Minimizing Resource Impacts (NPS 2012),

%americantrails.org

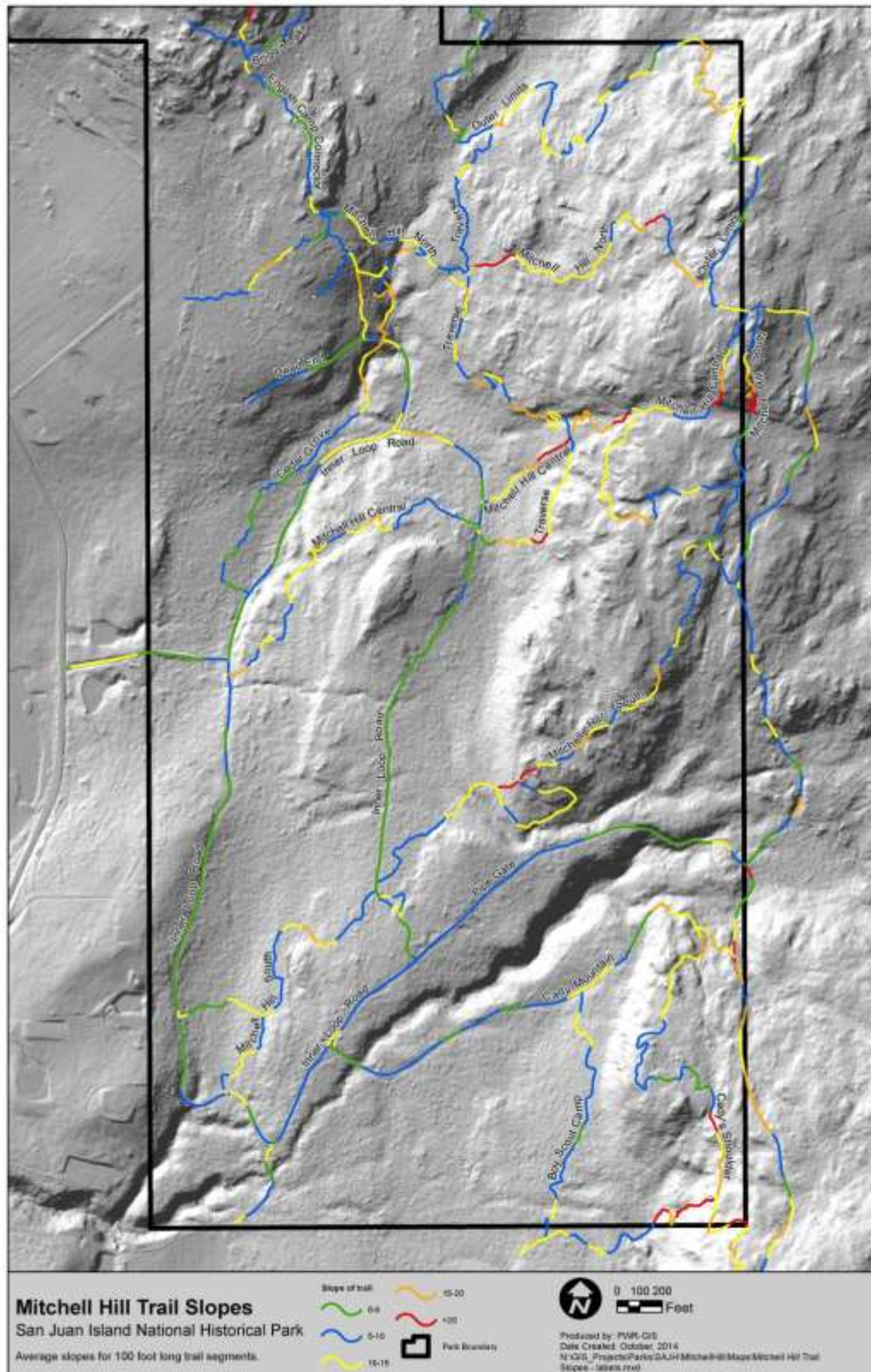


Figure 6: Mitchell Hill Trail Slopes

English Camp: To minimize impacts on park resources, equestrian use in the park requires an annual permit that specifies which trails are open to equestrian use. In addition to the English Camp Administrative Road from West Valley Road to the Parade Ground, the Sandwith Orchard Trail would be open to equestrian use. The equestrian permit would continue to be used and would be modified to include the Sandwith Orchard Trail and other trails proposed for multiuse (trails open to multiuse vary by alternative).

Mitchell Hill: The park would establish criteria for and designate trails for equestrian and bicycle access. Multiuse (hiking, equestrian and bicycling) trails would be retained (in all alternatives) on former logging roads, including the Inner Loop Road and the Pipegate Trail.

The Old Military Road (0.5 miles) through the site would be marked and cleared and available for hiking and a single improved hiking trail would be established in the cedar grove (Cedar Grove Trail).

#### *Hiking Only Trails*

The following trails would be hiking only in Alternatives 2-4:

- Cedar Grove
- Old Military Road

#### *Multiuse Trails*

The following trails would be multiuse in Alternatives 2-4:

- Briggs Lake
- Cady Mountain
- Dead End
- English Camp Connector
- Inner Loop Road
- Pipe Gate



Figure 7: Cedar Grove Trail

#### Westcott Bay

##### *Hiking Only Trails*

The Point Trail would remain hiking only in Alternatives 2-4.

#### h. Trail Linkages

Trail linkages would be focused on those trails that provide access to the Island-wide trail network and would include the trails that connect Mitchell Hill to the Roche Harbor Highlands trails as well as the connector trails from English Camp to Westcott Bay and Mitchell Hill.

#### i. Trail Resource Protection Measures

A variety of resource protection measures have been identified to improve the condition of park natural and cultural resources on or adjacent to trails within the area associated with this DCP. These measures include closure of duplicate trails, limiting use near sensitive habitats, such as the cedar grove, riparian areas, seasonal wetlands, and rocky moss-covered areas and closing or rerouting trails with a slope of greater than 20 percent.

English Camp, Mitchell Hill and Westcott Bay: In all areas, the park would identify and eliminate some social trails through closure, which may include restoration. Where designated trails pass through sensitive habitat, such as wetlands, these surrounding resources would be protected by using raised trails, such as boardwalks or turnpike, appropriate to the designated uses (e.g. hiking, equestrian and/or mountain bicycling). This would also include providing drainage improvements, such as culverts, water bars, ditches or cross-drains where needed. In some cases, trails may need to be rerouted to improve their sustainability.

The park would also work with federal land management surveyors and other public and private landowners to mark the new English Camp boundary. This would include ongoing efforts to remove non-historic fencing that interrupts safe visitor and wildlife passage through the landscape.

Mitchell Hill: A series of unnatural user-created features, such as mountain biking ramps, jumps, and dips, have been constructed at Mitchell Hill. Trail features, such as banked turns and rolling terrain are specifically designed for mountain bike downhill use. Because these trail features have adversely affected the natural environment, they would be removed and the area restored.

The following are among those trails that would be closed and/or rehabilitated:

- Trail sections not part of formal cedar grove designated trail.
- Trails that dead-end onto private property (where the private landowner is unwilling to accept public use via an agreement with the park).
- Extremely steep trails (above 20%).
- Trails that impact sensitive resources areas, such as moss-covered rocks.

Over time, depending on site-specific analysis, there may be other categories of trails that would be identified for closure, such as those impacting a specific resource.

Because this plan results in formalizing social and user-created trails, it is likely that these trails may need to be modified (improved) to meet trail standards for their designated uses. For instance, a winding social trail may need to be rerouted slightly to avoid overly steep or eroding sections. Trails designated for multiuse may need to be modified to minimize the number of blind corners in uphill or downhill sections. A trail designated for multiple use that is currently too steep to limit erosion impacts from mountain biking may need to be rerouted to reduce its grade. Other trails may need to be modified where they cross the Old Military Road to avoid potential impacts to cultural resources.

Westcott Bay: The sensitive Westcott Bay lagoon shoreline has already been impacted by a network of social trails. The park would establish and define access to the area to minimize the adverse impacts from these trails (for example, to avoid contributing sediment to the bay during runoff). There is also a need to



Figure 8: Trail Sharing

minimize impacts to adjacent privately-owned shoreline, by directing visitor use through trailhead signs and maps.

The Westcott Bay Connector Trail would be improved by installing culverts and turnpike where needed to minimize impacts to water resources. The Point Trail would also be improved to minimize potential impacts to archeological resources and to identify a single path onto the peninsula adjacent to the lagoon.

a. Trail Signs

English Camp, Mitchell Hill and Westcott Bay: Through this plan the network of trails that could be retained for designation has been named. The park would create and produce a map of the trail system showing landmarks and trail junctions. New signs would primarily be located at trailheads and trail junctions. Trail junction signs would be low impact/low profile, while trailhead signs could be kiosks that contain more information, such as maps and trail rules and area regulations as well as important safety information about the area and trail use. Trail signs would also show appropriate uses (hiking, horseback riding, mountain bicycling) and would also include multiuse trail etiquette signs) (Figure 8).

## 5. Accessibility

English Camp: Providing for accessibility would be the same as in Alternative 1, including designated parking and other accommodations.

Mitchell Hill / Westcott Bay: Over the long-term, the park would develop accessible trails at Mitchell Hill, such as in the cedar grove area, and at Westcott Bay, such as to the point area. Because trail grade modifications and other improvements would be necessary, it is likely that these actions would require additional environmental impact analysis. At both sites, accessible parking would be provided when parking areas are improved. In addition, access to Westcott Bay via the Westcott Drive entrance could be provided upon request for those with accessibility placards.

## 6. Interpretation

English Camp, Mitchell Hill and Westcott Bay: In addition to offering the same range of interpretive programming identified in Alternative 1, the park map and guide (brochure) would be revised to reflect Mitchell Hill and Westcott Bay.

As described in a recent interpretive evaluation report:

Even though the Westcott Property is located less than one mile from English Camp (which **receives the majority of the park's summer visitation**), **the property provides a sense of peace** and solitude and an unimpaired view shed of Westcott Bay. The property offers a variety of natural space and island ecosystems -- from evergreen forest to small fresh water pond to salt water lagoon -- for visitors and students to explore (NPS PWR 2014).

The report identified interpretive themes suitable for the area:

- The trails and shoreline within this island setting offer visitors recreational experiences, while the cultural landscapes provide opportunities to explore the relationships between people and their environment over time.
- The area also provides a forum to discuss the continuum of human uses of the areas now known as English Camp and Westcott Bay, from use of the islands by the Lummi, to the occupation by the British Military, to the current (adjacent) oyster farm.

- The site also provides rich opportunities for interpreting ecosystems, including the Douglas-fir forests, fresh water pond, marine lagoon, and underwater eel grass ecosystems (NPS PWR 2014).

Mitchell Hill and Westcott Bay: In addition to occasional special event programming, bulletin boards and trailhead kiosks would be added. There would also be opportunities for occasional ranger-led hikes and talks at each site.

## 7. Education Camp

English Camp: Instead of relocating the education camp to the south side of the Administrative Road, the camp would be relocated to the north side of the Administrative Road. Because the north side of the road has already been disturbed through park maintenance use for wood-cutting, and because it is flatter and has a lower density of trees, overall impacts from constructing an improved facility would be reduced.

Under all alternatives, the park would work with contractors and partners to provide a flexible area for up to 40 students and 10 staff, including the following amenities:

- Campfire circle
- Group shelter with kitchen and picnic tables (flexible space)
- Approximately 10-15 tent pads
- Accessible toilet
- Nearby parking for 4-6 vehicles and one bus
- Nearby turnaround for buses
- Loading/Unloading area adjacent to camp
- Utilities (connections to water and electricity)
- Septic system

These improvements would enable continued use by the Oregon Museum of Science and Industry and by a variety of other educational groups.

## 8. Resource Protection

English Camp, Mitchell Hill and Westcott Bay: The park would continue to conduct natural and cultural resources assessments and inventories and would begin monitoring programs for key resources as needed to determine baseline conditions as well as to analyze impacts from park actions and to move resources toward desired future conditions.

Non-historic infrastructure, such as former tent cabin platforms at Westcott Bay, would be removed, pending analyses of condition, significance and safety.

Streams and stream corridors (riparian areas) would be protected. Resource protection measures could include limiting use to hiking and improving drainage. Other sensitive resources, such as cutthroat trout, shallow soils and rare or unusual plants and vegetation communities could also be protected by using buffer areas, where appropriate, and by managing visitor use, such as by designating trails and/or not permitting off-trail use.

## 9. Special Park Uses (Permit Activities)

The park would continue to manage horse use through special use permits to ensure riders understand where riding is available and how they can mitigate impacts. Although where equestrian use is allowed varies among the alternatives, the permit system would be identical in all action alternatives.

Mitchell Hill: There are currently no additional proposed special park uses planned for Mitchell Hill.

Westcott Bay: There would continue to be opportunities for special events, including those hosted by the park as well as others. Specific uses would be dependent on what facilities were available (which varies among the alternatives).

## 10. Kayaking

English Camp: There would continue to be informal kayak launching and landing along English Camp shoreline.

Westcott Bay: There would continue to be informal kayak launching and landing along the Westcott Bay shoreline, however, to protect fragile resources, kayak launching and landing would not be permitted in the cove.

# C. Alternative 2: Low Impact Visitor Use Opportunities

## 1. Overview

English Camp, Mitchell Hill and Westcott Bay: In this alternative, a wider range of activities would be available to individuals and organized groups. In addition to the range of low impact visitor use activities currently available, accessible trails would be added. At English Camp, the education camp would be improved and would continue to provide a variety of overnight and day use activities for organized groups. At Mitchell Hill, offsite parking on the county easement would be expanded and the area would continue to offer hiking, bicycling and horseback riding trails. This alternative would emphasize resource protection and favor hiking over other uses, with fewer multiuse trails than in the other action alternatives. Parking and hiking access to Westcott Bay would continue to be available from English Camp via the Westcott Bay Connector Trail. In addition, a small number of parking spaces would be open to the public at Westcott Bay in the winter and to those needing accessibility or taking part in small special events year-round. To retain a more natural setting, the house would be removed or modified to become a picnic shelter / gathering space.

## 2. Zoning

English Camp: As in Alternative 1 and ECAA, zoning would be the same as in the GMP (Figure 3).

Mitchell Hill: All of Mitchell Hill, except the Old Military Road, would be part of the Natural Zone. As in other alternatives (ECAA), the Old Military Road would be part of the Cultural Zone.

Westcott Bay: The Westcott Drive driveway, parking area, picnic shelter and restroom would be zoned Visitor Services. The remainder of the area would be part of the Natural Zone.

## 3. Access and Parking

Mitchell Hill: A small number of parking spaces would continue to be located outside the gate at the end of Horse Trail Road and the park would work with San Juan County to expand this parking to provide 5-8 spaces as well as roadway directional signs. There would also continue to be hiking access from English Camp via the English Camp Connector Trail.

Westcott Bay: The park would provide a small number of first-come; first serve visitor parking spaces in the winter as onsite parking. During the summer (from Memorial Day to Labor Day), vehicle access would continue to be from English Camp and on foot via the Westcott Bay

Figure 9: Alternative 2 Mitchell Hill

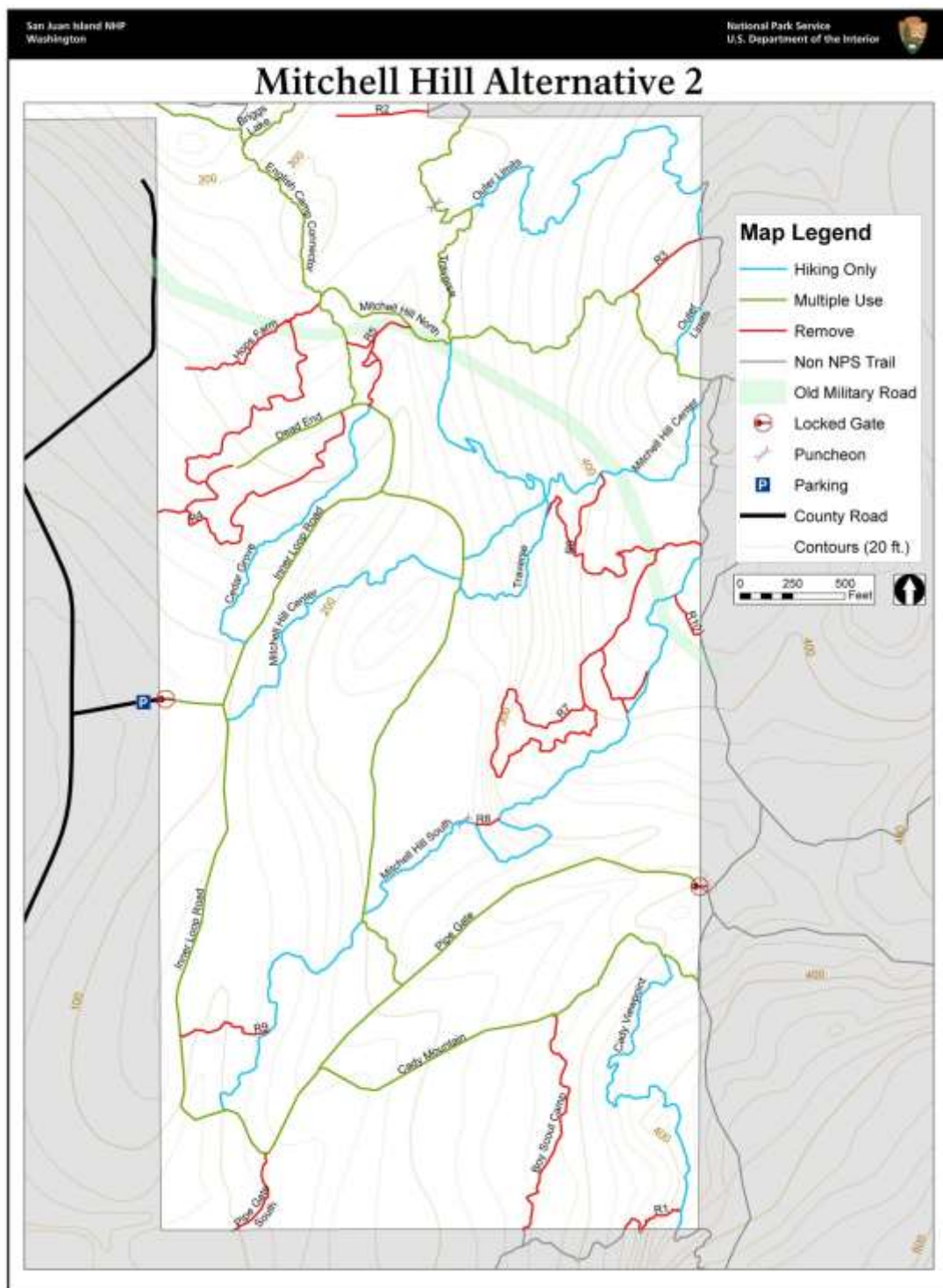
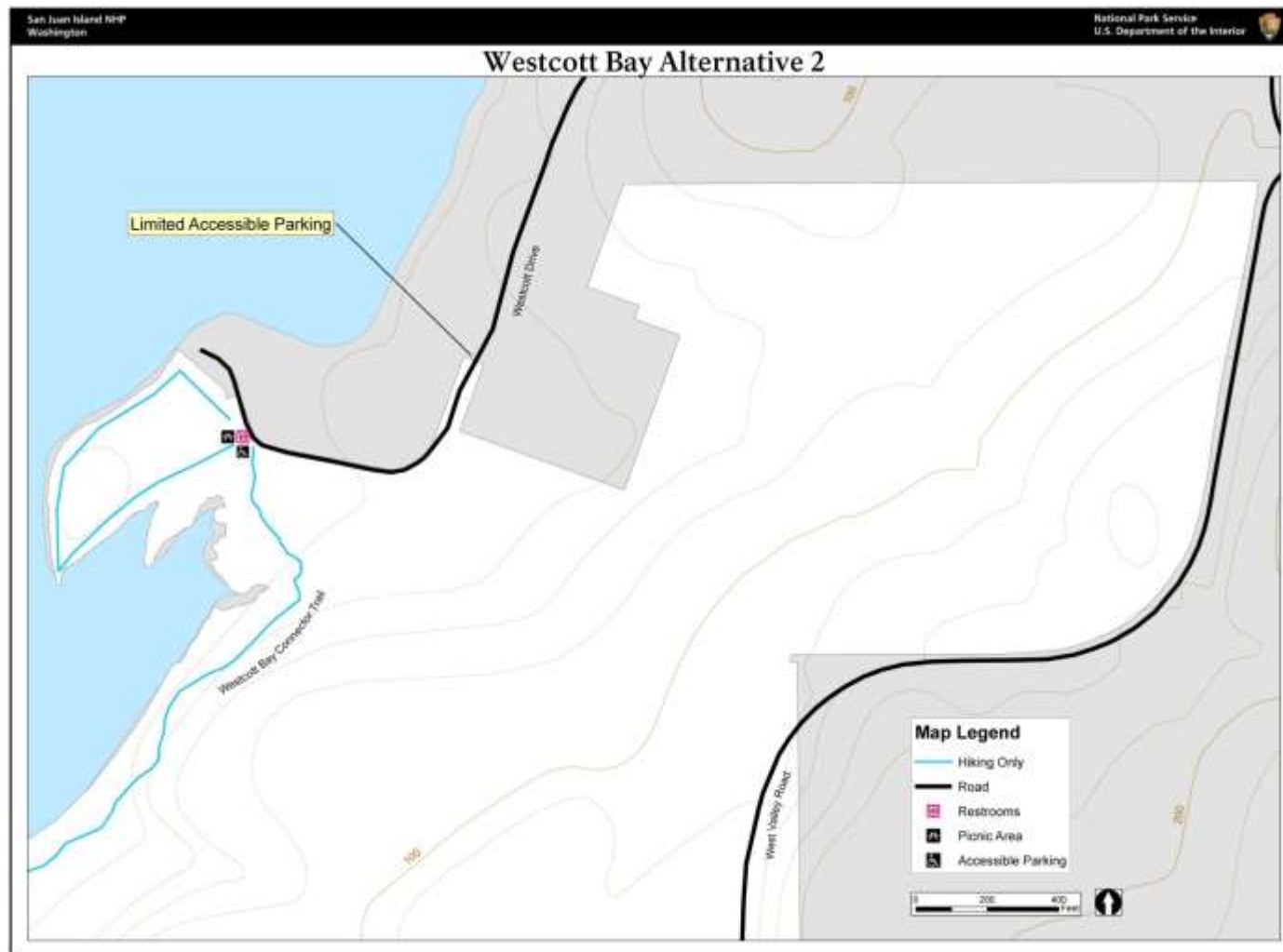


Figure 10: Alternative 2 Westcott Bay



Connector Trail. Accessible and special event parking would be via reservation and/or park-issued permits. Administrative parking would also continue.

#### 4. Facilities

Mitchell Hill: Actions would be the same as described in ECAA (provision of a bike rack and benches along trails where appropriate).

Westcott Bay: In addition to providing picnic tables, a bike rack and benches on trails where appropriate, the park would deactivate/remove the septic system and remove the house and reuse the foundation for a picnic shelter / gathering space. Providing a shelter would increase the ability to use the site during the off-season and/or during inclement weather.

#### 5. Trail Use

##### b. Standards

As in ECAA, trail standards developed through this plan would be applied parkwide.

##### c. Designations

Mitchell Hill: This alternative would emphasize resource protection and would therefore have the strictest standards for multiuse trails. The focus would be on hiking. It would have the most hiking only trails and the fewest multiuse trails. There would be 2.14 fewer miles of multiuse trails than in Alternative 3 and 3.48 fewer than in Alternative 4. Trails at Mitchell Hill would continue to link to existing trails at other sites managed for public access, such as at Roche Harbor Highlands. Access trails from other private property would be closed and rehabilitated.

At Mitchell Hill, multiuse trails would include former road beds and trails that link directly to the island-wide trail network.

The following trails would be designated for hiking only (\* ECAA):

- Cedar Grove\*
- Mitchell Hill Center
- Mitchell Hill South
- Old Military Road\*
- Outer Limits to Traverse Trail Junction
- Traverse Trail from Inner Loop to Mitchell Hill North Junction

The following trails would be designated for multiuse (hiking, bicycling and horseback riding) (\* ECAA):

- Briggs Lake\*
- Cady Mountain\*
- Inner Loop Road\*
- Dead End\*
- English Camp Connector\*
- Mitchell Hill North
- Outer Limits Trail from Traverse Trail Junction to park boundary
- Pipe Gate\*
- Traverse Trail from Mitchell Hill North Trail Junction to Outer Limits Trail Junction

The following trails would be closed and rehabilitated:

- Boy Scout Camp Trail
- Hops Farm Trail (English Camp Connector to private property on park boundary)
- Pipe Gate South Trail (Pipe Gate to private property on park boundary)

Westcott Bay: The following trails (all) at Westcott Bay would remain hiking only:

- Point Trail
- Westcott Bay Connector

Two new hiking only trails would be constructed:

- West Valley Road Connector (from West Valley Road to Westcott Bay)
- Westcott Bay Loop Trail (from Westcott Bay Connector to Roche Harbor Highlands trailhead at the corner of West Valley and Roche Harbor roads).

d. Trail Linkages

The following trails would continue to provide direct links to English Camp:

- English Camp Connector (multiuse)
- Westcott Bay Connector (hiking only)

The following multiuse trails would link to the island-wide trail network (Roche Harbor Highlands):

- Briggs Lake
- Cady Viewpoint
- Cady Mountain
- Mitchell Hill Central
- Mitchell Hill North
- Mitchell Hill South
- Outer Limits
- Pipe Gate

e. Trail Resource Protection Measures

Actions to protect resources would be the same as described in ECAA.

f. Wayfinding / Trail Signs

The emphasis on low impact, low-profile signs for trail junctions, and the need to sign trailheads and provide trail etiquette signs would be the same as described in ECAA.

## 6. Accessibility

In addition to providing for accessible parking at English Camp and Westcott Bay, the park would construct accessible parking at Mitchell Hill.

## 7. Interpretation

Actions would be the same as described in ECAA. In addition to ongoing interpretive programming at English Camp, there would be a variety of non-personal interpretive services provided at Mitchell Hill and Westcott Bay, including trail maps and trailhead signs.

## 8. Education Camp

Actions associated with the education camp at English Camp would be the same as described in ECAA.

## 9. Resource Protection

Resource protection measures would be the same as described in ECAA.

## 10. Special Park Uses (Permit Activities)

Mitchell Hill: There are currently no proposed special park uses planned for Mitchell Hill.

Westcott Bay: As in ECAA, there would be opportunities for park-sponsored uses and other special events. In Alternative 2, a picnic shelter, rather than a house would be available at Westcott Bay.

## 11. Kayaking

Actions would be the same as in Alternative 1. Informal kayaking would be available at English Camp.

## 12. Camping

Actions would be the same as described in Alternative 1. There would be no public visitor camping available.

# D. Alternative 3: Mix of Development and Visitor Use Opportunities

## 1. Overview

English Camp, Mitchell Hill and Westcott Bay: In this alternative, as in Alternative 2, a wide range of low impact visitor use activities would be available for individuals and organized groups. Modifications to the education camp would be the same as in ECAA. In addition, visitor amenities at Mitchell Hill would be expanded to include low impact restrooms and picnic sites, and the parking area would be expanded on the county easement. The area would continue to offer hiking, bicycling and horseback riding trails. Most trails, except the cedar grove and trails with long, steep stretches, would be multiuse. At Westcott Bay, the house would be retained for administrative use and there would be expanded opportunities to use the site for community groups, housing, and/or special park uses.

## 2. Zoning

English Camp: As in Alternative 1 and ECAA, zoning would be the same as in the GMP (Figure 3).

Mitchell Hill: As in ECAA, the Old Military Road would be part of the Cultural Zone. The Visitor Services Zone would be applied to the low impact restroom and picnic sites, and the remainder of the area would be part of the Natural Zone.

Westcott Bay: The Westcott Drive driveway and house would be part of the Administrative Zone. The parking area and low impact restroom would be zoned Visitor Services. The remainder of the area would be part of the Natural Zone.

## 1. Access and Parking

Mitchell Hill: As in Alternative 2, there would be an expanded parking area on easement lands outside the gate that would accommodate approximately 5-8 vehicles. The parking area would be expanded in cooperation with San Juan County. In addition, the park would craft agreements to partner with private landowners willing to provide public access to the park through their adjacent private lands.

Westcott Bay: The park would work with San Juan County to develop an improved parking area off of West Valley Road, which is adjacent to the Westcott Bay site. An access trail (up to 0.5 miles long) to Westcott Bay from this parking area would also be constructed. Because the specific details of this proposed parking area still need to be determined, additional design and environmental impact analysis would be required to implement this action.

Figure 11: Alternative 3 Mitchell Hill

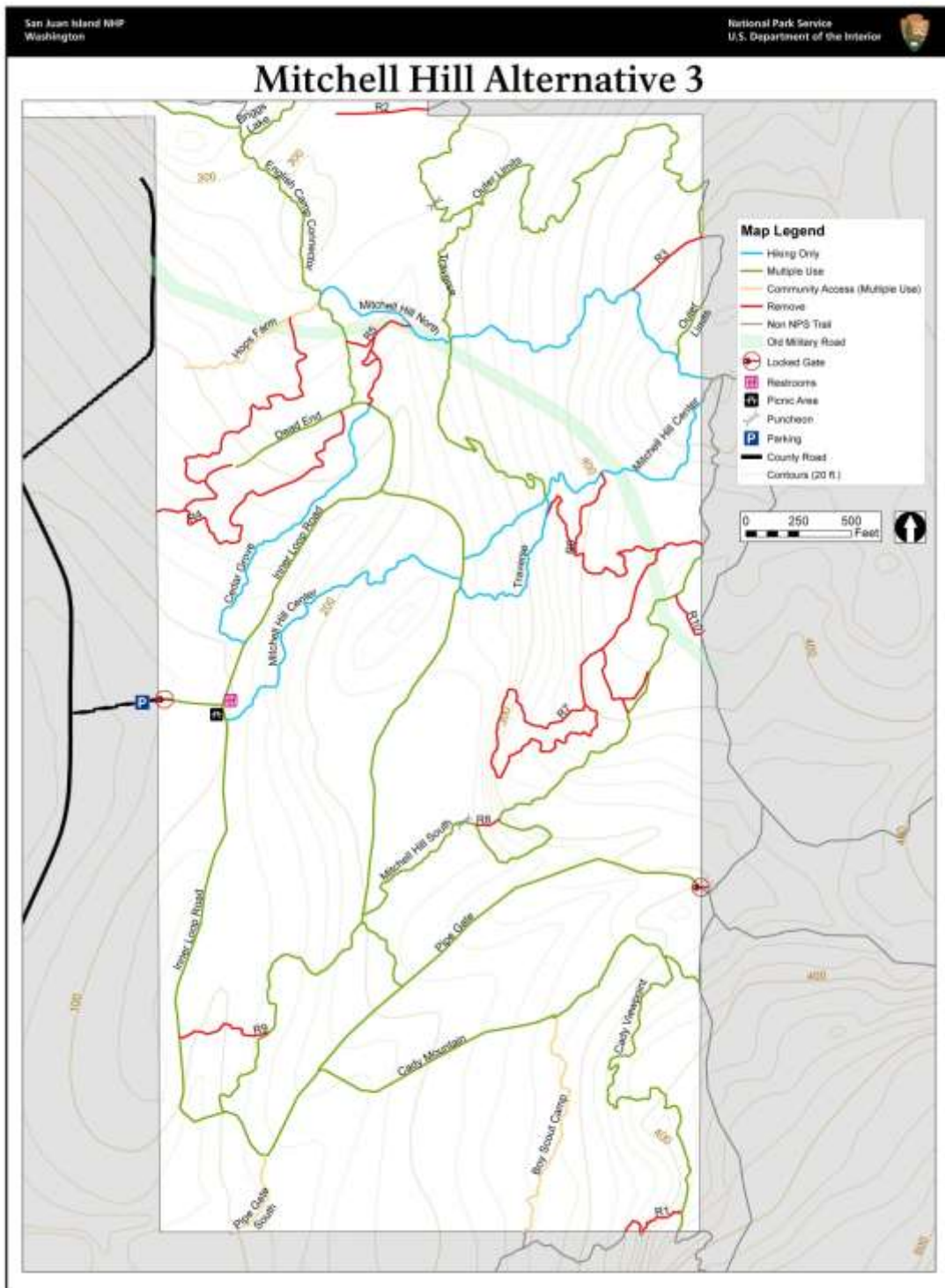
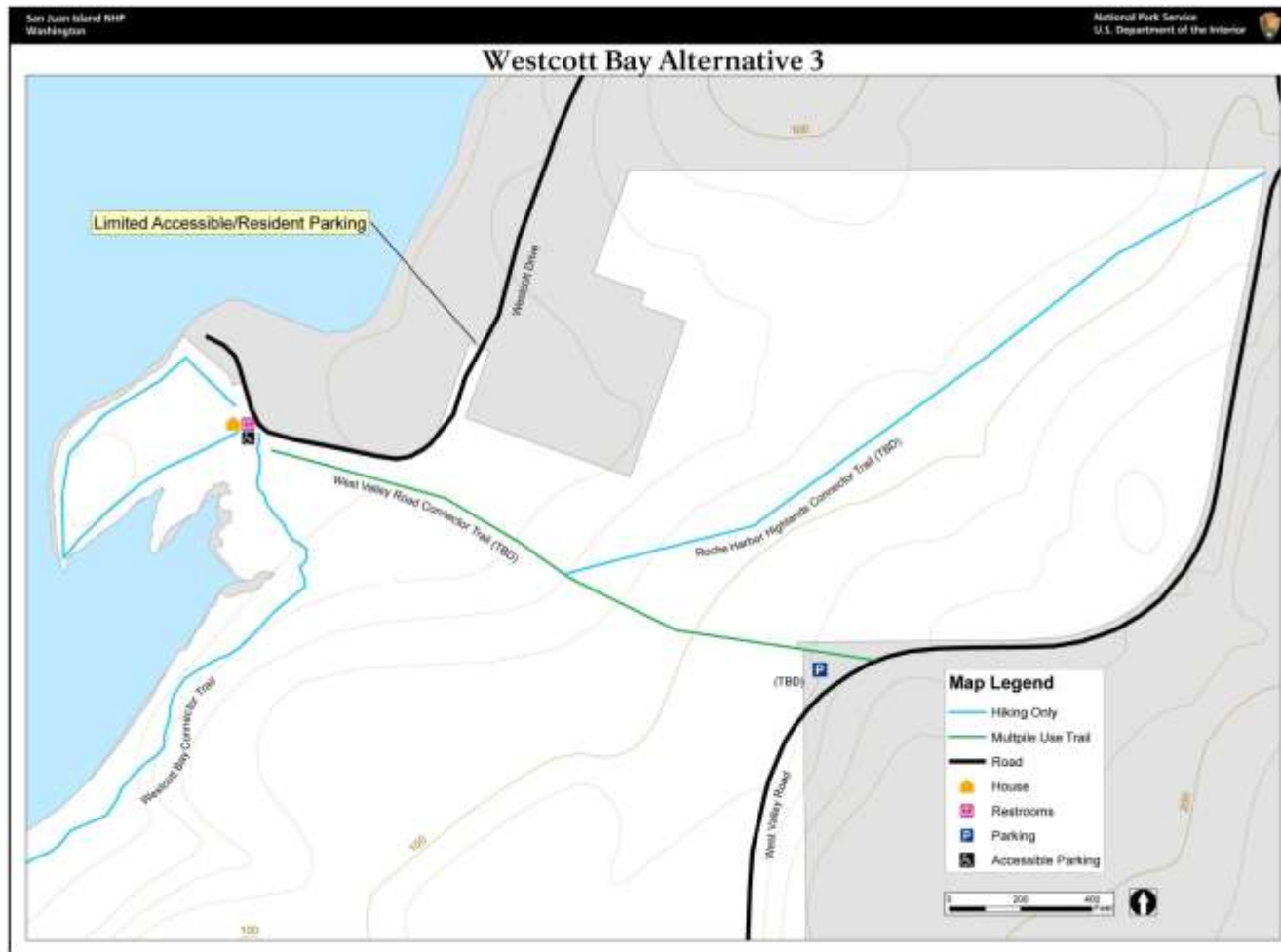


Figure 12: Alternative 3 Westcott Bay



## 2. Facilities

Mitchell Hill: In addition to a bike rack and benches along trails where appropriate, low impact public restrooms would be constructed and a small number of picnic tables would be added near the reconfigured parking.

Westcott Bay: In addition to providing picnic tables, a bike rack and benches on trails where appropriate, the house would be retained for administrative use. Depending on the ultimate function, more frequent occupancy of the house would likely provide enhanced security for the site as well as a potential opportunity for small group gatherings/special events.

Recommendations from the Pacific West Region Interpretive Ranger Advisory Committee report that would be appropriate for this alternative include:

- Use the building for a multitude of short-term administrative functions, particularly those that support visitor services.
- Offer it as a shelter for partners and cooperators who are on site during daytime hours to interact with the public, e.g. Native American elders and families preparing and providing cultural demonstrations.
- Use the building as an occasional staff training and meeting location.
- Given the need for affordable housing during different periods of the year, use the structure as short-term housing for interns, researchers, educators, regional staff, etc..  
**Don't use it as a permanent residence or other private use where visitors are not welcomed to approach the house or hang out on the deck (NPS PWR 2014).**

## 3. Trail Use

### g. Standards

As in ECAA, trail standards would be applied parkwide.

### h. Designations

Mitchell Hill: This alternative would designate trails with a slope greater than 20 percent for 100 feet or more for hiking only. Less steep trails would be available for multiuse. Therefore, most trails, except the Cedar Grove and trails with long, steep stretches would be multiuse. Community access trails would also be designated multiuse.

The following trails would be designated for hiking only (\* ECAA):

- Cedar Grove\*
- Mitchell Hill Center from Inner Loop Road junction to eastern park boundary
- Old Military Road\*
- Outer Limits
- Traverse Trail from Inner Loop to Mitchell Hill Center junction
- Mitchell Hill North from Traverse Trail to Outer Limits Junction

The following trails would be designated for multiuse (hiking, bicycling and horseback riding) (\* ECAA).

- Briggs Lake\*
- Cady Mountain\*
- Cady Viewpoint
- Inner Loop Road\*
- Dead End\*
- English Camp Connector\*
- Mitchell Hill Center to Inner Loop Road
- Mitchell Hill North to Traverse Trail junction and from Outer Limits Trail junction to park boundary
- Mitchell Hill South
- Pipe Gate\*

- Traverse Trail from Mitchell Hill Center junction to park boundary

Trails proposed for closure and/or rehabilitation would be the same as in ECAA.

Westcott Bay: The following trails at Westcott Bay would remain hiking only:

- Point Trail
- Westcott Bay Connector

Two new trails would be constructed:

- West Valley Road Connector (multiuse)
- Roche Harbor Road / West Valley Road to Westcott Bay (multiuse)

The trail from the road junction would link with the proposed West Valley Road Connector parking area (tbd) for Westcott Bay and would be in addition to the two new trails identified in Alternative 2.

#### i. Trail Linkages

The following trails would continue to provide direct links to English Camp:

- English Camp Connector (multiuse)
- Westcott Bay Connector (hiking only)

The following multiuse trails would link to the island-wide trail network (Roche Harbor Highlands):

- Briggs Lake
- Cady Viewpoint
- Mitchell Hill Center
- Mitchell Hill North
- Mitchell Hill South
- Outer Limits
- Pipe Gate
- Roche Harbor Road / West Valley Road connector

In addition, the following community access trails would link to other private lands that border Mitchell Hill:

- Boy Scout Camp Community Access Trail
- Hop Farm Community Access Trail
- Pipe Gate South Community Access Trail

Designating these trails as multiuse community access trails would require agreements with private landowners that allow members of the public to use these trails. Otherwise these trails would be removed and rehabilitated within the park.

#### j. Trail Resource Protection Measures

Actions to protect resources would be the same as described in ECAA.

#### k. Wayfinding / Trail Signs

The emphasis on low impact, low-profile signs for trail junctions, and the need to sign trailheads and provide trail etiquette signs would be the same as described in ECAA.

#### 4. Accessibility

In addition to providing for accessibility at English Camp and Westcott Bay, the park would designate accessible parking spaces in the expanded parking area at Mitchell Hill and in the new parking area off of West Valley Road for Westcott Bay.

#### 5. Interpretation

In addition to providing bulletin boards, trailhead kiosks, brochures and trail maps, the park would create self-guided trails at Mitchell Hill and Westcott Bay. These could be via signs, brochures and/or podcasts. In addition, there would be occasional ranger programs at both sites.

#### 6. Education Camp

Actions associated with the education camp at English Camp would be the same as described in ECAA.

#### 7. Resource Protection

Resource protection measures would be the same as described in ECAA.

#### 8. Special Park Uses (Permit Activities)

Mitchell Hill: There are currently no proposed special park uses planned for Mitchell Hill.

Westcott Bay: Actions would be similar to Alternative 2. In addition the park could provide opportunities for small-scale special events, such as community meetings, picnics or weddings.

English Camp: Special use permits could also be used for kayakers (see below).

#### 9. Kayaking

English Camp and Westcott Bay: Actions would be similar to ECAA. In addition to providing informal kayaking access from English Camp, kayakers could obtain a special use permit to drive down the Administrative Road and launch from the English Camp dock.

#### 10. Camping

Actions would be the same as described in Alternative 1. There would be no public visitor camping.

## E. Alternative 4: More Accommodation of Visitor Use Opportunities

#### 1. Overview

This alternative would include more visitor amenities than other alternatives. In addition to providing a range of low impact visitor uses at English Camp and Westcott Bay, there would be a greater focus on providing multiuse trails, not only at Mitchell Hill, but also to link English Camp with Westcott Bay and Mitchell Hill and to link to the island-wide trail system. Therefore, bicycling and horseback riding would be permitted on the connector trails. There would be expanded onsite parking inside the gate at Mitchell Hill with a trailer turnaround (if feasible). There would also be low-impact walk-in camping. A new kayak launch site at Westcott Bay would also be constructed. A new entrance road off of West Valley Road would provide access to a new day use parking area at Westcott Bay. The house would become a visitor contact station or nature center. With parking and facilities, Westcott Bay could offer larger special events.

Figure 13: Alternative 4 Mitchell Hill

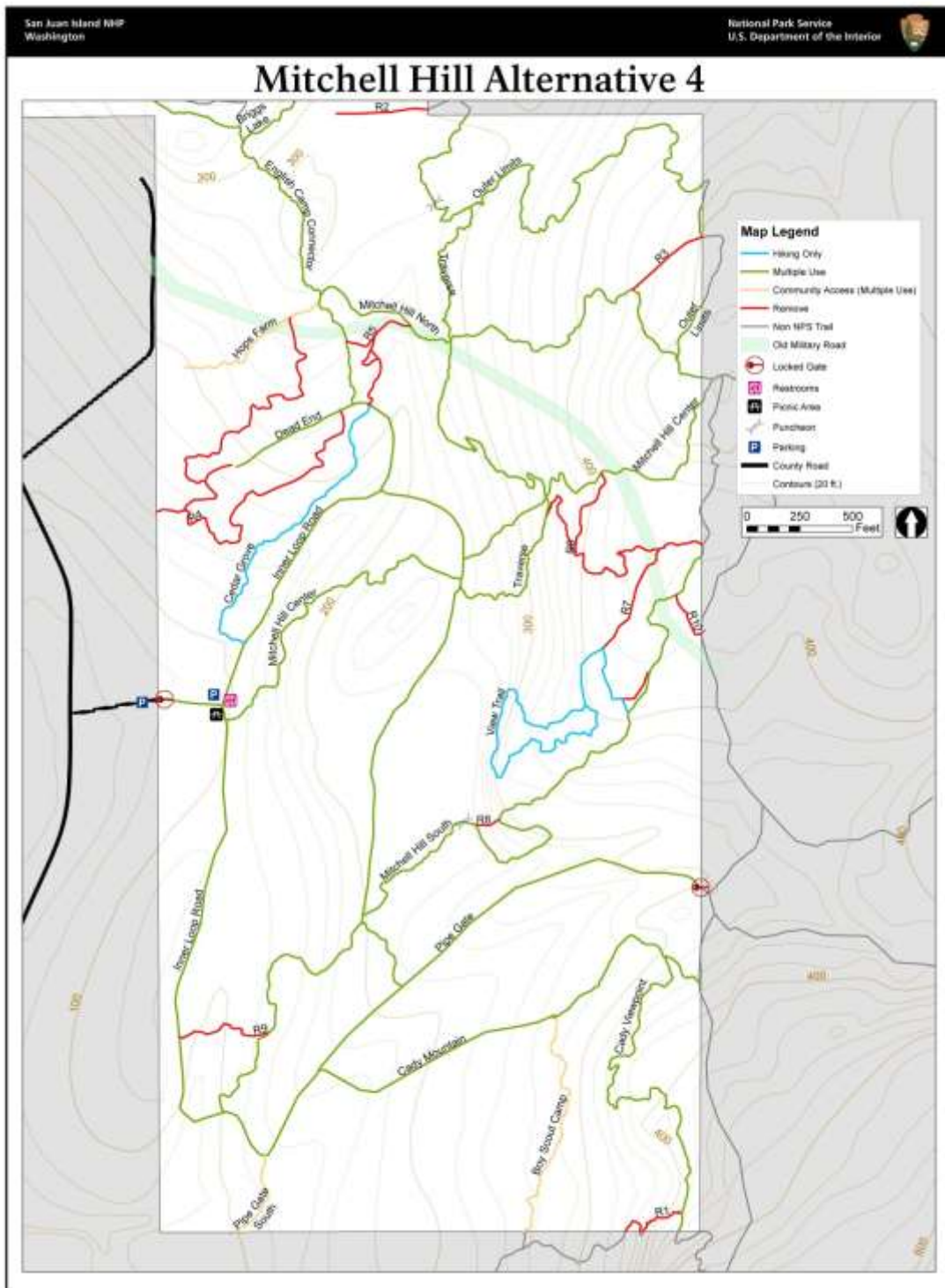
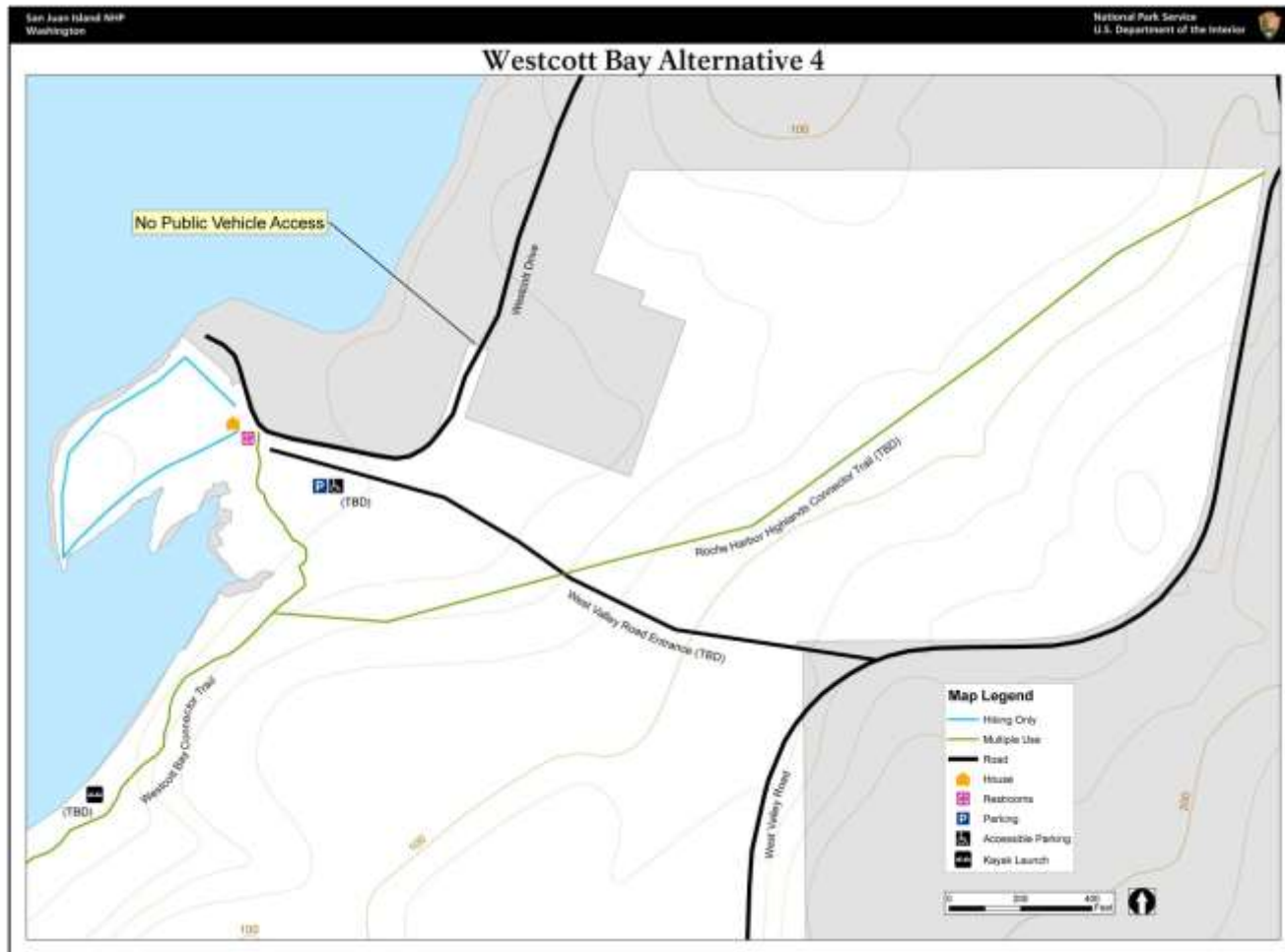


Figure 14: Alternative 4 Westcott Bay



## 2. Zoning

English Camp: As in Alternative 1 and ECAA, zoning would be the same as in the GMP.

Although the Sandwith Orchard would be retained in the Cultural Zone, the Cultural Zone characteristics (only in this area) would be modified to allow for equestrian use. This would **slightly modify the GMP prescription that states “low impact recreational opportunities, such as hiking, picnicking and beachcombing that would not affect cultural resources” to include** horseback riding on the access trail from Sandwith Orchard to Mitchell Hill. Although this definition does not specifically preclude equestrian use, neither does it call out horseback riding as an approved use.

The authorization for equestrian use through the Sandwith Orchard would be provided to improve safety related to equestrian travel on or alongside West Valley Road when accessing Mitchell Hill. This area is routinely wet and is adjacent to fast moving traffic along the roadway. Authorizing equestrian use of the Sandwith Orchard Trail to access Mitchell Hill (to improve safety in equestrian travel) would require mitigation measures to ensure that there would be no effect on cultural resources in these areas.

Mitchell Hill: As in Alternative 2, the Old Military Road would be part of the Cultural Zone. The Visitor Services Zone would be used for the expanded parking area inside the gate, low impact restroom and picnic sites, and the remainder would be part of the Natural Zone (Figure 3).

Westcott Bay: The Westcott Drive driveway and internal parking area would be part of the Administrative Zone. The new entrance road and parking area, house and low impact restroom would be zoned Visitor Services. The remainder of the area would be part of the Natural Zone.

## 3. Access and Parking

English Camp: Parking for both Mitchell Hill and Westcott Bay would be available at English Camp. To accommodate a greater variety of visitors, both the English Camp Connector Trail and the Westcott Bay Connector Trail would become multiuse.

Mitchell Hill: As in other alternatives, the park would work with San Juan County to provide roadway directional signs. In this alternative, the English Camp Connector Trail would become multiuse and there would be hiking and equestrian access via the Sandwith Orchard. In addition, the park would develop an onsite parking area, including a horse trailer turnaround (if feasible) inside the gate.

Westcott Bay: In addition to administrative use of onsite parking and trail access from English Camp, a new road, parking area, and trail would be constructed off of West Valley Road. From the new parking lot, a short accessible trail would lead visitors further into the site.

## 4. Facilities

Mitchell Hill: In addition to the low impact public restrooms, picnic tables, and benches identified in other alternatives, there would be an expanded parking area with a horse trailer turnaround inside the gate (if feasible). The parking area would accommodate approximately 10-15 vehicles and at least one horse trailer.

Westcott Bay: In addition to restrooms, picnic tables and trailside benches as well as retaining the house for use as a visitor contact station / nature center, there would be a new entrance road and parking area off of West Valley Road leading to a trail entering the site. The road would be

approximately 0.3 miles long and the parking area would be constructed to contain approximately 10-20 vehicles. The trail would be multiuse and approximately 0.1 miles long.

## 5. Trail Use

### I. Standards

As in ECAA, trail standards would be applied parkwide.

### m. Designations

Mitchell Hill: This alternative would designate most trails multiuse. This includes community access trails and trails that connect to Mitchell Hill and Westcott Bay from English Camp and the island trail system.

The following trails would be designated for hiking only (\* ECAA):

- Cedar Grove\*
- View
- Old Military Road\*

One of these, the View Trail would be a new trail, constructed to connect Mitchell Hill South and Mitchell Hill Central via a rocky outcrop providing a view of Garrison Bay.

The following trails would be designated for multiuse (hiking, bicycling and horseback riding) (\* ECAA) (13 total):

- Briggs Lake\*
- Cady Mountain\*
- Cady Viewpoint
- Inner Loop Road\*
- Dead End\*
- English Camp Connector\*
- Mitchell Hill Central
- Mitchell Hill North
- Mitchell Hill South
- Outer Limits
- Pipe Gate\*
- Traverse

Trails proposed for closure and/or rehabilitation would be the same as in ECAA.

Westcott Bay: As in Alternative 3, the Point Trail would remain hiking only. The Westcott Bay Connector Trail, however, would become multiuse.

As in Alternative 2, two new hiking only trails would also be constructed:

- West Valley Road Connector
- Roche Harbor Road / West Valley Road to Westcott Bay

The trail from the road junction would link with the proposed West Valley Road Connector parking area (tbd) for Westcott Bay. (Note: This alternative also has a new road from West Valley Road to Westcott Bay.)

### n. Trail Linkages

The following trails would continue to provide direct links to English Camp:

- English Camp Connector (multiuse)
- Westcott Bay Connector (hiking only)

The following multiuse trails would link to the island-wide trail network (Roche Harbor Highlands):

- Briggs Lake
- Cady Viewpoint
- Mitchell Hill Center
- Mitchell Hill North
- Mitchell Hill South

- Outer Limits
- Pipe Gate
- Roche Harbor Road / West Valley Road connector

As in Alternative 3, the following community access trails would link to other private lands that border Mitchell Hill:

- Boy Scout Camp Community Access Trail
- Hops Farm Community Access Trail
- Pipe Gate South Community Access Trail

o. Trail Resource Protection Measures

Actions to protect resources would be the same as described in ECAA.

p. Wayfinding / Trail Signs

The emphasis on low impact, low-profile signs for trail junctions, and the need to sign trailheads and provide trail etiquette signs would be the same as described in ECAA.

## 6. Accessibility

As in Alternative 2, in addition to providing for accessibility at English Camp, the park would designate accessible parking in the expanded parking areas at Mitchell Hill and Westcott Bay.

## 7. Interpretation

Mitchell Hill: Actions would be the same as in Alternative 3.

Westcott Bay: In addition to the services provided in Alternative 3, there would be a visitor facility (visitor contact station or nature center) which would include staffing. There would also be more frequent interpretive programming and wayside exhibits could be added to highlight key features at the site.

Recommendations from the Pacific West Region Interpretive Ranger Advisory Committee report that apply to this alternative include:

- Incorporate interpretive media and wayside exhibits into the deck and surrounding area, interpreting the views and nearby natural and cultural features and ecosystems.
- Provide trail information so visitors understand options for safely exploring the peninsula and lagoon.
- Offer cultural demonstrations, restoration demonstrations, and other activities delivered by partners where visitors can drop-in, interact, and leave as desired.
- Offer the site to youth group leaders and teachers to support group hikes from English Camp.
- Offer scheduled facilitated dialogue and interpretive programs, as park staffing allows (NPS PWR 2014).

## 8. Education Camp

English Camp: Actions associated with the education camp at English Camp would be the same as described in ECAA.

## 9. Resource Protection

Resource protection measures would be the same as described in ECAA.

## 10. Special Park Uses (Permit Activities)

Mitchell Hill: There are currently no proposed special park uses planned for Mitchell Hill.

Westcott Bay: Actions would be similar to Alternative 2. In addition the park would provide opportunities for small-scale special events.

## 11. Kayaking

English Camp and Westcott Bay: At English Camp, actions would be the same as described in Alternative 1. In addition, at Westcott Bay, kayak launching/landing would be provided at a location and design to be determined off the Westcott Bay Connector Trail that would not adversely impact fish or eelgrass. Implementation would likely require additional environmental impact analysis.

## 12. Camping

Mitchell Hill: The GMP would be amended through the public process for this DCP to allow for a small number (3-5) of campsites to be established at Mitchell Hill, possibly off of the Dead End Trail or in another sustainable location. Camping would be managed through permits issued in advance. Campers would need to adhere to Leave No Trace principles and to carry in their own water. No campfires would be permitted.

Westcott Bay: As in Alternative 1, there would be no public overnight camping.

# F. Alternatives and Actions Considered But Dismissed

Under NEPA and the Council on Environmental Quality (CEQ) *Forty Questions*, alternatives may be eliminated from detailed study based on the following reasons [40 CFR 1502.14 (a)]:

- Technical or economic infeasibility
- Inability to meet project objectives or resolve need for the project
- Duplicate other less environmentally damaging alternatives
- Conflict 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
- Environmental impacts are too great.

The following alternatives or variations were considered during the planning process, but were rejected because they met one of the above criteria.

### 1. English Camp

Improving Rather than Relocating the Education Camp or Relocating the Education Camp Nearer to its Existing Location: In addition to conflicting with the GMP, these alternatives were rejected because they would have had greater impacts on the wetland where the camp is now located.

### 2. Mitchell Hill and Westcott Bay

Equestrian Only or Mountain Biking Only Trails: The level of use is low and conflicts between users are rare. Therefore isolating use on specific trails is not necessary to reduce or prevent conflicts or other resource impacts.

### 3. Mitchell Hill

Constructing Education Camp: Constructing an education camp at Mitchell Hill instead of English Camp would conflict with the GMP (this location was considered in the GMP non-selected alternative) and would have greater impacts than other alternatives considered in the DCP because of inadequate access and infrastructure.

#### 4. Westcott Bay

Constructing Education Camp: As described above, constructing an education camp at Westcott Bay instead of English Camp would conflict with the GMP and would have greater impacts than other alternatives considered in the DCP because of inadequate access and infrastructure. The fragile shoreline environment, including estuarine and archeological resources, and adjacent neighborhood would also preclude heavier use.

Swimming in Pond / Cove: Because both the pond and cove are small sensitive areas that would not be able to withstand impacts from swimming, this potential visitor use opportunity was considered but dismissed.

Public Camping: Because of limited access, sensitive resources and the size of Westcott Bay, providing for hike-in or kayak-in camping was considered but dismissed. Compared to other visitor uses, providing for camping would have greater impacts on water resources, soundscapes, and air quality (depending on whether campfires were permitted).

Power Boat Access/Launch: Motorized boating is inconsistent with the GMP and would have adverse impacts on eelgrass areas in Westcott Bay as well as at any shoreline launch sites.

### G. Mitigation Measures Incorporated into the Action Alternatives

The measures listed under each resource section in *Environmental Consequences* have been developed to lessen the potential adverse effects of the alternatives.

### H. Consistency with NEPA Section 101(b)

The Council on Environmental Quality (CEQ) (46 FR 18026 - 46 FR 18038) provides direction that the “environmentally preferable alternative is the alternative that would promote the national environmental policy as expressed in NEPA’s Section 101,” including:

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
2. Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
3. Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
4. Preserve important historic, cultural and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice;
5. Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life’s amenities; and
6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources (NEPA Section 101(b)).

#### Analysis

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.

Because the education camp would be relocated from a wetland, and wetland impacts from the Point Trail would be mitigated, and because resource protection measures would be implemented to minimize adverse impacts occurring at Westcott Bay and Mitchell Hill, all action alternatives would meet this criterion. Alternative 2 would also minimize the extent of new development, providing new restrooms and allowing for parking in existing disturbed areas at Westcott Bay and

closing some trails and designating others hiking only at Mitchell Hill, while other alternatives call for additional development at both locations. Therefore Alternative 2 would best meet this criterion.

2. Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings.

All alternatives would meet this criterion. All would protect resources, however specific measures in the action alternatives (2-4) would increase the level of protection for both natural and cultural resources while maintaining a range of recreational uses and would best meet this criterion.

3. Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.

All of the action alternatives (2-4) would meet this criterion. Alternatives 3 and 4, would also provide a wider range of trail types, including community access trails at Mitchell Hill and improvements in kayaking access, therefore increasing the range of beneficial uses of the park, however because Alternative 4 would also increase the level of development for parking at Mitchell Hill and Westcott Bay (including a new road), Alternative 3 would best meet this criterion.

4. Preserve important historic, cultural and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.

All of the alternatives would meet this criterion; however the action alternatives would increase the level of protection for park resources while providing a greater diversity of activities, such as hiking only trails at Mitchell Hill, restrooms, improved accessibility, picnicking, and Old Military Road access in Alternatives 2-4; improvements to kayaking in Alternatives 3 and 4; and new backcountry camping in Alternative 4.

5. Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities.

All of the alternatives would meet this criterion. Alternatives 2 and 3 would best meet this criterion because they offer additional resource protection measures, the same modifications to visitor use opportunities noted in the criterion 4 explanation, and also provide limited expansion of parking.

6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources).

All alternatives call for relocation of the education center, including new construction. In conformance with NPS standards, buildings must be environmentally sustainable and all alternatives would meet this criterion. Although no additional specific measures in Alternative 1 call for additional resource use, it is likely that ongoing management of Mitchell Hill and Westcott Bay would include reconstruction of poorly situated or poorly constructed trail bridges at Mitchell Hill and construction of additional trail structures that would protect resources at both sites over time. For this and for the action alternatives, use of additional resources would rely heavily on renewable and/or recycled materials for trail structures, such as boardwalk construction. Reuse of the house, which is located in an upland at Westcott Bay and which currently provides outstanding opportunities for use, would occur in Alternatives 1, 3 and 4, therefore these alternatives would minimize the loss of resources used to construct it. Alternatives 2-4 call for relocation of the education center out of a wetland to an upland site that is preferable because it is already moderately impacted, is more open, and contains fewer trees that would need to be removed. Improvements and changes in the interpretive and educational visitor experience would result in major, beneficial, long-term and regional impacts. Because Alternative 4 calls for additional development and Alternative 2 for removal of the house and reconstruction

of a new picnic shelter in its place, which may or may not use existing materials, Alternative 3 would likely best meet this criterion.

## I. Environmentally Preferable Alternative

In accordance with NPS Director's Order-12, *Conservation Planning, Environmental Impact Analysis, and Decision-making* and CEQ requirements, the NPS is required to identify the "environmentally preferable alternative" in all environmental documents, including EAs. The environmentally preferable alternative is determined by applying the criteria suggested in Section 101B of the National Environmental Policy Act (NEPA) of 1969.

The environmentally preferable alternative is the alternative that causes the least damage to the biological and physical environment and that best protects, preserves, and enhances historic, cultural, and natural resources (46 FR 18026 – 46 FR 18038). Based on the preceding analysis, alternatives 2 and 3 would be environmentally preferable for different reasons. Alternative 3 would minimize additional development by retaining the house, rather than removing or modifying it as a picnic shelter, and thus would be considered environmentally preferable. Alternative 2, however, would minimize construction of new parking areas and would maximize use of previously disturbed areas on the existing sites for parking. Alternative 3 best met five of the six CEQ criteria, while Alternative 2 best met four of the six criteria, but could also best meet criterion 6 if more of the existing materials from the house were used for the picnic shelter at Westcott Bay. Although Alternative 4 best met some of the criteria, because it would provide the most development, it was not selected as environmentally preferable.

Table 2: Mitchell Hill Trail Designation Comparison Chart

Trail	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Briggs Lake	multiuse	multiuse	multiuse	multiuse
Cady Mountain	multiuse	multiuse	multiuse	multiuse
Cady Viewpoint	multiuse	hiker only	multiuse	multiuse
Cedar Grove	multiuse	hiker only	hiker only	hiker only
Inner Loop Road	multiuse	multiuse	multiuse	multiuse
Dead End	multiuse	multiuse	multiuse	multiuse
English Camp Connector	multiuse	multiuse	multiuse	multiuse
Mitchell Hill Center	multiuse	hiker only	multiuse to Inner Loop Road hiker only to park boundary	multiuse
Mitchell Hill North	multiuse	multiuse	multiuse to Traverse Trail hiker only to Outer Limits Trail multiuse to park boundary	multiuse
Mitchell Hill South	multiuse	hiker only	multiuse	multiuse
Old Military Road*	n/a	hiker only	hiker only	hiker only
Outer Limits	multiuse	multiuse to Traverse Trail hiker only to park boundary	multiuse	multiuse
Pipe Gate	multiuse	multiuse	multiuse	multiuse
Traverse	multiuse	hiker only to Mitchell Hill North Trail multiuse use to Outer Limits Trail	hiker only to Mitchell Hill Central Trail multiuse to Outer Limits Trail	multiuse
View	n/a	n/a	n/a	hiker only
Community Access Trails^	0	0	3	3
Boy Scout Camp Community Access Trail	multiuse	remove	multiuse	multiuse
Hops Farm Community Access Trail	multiuse	remove	multiuse	multiuse
Pipe Gate South Community Access Trail	multiuse	remove	multiuse	multiuse

\*Add mitigation measures where other trails cross Old Military Road to avoid impacts on historic/cultural resources.  
Notations are west to east

Table 3: Mitchell Hill Trail Designation Summary

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Number of Hiker Only Trails	0	3.82 miles 5 complete trails 2 segments	2.15 miles 2 complete trails 3 segments	1.3 miles 3 complete trails
Number of Multiuse Trails	9.83 miles	3.84 miles 7 complete trails 2 segments	5.98 miles 12 complete trails 3 segments <sup>#</sup>	7.32 miles 15 complete trails
Number of Trails Removed / No Longer in Use	0	2.67 miles 3+ ECAA	2.2 miles 1 + ECAA	1.71 miles 0 +ECAA
Number of New Trails	0	1	1	2
Total Miles of Trail	9.83	7.66	8.13	8.62

<sup>#</sup>not including two segments that are part of one trail

Table 4: Westcott Bay Trail Designation Comparison Chart

Trail	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Point Trail	hiker only	hiker only	hiker only	hiker only
Westcott Bay Connector	hiker only	hiker only	hiker only	multiuse
Roche Harbor Road / West Valley Road junction connector	n/a	n/a	hiker only	multiuse
West Valley Road Connector	n/a	hiker only	multiuse	multiuse
Total Miles of Trail	0.89 hiker only	0.89 hiker only	1.31 hiker only 0.34 multiuse (est.)	0.29 hiker only 1.18 multiuse (est.) 0.34 access road (est.)

Table 5: Mitchell Hill Westcott Bay Development Concept Plan Alternatives Matrix

Topic	Alternative 1 Continue Current Management (No Action)	Elements Common to Action Alternatives (ECAA)	Alternative 2 Low Impact Visitor Use Opportunities	Alternative 3 Mix of Development and Visitor Use Opportunities	Alternative 4 More Accommodation of Visitor Use Opportunities
Summary	<p><u>English Camp</u> Ongoing interpretation and low impact visitor use activities, such as hiking, bird watching, small boat use, and interpretation</p> <p>Education camp use by Oregon Museum of Science and Industry.</p> <p><u>Mitchell Hill</u> Offsite parking on county easement. Ongoing use for hiking, bicycling and horseback riding.</p> <p><u>Westcott Bay</u> Offsite parking (English Camp), low impact visitor use activities similar to English Camp.</p>	<p><u>All Sites</u> Low impact activities such as hiking, picnicking, bird watching, fishing, and accessible trails.</p> <p>Recreational use by organized groups.</p> <p>Some trails managed as multiuse.</p> <p><u>English Camp</u> Continued use as education camp.</p> <p><u>Mitchell Hill</u> Same as Alternative 1</p> <p><u>Westcott Bay</u> Low impact restrooms</p>	<p><u>English Camp and Mitchell Hill</u> Same as ECAA</p> <p>Emphasis on hiking. Trails that are former roads or that provide direct links to Roche Harbor Highlands trails are multiuse. All others hiking only to protect natural resources.</p> <p><u>Westcott Bay</u> Same as Alternative ECAA plus:</p> <p>Provide kayaking access</p> <p>Modify or remove house for use as a picnic shelter</p>	<p><u>English Camp</u> Same as ECAA</p> <p><u>Mitchell Hill</u> Same as ECAA plus picnicking and low impact restrooms.</p> <p>Steep trails and Cedar Grove are hiking only. All others multiuse.</p> <p><u>Westcott Bay</u> Same as Alternative 2 plus:</p> <p>Use of house for overnight administrative use (special events, housing, etc.).</p> <p>Potential opportunities for community group use and/or special park uses.</p>	<p><u>All Sites</u> Same as Alternative 3 plus Linked by multiuse trail and:</p> <p><u>English Camp</u> Provide multiuse connector trail.</p> <p><u>Mitchell Hill</u> Same as Alternative 3 plus expanded onsite parking, trailer turnaround, and potential future low-impact, walk-in camping.</p> <p>Emphasis on multiuse trails; all except Cedar Grove, Old Military Road and View trails are multiuse.</p> <p><u>Westcott Bay</u> Similar to Alternative 3 except provide formal kayak launch area.</p> <p>Use of house as day use visitor facility (nature center classroom or visitor contact station).</p> <p>Potential for larger special events.</p>
Zoning	<u>English Camp</u> Retain English Camp	<u>English Camp</u> Same as Alternative 1, including	<u>English Camp</u> Same as ECAA	<u>English Camp</u> Same as ECAA	<u>English Camp</u> Same as ECAA

Topic	Alternative 1 Continue Current Management (No Action)	Elements Common to Action Alternatives (ECAA)	Alternative 2 Low Impact Visitor Use Opportunities	Alternative 3 Mix of Development and Visitor Use Opportunities	Alternative 4 More Accommodation of Visitor Use Opportunities
	<p>Zoning as described in GMP.</p> <p><u>Mitchell Hill / Westcott Bay</u></p> <p>No zoning</p>	<p>Sandwith Orchard Trail: cultural zone</p> <p><u>Mitchell Hill and Westcott Bay</u> Zone consistent with GMP.</p> <p>Use GMP zones (administrative, natural, cultural, visitor services), criteria and definitions.</p> <p><u>Mitchell Hill</u> Apply cultural zone to Old Military Road.</p>	<p><u>Mitchell Hill</u> <i>Natural:</i> All, except Old Military Road</p> <p><u>Westcott Bay</u> <i>Visitor Services:</i> Access (Westcott Drive driveway), administrative / visitor parking, picnic shelter, and restroom</p> <p><i>Natural:</i> Remainder</p>	<p><u>Mitchell Hill</u> <i>Visitor Services:</i> restroom and proposed picnic area</p> <p><i>Cultural:</i> Old Military Road</p> <p><i>Natural:</i> Remainder</p> <p><u>Westcott Bay</u> <i>Administrative:</i> House, Westcott Drive driveway</p> <p><i>Visitor Services:</i> restrooms and new parking area</p> <p><i>Natural:</i> Remainder</p>	<p><u>Mitchell Hill</u> <i>Visitor Services:</i> parking inside gate, restroom and picnic area</p> <p><i>Cultural:</i> Old Military Road</p> <p><i>Natural:</i> Remainder</p> <p><u>Westcott Bay</u> <i>Administrative:</i> Westcott Drive driveway</p> <p><i>Visitor Services:</i> house, new road and parking area</p> <p><i>Natural:</i> Remainder</p>
Access and Parking	<p><u>Mitchell Hill</u> Administrative access via Horse Trail Road.</p> <p>Limited visitor use parking (4-6 cars) outside the gate on county easement.</p> <p>Public access to Mitchell Hill via hiking trail from English Camp.</p> <p>Equestrian access via West Valley to Horse Trail Road and through private property by permission</p>	<p><u>Mitchell Hill / Westcott Bay</u> Work with county to provide roadway directional signs to Westcott Bay and Mitchell Hill access points.</p> <p><u>Mitchell Hill</u> Administrative access via Horse Trail Road.</p> <p>Public access to Mitchell Hill via trail from English Camp.</p> <p>Improve park access trails (such as English Camp Connector Trail) for designated uses.</p> <p>Improve and expand parking on Horse Trail Road outside the gate in cooperation with the county.</p>	<p><u>Mitchell Hill</u> Same as ECAA</p> <p><u>Westcott Bay</u> Access trails would be hiking only.</p> <p>Accessible and special use permit public access with small number of parking spaces (5-10).</p>	<p><u>English Camp</u> Same as ECAA</p> <p><u>Mitchell Hill</u> Same as ECAA</p> <p>Partner with neighboring landowners willing to provide public access to the park through private lands (craft agreements).</p> <p><u>Westcott Bay</u> Improved off-site parking (off West Valley Road tbd) (5-10 spaces).</p> <p>Add picnicking.</p>	<p><u>English Camp</u> Improve park access trail from Sandwith Orchard for equestrian use.</p> <p><u>Mitchell Hill</u> Same as Alternative 3 plus:</p> <p>Develop an on-site parking area, including horse trailer turnaround, inside park gate.</p> <p><u>Westcott Bay</u> Construct new access road and parking area (for approximately 10-20 cars) off of West Valley Road to provide for public access.</p>

Topic	Alternative 1 Continue Current Management (No Action)	Elements Common to Action Alternatives (ECAA)	Alternative 2 Low Impact Visitor Use Opportunities	Alternative 3 Mix of Development and Visitor Use Opportunities	Alternative 4 More Accommodation of Visitor Use Opportunities
	<p>of landowners.</p> <p><u>Westcott Bay</u> Closed gate at entrance</p> <p>Informal administrative access/parking.</p> <p>Visitor use parking at English Camp (no visitor use parking available at Westcott Bay).</p> <p>Public access to Westcott Bay via hiking trail from English Camp.</p>	<p><u>Westcott Bay</u> Improve 5-car administrative parking area at end of Westcott Drive</p> <p>Provide access for Administrative / Educational / Special Uses via Westcott Drive.</p> <p>Provide accessible parking.</p> <p>Public access to Westcott Bay via trail from English Camp.</p> <p>Visitor use parking available at English Camp.</p>		<p>Access via multiuse trail from West Valley Road offsite parking (tbd).</p>	<p>Access trails would be multiuse.</p>
Facilities	<p><u>Mitchell Hill</u> N/A</p> <p><u>Westcott Bay</u> House Road Utilities</p>	<p><u>Mitchell Hill</u> Provide bike rack</p> <p>Provide benches along trails where appropriate.</p> <p><u>Westcott Bay</u> Provide picnic tables</p> <p>Provide bike rack</p> <p>Provide benches along trails where appropriate.</p> <p>Construct low impact public restrooms.</p>	<p><u>Mitchell Hill</u> Same as Alternative 1</p> <p><u>Westcott Bay</u> Modify or remove house and deactivate/remove septic system. Repurpose house / foundation as gathering space/picnic area.</p>	<p><u>Mitchell Hill</u> Construct low impact public restrooms.</p> <p>Provide a small number of picnic tables.</p> <p><u>Westcott Bay</u> Retain house for administrative use (special events, housing, etc.).</p>	<p><u>Mitchell Hill</u> Same as Alternative 3 plus: construct expanded parking area with horse trailer turnaround (10-15 spaces plus at least one horse trailer).</p> <p><u>Westcott Bay</u> Provide access road, parking area, and trail to Westcott Bay. Retain house for day use visitor facility.</p>

Topic	Alternative 1 Continue Current Management (No Action)	Elements Common to Action Alternatives (ECAA)	Alternative 2 Low Impact Visitor Use Opportunities	Alternative 3 Mix of Development and Visitor Use Opportunities	Alternative 4 More Accommodation of Visitor Use Opportunities
Trail Standards	Draft equestrian trail standards	Trail standards developed for DCP would be applied to other park trails.	Same as ECAA	Same as ECAA	Same as ECAA
Trail Use Designations (Hiking, Bicycling, Horseback Riding)	<p><u>English Camp</u> <i>Hiking</i> All trails designated for hiking.</p> <p><i>Mountain Biking</i> No bicycling trails.</p> <p>Bicycles allowed on paved roads throughout park.</p> <p><i>Horseback Riding</i> Specific trails identified for equestrian use at English Camp, including: **English Camp Administrative Road from West Valley Road to edge of Parade Ground.</p> <p>No equestrian use on Parade Ground (cultural zone).</p> <p><u>Mitchell Hill</u> All trails available for multiuse (hiking, bicycling and horseback riding)</p> <p>Logging roads and</p>	<p><u>All Sites</u> All trails open to hiking.</p> <p>Bicycles allowed on paved roads. Administrative Road: no bicycle use.</p> <p><u>English Camp</u> Continue to require a permit for equestrian use.</p> <p><u>Mitchell Hill</u> Establish criteria for and designate trails for equestrian and bicycle access.</p> <p>Retain multiuse trails (hiking, equestrian and bicycling) on former logging roads.</p> <p>Mark and clear proposed Old Military Road trail.</p> <p>Add Mitchell Hill to Equestrian Use Permit</p> <p>Establish a single improved path in cedar grove.</p> <p><i>Hiking Only Trails</i></p> <ul style="list-style-type: none"> <li>• Cedar Grove*</li> <li>• Old Military Road*</li> </ul> <p>The following trails would be multiuse:</p>	<p><u>All Sites</u> Same as ECAA plus:</p> <p><u>Mitchell Hill</u> Most hiking only trails.</p> <p>Fewest multiuse trails.</p> <p>Community access trails only from adjacent public lands managed for public use.</p> <p>Multiuse trails would include former road beds and trails that link to island trail network (connector trails). All other trails hiking only.</p> <p><i>Hiking Only Trails</i> In addition to those trails listed in ECAA, the following trails would be hiking only:</p> <ul style="list-style-type: none"> <li>• Mitchell Hill Center</li> <li>• Mitchell Hill South</li> <li>• Outer Limits to Traverse Trail Junction</li> <li>• Traverse Trail to Mitchell Hill North Junction</li> </ul> <p><i>Multiuse Trails</i></p>	<p><u>All Sites</u> Same as ECAA plus:</p> <p><u>Mitchell Hill</u> Trails with 20% slope for 100 feet or more are hiking only.</p> <p>Trails under 20% slope multiuse.</p> <p>Community access trails multiuse.</p> <p>All trails except Cedar Grove and trails with long steep stretches multiuse.</p> <p><i>Hiking Only Trails</i> In addition to those trails listed in ECAA, the following trails would be hiking only:</p> <ul style="list-style-type: none"> <li>• Mitchell Hill Center from Inner Loop Road junction to park boundary</li> <li>• Mitchell Hill North from Traverse Trail to Outer Limits Trail</li> <li>• Traverse Trail from Inner Loop Road to Mitchell Hill Center</li> </ul>	<p><u>All Sites</u> Same as ECAA plus:</p> <p><u>Mitchell Hill</u> Fewest hiking only trails.</p> <p>Most trails multiuse (except Cedar Grove).</p> <p>Community access trails multiuse</p> <p>Construct trail to central viewpoint between Mitchell Hill South and Mitchell Hill Center trails.</p> <p><i>Hiking Only Trails</i> In addition to those trails listed in ECAA, the following trails would be hiking only:</p> <ul style="list-style-type: none"> <li>• View</li> </ul> <p><i>Multiuse Trails</i> In addition to those trails listed in ECAA, equestrian and bicycle use would be allowed on the following designated trails at Mitchell Hill (see Alternative 4 map).</p> <ul style="list-style-type: none"> <li>• Cady Viewpoint</li> <li>• Mitchell Hill Center</li> <li>• Mitchell Hill</li> </ul>

Topic	Alternative 1 Continue Current Management (No Action)	Elements Common to Action Alternatives (ECAA)	Alternative 2 Low Impact Visitor Use Opportunities	Alternative 3 Mix of Development and Visitor Use Opportunities	Alternative 4 More Accommodation of Visitor Use Opportunities
	<p>user-created trails are present.</p> <p>English Camp Connector Trail from Young Hill.</p> <p><u>Westcott Bay</u> All trails hiking only, no bicycle or equestrian use.</p> <p>Trail access via English Camp: Interim trail connecting to Westcott Bay from Bell Point Trail at English Camp (Westcott Bay Connector Trail).</p>	<ul style="list-style-type: none"> <li>Briggs Lake*</li> <li>Cady Mountain*</li> <li>Inner Loop Road*</li> <li>Dead End*</li> <li>English Camp Connector*</li> <li>Pipe Gate*</li> </ul> <p>The following trails would be closed and rehabilitated:</p> <ul style="list-style-type: none"> <li>Trail sections not part of formal cedar grove designated trail.</li> <li>Some trails that dead-end onto private property (where the private landowner is unwilling to accept public use via an agreement with the park).</li> <li>Extremely steep trails (above 20%).</li> <li>Trails that impact sensitive resources areas, such as moss-covered rocks.</li> </ul> <p><u>Westcott Bay</u> Improve Westcott Bay Connector Trail (culverts and turnpike).</p> <p>Improve Point Trail.</p> <p><i>Hiking Only Trails</i></p>	<p>In addition to those trails listed in ECAA, equestrian and bicycle use would be allowed on the following designated trails at Mitchell Hill (see Alternative 2 map):</p> <ul style="list-style-type: none"> <li>Mitchell Hill North</li> <li>Outer Limits Trail from Traverse Trail Junction to park boundary</li> <li>Traverse Trail from Mitchell Hill North Trail Junction to Outer Limits Trail Junction</li> </ul> <p>The following trails would be closed and rehabilitated:</p> <ul style="list-style-type: none"> <li>Boy Scout Camp Trail</li> <li>Pipe Gate South Trail</li> <li>Hops Farm Trail</li> </ul> <p><u>Westcott Bay</u> All trails would be hiking only, including the following new trail that would be designated / constructed:</p> <ul style="list-style-type: none"> <li>West Valley Road Connector</li> </ul>	<p>junction</p> <p><i>Multiuse Trails</i> In addition to those trails listed in ECAA, equestrian and bicycle use would be allowed on the following designated trails at Mitchell Hill (see Alternative 3 map).</p> <ul style="list-style-type: none"> <li>Mitchell Hill Center to Inner Loop Road</li> <li>Mitchell Hill North to Traverse Trail junction</li> <li>Outer Limits Trail</li> <li>Mitchell Hill South</li> <li>Traverse Trail from Mitchell Hill Center junction to Outer Limits Trail junction</li> </ul> <p><i>Trail Closure:</i> Trails that would be closed and rehabilitated are the same as identified in ECAA.</p> <p><u>Westcott Bay</u> Three new trails would be designated / constructed:</p> <ul style="list-style-type: none"> <li>West Valley Road Connector (multiuse)</li> <li>Westcott Bay Loop Trail (hiking only)</li> </ul>	<ul style="list-style-type: none"> <li>North</li> <li>Mitchell Hill</li> <li>South</li> <li>Outer Limits</li> <li>Traverse</li> </ul> <p><i>Trail Closure:</i> Trails that would be closed and rehabilitated are the same as identified in ECAA.</p> <p><u>Westcott Bay</u> New trails would be the same as in Alternative 3.</p> <p>The Westcott Bay Connector Trail and the new parking area trail connection would be multiuse.</p> <p>All other trails would remain hiking only.</p>

Topic	Alternative 1 Continue Current Management (No Action)	Elements Common to Action Alternatives (ECAA)	Alternative 2 Low Impact Visitor Use Opportunities	Alternative 3 Mix of Development and Visitor Use Opportunities	Alternative 4 More Accommodation of Visitor Use Opportunities
		<ul style="list-style-type: none"> <li>Point Trail (adjacent to lagoon)</li> </ul>		<ul style="list-style-type: none"> <li>Roche Harbor Road / West Valley Road to Westcott Bay (multiuse)</li> </ul>	
Trail Linkages	Westcott Bay Connector Trail  English Camp Connector Trail	Provide hiking trails that link to Island-wide trail network.	Same as ECAA	Same as ECAA plus:  Construct a hiking trail Roche Harbor Highlands trailhead to Westcott Bay.  Construct a trail from proposed West Valley Road parking (tbd) to Westcott Bay.	Identify/create a multiuse loop trail that links Westcott Bay, English Camp, and Mitchell Hill, and work cooperatively with Roche Harbor Highlands to link to that trail system.  Construct access trail from new road/parking area on West Valley Road to meet multiuse connector trail linking Roche Harbor Highlands to Westcott Bay
Trail Resource Protection Measures	No specific measures	<u>All Sites</u> Restore/eliminate some social trails.  Protect areas of sensitive habitat, such as wetlands, with raised trails such as boardwalks or turnpike as appropriate.  Provide drainage improvements on trails where needed.  Annually evaluate resource impacts related to multiuse in sensitive areas and determine ways to avoid, minimize or mitigate impacts.  Evaluate trails traversing rocky balds	Same as ECAA	Same as ECAA	Same as ECAA plus:  Multiuse trails crossing Old Military Road would be modified to avoid adverse impacts to cultural zone.  Trails designated for multiuse that exceed standard (20% slope for 100 feet) would be modified to meet this standard (see ECAA example).

Topic	Alternative 1 Continue Current Management (No Action)	Elements Common to Action Alternatives (ECAA)	Alternative 2 Low Impact Visitor Use Opportunities	Alternative 3 Mix of Development and Visitor Use Opportunities	Alternative 4 More Accommodation of Visitor Use Opportunities
		<p>to determine impacts for possible need to change designations if widening or rerouting would further impact resources.</p> <p><u>Mitchell Hill</u> Remove/rehabilitate unnatural/user-created features (mountain biking jumps and dips).</p> <p>Close / rehabilitate the following trails:</p> <ul style="list-style-type: none"> <li>• Trail sections not part of formal cedar grove designated trail</li> <li>• Some trails that dead-end onto private property</li> <li>• Extremely steep trails (above 20%)</li> </ul> <p>Modify trails as needed to meet standards for designated uses. For example, a trail designated for multiple use that is currently too steep for mountain biking may be rerouted to reduce its grade.</p> <p>Where trails cross the proposed Old Military Road mitigate potential impacts to cultural resources.</p> <p><u>Westcott Bay</u> Establish and define access to Westcott Bay cove / shoreline to minimize social trails.</p>			
Trail Signs	<u>Mitchell Hill / Westcott Bay</u>	<u>Mitchell Hill / Westcott Bay</u> Mark boundaries of Westcott Bay	Same as ECAA	Same as ECAA	Same as ECAA

Topic	Alternative 1 Continue Current Management (No Action)	Elements Common to Action Alternatives (ECAA)	Alternative 2 Low Impact Visitor Use Opportunities	Alternative 3 Mix of Development and Visitor Use Opportunities	Alternative 4 More Accommodation of Visitor Use Opportunities
	Interim trail signs at Westcott Bay and Mitchell Hill.	and Mitchell Hill.  Provide map of trail system with landmarks and trail junctions.  Add trail designation signs to Westcott Bay and Mitchell Hill.  Continue to sign trail junctions with low impact, low profile signage.  Add trail etiquette signs.			
Accessibility	<u>English Camp</u> Accessibility to parade ground provided on request with golf carts.  Accessible parking provided at English Camp (2 spaces).  <u>Mitchell Hill / Westcott Bay</u> No designated accessible parking at Westcott Bay or Mitchell Hill.	<u>English Camp</u> Same as Alternative 1  <u>Mitchell Hill / Westcott Bay</u> Develop accessible trails, such as in the cedar grove area at Mitchell Hill and to the point area at Westcott Bay.  Provide accessible parking by request at Westcott.	Same as ECAA plus:  Construct accessible parking in expanded parking area at Mitchell Hill.	Same as Alternative 2 plus:  Provide accessible parking spaces at new parking area off West Valley Road for Westcott Bay.	Same as ECAA plus:  Provide accessible parking in new parking areas at Westcott and Mitchell Hill.
Interpretation	<u>English Camp</u> Maintain existing interpretation.  <u>Mitchell Hill / Westcott Bay</u> Occasional special	<u>English Camp</u> Same as Alternative 1  <u>Mitchell Hill / Westcott Bay</u> Provide: <ul style="list-style-type: none"> <li>• Bulletin board</li> <li>• Trailhead kiosks</li> </ul>	Same as ECAA	Same as ECAA plus:  Provide self-guided trails (signs and/or brochures / podcast) at Mitchell Hill and Westcott Bay.  Conduct occasional ranger	<u>Mitchell Hill</u> Same as Alternative 3 plus:  <u>Westcott Bay</u> Same as Alternative 3 plus:  Interpretive exhibits visitor

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	event walks.	<ul style="list-style-type: none"> <li>Revised park brochure</li> <li>Trail maps</li> </ul>		programs at both sites.	facility.  Staffing for visitor facility.  Semi-regular interpretive programming.
Education Camp	<u>English Camp</u> <i>Current:</i> Group education camp (tent sites with water and power) would remain in its present location at English Camp.  <i>Future:</i> Education camp would be relocated to GMP identified site (on the south side of the administrative access road).	<u>English Camp</u> Education camp would be relocated to north side of Administrative Road.  Provide flexible area for up to 40 students and 10 staff, including: <ul style="list-style-type: none"> <li>Campfire circle</li> <li>Group Shelter with kitchen and picnic tables (flexible space)</li> <li>Tent Pads (approx. 10-15)</li> <li>Restroom</li> <li>Nearby parking for 4-6 vehicles and one bus</li> <li>Nearby turnaround for buses</li> <li>Loading/Unloading area adjacent to camp</li> <li>Utilities (connections to water and electricity, new septic system)</li> </ul>	Same as ECAA	Same as ECAA	Same as ECAA
Resource Protection	No specific measures	Conduct natural and cultural resources assessments, inventories and begin monitoring.  Remove non-historic infrastructure.  Protect streams and stream corridors by limiting use to hiking and by improving drainage along trails.	Same as ECAA	Same as ECAA	Same as ECAA

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		Protect sensitive resources, such as cutthroat trout, shallow soils, and vegetation by creating buffer areas and managing visitor use.			
Special Park Uses (permit activities)	<u>Mitchell Hill</u> n/a  <u>Westcott Bay</u> Occasional use for park sponsored meetings.	<u>English Camp/Mitchell Hill</u> Manage horse use through the issuance of special use permits.  <u>Westcott Bay</u> Opportunities for park sponsored uses and other special events.	<u>Westcott Bay</u> Similar to Alternative 1 (picnic shelter available)	<u>Westcott Bay</u> Provide opportunities for small- scale special events.	<u>Westcott Bay</u> Provide opportunities for special park uses such as family picnics and weddings.
Kayaking	<u>English Camp</u> Informal kayak launching from English Camp (parade ground or dock).  <u>Westcott Bay</u> Informal kayak launching/landing along Westcott Bay shoreline	<u>English Camp</u> Same as Alternative 1  <u>Westcott Bay</u> Same as Alternative 1 plus:  No kayak launching/landing in cove due to fragile resources.	<u>English Camp</u> Same as Alternative 1	<u>English Camp</u> Same as Alternative 1 plus:  Provide special use access to English Camp Administrative Road for kayakers at English Camp to launch at dock.	<u>English Camp</u> Same as Alternative 1  <u>Westcott Bay</u> Provide access to an improved launch site at Westcott Bay off the Westcott Bay Connector Trail.
Camping	No public overnight camping	Same as Alternative 1	Same as Alternative 1	Same as Alternative 1	<u>English Camp and Westcott Bay</u> Same as Alternative 1  <u>Mitchell Hill</u> Public overnight camping (3-5 spaces)

# III. Chapter 3: Affected Environment

## Introduction

This chapter focuses on key topics that have the potential to be affected by the alternatives should they be implemented. These topics are: soils, water resources (water quality, quantity, wetlands, and floodplains), vegetation, special status species, prehistoric and historic archeological resources, historic structures and cultural landscapes, visitor experience, and park operations.

## A. Physical Resources

### 1. 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 archeological objects (NPS PWR 2008).

In general, the soils at the English Camp Unit are shallow to moderately deep extending down to bedrock material. According to San Juan County planning and ordinance maps, the Mitchell Hill and Westcott Bay properties have the soils listed below.

Table 6: Soil Types

Mitchell Hill	Westcott Bay
Mitchell Bay gravelly sandy loam, 0 to 5% slopes	Beaches-Endoaquents,tidal-Xerorthents association, 0 to 5% slopes
Sholander-Spieden complex, 0 to 5% slopes	Sholander-Spieden complex, 0 to 5% slopes
Sucia loamy sand, 2 to 10% slopes	Coveland loam, 0 to 5% slopes
Sucia-Sholander complex, 5 to 20% slopes	Coveland-Mitchellbay complex, 2 to 15% slopes
Doebay-Morancreek complex, 5 to 25% slopes	Doebay-Cady-Rock Outcrop complex, 10 to 30% slopes
Haro-Hiddenridge-Rock Outcrop complex, 5 to 30% slopes	
Cady-Rock Outcrop complex, 5 to 30% slopes	
Doebay-Cady-Rock Outcrop complex, 10 to 30% slopes	
Cady-Rock Outcrop complex, 25 to 75% slopes	

(NRCS 2014)

Archeological investigations for the education camp found the following regarding soils at the proposed site:

In general, sediments revealed in the shovel probes consisted of poorly sorted glacial outwash fine sediments, sand, gravels, cobbles, and occasionally boulders beneath thin **humus**. **Almost all probes exhibited a thin and well developed “A” soil horizon typical** of soils commonly found in forested glacial outwash plains. Most shovel probes located in the far western portion of the Education Camp area encountered bedrock at 11 to 63 cmbs. Shovel probes located in the eastern end of the Education Camp and near the well house were terminated in **unweathered “C” horizon without** encountering bedrock (Ripin 2015).

## 2. Water Resources

### a. Hydrological Overview

Water features within the project area are non-tidal wetlands and streams. The features mapped by San Juan County include:

#### Mitchell Hill

- Three possible non-tidal wetlands: one crosses the north boundary, another north of the Horse Trail Road entrance, and a larger one almost in the middle of the property.
- One perennial stream that flows through the entire southern portion of the property, and two other streams that may be perennial because they are identified as capable of supporting fish.
- Five seasonal stream reaches identified as not capable of supporting fish.

#### Westcott Bay

- There is a small lake (pond) on the property that is a possible non-tidal wetland (San Juan County 2014a).



Figure 15: Westcott Bay Pond

In 2014, in cooperation with Oregon State University the NPS completed a Draft Natural Resource Condition Assessment Report for the park. Its general findings regarding surface waters within Mitchell Hill and Westcott Bay were:

The Mitchell Hill addition contains three first-order channels and a collective length of about 9,000 feet. At least one of them flows year-round during most years. They join **together about 0.4 mile downslope from the park's west boundary and then flow through** a few ponds and wetlands before reaching Garrison Bay another 0.8 stream-miles from the park. Two of the three channels originate outside the park. The northernmost channel which originates within the park drops about 210 feet over a distance of about

2,800 feet for an average percent-slope of 7%. The middle channel originates in a spring and before entering the park from the east, it drops about 115 feet over a distance of about 2,050 feet for an average percent-slope of 6%. The southernmost channel probably flows the most consistently and drops about 140 feet over a distance of about 1,750 feet for an average percent-slope of 8%. For much of its length within the park it is bounded by steep side slopes, giving it a ravine-like appearance. The two channels that originate outside the park are shaded by forest their entire length beginning at their source, as are all three of the channels as they flow **westward through the park's Mitchell Hill addition**. About 0.3 mile north of the English Camp park boundary, a mostly-wooded stream feeds into Westcott Bay (NPS 2014).

b. Water Quality

Overall, the water quality in the region of the park is relatively high; however, little mixing occurs with enclosed inlets and bays (Westcott and Garrison Bays) making them susceptible to bacteria and nutrient loading (NPS PWR 2008). English Camp is in the center of the Westcott-Garrison Bay watershed and was ranked third in importance in the 1988 San Juan County Watershed Ranking Report (WDOE 2000). It was given priority because the calm, protected waters of the bays exhibit unique intertidal and marine habitats. Land and water use can impact the quality of water in the watershed.

The San Juan County Health and Community Services Department conducted a survey in the Westcott Bay area during the winter of 1997 to evaluate the performance of on-site septic systems in the drainage basin, and to identify homeowners in need of funding assistance for system maintenance and repair. Survey results showed a 5% failure rate of systems along Westcott Bay (Larkin 1999a). These results appeared to be directly related to streams previously sampled in the area that showed high fecal coliform counts (WDOE 2000). Consequently, a program to repair the failing septic systems was initiated. The soils in the Westcott-Garrison Bay watershed are generally unsuitable for on-site sewage treatment. The drainage basin contains areas of rock, clay and shallow soils, so gravity systems are not the most suitable type septic system for the area (Larkin 1999a). Many of the older septic systems in the drainage basin are gravity systems. The design of these systems requires at least three feet of vertical separation from the base of the drain-field to any impermeable layer beneath the soil (Larkin 1999a). The San Juan County Health Department administers the approval of on-site septic permits.

There are no septic facilities at Mitchell Hill or for the education camp at English Camp. The NPS property at Westcott Bay contains an on-site septic tank (5,000 gallon) and drainfield system. An after-the-fact permit has been issued by San Juan County (Permit #11094) for the house with its current capacity which is a single family residence with 2 bedrooms. This resulted in a restriction of a flow rate of 240-gallons per day for which the 5,000 gallon septic tank is overdesigned (Lam 2014).

c. Water Quantity

**San Juan County's water resources are provided by local rainfall only** and are characterized by the rain-shadow created by the Olympic Mountains to the south and Vancouver Island to the west, by predominantly steep terrain and bedrock geology, by small watershed catchment areas, and by the extensive shoreline. These conditions result in low rainfall, limited groundwater storage, and extensive runoff and discharge to the sea (San Juan County 2004).

Water withdrawals present a difficult issue throughout the San Juan Islands because of the limited extent and capacity of the aquifers, their characteristically slow recharge rates, and their vulnerability to saltwater/seawater intrusion (Larkin 1999a). [Seawater intrusion is the replacement of fresh ground water with seawater. This process occurs when freshwater, which is lighter than seawater, floats as a lens on the underlying seawater, is withdrawn to the point that

seawater is either drawn up toward the bottom of a pumping well or moves laterally inland (lateral intrusion) because of depletion of the volume of the freshwater lens (Larkin 1999a)].

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 functions. At English Camp, groundwater occurs in unconsolidated beach deposits, which are highly susceptible to saltwater intrusion, and in fractured bedrock aquifers (NPS PWR 2008). Water shortages often occur during summer months when rainfall is minimal and visitation is at a peak (NPS PWR 2008). Recharge rates in bedrock are usually less than 1.5 inches/year; in glacial deposits they range from 0.5 to 3 inches/year. In sandy soils the rate may be as high as nine inches/year. With an average precipitation for the Island of 33 inches/year, the average recharge in the English Camp area ranges from 1- 4 inches/year, with most of the area near one inch/year (NPS 2014a). At English Camp potable water for the education camp is from an NPS-owned well which has a limited yield of less than one gallon per minute, but which is adequate for the small withdrawal for the camp. At English Camp, two wells supply fresh drinking water. One was drilled in 2000 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 trailer pads, and the group campsite used in summer and the education camp. Both wells meet the exemption conditions set forth by the Washington Department of Ecology; therefore, obtaining a **certified water right is not required** (NPS 2014a).

Currently, there are no water utilities at Mitchell Hill. Westcott Bay obtains water through a temporary water use easement agreement (San Juan County 2012), which transfers water from Roche Harbor Water system, Inc. The drinking water source for the Roche Harbor area is Briggs Lake, a Class 1, 29.1-acre water body (WDOE 2000). A drinking water treatment plant is located in the Westcott-Garrison Bay watershed near the drainage to the northern creek to Westcott Bay (WDOE 2000).

#### d. Wetlands

Overview: The U.S. Fish and Wildlife Service defines wetlands as: “lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water. Wetlands must have one or more of the following three attributes:

- 1) At least periodically, the land supports predominantly hydrophytes
- 2) The substrate is predominantly undrained hydric soil
- 3) The substrate is non-soil and is saturated with water or covered by shallow water at **some time during the growing season of each year**” (Cowardin 1979).

Mottled and moist soils in conjunction with wetland vegetation are indicative of wetland sites. Marshes, swamps, and bogs are also termed wetlands.

NPS Director's Order 77-1: Wetland Protection and Procedural Manual established the agency procedures/requirements for implementing Executive Order 11990. One requirement includes preparation of a Wetlands Statement of Findings if an action would have new adverse impacts on wetlands, and to compensate (minimum 1:1 ratio) for wetland impacts by restoring degraded wetlands.

San Juan County has identified its wetlands as one of the “County's most valuable resources because drinking water aquifers are recharged entirely through rainfall” (Larkin 1999a). The Westcott-Garrison Marine Habitat Management Area Plan developed a series of management recommendations. One of these recommendations states the following:

Initiate a program with the San Juan County Conservation District and/or other organizations to confirm in the field those wetlands identified on the county's inventory

map but not field-checked; and use available resource data (hydric soils, etc.) to identify areas potentially containing wetlands and confirm these. This would be prohibitively **expensive to do countywide but may be workable for “target” areas in this particular watershed**, such as forested areas with hydric soils (Larkin 1999b).

The park contains several wetlands. 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, including nine wetland areas totaling 12.7 acres within the English Camp Unit. These were all freshwater wetlands and consisted of a total of eight acres of palustrine forested wetlands, 0.3 acres of palustrine scrub shrub wetlands, and 4.4 acres of palustrine emergent wetlands (Holmes 1998). The primary emergent wetland vegetation was red alder (*Alnus rubra*). These sites provide significant feeding, nesting, and breeding grounds for a variety of resident and migratory birds including the black brant, great blue heron, and osprey. 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).

In 2004 the NPS Water Resources Division conducted a survey of the park to help develop the **“Vital Signs” monitoring program**. The report identified probable agents of change and stressors associated with possible alteration and/or loss of wetland habitat. Some of these potential agents of change and stressors include:

- Increased or existing land development (including residential/commercial development, roads/parking areas expansion, turf or golf course management, abandoned landfills)
- **“Failing” on-site sewage systems** (improper design, operation, and maintenance)
- Groundwater withdrawals (residential/commercial water supply)

The report made the following conclusion:

**Because potential “ecosystem responses” to the probable agents of change/stressors include** the possible alteration and/or loss of wetlands habitats, it is strongly advised that similar survey efforts be conducted on at least a once per decade basis (NPS 2004).

#### Mitchell Hill

With the addition of Mitchell Hill and Westcott Bay in 2010 and 2013 respectively, the park acquired more wetlands and hydrologic resources. At Mitchell Hill, San Juan County identified at least one stream that flows into Mitchell Bay (WDOE 1986).

In 2012 the existence of a perennial stream within the Mitchell Hill property was identified by Rocchio during a vegetation survey: **“There is an entrenched perennial stream on Mitchell Hill that runs east to southwest across the southern portion”** (Rocchio et al. 2012).

The vegetation survey also identified forested swamps (western red cedar, salmonberry and skunk cabbage) within Mitchell Hill (Rocchio et al. 2012). Four herbaceous and two forested native wetland alliances found at English Camp and Mitchell Hill are described in Figure 16. The most frequent and abundant type is the (*Acer macrophyllum* - *Alnus rubra*) Riparian Forest Alliance, which occupies seasonally wet areas associated with streams or seasonally perched water tables. The other forested type is the (*Tsuga heterophylla* - *Picea sitchensis* - *Thuja plicata* - *Abies*) / *Lysichiton americanus*, Coniferous Swamp Woodland Alliance.

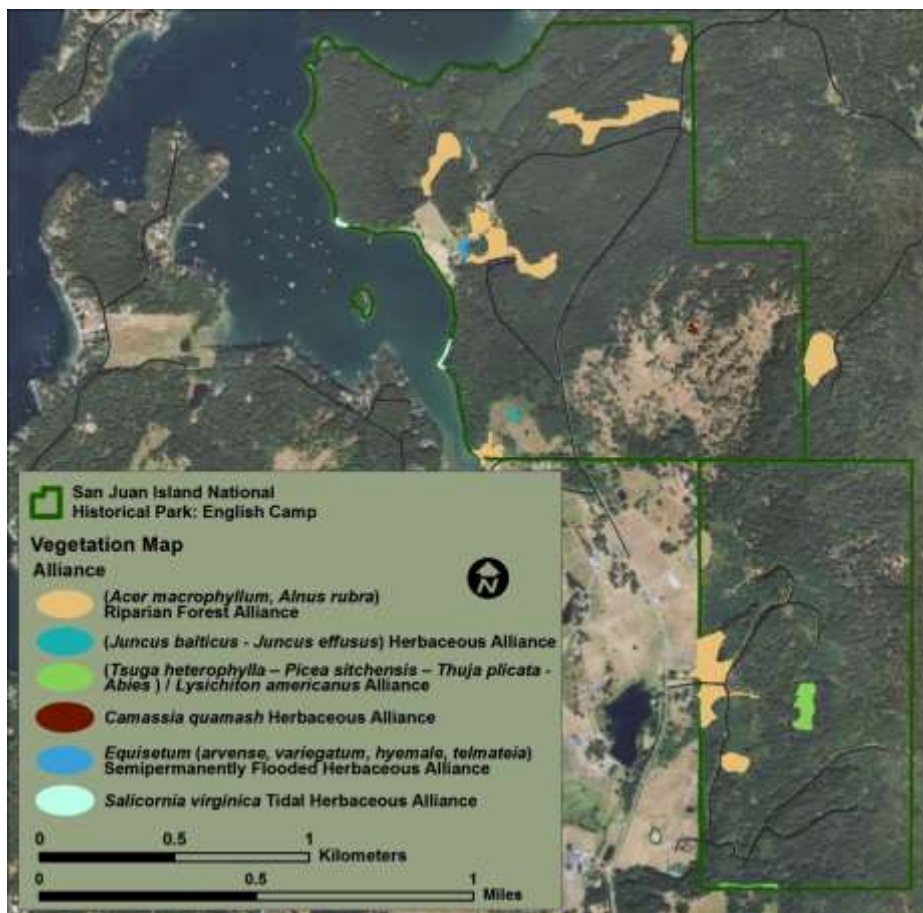


Figure 16: Native Wetland Alliances at English Camp and Mitchell Hill (Rocchio et al. 2012)

#### Westcott Bay

In November 2014 a wetlands delineation was completed for Westcott Bay. In summary, there were four obligate wetland species found at the site: *Jaumea carnosa* (jaumea), *Salicornia virginica* (pickleweed), *Potentilla anserina* var. *pacifica* (Pacific cinquefoil), and *Triglochin maritimum* (seaside arrow-grass). Nine facultative wetland species also exist on the site (Murphy 2014). The complete wetlands delineation report is available upon request. Although there would be construction of a short section of boardwalk through this area, construction methods would avoid most impacts to wetlands. Overall impacts would affect less than 0.1 acre. Based on analysis of impacts and consultation, a wetlands statement of findings is not required for this excepted action.

#### e. Floodplains

In managing floodplains on park lands, the National Park Service will:

- (1) **manage for the preservation of floodplain values**
- (2) **minimize potentially hazardous conditions associated with flooding**
- (3) comply with the NPS Organic Act and all other federal laws and executive orders related to the **management of activities in flood-prone areas**, including Executive Order 11988 (Floodplain Management), the National Environmental Policy Act, applicable provisions of the Clean Water Act, and the Rivers and Harbors Appropriation Act of 1899 (NPS 2006).

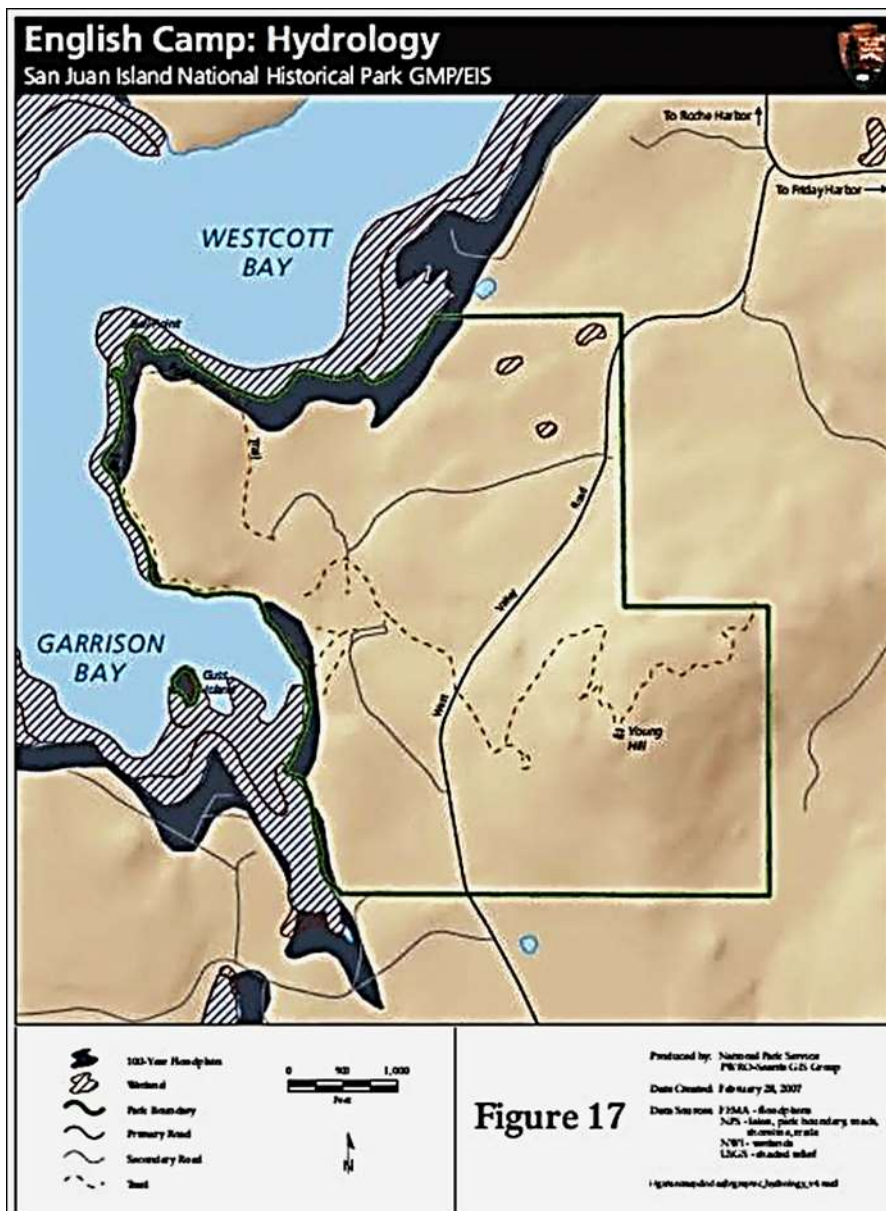


Figure 17: GMP English Camp Hydrology Map (NPS PWR 2008)  
(Dark solid color indicates 100-year floodplain)

When it is not practicable to locate or relocate development or inappropriate human activities to a site outside and not affecting the floodplain, the Service will

- prepare and approve a statement of findings, in accordance with procedures described in Director's Order 77-2 (Floodplain Management);
- use nonstructural measures as much as practicable to reduce hazards to human life and property while minimizing the impact to the natural resources of floodplains;
- ensure that structures and facilities are designed to be consistent with the intent of the standards and criteria of the National Flood Insurance Program (NPS 2006).

As shown in Figure 17, most of the Westcott Bay property is within the 100 year floodplain (NPS PWR 2008). As a result, implementation of actions proposed in this plan, including in the NPS

preferred alternative, require a Floodplains Statement of Findings. A draft Floodplains Statement of Findings for the preferred alternative is attached as Appendix 3 in this plan.

## B. Biological Resources

### 3. Vegetation

#### a. Native Vegetation

A key management goal for the park is to emphasize the connections and interrelationships **between the park's natural and cultural resources**. This includes providing opportunities for visitors to **understand the importance of the park's natural resources in defining the cultural** landscapes and influencing historic events of San Juan Island (NPS PWR 2008). Having an accurate inventory and maps **of the park's vegetation is an important factor in accomplishing this** goal. Vegetation maps also assist managers with planning efforts, and provide baseline information on the current condition of the vegetation, which can then be used to monitor changes. In 2012 a vegetation map was completed for the park. It built on previous mapping projects conducted by Holmes, Agee, and others (Agee 1987, Holmes 1998). The project also was completed to meet current NPS Vegetation Inventory and Mapping Program standards.

English Camp is dominated by mature Douglas-fir (*Pseudotsuga menziesii*) mixed with grand fir (*Abies grandis*), big leaf maple (*Acer macrophyllum*), red alder (*Alnus rubra*), Pacific madrone (*Arbutus menziesii*), 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 part 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).

One remaining stand of open Garry oak (*Quercus garryana*) woodlands that once stretched from Vancouver Island to southern Oregon dominates the south side of Mount Young at English Camp and a small portion of the Mitchell Hill property. Encroaching shrubs and young Douglas-fir trees have prompted the park to take actions to preserve the oak woodlands. The park has been engaged in active management efforts since 2003 to preserve the prairie and oak woodlands. An interdisciplinary and integrated approach at English Camp has included the control of nonnative plants, collection of native plant seeds for propagation, support for the establishment of new oak trees, removal of encroaching fir trees, and using fire to preserve and maintain this increasingly rare habitat (NPS 2011).

#### Mitchell Hill

The forest cover on Mitchell Hill is characterized by a mixture of Douglas-fir, western red cedar, alder and scrub brush ranging in age from 40 to 100 years. On the dry, open ridges some trees were documented in 1986 as 170 years old (*now almost 200 years old*). Much of the area has been logged in the past. Aerial photos indicate a clearcut circa 1940 on a portion of the property (WDNR 1986).

The 2012 parkwide vegetation survey included Mitchell Hill (since it had been acquired in 2010). The following data came from that survey report.

Findings confirmed that Mitchell Hill is largely dominated by forest alliances (97% of Mitchell Hill total) with the *Pseudotsuga menziesii* - (*Arbutus menziesii*) Forest and Woodland Alliance being the most abundant alliance (116 ha or 286.4 acres; 62.8% of total). The next most abundant alliance is the more mesic *Thuja plicata* - (*Abies grandis*)

Maritime Forest Alliance which occupies 57.2 ha (141.4 acres) or 31% of the total area. This alliance is extensive at Mitchell Hill in low-lying flats. There are some early seral forest types that occupy relatively recently (e.g., 15-50 years ago) logged areas.

Two herbaceous alliances are found at Mitchell Hill, *Holcus lanatus* - *Poa pratensis* - *Elymus repens* Provisional Ruderal Alliance and *Bromus sitchensis* - *Elymus glaucus* Provisional Ruderal Alliance, and account for 4.5 ha (11.2 acres) (2.5%). The *Holcus lanatus* - *Poa pratensis* - *Elymus repens* Provisional Ruderal Alliance (nonnative species association) is the more abundant of the two and occupies 4.2 ha (10.4 acres) (2.3%). These two herbaceous alliances are the only ruderal alliances found at Mitchell Hill, of which only .8 acres are native species (Alaska brome and Blue wild rye). Ruderal vegetation types at Mitchell Hill are limited to trails and old roads and a small portion of a cleared meadow in the northwest corner of the unit. The only shrubland alliance is the *Symphoricarpos albus* (snow berry) Pacific Coast Shrubland Alliance which covers 0.8 ha (1.9 acres) or 0.42% of the total area (Rocchio, et al. 2012).

#### Westcott Bay

The vegetation at Westcott Bay was surveyed as part of the wetlands delineation conducted in November 2014. The vegetation associations described below were compiled by Madrona Murphy from the Kwiáht: Center for the Historical Ecology of the Salish Sea, Lopez Island, WA in partnership with the NPS.

The forest on the headlands above the lagoon is of two types: *Pseudotsuga menziesii*-*Arbutus menziesii* / *Holodiscus discolor* / *Lonicera hispidula* near the water and *Pinus contorta*-*Pseudotsuga menziesii* / *Gaultheria shallon* farther inland (in Chapell 2006).

The salt marsh is dominated by *Salicornia virginica* and *Jaumea carnosa* nearest to the water with *Distichlis spicata* dominant further upland. The salt marsh community also includes: *Atriplex gmelinii*, *Polygonum fowleri*, *Plantago maritima*, *Potentilla anserina* var. *pacifica*, *Puccinellia nuttalliana*, *Spergularia canadensis*, and *Triglochin maritima*.

At its upper end the saltmarsh mixes with wet pasture and the edges of the lawn, and in this area is dominated by introduced grasses, particularly *Agrostis* (probably *A. stolonifera*). This area also includes *Achillea millefolium*, *Barbarea orthoceras*, *Bromus hordeaceus*, *Poa* (probably *P. pratensis*), *Rumex crispus*, *Shedonorus arundinacea*, and *Symphotrichum subspicatus*.

The total plants observed during the survey included 41 native species and 22 nonnative species.

#### a. Nonnative Vegetation

Invasive/nonnative species are plant species whose introduction into a nonnative habitat may lead to economic and/or environmental harm or harm to human health (National Invasive Species Council 2006). Invasive species can impact entire ecosystems by altering habitat, species composition, hydrology, and the timing and severity of disturbances, such as fires, floods, and disease (NPS SAJH 2005).

Nonnative plants are widespread throughout San Juan Island, largely due to past agricultural practices. More recently; land development/conversion, home gardening, and landscape practices continue to introduce a wide variety of new nonnative species, as does the inadvertent introduction of nonnative seeds by individuals from travels off-island (NPS 2011). Nonnative species are a particular challenge to island native ecosystems because unlike the native plants that developed in this environment, nonnative plants originated in other areas and have been

introduced to an ecosystem where they are generally free from natural controls, such as insects, wildlife and other organisms (NPS 2011).

During the summers of 2000, 2001, 2002, and 2004, a plant inventory was conducted at the park.

Results of the inventory estimated 371 plant species, with approximately 120 of these species being nonnative (NPS 2005). There are no known Class A noxious weeds in the park. State and county noxious weed lists identify seven Class B species and six Class C species that occur in the park (Washington State and San Juan County Noxious Weed Control Boards 2003).

At present, 13 nonnative and invasive plant species are managed and monitored by the park. Only seven of these plants are listed as noxious weeds (NPS SAJH 2005). Invasive plants in the park include, but are not limited to, spotted knapweed (*Centaurea biebersteinii*), Canada thistle (*Cirsium arvense*), bull thistle (*Cirsium vulgare*), tansy ragwort (*Senecio jacobaea*), quackgrass (*Elymus repens*), Himalayan blackberry (*Rubus discolor*), cutleaf blackberry (*Rubus laciniatus*), common mullein (*Verbascum thapsus*), and winged elm (*Ulmus alata*) (NPS 2010).

In 2006, chemical applications to control Canada thistle, bull thistle and St. Johnswort on Young Hill were conducted following prescribed burn treatments. Also in 2006, infestations of cheatgrass and rip-gut brome (*Bromus rigidus*) were mapped on Young Hill (NPS PWR 2008).

#### Mitchell Hill

The *Holcus lanatus* - *Poa pratensis* - *Elymus repens* Provisional Ruderal Alliance (velvet grass, Kentucky bluegrass and quack grass) comprises about 4.2 ha (10.4 acres) (2.3%) on Mitchell Hill, mostly along old roads and trails (Rocchio, et al. 2012).

#### Westcott Bay

The November 2014 wetlands plant survey identified 22 nonnative plant species, with three of these species listed by the San Juan County Noxious Weed Control Board, 2014. All three species (English ivy, Canada thistle, and bull thistle) are state and county-identified noxious weeds.

## 4. Special Status Species and Communities

### a. Plants

#### English Camp and Mitchell Hill

According to the 2012 parkwide vegetation survey, the imperiled *Pseudotsuga menziesii* / *Rosa gymnocarpa* - *Holodiscus discolor* / *Festuca occidentalis* Forest occupies more area than any other vegetation type in both English Camp and Mitchell Hill (Rocchio et al. 2012).

These species are found extensively on Mitchell Hill in shallow or coarse soils. The imperiled *Thuja plicata* / *Gaultheria shallon* Forest and *Thuja plicata* - *Abies grandis* / *Polystichum munitum* Forest associations are also found at both units, but is [sic] limited to seasonally wet soils that remain moist through the growing season on Mitchell Hill. Both of these imperiled forest associations are found only within the Olympic rainshadow and their abundance and distribution has been impacted by development, agriculture, and past logging activities. The imperiled *Tsuga heterophylla* - (*Thuja plicata* - *Alnus rubra*) / *Lysichiton americanus* - *Athyrium filix-femina* Forest is a hardwood- conifer swamp which occurs in two locations with perennially saturated soils at Mitchell Hill and is sensitive to changes/adverse impacts in hydrology or water quality.

The complete 2012 Vegetation Report for San Juan Island National Historical Park can be found online at: <http://irmafiles.nps.gov/reference/holding/460911>.



# Vegetation Map

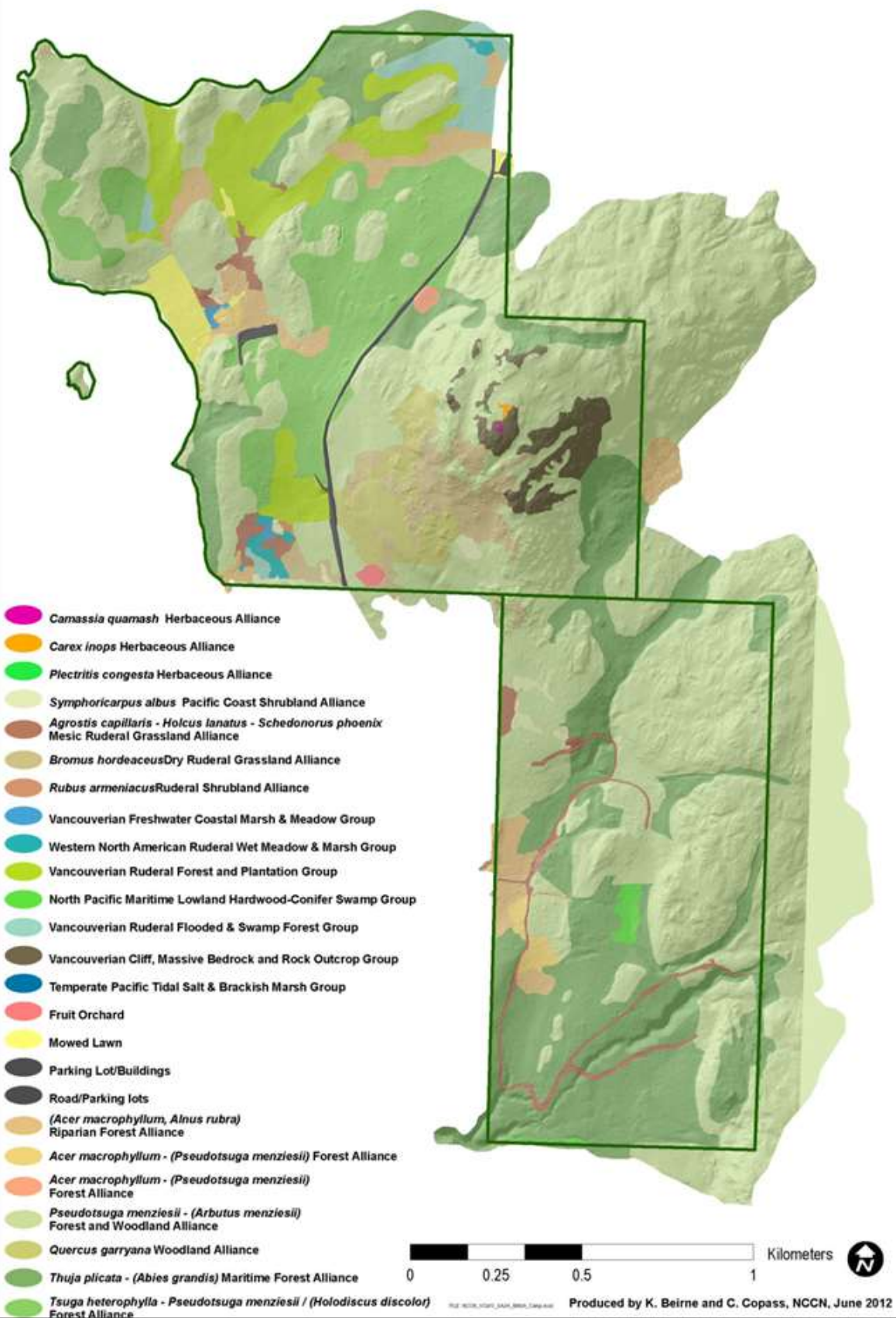


Figure 18: English Camp Vegetation 2012 (Prior to Westcott Bay Acquisition)

Table 7: Mitchell Hill Imperiled Forest Associations

Plant Association	Global Conservation Status Rank	Habitat
Thuja plicata – Abies grandis / Polystichum munitum Forest	G1G2	Mesic Forest
Thuja plicata / Gaultheria shallon Forest	G1G2	Mesic Forest
Pseudotsuga menziesii / Gaultheria shallon – Holodiscus discolor Forest	G2G3	Dry Forest
Pseudotsuga menziesii / Rosa gymnocarpa - Holodiscus discolor / Festuca occidentalis Forest	G2G3	Dry Forest
Pseudotsuga menziesii - Arbutus menziesii / Holodiscus discolor Forest	G2G3?	Dry Forest
Tsuga heterophylla - (Thuja plicata - Alnus rubra) / Lysichiton americanus - Athyrium filix-femina Forest	G3?S2	Wetland

Rocchio et al. 2012

Table 8: Global Conservation Rankings

Code	Meaning
G1	Critically imperiled: At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines or other factors.
G2	Imperiled: At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines or other factors
G3	Vulnerable: At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), and widespread declines or other factors
G4	Apparently secure: Uncommon but not rare; some cause for long-term concern due to declines or other factors
G5	Secure. Common; widespread and abundant.

Two imperiled mesic associations from the North Pacific Maritime Western Red-cedar-Western Hemlock Forest Group are found in the moistest upland forest types in the park and are relatively abundant within Mitchell Hill (Rocchio et al. 2012). The park supports some of the last remaining occurrences of many of these imperiled plant associations (Rocchio et al. 2012).



Figure 19: Herbaceous Bald

San Juan County’s “habitats of local importance” that occur on Mitchell Hill include: herbaceous balds and bluffs, and the Garry oak (*Quercus garryana*) woodlands and savannas (San Juan County 2014b). Although the 2012 survey on Mitchell Hill did not bring attention to herbaceous balds and bluffs, they do exist and have been observed by park staff. The specific plant associations, distribution, abundance, and condition of these herbaceous balds have not been determined. San Juan County has an ordinance revised in 2014 that has placed

protection measures to minimize disturbance to these “habitats of local importance” (San Juan County 2014b).

#### Westcott Bay

The imperiled *Salicornia virginica* - *Distichlis spicata* - *Triglochin maritima* - (*Jaumea carnosa*) herbaceous vegetation occurs in very narrow strips along the shoreline of Garrison and Westcott Bays (Rocchio et al. 2012). The presence of *Jaumea carnosa* (a wetland obligate) was recorded within the new Westcott Bay NPS property during the 2014 wetlands delineation of the site. Many of the plant associations described in the above map from the 2012 survey at English Camp and Mitchell Hill were also found at Westcott Bay during the wetlands delineation.

#### a. Wildlife

There are no special status species known from Mitchell Hill or Westcott Bay. There is, however, one species that is being considered for listing. In addition, San Juan County has identified the entire Westcott Bay property as a critical resource area that is regulated as a fish and wildlife habitat conservation area (San Juan County 2014a).

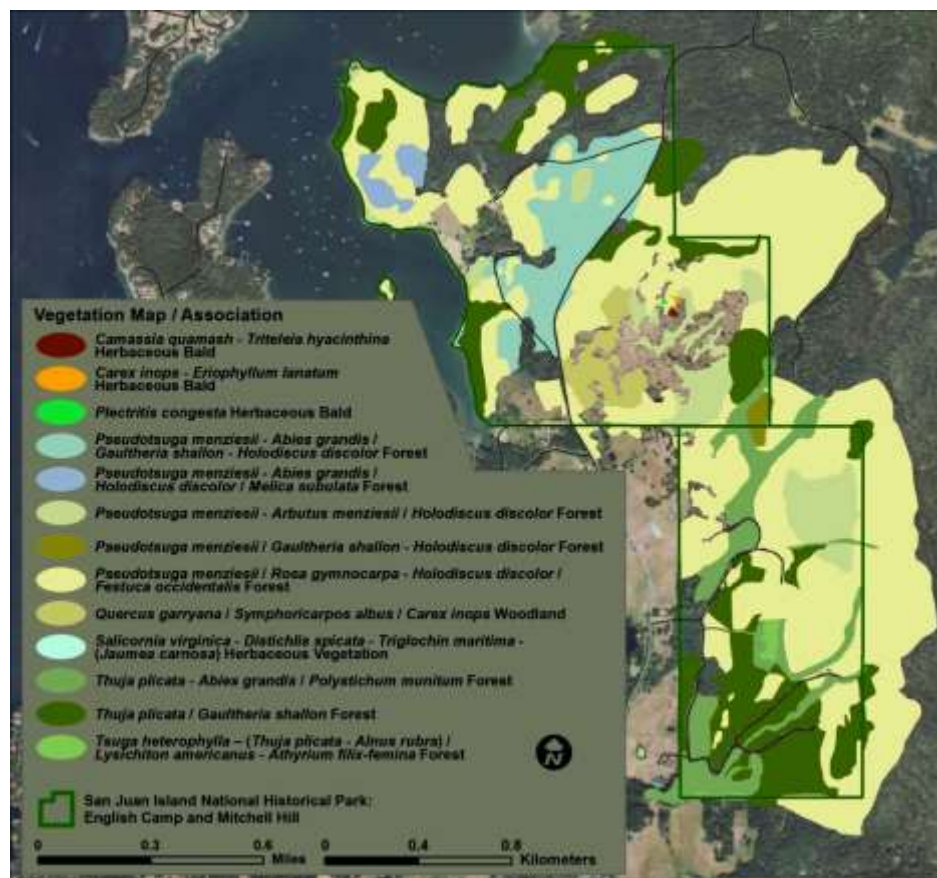


Figure 20: Sensitive plant associations at English Camp and Mitchell Hill (Rocchio et al. 2012)

Coastal Cutthroat Trout: The perennial stream at Mitchell Hill provides habitat for coastal cutthroat trout (*Oncorhynchus clarki clarki*), which has been identified by the U.S. Fish and Wildlife Service as a species of concern. Cutthroat have been identified just outside the southwest boundary of Mitchell Hill and are likely to be within the park. The trout sampled adjacent to the park is a genetically distinct species from other coastal cutthroat trout sampled in the San Juan Islands (Barsh 2014). The USFWS is currently considering listing of this sub-species under the

Endangered Species Act (Barsh 2014). Should this listing occur, it is likely that habitat improvements within the park would be proposed. Even without listing, management of this species would be closely coordinated with the USFWS and other partners.

## C. Cultural Resources

### 1. Archeology

#### English Camp

Archeological resources at English Camp include: shell middens, a long house site, pithouse occupation sites, and submerged resources. As a result of 50 years of archeological investigations in the park, one million artifacts have been retrieved and several research papers and reports have been produced and archived (NPS PWR 2008). The archeological resources complement and enhance the historical significance and purpose of the park, making it important to protect, manage and interpret these resources.

English Camp was a winter village site for 2,000 years, inhabited by the Coast Salish people. Tools found at the site have helped archeologists determine that early residents ate camas bulbs and other plants, engaged in woodworking, weaving, fishing, and carving, and manufactured and used stone tools (Stein 2000).

The National Park Service conducted an archeological survey for the proposed education camp facility at English Camp. The archeological survey is necessary under Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and the implementing regulations, because this project is an *undertaking* as defined in Section 106 of the NHPA.

The Area of Potential Effects (APE) for archeological resources encompassed four acres. It included the actual camp location and a linear portion of the Administrative Road for a buried water pipe. The assessment consisted of archival research, field survey, and resource documentation and evaluation for eligibility to the National Register of Historic Places (NRHP). Fieldwork included pedestrian survey (10 meter transects) and excavation of shovel probes (5-20 meters – more closely spaced for areas with greater proposed disturbance, including septic system and cookshelter). One historic site, Ed-Cp-01, was identified. This site is not recommended eligible for listing on the NRHP or as contributing element of the English Camp National Historic Landmark. Archeological monitoring of ground disturbance activities during the camp construction was recommended and would occur (Ripin 2015).

There are 40 archeological sites recorded within one mile of the proposed education camp location (Ripin 2015). Many of these are prehistoric; some also relate to the historic period. Although an 1894 map shows an old road and previous archeological investigations found evidence of the Crook House barn (located near the current well house), this investigation did not uncover evidence of the barn but did relocate the old road outside of the APE:

Pedestrian survey failed to reveal the locations of the roads indicated in the NPS (1971) map. . . however, it is possible that one of the roads was located where the current access driveway and parking area is. The location corresponds with the location depicted in the map. Evidence of an abandoned road was visible just north of the campground project area below the bench outside the APE. . . Pedestrian survey and subsurface shovel probes failed to reveal any evidence of the Crook Era barn remains indicated in the 1971 NPS map that may be located near the well house.

#### Mitchell Hill

Archeological investigations have also occurred at Mitchell Hill. Sites that have been documented include the former location of a schoolhouse in the northeast corner of the property, which has

not yet been analyzed to determine its significance (Horton 2014). A 0.5 mile section of the Old Military Road (recorded in 1989 by the state archeologist) is also present. In addition, culturally modified trees have been documented and the interdisciplinary team in September 2014 found possible evidence of another archeological site. Based on documentation associated with transfer of the site from the Department of Natural Resources and on a search of state office of archeological resources records, no additional archeological sites have been documented. Additional archeological analysis of the area is needed and would occur before implementation of actions proposed in the alternatives.

#### Westcott Bay

Westcott Bay contains a shell midden. Initial analysis of the site has occurred. Additional archeological monitoring and clearance would occur before implementation of actions proposed in the alternatives.

## 2. Historic Structures and Cultural Landscapes

English Camp was first designated a nationally significant historic site in 1961. It, along with American Camp, became National Historic Landmarks (NHL) in 1966, just prior to establishment of the park that same year. Since NHLs are the preeminent historic properties in the nation, special consideration would 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.

### a. Historic Structures

Mitchell Hill includes traces of the historic military road bisecting the northern edge of the property. This portion of the road was constructed by the Royal Marines to travel between American and English camps during the joint military occupation of 1859-1872. The road followed the path of a sheep run cleared by Hudson's Bay Company and Cowichan laborers from Vancouver Island. Visible along portions of the road is riprap — rock placed by British troops to reinforce the road — as well as wheel ruts from wagons. A few road cuts are evident on rock faces along the canopied forest paths. According to **the park's historian: "The military road captures the period before the U.S. took formal possession of San Juan Island when the boundary dispute was resolved. Not only did the road symbolize peacekeeping, it tied one end of the island with the other. This is very much a part of the island's heritage"** (San Juan Journal 2013). American and British troops further developed the trail in the 1860s during the military occupation to facilitate communication between their camps.

Westcott Bay, along with Roche Harbor proper, was part of the military reserve charted by Captain George E. Pickett of the U.S. Army and Captain George Bazalgette of the British Royal Marines in 1860, following a low-key dispute over lime deposits at Roche Harbor (NPS PWR 2008).

### b. Cultural Landscapes

The NPS **defines a cultural landscape as "... a reflection of human adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built."** The character of a cultural landscape is defined both by physical materials, such as roads, buildings, walls, and vegetation, and by use reflecting cultural values and traditions (Director's Order 28).

#### Sandwith Orchard

The Sandwith Homestead is a 5.2-acre historic site situated on the lower slopes of Mount Young within English Camp. The site consists of the original homestead, including the home site and a remnant fruit orchard. It is significant as the location of a late-nineteenth-century homestead farm and subsistence orchard, settled and farmed by Isaac Sandwith from 1875 to 1902. The

extant historic fruit trees, together with the vegetation patterns, archeological features, and the natural context, continue to convey the significance of the site. Today, the Sandwith Homestead remains in fair condition. In 2006, the State Historic Preservation Office determined the Sandwith Homestead ineligible for listing in the National Register of Historic Places (NPS 2009).

Proposed actions in the DCP include improving access trails through Sandwith orchard to allow for a connector trail. Although the Sandwith homestead and orchard are ineligible for listing in **the National Register of Historic Places, the park's GMP states that it will manage the site** and its associated features as a cultural resource (NPS PWR 2008). Specifically, the orchard lies within the GMP Cultural Zone, which includes the following prescriptions:

- All significant cultural features would be preserved and interpreted to enhance visitor understanding and enjoyment.
- There would be low tolerance for resource degradation.
- Archeological sites would be preserved (NPS PWR 2008).

The mixed coniferous forest and Garry oak communities that exist today at English Camp and Mitchell Hill are also considered important to the encampment period.

## D. Visitor Experience

The Organic Act and NPS Management Policies 2006 direct the NPS to provide visitor enjoyment opportunities that are suited and appropriate to the resources found in the park.

### A. Access and Transportation

#### a. Mitchell Hill

Access to Mitchell Hill is currently available via trails from English Camp and Roche Harbor Highlands. The only official vehicle access from NPS land to Mitchell Hill is from the parking lot at English Camp (approximately one mile away). Visitors can hike from this parking lot across West Valley Road and over to trails on Young Hill and the Sandwith Orchard that connect with Mitchell Hill.

Horse Trail Road (a county spur off West Valley Road) currently serves as the main vehicle access point to Mitchell Hill. This spur road is known mostly to locals on San Juan Island. No signs off West Valley Road indicate access to NPS park lands or trails. Both the north and south sides of Horse Trail Road are private property. Horse Trail Road is an unimproved (dirt) 0.07 mile access route to an 11.5 acre private property south of the road. It also provides access to a county utility easement on the same private property. The spur also originally provided access to logging roads on former Department of Natural Resources land (Mitchell Hill). The end of Horse Trail Road is marked by a locked gate, NPS sign, and box with trail brochures provided by the San Juan Island Trails Committee. There is informal parking that may accommodate three to five compact to mid-size vehicles.

Mitchell Hill may also be accessed via Roche Harbor Highlands trailhead parking at the intersection of Roche Harbor Road and West Valley Road (approximately two miles away). Adjacent to Mitchell Hill are other private lands, including a Boy Scout Camp and Twin Oaks Farm. There is unofficial access from these properties to the park. Other informal access points to Mitchell Hill also exist along West Valley Road, including from the wide shoulder at the entrance sign for English Camp. Very limited parking exists at this site, and can be unsafe because visitors cross West Valley Road to access a steep route toward Sandwith Orchard.

b. Westcott Bay

Westcott Bay added approximately one-half mile of shoreline to the park. Combined with the existing 11 acres of shoreline at English Camp, the park provides some of the limited public access to the waterfront on the island.

As noted previously (see Issues section in Chapter 1), the only public access to Westcott Bay is from the parking lot at English Camp via a heavily forested mile-long hiking trail.

Westcott Drive, a county road, provides access to a small residential development and to the Westcott Bay Sea Farm (directly adjacent to the park). Nevertheless public road access to the national park portion of Westcott Bay is currently limited by several factors. There is a gate at the end of Westcott Drive, which may or may not be open, depending on the hours of the Westcott Bay Sea Farm. There is also no parking for park visitors. The area is signed for NPS administrative access only and informal administrative parking is available adjacent to a small house.

Visitor access to NPS lands via Westcott Drive is heavily discouraged by adjacent private landowners. Road signs are posted that say “no park access, no turnaround, local traffic only, no parking, Westcott Bay Shellfish parking only, etc.”

There is public access to the Westcott Bay waters via boat, canoe or kayak via other local areas, such as Garrison Bay or from private property. Adjacent to the park, visitor use of the tidelands is prohibited.

B. Visitor Use Opportunities

A park-wide visitor use survey in 1995 revealed that visitor recreational activities included: sightseeing (94 percent), walking/hiking on trails (78 percent), taking photographs (70 percent), and viewing wildlife (45 percent) (Littlejohn 1995). This survey also indicated that 72% of the respondents visited English Camp and 87% said they visited the park to view the scenery; however, 80% of respondents said that the park was not their primary destination (Littlejohn 1995).

**Currently, the park is a day use only area. The current Superintendent’s Compendium defines** specific visiting hours, public use limits, closures, and areas designated for specific uses or activities (click: [Compendium online](#)). The compendium allows bicycling in the Mitchell Hill area. Previously bicycling was allowed only on park roads and in parking areas (National Park Regulations at a Glance – [www.nps.gov/sajh](http://www.nps.gov/sajh)). In 2010, the compendium prohibited horse use, but was modified to allow horse use in certain areas by permit only, which is the current situation.

The GMP makes the following statements regarding visitor recreation opportunities:

- Continue to allow beach activities such as beachcombing, picnicking, bird watching, viewing and photographing wildlife, hiking, sightseeing, attending park programs, and shellfishing on 900 feet of shoreline at English Camp.
- Continue to manage the park as a day-use area.
- Continue to prohibit overnight camping, hunting and off-road vehicles.
- If additional lands are acquired, prohibit hunting, but allow compatible, non-motorized use along the multi-use trails at Mitchell Hill.
- Equestrian trails and horseback riding would continue at the discretion of the superintendent. Park staff would partner with trail riding groups to maintain horse trails and monitor use of trails in the park.
- Biking would continue along park and county roads within the park, 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.
- Partner with county to establish new trail connections to connect the park with existing long distance trails. Various routes would be considered.
- **Manage additional new trails on any acquired property as “non-motorized”.**
- Work with partners to establish a trail connection between Roche Harbor and the park Administrative Road.
- Support efforts to implement the concept of the Old Military Road Trail connecting English and American Camps as part of an island-wide trail system (NPS PWR 2008).

Recommendations from the GMP that have been accomplished include partnering with the San Juan Island Trails Committee to help maintain multiuse trails on Mitchell Hill, and developing connector trails between Westcott Bay and English Camp and Mitchell Hill and English Camp, and Roche Harbor.

a. Mitchell Hill Trails

**The park’s acquisition of Mitchell Hill included** existing multiple use (hiking, bicycling, equestrian) trails (approximately 10 miles total) on former Washington Department of Natural Resources land. The trails are a mix of old logging roads and new narrower trails created by various user groups. They also include some created by the San Juan Island Trails Committee (Figure 21). Because most are user created trails, they were not designed or engineered and some are unsustainable. In addition, there are numerous social, parallel and duplicate trails.

Bicycle use on trails within NPS-managed areas is not a traditional or common use; however, this use is becoming more accepted and has been integrated into park trail systems in parks across the country where appropriate. **Most of English camp is currently zoned “Natural,”** and the GMP zone definition does not preclude the use of mountain bikes on trails, but rather states that **“bicycle and horse use may be acceptable on some trails.”**

As described earlier (see Chapter 1: Purpose and Need), an agreement between the National Park Service and the International Mountain Bicycling Association (IMBA) resulted in a rulemaking published in the Federal Register in 2012. Some excerpts from the document include the following:

- Existing trails may not be designated for bicycle use if doing so would result in a significant impact on the environment.
- Designation of a particular trail for bicycle use must be considered as part of a park plan addressing trail use, such as a recreation use plan.
- In order to authorize bicycle use on an existing trail, the Environmental Assessment must result in a finding of no significant impact.
- For existing trails, the final rule prohibits bicycle use where significant impacts would occur.
- The final rule requires that the superintendent to provide the public with notice of the availability of the EA and at least 30 days to review and comment on EAs for bicycle use.
- The final rule requires that the superintendent, after considering public comment, submit to the appropriate NPS Regional Director for approval in writing the superintendent's determination that bicycle use on a trail is consistent with the protection of the park area's natural, scenic and aesthetic values, safety considerations, and management objectives and will not disturb wildlife or park resources.
- For existing trails, even when the environmental compliance analysis has found no significant impacts, the appropriate NPS Regional Director may decide that bicycle

use is not consistent with the resources, values, and purposes of the park area, and may, after considering public comment on the written determination required by the final rule, withhold approval.

- The final rule retains the current requirement for a special regulation to authorize construction of new trails for bicycle use outside developed areas.
- The final rule clarifies that all planning and compliance must be completed before designation of trails for bicycle use.

Existing trails are shown in the San Juan Island Trails Committee Map (Figure 21) and on Figure 4 (Alternative 1: Mitchell Hill Trails).

a. Westcott Bay Trails

There are currently two trails at Westcott Bay – a trail to the shoreline from the house (Point Trail) and a trail from English Camp off the Bell Point Trail to Westcott Bay (Westcott Bay Connector Trail).

Existing Westcott Bay Trails are shown in Figure 5 (Alternative 1: Westcott Bay Trails).

b. Trail Surveys and Standards

The park currently does not have specific trail standards for multiuse (hiking, bicycling, and equestrian) trails. Nonetheless, in 2002, the North Cascades National Park Service Complex (NOCA) Trail Crew conducted a trails survey for English and American Camps. This was well before Mitchell Hill or Westcott Bay were acquired. For this survey, the crew used North Cascades National Park Complex standards.

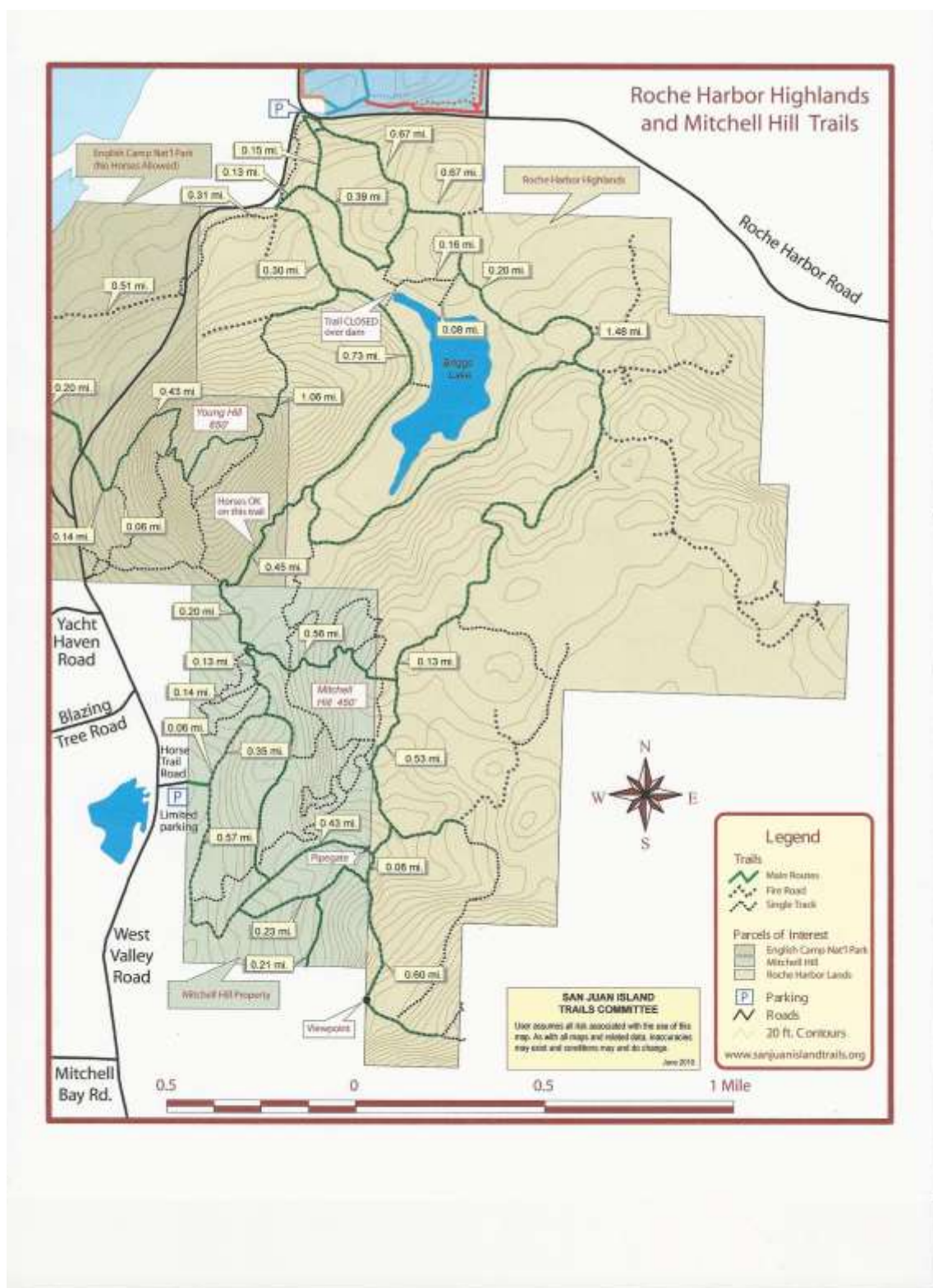
In 2002, there were 6.08 miles of visitor use trails at English Camp. All the trails received a fair condition rating, which meant they met the minimum trail standards, but required additional maintenance to prevent further deterioration, increase operating efficiency, and to achieve normal life expectancy (NPS 2002b).

Subsequent to the North Cascades trail crew survey, using funding provided by the National Parks Conservation Association, the park developed an interim sign plan to mark trail junctions on Mitchell Hill and to name the main trails. Although funding includes sign fabrication, this may change as a result of implementation of this DCP.

In 2012 the park conducted a trails survey to determine areas appropriate for expanding horse use. In the interim plan that resulted, the park adopted the North Cascades Trail Standards for equestrian trails (Table 10). Three trails at American Camp and three trails at English Camp were evaluated. The English Camp trails determined appropriate for horse use included: the Trail from Roche Harbor Highlands up the Back Side of Young Hill (0.44 miles), and the English Camp Service Road/Roche Harbor Connector Trail (0.89 miles). The other trail evaluated was the Sandwith orchard to English Camp Connector Trail (0.48 miles), which was determined inappropriate for horse use.

One of the goals of this DCP is to develop trail standards for all user types, which will then be applied throughout the park. Many national park units have established their own trail standards.

Figure 21: San Juan Island Trails Overview



In addition, the Denver Service Center of the National Park Service has established some general trail sustainability guidelines, which were incorporated into the 2012 Final Rule on Bicycle Use.

As outlined in the 2012 NPS Final Rule, the NPS Natural Resource Reference Manual #77 (RM 77) provides guidance regarding “Trail Sustainability” as follows:

Sustainability of backcountry trail corridors is defined as the ability of the travel surface to support current and anticipated appropriate uses with minimal impact to the adjoining natural systems and cultural resources. Sustainable trails have negligible soil loss or movement and allow the naturally occurring plant systems to inhabit the area, while allowing for the occasional pruning and removal of plants necessary to build and maintain the trail. If well-designed, built, and maintained, a sustainable trail minimizes braiding, seasonal muddiness and erosion. It should not normally affect natural fauna adversely nor require re-routing and major maintenance over long periods of time (NPS 2004a).

RM-77 implies in other parts of the text that if trails are appropriately designed, located, constructed, and maintained then they will be sustainable. However, most of the trails on Mitchell Hill were not sustainably designed, but rather fall under the category of ongoing uses on existing trails. RM-77 offers the following guidance for new uses on existing trails:

When new uses (e.g., mountain bikes on hiking trails) are being considered for existing trails (many of which evolved through use and not design), planning teams must carefully consider sustainability factors. The design principles used for old roads and railway beds are significantly different from those used for trails, so it is necessary to evaluate sustainability factors when redeveloping these types of corridors for new uses. In addition, new uses may have very different impacts on resources than old uses, and a new environmental assessment may be required. The evaluation of other trail projects in the local area can assist in developing sustainability criteria for the current project (NPS 2004a).

Table 9: North Cascades National Park Complex Trail Standards Used in 2002 Survey of English Camp Trails

Characteristic	Trail Type / Standard	
	<i>Special Use Trail</i>	<i>All-Purpose Trail</i>
<i>Routing</i>	Conforms to terrain except minor modification where necessary for user safety and/or trail stability	Conforms to the terrain except minor modification where necessary for user safety and/or trail stability
<i>Clearance</i>	Lateral 6-8' Vertical 8-10'	Lateral 8' Vertical 10'
<i>Maximum Grade</i>	General 10% Midrange 15% for 500' High range 18% for 100'	10% 15% for 500' 20% for 100'
<i>Switchback Radius</i>	Minimum 6' Maximum 8'	6' 8'
<i>Drainage</i>	Adequate to carry max. runoff and designed to min. down-slope erosion	Adequate to carry max. run off and designed to min. down-slope erosion
<i>Tread</i>	Minimum 24" Maximum 36" Protrusions Over 2" high, loose material over 1" removed	Minimum 24" Maximum 30" Protrusions Over 2" high, loose material over 1" removed
<i>Minimum Maintenance</i>	Two or more times per year	At least once per year

Source: NPS NOCA 2002b (Trails Handbook, North Cascades National Park Service Complex).

Mitchell Hill is a large undeveloped and natural management zone that could be considered backcountry. Thus RM-77 guidance could be used by the park in developing trail standards.

The NPS Final Rule also recommends sustainability standards based on RM-77 and recreation ecology studies that have been conducted in national park units for decades. To ensure that trails are sustainable, the NPS recommends:

- an average trail profile grade of 10-12 percent,
- a maximum trail profile grade of 12-15 percent, and
- the relationship between the trail profile gradient and prevailing cross slope grade in **the immediate vicinity along the trail centerline at less than one quarter** (“high slope alignment angle”) (NPS 2014).

### C. Interpretation and Education

The park provides educational, research, and volunteer opportunities that support the preservation of park resources and values and contribute to public enjoyment and understanding. The GMP preferred alternative identified the relocation of the education camp from its present location to an area along the Administrative Road (NPS PWR 2008). On the accompanying map, this is shown as the south side of the Administrative Road. Based on additional analysis for this DCP, including of existing impacts along the Administrative Road, an area on the north side of the Administrative Road is also considered as a possible location for the relocation of the education camp. The camp has traditionally been used by the Oregon Museum of Science and Industry, which has offered programs on natural and cultural history and marine science. These programs are tied to the primary significance of the park. Sessions vary in duration from one to two weeks.

Other interpretation and education services offered at English Camp are curriculum-based school programs, a junior ranger program, and living history demonstrations. The GMP stated that 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 (NPS PWR 2008).

## E. Park Operations

### 1. Facilities

#### a. English Camp

The English Camp Royal Marine Barracks serves as the visitor contact station during the summer. There is no year-round contact station or visitor center at English Camp, which may account for lower visitation. (American Camp has the primary year-round visitor contact station.)

The Administrative Road at English Camp **provides access to the park’s maintenance facilities**, volunteer campsites, and an education camp. The education camp consists of a group tent site with water, but no sewer. There are two roads within the Visitor Services management zone, the West Valley Road and the entrance road to the parking lot at English Camp. This parking lot provides 33 visitor use parking spaces.

The GMP identified the following actions related to English Camp facilities:

- Change the Administrative Road to a dual use public access road to provide for long distance trail connections.
- Enlarge the volunteer campsites to provide privacy and two additional hook-ups.
- At the Young Hill parking establish parallel parking spaces adjacent to the trailhead.
- Construct an ADA trail to the parade ground.

- Construct a long distance trail connection to Roche Harbor starting from Administrative Road and West Valley Road junction.
- Improve and upgrade for two-way traffic the Entrance Road to the Parking Lot.
- The education camp would be established at a new site along the Administrative Road (NPS PWR 2008).

b. Mitchell Hill

Aside from informal trailhead parking and an informal unsigned trail system, there are no visitor use facilities at Mitchell Hill. The DCP alternatives propose various amenities, such as an official trailhead, a vault toilet, improved parking, an accessible trail, and trail improvements.

c. Westcott Bay

Westcott Bay includes a house, electrical utilities, an access road to the house, and an informal trail to a viewing point. The alternatives include opportunities to use the house and to improve public access and circulation.

## 2. Park Operations

Staffing levels at the park have changed since the 2008 GMP when the park had nine full-time positions, and currently maintains seven full-time positions. The park maintains a number of part-time seasonal or term positions to accomplish resources management, interpretation, and maintenance objectives. Assistance from network parks and regional office are common support functions. With the addition of over 380 acres to the park, which includes desirable recreation venues and opportunities, additional staffing may be required in order to maintain the facilities and trails proposed in the alternatives, as well as protect the park resources, and provide a quality visitor experience.

Currently the park has two full-time equivalent (FTE) maintenance positions. This includes one year-round and two subject-to-furlough (STF) positions. Additional funding for maintenance is provided by project funding, which helps to extend the STF employment and may also provide for one to two seasonal positions. Among the activities currently carried out regarding trail maintenance include trimming encroaching vegetation along trails and maintaining trail surfaces.

Prior to the acquisition of Westcott Bay and Mitchell Hill, the park had 11 miles of trails, which required an average workload of 379 hours per year (FY 2009- 2013). Tools and materials to support this work averaged almost \$8,000 annually during the same period. The addition of the new lands has more than doubled the number of miles of trails in the park and has also increased the need for grounds and building maintenance.

## IV. Chapter 4: Environmental Consequences

### A. Methodology

#### 1. Introduction

This section contains the methods and/or criteria used to assess impacts for specific resource topics.

NEPA requires that federal agencies disclose the environmental impacts of the proposed federal action, reasonable alternatives to that action, and any adverse environmental consequences that cannot be avoided should the proposal be implemented. This section analyzes the environmental impacts of project alternatives on affected park resources. These analyses provide the basis for comparing the effects of the alternatives to the current conditions or no action alternative. NEPA also requires consideration of context, type and duration of impacts, indirect impacts, cumulative impacts, and measures to mitigate impacts. The anticipated decision document for this environmental assessment is a Finding of No Significant Impact (FONSI).

#### 2. Impact Analysis

The environmental consequences for each impact topic were defined based on the following information regarding the context, type, duration, and area of impact and the projects that are considered part of the cumulative effects environment. Unless otherwise stated in the resource section in *Environmental Consequences*, analysis is generally based on a qualitative assessment of impacts.

##### a. Context of Impact

The context is the setting within which impacts are analyzed – such as the project area or region, or for cultural resources – the area of potential effects or APE. Often, the context varies by impact topic.

##### b. Type of Impact

The type of impact is a measure of whether the impact will improve or harm the resource and whether that harm occurs immediately or at some later point in time.

- Beneficial Impacts reduce or improve impact being discussed.
- Adverse Impacts increase or result in impact being discussed.
- Direct Impacts are caused by and occur at the same time and place as the action, and may include, but not limited to, impacts such as: animal relocation, displacement, or mortality; vegetation trampling or removal; damage to cultural resources; or soil removal, erosion, or contamination.
- Indirect Impacts are caused by the action, but occur later in time, at another place, or to another resource. These include changes in species composition, vegetation structure, range of wildlife, or offsite erosion.

##### c. Duration of Impact

Duration is a measure of the time period over which the effects of an impact persist. The duration of impacts evaluated in this EA may be one of the following:

- Short-term: Often quickly reversible and associated with a specific event, and lasting one to five years.

- Long-term: Reversible over a much longer period, or may occur continuously based on normal activity, or for more than five years.

d. Area of Impact

The area of impacts may be detectable in nearby or surrounding areas.

- Localized Impacts are detectable only in the vicinity of the activity.
- Widespread Impacts are detectable on a landscape or regional scale.

e. Impact Mitigation

Impacts may be reduced in the following ways:

- Avoid conducting management activities in an area of the affected resource, or
- Minimize the type and duration of the impact to an affected resource.

Impacts may also be reduced by additional mitigation actions such as by:

- Repairing localized damage to the affected resource immediately after an adverse impact.
- Rehabilitating an affected resource with a combination of additional management activities.
- Compensating a major long-term adverse direct impact through additional strategies designed to improve an affected resource to the degree practicable.

f. Intensity for All Impacts Except Cultural Resources and Special Status Species

*Note:* Special Status Species and Cultural Resources impact determinations are formally determined under the Endangered Species Act (Section 7) and the National Historic Preservation Act (Section 106), respectively. Cultural resources impacts are also initially characterized as noted below, however the conclusion follows the format below, and makes a formal determination of effect under Section 106 of the National Historic Preservation Act.

- Negligible: Measurable or anticipated degree of change would not be detectable or would be only slightly detectable. Localized or at the lowest level of detection.
- Minor: Measurable or anticipated degree of change would have a slight effect, causing a slightly noticeable change of approximately less than 20 percent compared to existing conditions, often localized.
- Moderate: Measurable or anticipated degree of change is readily apparent and appreciable and would be noticed by most people, with a change likely to be between 21 and 50 percent compared to existing conditions, may be localized or widespread.
- Major: Measurable or anticipated degree of change would be substantial, causing a highly noticeable change of approximately greater than 50 percent compared to existing conditions, often widespread.

g. Intensity for Special Status Species

- No Effect: The project (or action) is located outside suitable habitat and there would be no disturbance or other direct or indirect impacts on the species. The action will not affect the listed species or its designated critical habitat (USFWS 1998).
- May Affect, Not Likely to Adversely Affect: The project (or action) occurs in suitable habitat or results in indirect impacts on the species, but the effect on the species is likely to be entirely beneficial, discountable, or insignificant. The action may pose effects on listed species or designated critical habitat but given circumstances or mitigation conditions, the effects may be discounted, insignificant, or completely beneficial. Insignificant effects would not result in take. Discountable effects are those extremely unlikely to occur. Based on best judgment, a person would not 1) be able to meaningfully measure, detect, or evaluate insignificant effects or 2) expect discountable effects to occur (USFWS 1998).

- May Affect, Likely to Adversely Affect: The project (or action) would have an adverse effect on a listed species as a result of direct, indirect, interrelated, or interdependent actions. An adverse effect on a listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions and the effect is not: discountable, insignificant, or beneficial (USFWS 1998).

In accordance with *Management Policies* (NPS 2006), the analysis in this Environmental Assessment fulfills the responsibilities of the NPS under Section 106 of the National Historic Preservation Act.

h. Intensity for Cultural Resources Impacts

- No effect: There are no historic properties in the Area of Potential Effect (APE); or, there are historic properties in the APE, but the undertaking will have no impact on them.
- No adverse effect: There will be an effect on the historic property by the undertaking, but the effect does not meet the criteria in 36 CFR Part 800.5(a)(1) and will not alter characteristics that make it eligible for listing on the National Register. The undertaking is modified or conditions are imposed to avoid or minimize adverse effects. This category of effects is encumbered with effects that may be considered beneficial under NEPA, such as restoration, stabilization, rehabilitation, and preservation projects. Under the terms of the 2008 Programmatic Agreement (PA), data recovery can mitigate affect to archaeological properties that are eligible for listing on the National Register under criterion D. However, some archaeological sites are eligible as traditional cultural places under criterion A, and such mitigation may not be sufficient or appropriate.
- Adverse effect: The undertaking will alter, directly or indirectly, the characteristics of the property making it eligible for listing on the National Register. An adverse effect may be resolved in accordance with the Stipulation VIII of the 2008 Programmatic Agreement, or by developing a memorandum or program agreement in consultation with the State Historic Preservation Office (SHPO), Advisory Council for Historic Preservation (ACHP), American Indian tribes, other consulting parties, and the public to avoid, minimize, or mitigate the adverse effects (36 CFR Part 800.6(a)).
- Significant Impact: An impact to a National Register historic property would be considered significant when an adverse effect cannot be resolved by agreement among SHPO, ACHP, American Indian tribes, other consulting and interested parties, and the public. The impact will diminish the integrity of location, design, setting, materials, workmanship, feeling or association characteristics that make the historic property eligible for inclusion in the National Register Historic Places. The resolution must be documented in a memorandum or programmatic agreement or the FONSI.

i. Cumulative Impacts

The Council on Environmental Quality (CEQ) describes a cumulative impact as follows (Regulation 1508.7):

*A cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.*

Therefore the projects addressed in this cumulative impacts analysis include past and present actions, as well as any planning or development activity currently being implemented or planned for implementation in the reasonably foreseeable future. Cumulative actions are evaluated in conjunction with the impacts of an alternative to determine if they have any additive effects on a particular resource.

- j. Projects Related to the Cumulative Impacts Analysis for the Mitchell Hill and Westcott Bay Development Concept Plan and Environmental Assessment Include:
  - Draft Trail Sign Plan for Mitchell Hill (NPS SAJH 2014)

Proposed signs and trailhead bulletin boards are in the process of being developed. Depending on the outcome of this DCP, some or all of these would be fabricated and installed.

- Construction of Mitchell Hill and Westcott Bay connector trails

Construction of these initially interim trails included constructing a puncheon bridge over a seasonally wet area at Mitchell Hill (2012); construction of a connector trail from Young Hill to Mitchell Hill (2012); and clearing a connector trail from English Camp to Westcott Bay (2013); and construction of two small bridges over a seasonal stream that flows into Westcott Bay (2013)(San Juan Trails Committee 2013).

- Evaluation of Horse Use on Park Trails. Internal Report (NPS SAJH 2012)

Analysis of park trails to improve opportunities for equestrian use was conducted. The analysis applied characteristics of equestrian trails currently used by North Cascades National Park Complex to San Juan Island NHP trails. As a result, several trails at American and English Camps were approved for equestrian use in 2012.

- Ongoing removal of non-historic structures, including old fencelines, from former boy's camp at Westcott Bay.

Following an analysis of the historical significance of the former boy's camp at Westcott Bay, removal of the non-historic structured commenced to minimize safety hazards at the site.

- San Juan Island Trails Plan (San Juan Island Trails Committee 2006)

This trails plan proposes several San Juan Island trails and trail connections to create an island-wide trail system among public and suitable private properties.

- San Juan Island National Historical Park Fire Management Plan (NPS SAJH 2005)

**The primary goal of the current Fire Management Plan (FMP) is to "Use hazard fuel reduction (including manual/mechanical and prescribed fire techniques) to reduce the risk of wildfire to life and property and to improve the ability to restore native plant communities and cultural landscapes."**

- San Juan Island National Historical Park Prairie Stewardship Plan and Environmental Impact Statement (pending)

The purpose of this plan is to restore a functioning native prairie ecosystem to the cultural landscape at American Camp and enhance Garry oak woodland at English Camp in San Juan Island National Historical Park.

### 3. Analyzing Impacts

Impacts were assessed by reviewing existing literature and characterizing the effects based on the types of impacts that could occur, and then analyzing factors that could contribute to impacts under each alternative. Potential impacts from management actions are based on professional judgment and experience with similar actions. Potential impacts were analyzed in consultation with park and regional professionals, including a soil scientist, engineers, geologists, archeologists, natural resource specialists, and environmental protection specialists.

Table 10: Impact Comparison Chart

Resource	Alternative 1	Impacts from Action Alternatives (2-4)	Alternative 2	Alternative 3	Alternative 4
Soils	Ongoing minor to moderate localized adverse impacts from existing visitor and administrative uses and development.  Minor to moderate localized adverse impacts from relocation and construction of education camp.	Minor to moderate localized adverse impacts from relocation and construction of education camp. Negligible to moderate impacts from modifying trails at Mitchell Hill and Westcott Bay.  Beneficial effects from implementing trail resource protection measures.	Similar to ECAA with fewer adverse impacts at Mitchell Hill from more miles of hiking only trails.  Beneficial impacts from converting house to picnic shelter.	Similar to ECAA with more impacts from small additional parking area and connector trails to Westcott Bay.	More impacts from creating larger parking area at Mitchell Hill and a parking area, road connection, and visitor contact station at Westcott Bay.
Water Quality	Ongoing negligible to minor adverse impacts from location of education camp in a wetland. Negligible impacts from informal kayak access to Garrison Bay and infrequent use of existing septic system at Westcott Bay. Ongoing minor to moderate adverse impacts from unimproved trails at Mitchell Hill.	Long-term beneficial effects from relocation of education camp and adding trail structures at Mitchell Hill.  Additional negligible to minor adverse impacts from improving small parking area at Mitchell Hill with runoff protection measures.  Long-term beneficial effects from use of trail and wetland resource protection measures.	Same as Alternatives 2-4 plus additional beneficial impacts from removal of septic system at Westcott.	Same as Alternatives 2-4 plus more frequent use of septic system at Westcott from regular use of house. Additional negligible to minor adverse impacts from creation of small parking area at Westcott with runoff protection measures.	Same as Alternatives 2-4 plus additional minor adverse impacts from larger parking areas at both sites and entrance road at Westcott, along with negligible to minor localized impacts from constructing a kayak launch ramp.
Water Quantity	Ongoing negligible to minor adverse impacts from provision of water to education camp.	Same as Alternative 1 plus additional short-term minor impacts from water use during construction.	Same as Alternatives 2-4		
Wetlands	Ongoing minor to moderate localized adverse impacts from Point Trail and education camp.  Long-term minor adverse impacts from retaining drainfield line in wetlands.	Long-term beneficial impacts from relocating education camp and constructing boardwalk for wetland portion of Point Trail.  Additional beneficial impacts from constructing trail structures where trails pass through wetlands and from implementing other resource protection measures and from conducting active and passive wetlands restoration.	Long-term beneficial effects from removing septic system, including drainfield line in wetlands.		
Floodplains	Ongoing minimal adverse impacts to floodplains from use of the existing facilities located in a floodplain affected only by storm surges during extreme high tides.		Removal of house would eliminate most risks to people and property.	Mitigation measures would reduce risks to people and property.	Same as Alternative 3.
Vegetation	Initial ongoing adverse impacts to vegetation from education camp (one acre) followed by later restoration. Loss of vegetation from relocation of education camp on	Initial ongoing adverse impacts to education camp (one acre) in wetland, followed by later restoration and loss of vegetation from up to 1.5 acres from relocation of camp on north side of Administrative Road.	Similar to Alternatives 2-4, with slightly fewer adverse impacts from more hiking only trails and fewer overall trails	Similar to Alternatives 2-4, with additional negligible to moderate adverse impacts from use of Administrative	Similar to Alternatives 2-4 with addition minor to moderate adverse impacts from creation of larger

Resource	Alternative 1	Impacts from Action Alternatives (2-4)	Alternative 2	Alternative 3	Alternative 4
	<p>south side of Administrative Road (up to two acres). (Actual facilities would encompass approximately a third of an acre.) Ongoing fragmentation of vegetation from social and way trails, nonnative plants, and poorly constructed trails or trails through sensitive areas.</p> <p>Beneficial effects from removal of derelict structures.</p>	<p>Resource protection measures, such as trail sustainability standards, trail closures and rerouting trails to meet the guidelines for their standard would result in long-term beneficial effects.</p> <p>Additional minor adverse and beneficial effects from Mitchell Hill parking area improvements, Westcott vault toilet construction, and trail construction in both areas (Old Military Road, Point Trail, and Cedar Grove Trail).</p>	<p>and from removal of house and septic system.</p> <p>Additional beneficial effects from designating steep trails for hiking only or rerouting to accommodate multiuse.</p>	<p>Road end for kayak launch parking, construction of trail linkages, and new parking at Westcott.</p> <p>Impacts similar to Alternative 1 from retention of house for administrative and special uses.</p> <p>Additional minor adverse impacts from construction of vault toilets at Mitchell Hill.</p>	<p>parking areas and road for Westcott (up to four acres) and new parking area at Mitchell Hill.</p>
Special Status Species and Communities	Ongoing negligible to moderate adverse effects to sensitive species (coastal cutthroat) and communities (herbaceous balds, cedar grove, wetlands) from existing conditions.	<p>Implementation of resource protection measures (improvement of drainages/culverts, wetlands, etc.) would improve conditions for sensitive species and communities.</p> <p>Actions would be not likely to adversely affect coastal cutthroat.</p>	Same as Alternatives 2-4 plus additional improvements from more hiking only trails at Mitchell Hill and from removal of septic line in wetlands at Westcott Bay.	Same as Alternatives 2-4 plus improvements from relocation of septic line and rerouting or other modifications to trails to accommodate multiuse when passing through herbaceous balds and sensitive forest communities.	Same as Alternative 3 plus sensitive construction would avoid impacting wet forest type near proposed parking area at Mitchell Hill.
Prehistoric and Historic Archeological Resources	No additional impacts (no adverse effect on archeological resources)	<p>Resource protection and mitigation measures would be used to avoid impacts to potentially unidentified archeological resources. Among these include archeological monitoring where called for by initial surveys.</p> <p>Some potential for both beneficial and adverse effects from opening Old Military Road as a hiking trail and from constructing part of the Point Trail as a boardwalk.</p> <p>No effect or no adverse effect on archeological resources.</p>	Same as Alternatives 2-4 plus improved protection from hiking only trails through sensitive areas.	Same as Alternatives 2-4 plus additional potential for impacts from connector trails and parking area.	Same as Alternatives 2-4 plus additional potential for impacts from widening and rerouting trail through Sandwith Orchard and from parking areas at both sites.
Historic Structures and Cultural Landscapes	Ongoing minor to moderate adverse effects on Old Military Road and negligible to minor effects on Sandwith Orchard.	Long-term beneficial and minor short-term adverse effects from using the road as a hiking trail.	<p>Old Military Road: Same as Alternatives 2-4.</p> <p>Sandwith Orchard: Same as Alternative 1.</p>	Same as Alternative 2	<p>Old Military Road: Same as Alternatives 2-4</p> <p>Sandwith Orchard:</p>

Resource	Alternative 1	Impacts from Action Alternatives (2-4)	Alternative 2	Alternative 3	Alternative 4
	No effect on English Camp National Historic Landmark.				Minor to moderate long-term adverse effects from establishing a hiker-equestrian trail.
Visitor Experience: Visitor Use Access	Existing minor to moderate beneficial and adverse impacts would continue.	Mitchell Hill: Beneficial effects from improving parking at Horse Trail Road in cooperation with county.  Westcott Bay: Beneficial effects from providing accessible parking.	Mitchell Hill: Same as Alternatives 2-4  Westcott Bay: Same as Alternatives 2-4 plus some beneficial effects from providing special use permit parking.	Mitchell Hill: Same as Alternatives 2-4  Westcott Bay: More beneficial effects from providing small parking area (tbd) near West Valley Road and access trails from Roche Harbor Highlands parking.	Mitchell Hill: More beneficial effects from providing vehicle and horse trailer parking.  Westcott Bay: More beneficial effects from providing larger parking area and access road.
Visitor Experience: Visitor Use Opportunities, Interpretation and Education, and Safety	Ongoing beneficial effects from new visitor use opportunities at Mitchell Hill and Westcott Bay, including multiuse of all trails at Mitchell Hill and hiker only access to Westcott Bay.  Ongoing minor adverse effects at Mitchell Hill from lack of signs, minimal trail structures, and from minimal maintenance of some unsustainable trails.  Long-term beneficial effects from improving education camp facilities.	Education Camp: Same as Alternative 1 at different site.  Improved visitor use opportunities from new and modified trails, trail linkages, trail signs, opportunities for interpretation, and finding resources in better condition.	Beneficial and adverse effects from emphasis on low key visitor use opportunities at both sites, including providing more hiking trails at Mitchell Hill, while retaining hiker only access (except for accessible and special use permit parking) to Westcott Bay.	Beneficial effects from increasing recreational opportunities, including from maintaining more multiuse trails at Mitchell Hill, from improving access to restrooms, and from improving parking at both sites. There would also continue to be access from private landowners willing to provide it. Minimal adverse effects would continue to occur from providing fewer hiking only trails.	Similar to Alternative 3 with more opportunities for easier access to both sites and more trails with new visitor experiences. Fewer low key visitor use activities would be available at Westcott Bay, but there would be new interpretive and educational opportunities with the visitor contact station.  New visitor use opportunities from a formal kayak launch and primitive camping would also be available.
Park Operations	Generally unchanged, with additional responsibilities for new sites and new education camp facilities being absorbed into existing budget and staffing.  More facilities (education camp)	Similar to Alternative 1 unless a budget or staffing increase occurred.  Adverse effects from increased responsibilities for funding and managing new actions, some of which would make visitor use easier to manage.	Reduced facilities maintenance costs from removal of the house and utility systems but increased reliance on county to assist with providing visitor access,	More facilities (trails, parking, structures) would increase long-term maintenance needs.	Same as Alternative 3 plus increase in capacity of facilities at both sites would likely also result in more visitors and more management needs.

Resource	Alternative 1	Impacts from Action Alternatives (2-4)	Alternative 2	Alternative 3	Alternative 4
	would increase maintenance and management operational needs.		such as to new parking at Mitchell Hill.		

## B. Physical Resources

### 1. Impacts to Soils

Soils are susceptible to several types of physical and chemical impacts including erosion, compaction, contamination, and direct removal. Visitor uses and management actions are potential sources of each of these types of impacts; however, the timing of activities and site-specific soil conditions determine the extent of soils impacts. There are a variety of ways in which potential soil impacts can be avoided or mitigated, including infrastructure design and maintenance, both of which play a key role in reducing potential adverse impacts from recreational uses.

#### Impacts from Alternative 1 (No Action)

English Camp: Adverse impacts now occurring from natural erosion, existing visitor and administrative uses and development would continue. Among these impacts include soil erosion, compaction, and loss, as well as potential contamination from vehicle use on existing roads and parking areas, such as the English Camp parking area and the Sandwith Orchard pullout. These impacts would continue to be concentrated in existing areas of use and would likely remain negligible to moderate and localized.

*Current Education Camp*: Because the group camp is within a wetland, there is ongoing disturbance, primarily compaction of soils and loss of vegetation associated with hydric (wetland) soils that would ordinarily support wetland vegetation. According to research by restoration ecologists, because the most severe impacts to soils usually occur within the time period following initial use of a site (trail or campsite) (Cole 2003), it is likely that to a great extent these have already occurred at the Education Camp. Because the site is allowed to rest each year during the wettest period (late fall through early spring); however, it is likely that overall impacts are less severe than would occur with year-round use. This is supported by the fact that vegetation, although stunted and sparser, persists in areas of use. Impacts that have been observed include: soil compaction and removal of soil in and around tent sites, and bare soil from user-created travel paths that access the gathering site, potable water and toilet locations from campsites. This seasonally wet area also exhibits compaction depressions in bare and vegetated areas. Because wastes from cooking and human use are collected in the temporary trailer and in portable toilets brought to the area and then pumped and seasonally removed from the site, it is unlikely that contamination of the area has occurred from human uses. It is unknown, however, to what degree camper use of the area results in other, smaller impacts (such as from toothbrushing) that would occur from regular campsite use, that could be mitigated by leave no trace techniques. Overall impacts to soils have been minor to moderate and long-term.

*Future Education Camp (new location)*: Because current approved management actions would be implemented, even in the No Action Alternative, the education camp would move to the south side of the Administrative Road as called for by the GMP. New impacts would include site clearing to remove trees and then leveling pads for the cookshelter/gathering area, vault toilets and raised tent platforms. Approximately 10-15 tent platforms would be located throughout the site, with pathways linking them to each other and to common use areas, including the cookshelter/gathering area, the vault toilets and drop-off zone. A small drainfield would service the kitchen sink and new utilities, including electricity and water lines would be laid to the area (likely along the Administrative Road) from the current camp location. Adjacent to the road would be a loading/unloading zone for 4-6 vehicles (1,414 square feet). Near the camp, an area would also be cleared and delineated for a campfire circle (1,256 square feet). Down the Administrative Road would be bus parking and parking for 2-3 vehicles (1,800-2,700 square feet), including accessible spaces.

Construction of the education camp would disturb soils in an area of up to two acres. Much of the camp, however, would continue to include low-lying shrubs and trees interspersed among the tent platforms, buildings and structures. Where buildings or structures and the septic system tank and drainfield were planned, soils would be cleared of vegetation, excavated, moved and replaced and covered with imported materials to construct foundations for the structures. Deeper excavation of soils would occur for foundations, the septic tank, vault toilets, and drainfield.

The double vault toilet would encompass an area of approximately 166 square feet and the building would be approximately 2,640-3,500 square feet. Platforms or pads (approximately 252-390 square feet, depending on whether they were accessible) would accommodate tents of 120 square feet (10 x12 feet) (Figure 22). A network of pathways, including accessible paths to the accessible tent structures, would be delineated and constructed. These would likely be 4-6 feet wide and would include surfacing, such as gravel or woodchips, to reduce muddiness during the wet season. Approximately 0.12 mile of pathways would likely be constructed. During construction, the area would be compacted by construction equipment and imported materials. Materials staging would occur along the edge of the Administrative Road and in cleared areas of the camp adjacent to proposed structures. Surfacing for buildings, structures and pathways would reduce permeability of soils in the areas covered.

A small parking area would also be delineated near the current administrative camping area for bus and vehicle parking associated with the camp. This area would encompass approximately 1,400 square feet and would be located in a previously disturbed area where it is unlikely that clearing would be required.



Figure 22: Representative Tent Platform

*Current Education Camp Site:* The current location of the education camp, approximately one acre, would be restored to natural conditions by removing existing compaction through scarification and then allowing for passive revegetation to occur. This would result in long-term beneficial impacts to hydric (wetland) soils. Initial beneficial effects would result from discontinuing use, however, restoration of vegetation and erasure of evidence of impacts in this area would take many years. The education camp has been at this location since its inception in 2001. Although initial use was much more seasonal, over time as the program has developed, use has occurred more frequently and for longer periods of time. Because it is used seasonally, the wet meadow has had short periods without use. Nonetheless, it is evident by the way water flows

through the area that some soils have been heavily compacted and that soil loss has occurred through sheet erosion and from loss of vegetation. Because this area is near the bottom of a drainage (Figure 23) and because it is seasonally wet, it is likely that it would continue to remain a wet meadow, surrounded on the drier edges by trees and shrubs.

Mitchell Hill: Because there would be no new development, there would be no additional impacts on soils at Mitchell Hill. Therefore, ongoing impacts from use of the informal parking area would be similar to that described above for English Camp from compaction and erosion of bare soils.

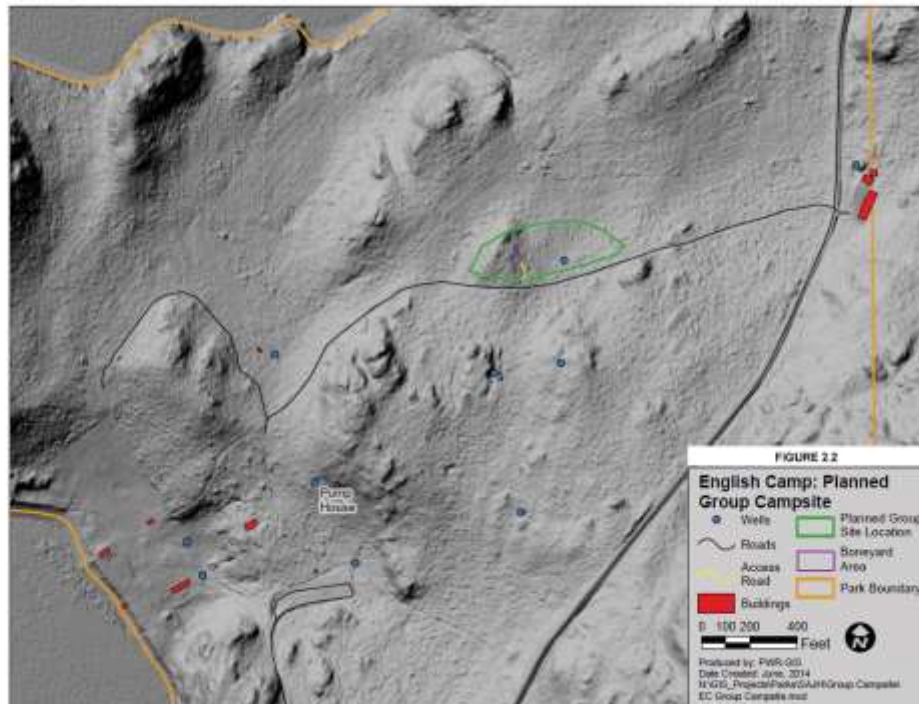


Figure 23: Proposed Education Camp

Mitchell Hill: *Trails:* Under Alternative 1 no new trails, road, or parking spaces would be developed at Mitchell Hill. Current recreational use on Mitchell Hill trails by hikers and mountain bikers would continue, as would use of approved trails by equestrians.

Soil erosion and loss have occurred to varying degrees on trails now part of the park. Particularly in steeper sections and where drainage features have not been crafted, soils are more susceptible to erosion. In addition, initial impacts from off-trail hiking creates social trails and the subsequent loss of vegetation from trampling may begin or exacerbate erosion and/or compaction. Impacts to soils may also occur from side-by-side use of trails that causes one user to leave the established trail surface. Poorly designed and/or unmanaged trails can also contribute to erosion. After soils are loosened by visitor use, they are more susceptible to removal by wind and water associated with storm events.

Use on both former logging roads and current trails, many of which are social or user-created trails, would continue to contribute minor to moderate localized adverse impacts on soils, including from soil erosion, particularly on slopes and trail gradients greater than 15 percent. The magnitude of impacts would continue to be a function of their frequency of use, the type and behavior of users, season of use, environmental conditions, and the spatial distribution of use

(Cole 2003). Impacts are more likely to occur from equestrian or bicycle use. Research shows that equestrian use of trails results in statistically significant higher sediment yields (the primary indicator of trail deterioration) during erosion than either hiker or other stock use (such as llamas) (DeLuca et al. 1998). This same study found that horse traffic also caused large increases in soil roughness (likely due to steel-shoed hoof action) compared to other users. Consequently, **it is likely that the “greater impacts caused by horses on trails is a result of soil loosened trail surfaces that are otherwise compacted, thereby increasing the detachability of soil particles and increasing sediment yield and erosion” (DeLuca et al. 1998).** Wilson and Seney also found that **“horses produced significantly larger quantities of sediment compared to hikers, off-road bicycles, and motorcycles, and the greatest sediment yields occurred on wet trails” (Wilson and Seney 1994).** As a result, because all trails at Mitchell Hill would remain multiuse under Alternative 1, there would likely continue to be a higher degree of impacts to soils from this use than under other alternatives, where some trails would designated hiker only (see Table 2).

Westcott Bay: There would continue to be sheet erosion during runoff and compaction of soils from use of unpaved parking areas, roadways and trails, compaction and disturbance of soils from removal of dilapidated structures, and both erosion and modifications to the soil surface from trail construction and maintenance, as well as long-term impacts to soils from the existing septic system for the house.

Soil impacts that may occur on the unpaved Westcott Bay access road and informal administrative parking area include formation of ruts, and soil compaction and sheet erosion especially during storm events and/or when soils are saturated enough to form standing water. Although no new soil impacts would occur because there are no planned improvements or additional development, there would continue to be impacts from ongoing rehabilitation actions, such as from removing dilapidated buildings, and old fencelines. This would involve short-term localized soil compaction and disturbance from activities to remove the structures. Following removal, formerly developed sites would be passively restored to natural conditions (without active revegetation). Impacts from continued use of the area would continue to be minor and long-term, with beneficial effects contributed from restoration of areas of existing impact (former camp structures). The septic system and drainfield are currently permitted to accommodate the small number of people who would have lived in the house. As a result, there would continue to be waste input to the functioning drainfield system, a long-term adverse effect on soils.

Impacts from Actions Common to Alternatives 2-4

English Camp: *Education Camp:* Unlike in Alternative 1, the education camp would be relocated to the north side of the Administrative Road. New construction at the site, however, would be similar to Alternative 1, including vegetation removal and site leveling to provide a slightly smaller area up to 1.5 acres that would accommodate the same structures and facilities identified in Alternative 1.

As described in Alternative 1, construction activities would result in removing vegetation, grading and excavation of soils to construct the following facilities:

- Cookshelter/gathering space: (44 feet x 80 feet) 3,520 square feet
- Double vault toilet: 167 square feet
- Accessible tent platform (1): 390 square feet
- Tent platforms (9): 252 square feet each, 2,268 square feet total
- Campfire amphitheater: (40 feet diameter) 1,256 square feet
- Septic tank (1,000 gallon) excavation: 200 square feet
- Septic drainfield construction: 540 linear feet (6 inches wide x 8 inches deep)
- Bus/vehicle drop off area: (60 feet diameter) 1,414 square feet
- Accessible/administrative parking (2 spaces): 1,800 square feet

- Circulation pathways: (650 linear feet x 5 feet wide)
- Staging area: 5,652 square feet
- Waterline (pump house to cookshelter): 1,752 linear feet

Use of construction equipment, including from storage and movement of materials between staging and construction areas would result in loss of vegetation, compaction and disturbance of areas beyond the confines of the above footprints. There would also be impacts from heavy equipment during excavation of water and electrical lines, which would be extended from the existing site to the new site.

There would be additional soil disturbance from constructing paths between the tent platforms and to and from other common use areas such as the cookshelter/gathering space, vault toilets, accessible parking, and loading zone, etc. The native soil surface of the paths would likely be surfaced with a durable material, such as gravel or woodchips to prevent muddiness during wet periods. As in Alternative 1, approximately 0.12 mile of circulation pathways would be constructed.

Mitchell Hill: Under all action alternatives, development of trail sustainability standards would contribute to improving adverse impacts on trails. Long-term beneficial impacts from reducing erosion and user-created impacts, such as horse footprint depressions and mountain bike ruts would result.

*Closing or Rerouting Trails through Sensitive Areas:* There would be long-term beneficial impacts from rerouting or closing trails in sensitive resource areas and from restoring social and duplicate (parallel) trails. Immediate beneficial effects from closing trails would result if the trails were strewn with vegetative material from trail clearing (such as logs, branches and duff), which would allow for indirect revegetation from capture of windblown seeds and direct reduction in the speed of runoff (water movement) from increasing obstacles on the trail tread. This would also increase water infiltration, ultimately increasing nutrient availability and soil water.

*Modifying Trails to Meet Sustainability Standards:* Until the trails were modified to meet trail sustainability standards, however, there would continue to be long-term minor to moderate adverse effects from ongoing impacts, especially in wetter areas, where existing use continues to result in evidence of visitor use, including from footprints, horse-prints and bicycle ruts, which both affect the tread surface and extend the impacts of off trail use from erosion during runoff and from visitors avoiding mucky or degraded areas by hiking alongside or off trail. Existing impacts from user-created features, such as banked turns and jumps on trails would also continue until these areas were rehabilitated. Ongoing trail maintenance and efforts to improve trail conditions would also continue as culverts and cross drains were installed, resulting in short-term adverse effects combined with long-term beneficial effects from increasing the sustainability of Mitchell Hill trails.

*Wayfinding:* All alternatives would also result in negligible to minor short-term adverse effects from the installation of wayfinding devices at trailheads and trail junctions. Wayfinding signs would also contribute to improved visitor understanding of the trail system which would indirectly benefit soils by reducing the confusion associated with using the trail system which could reduce social trails.

*Creating a Sustainable Trail System:* Designating trails would result in short-term minor to moderate localized adverse impacts on soils, from changing trails to meet their designations, combined with long-term beneficial impacts from containing visitor use to the new, sustainably-developed authorized routes. Those trails designated for foot traffic only would cause the fewest visitor use impacts to soils, while those that accommodated equestrian and bicycle use would be

designed or rehabilitated with additional sustainable features that would accommodate that use or would be rehabilitated. Multiuse trails would likely continue to result in the greatest impacts. Some of the most widely accepted research on trails impacts shows that horse traffic produces much more sediment than other users (hikers, mountain bikes, and motorcycles) on dry plots as well as wet (Wilson and Seney 1994). Bicycle use on level ground can potentially have less impact than a hiker because weight is distributed over the tires and the tire rolls over the soil and/or vegetation instead of with a direct and compact downward force; however, on steep slopes braking and accelerating with knobby mountain bike tires tends to loosen soil and vegetation.

Ongoing trail maintenance and new trail construction would also continue to dislodge soils, compact soils, mix soils and introduce nonnative materials such as tackifiers and imported soil or gravel to park native soils. Soil erosion, including severe effects such as gullying, that has occurred from poor trail construction on steep slopes would be corrected. Vegetation removal could contribute to both soil erosion (through removal) and compaction (through tree felling or repeated maintenance along trail edges). Along trails, topsoil and duff would be removed and relocated nearby, leaving the more durable mineral soil surface. Berms and outslopes would be created and maintained to maximize sustainability of the trail surface and to avoid the adverse effects of erosion on the trail itself. Soil drainage structures, such as ditches, rock drains, culverts and drain dips would be constructed and maintained by removing loose materials. Water bars would be constructed and dug out as needed and drainage pathways cleared to direct water flow off the trail. Trail tread would be surfaced, resurfaced, crowned or repaired as needed. Ruts would be filled and slough from slopes above removed. Switchbacks would be constructed and maintained, including inspected for erosion and trail cutting and signs of these repaired. Temporary reroutes could be constructed to minimize safety hazards for visitors near washouts or slides. Later, these reroutes would be obliterated using nearby materials after trails are improved.

Impacts from retaining multiuse trails on former logging roads would be similar to impacts from retaining the multiuse trail system identified in Alternative 1, however because these trails are heavily compacted compared to the narrower non-logging roads, erosional impacts would not be as severe from horse and bicycle use. Instead, while some impacts to the trail tread would occur during seasonally wet conditions and on unimproved sections of trail, such as the Inner Loop Road (until these sections are improved with drainage features), other areas would be more durable and would not show evidence of trail user impacts, such as depressions and uneven tread from horse hooves or bicycle ruts. Implementing a range of mitigation measures to avoid, minimize or reduce currently occurring soil impacts from existing visitor use on trails would have long-term direct beneficial effects where they are applied.

Although the majority of impacts would continue to result from the maintenance of previously constructed trails in inappropriate locations, other impacts, as noted above, would occur from day-to-day maintenance of existing well-constructed trails, including minor repair and reconstruction of features along these trails. Impacts from maintenance of poorly constructed trails could range from minor to moderate, while most impacts to soil resources from maintenance of trail structures and tread would be negligible to minor. All impacts would be localized in nature and although long-term, would occur widely spaced over time, while drainage maintenance activities would occur annually during spring opening and as needed throughout the season. Although importing surfacing materials could alter soil chemistry in the vicinity of use, because this effect would likely be confined to the trail tread and would contribute to maintaining a sustainable trail, it would be localized and negligible to minor.

*Old Military Road Trail:* Improvements to mark and clear the Old Military Road would result in short-term adverse effects from clearing the trail and long-term adverse effects from use. Clearing areas that have recovered since the road's initial construction and use during the military

encampment period would be intended to improve the area as a hiking only trail with minimal measures to clear a path that is easy to follow. Although the road is visible as a trace as a result of rock features along its edges and from the lack of large trees within it, much of it has become overgrown with mostly native vegetation and surface rain of leaves, twigs and branches. Removing vegetation from the soil surface and installing wayfinding devices such as signs at junctions as well as clearing litter and debris that has accumulated on the surface of the road would have minor adverse effects on soils from disturbance and from excavation to mineral soil. Most work would involve removing small trees and shrubs and forbs that have grown up through the road and from clearing (moving) downed logs and branches. Approximately 0.5 miles would be cleared in this way, resulting in impacts to soils from loss of the organic material covering the soil and from the small degree of erosion that would likely occur with future use until the trail surface stabilized from compaction during use.

*Cedar Grove Trail:* Establishing a single path through the cedar grove would result in ongoing long-term adverse impacts to soils from continued use of an at-grade trail through this seasonally wet area, which results in sheet erosion and impacts to the tread surface from use during wet periods. Although these would be mitigated by potential restrictions during especially wet periods, it is likely that these impacts would continue to some degree unless the trail was surfaced with a more durable material than its existing native soil. Long-term beneficial effects would be contributed from closing approximately 0.5 miles of parallel and social trails and from allowing natural revegetation of these user-created trails through the area. There would also be short-term adverse and long-term beneficial effects to soils from excavation and soil disturbance from installing culverts or bridges to cross seasonally and perennially wet areas. Culverts or bridges would decrease sedimentation from foot traffic through these areas. Short-term and long-term adverse effects would also be contributed from rerouting short sections of trail to avoid sensitive resources, such as the large cedars in the area and the drainage that runs alongside the primary loop trail near the access to the cedar grove trails.

Future creation of an accessible trail through the cedar grove would be explored and would require separate environmental impact analysis because there would be additional disturbance needed to construct a combined at-grade and boardwalk trail at an accessible grade through the area.

Westcott Bay: As described in Alternative 1, impacts from removal of dilapidated structures and from ongoing use and maintenance of roads, trails and parking areas would continue. In addition, there would be impacts from excavating soils to construct a vault toilet (approximately 166 square feet) and from improving an administrative parking, which may eliminate cars from compacting additional areas adjacent to the road. Improvements would allow soils to drain adequately and would reduce mud, ponding, and sheet erosion during seasonally wet conditions.

*Point Trail:* Improvements to the Point Trail would result in both long-term adverse and beneficial effects. Among these would be construction of the Point Trail as a combined soil surface and boardwalk trail to minimize impacts to soils where it traverses the wetland (Figure 26 – see also Wetlands section). Construction of this trail would require excavation of soils to insert boardwalk support posts and to improve the soil tread surface. This could include adding nonnative materials such as imported soil and gravel to the tread to improve its condition, especially for accessibility. Because the trail would be constructed as an accessible trail, it would also be widened and leveled where needed, resulting in additional impacts to soils from excavation and loss of vegetation. The trail would remain approximately 0.29 mile long and would affect an area of approximately 5,280 square feet. To avoid impacts in areas that could be inundated during high tides or storm surges, reliance on the boardwalk, rather than an at-grade trail would occur. Potential sea level rise would also be accommodated by the boardwalk design. The trail would be approximately 2,650 feet long, with a boardwalk of approximately 60 feet and

two trail bridges (approximately 20 feet each). Because excavation of footings or placement of pier blocks for the boardwalk would encompass a small area, (approximately 34 square feet) the proposed project would not require a wetlands statement of findings and would have minimal impacts on hydric soils, which would be more than compensated for by relocation of the Education Camp from its current wetland location to a point higher on the Administrative Road. Short-term adverse effects during trail construction would be coupled with greater long-term beneficial impacts from eliminating social trails and directing visitor use to newly created and/or improved trails. During construction, erosion protection measures to reduce sediment loss from construction area would be used to avoid impacts to sensitive resources in the bay and within the wetland.

*Westcott Bay Connector Trail:* In contrast, improvements to the Westcott Bay Connector Trail would cause fewer impacts. These impacts would include installation of culverts and improvement of trail tread, including potential installation of turnpike through moist areas. As with the Point Trail, short-term adverse effects during construction would be coupled with long-term beneficial effects from directing visitors onto formal, sustainable trail surfaces.

#### Impacts from Alternative 2

In addition to *Impacts from Actions Common to Alternatives 2-4*, there would be impacts at Mitchell Hill from designating a range of trails for hiking only or multiuse and from constructing a small parking area at Horse Trail Road in cooperation with San Juan County. At Westcott Bay, additional impacts would be related to removing the house and septic system, converting the area occupied by the house to a picnic shelter, and from constructing a small onsite parking area for up to ten vehicles.

Mitchell Hill: *Trails:* The range of beneficial impacts from rerouting or closing trails in sensitive resource areas, restoring social trails and duplicate trails, and implementing sustainable design standards would be the same as *Impacts from Actions Common to Alternatives 2-4*. Differences would be related to the trails that would need to be modified to meet their designated standards.

Under this alternative, approximately 2.67 miles at Mitchell Hill would be rehabilitated and/or closed, while 3.84 miles would remain open to multiuse and 3.82 miles would become hiker only. New trail construction at Mitchell Hill would be the same as identified in *Impacts from Actions Common to Alternatives 2-4*. Although impacts from trails designated for multiuse would be the same as in Alternative 1, on the hiking only trails long-term soils impacts would be reduced. Compared to other action alternatives, this alternative proposes the most hiking only trails on sections of trail with a 20% or greater slope for 100 feet or more, which would result in fewer soil impacts than in areas that allow multiple use on some of these same trail sections.

*Parking:* Additional soil impacts would be incurred at the main Mitchell Hill trailhead because road improvements and parking expansion at the end of Horse Trail Road, outside the park. Efforts to expand and improve parking would require collaboration with San Juan County. Because an agreement with the County and preliminary designs are unavailable, additional environmental impact analysis would be required. It is likely, however, that adverse impacts to soils would exacerbate existing impacts from the road and parking area. The area would need to be excavated, re-graded and stabilized. Soil impacts would therefore be long-term adverse and localized to the county road and park entrance. Mitigation measures would include sediment barriers to impacts to adjacent uplands and wetlands. Cooperation with adjacent private landowners would also need to be secured. Compared to current conditions, Alternative 2 would result in beneficial impacts to soils because there is no formal parking area, nor are there measures in place to reduce or mitigate impacts to soils, such as where extension of the parking area into undisturbed areas would be necessary.

Westcott Bay: Impacts from modifying the administrative parking area and improving the Point Trail for accessibility would be the same as described above in *Impacts from Actions Common to Alternatives 2-4*. Additional actions that would affect soils include removing the house and replacing it with a picnic shelter. Deconstructing and/or demolishing the house would benefit soils by reversing loss of soil permeability and compaction of seasonally saturated soils from use of the house. There would also be opportunities to restore native plants in the area formerly occupied by a portion of the house. Where this occurred, long-term indirect beneficial effects on soils would result from improving soil fertility through plant growth and decay.

Although there would be a range of short-term adverse effects on soils from constructing the picnic shelter in place of the house, it is unlikely that the shelter would occupy a greater area than the approximately 1,100 square feet currently occupied by the house. Because construction of the picnic shelter (approximately 600-1,000 square feet) would occur on part or all of the foundation or deck or in a nearby upland, it would have few new adverse effects on soils. If relocated nearby, impacts would include excavation for corner posts and other supports if needed and short-term compaction of areas adjacent to it from people and equipment.

Deactivating and removing the current septic system would include short-term localized adverse impacts to soils from heavy equipment use during removal. Later, long-term beneficial impacts to soils would result from removal of the septic system and restoration of the drainfield. Among these beneficial impacts would include reducing potential contamination of soils during overflow or storm surge conditions. Removal of the septic tank, would also eliminate the potential for future deterioration of and leakage from the tank. Although the drainfield is designed to treat wastes, removing inputs of waste would eliminate the potential for those to affect the soils within and surrounding the drainfield.

#### Impacts from Alternative 3

This alternative would call for slightly more improvements and developments than Alternative 2, primarily at Westcott Bay, thus overall soils impacts would increase, particularly where actions require soil removal to accommodate for new or improved parking areas, and new or improved trail and road access.

Mitchell Hill: *Trails:* At Mitchell Hill, soil impacts would be similar to those in Alternative 2, however there would be fewer miles of hiker only trails. Soil impacts on multiuse trails would be the same as described in Alternative 1, but reduced on trails designated for hikers only, especially when soils are wet. Approximately 2.2 miles of trail (including social trails) would be rehabilitated and/or closed, while 5.98 miles would remain open to multiuse and 2.15 miles would become hiker only. New trail construction at Mitchell Hill would be the same as identified in *Impacts from Actions Common to Alternatives 2-4*. Closure would result in the same types of beneficial impacts described above to fewer miles (0.47) of trail than in Alternative 2.

*Roads and Parking:* Actions and impacts from modifications to parking at Mitchell Hill would be the same as Alternative 2, however low impact toilets and a small number of picnic tables would also be added within the site, resulting in additional disturbance of soils and potentially vegetation, although placement would be focused on previously disturbed areas. Up to approximately 200 square feet could be affected for the vault toilet.

Westcott Bay: *House:* Retaining the house and reusing it for administrative, education, or community use would continue to result in the same long-term adverse impacts to soils as in Alternative 1. Although no expansion of the existing permit (240 gallons or less per day) would be needed; however if the house was used for administrative housing the system would receive more use, resulting in more waste discharged to the existing system than under current administrative use (Alternative 1).

*Trails:* In addition to the new trails identified in *Impacts Common to Alternatives 2-4*, this alternative proposes a new connector trail from Roche Harbor Highlands to Westcott Bay, and a new trail from a parking area (to be determined) along West Valley Road to the Westcott Bay area, which could link to the Westcott Bay Connector Trail. These actions would have additional adverse impacts to soils (compared to Alternatives 1 and 2) due to trail construction where no trails currently exist.

The connector trail from the Roche Harbor Highlands trailhead at the intersection of Roche Harbor and West Valley Roads would extend to Westcott Bay. Approximately 0.58 miles of trail would be constructed through the forested area that forms the eastern boundary of the Westcott Bay area. Trail construction would cause minor long-term adverse impacts to the top layers of the soil profile as soils were cleared of live and dead vegetation, scarified and formed into a trail. Trail construction and trail use would also result in compaction and the area would become inhospitable for plant growth.

The trail from the proposed parking area off of West Valley Road, at a location to be determined would have similar impacts but would be much shorter (approximately 0.30 mile). Both trails would incorporate structures, such as trail bridges, as appropriate, and both would follow sustainable trail guidelines. Additional environmental impact analysis would be required to design and build the parking area and new trail access from West Valley Road to better quantify specific impacts to soils and other resources.

*Parking:* Construction of an improved off-site parking area off West Valley Road would result in adverse impacts on soils. Although the location for this parking area is undetermined; it would be large enough to accommodate approximately 5-10 vehicles and would require additional environmental impact analysis upon design. It is likely that it would affect up to an acre and it would require vegetation clearing in addition to grading, excavation and stabilization of area soils, resulting in long-term, localized moderate adverse impacts to soils in the park. In addition, because this parking would be located off of West Valley Road, it would require coordination and with San Juan County.

#### Impacts from Alternative 4

Because there would be new parking areas at Mitchell Hill and Westcott Bay and new road access to Westcott Bay, there would be more impacts to soils in this alternative, compared to other alternatives. Some new development would also affect areas that have recovered since their last disturbance.

Mitchell Hill: *Trails:* More multiuse trails (7.32 miles) and fewer hiker only trails (1.3 miles) would be designated compared to other action alternatives. As a result, soil impacts would be similar to Alternative 1, however because mitigation measures would be employed and because some trails would be closed and rehabilitated, overall impacts would be reduced compared to Alternative 1. Trail restoration benefits would encompass 1.71 miles.

*Parking:* Compared to other alternatives, there would be moderate to major impacts to soils from constructing a trailhead parking lot with horse trailer turnaround at Mitchell Hill. This new parking area would be constructed on NPS land beyond the existing gate in an existing partially disturbed area. Because specific designs have not been developed, implementation would require additional environmental impact analysis, including a range of mitigation measures to protect the forest community near the gate, which is seasonally saturated. There would also likely be reconstruction of the road extending toward the previously disturbed area, which currently acts as a dam (with little water flow beneath it) between two sections of wetter forest.

*Backcountry camping:* Proposed backcountry campsites on Mitchell Hill would be identified in durable areas, where effects on native soils and vegetation would be minimal. Because there would be a small number (2-3) under an advance reservation system and they would be pack-in pack out with no direct access to water, it is unlikely that they would promote more use or more off-trail impacts. Although resource protection measures would help offset impacts, because this would be a new activity for the park, impacts would need to be closely monitored.

*Westcott Bay: House:* Converting the house into a visitor contact station/nature center would require modifying the interior of the existing house to accommodate information and exhibits and to provide an accessible entrance to the building. As in Alternative 3, the existing septic system would continue to be used. Unlike Alternative 2, this use would be more similar to the administrative use in Alternative 1 but could result in an increased frequency of use compared to Alternative 1, depending on the hours the contact station was open. As in other action alternatives, low impact public restrooms (vault toilets) would be constructed nearby.

*New Road:* Constructing a 0.34 mile long access road from West Valley Road to Westcott Bay would have moderate to major long-term adverse effects on soils from vegetation removal, compaction, runoff and potential contamination from vehicle use. Overall impacts would be somewhat localized but would be long-term and likely moderate to major since they would encompass an area of 1.5 - 3 acres and would involve excavation, grading and fill placement.

*Parking:* Potential paving of the access road to the Westcott Bay and providing a public parking area in a previously disturbed area near the house would also have minor to moderate long-term adverse effects on soils. Compared to the 5-car administrative parking area in Alternatives 2-3 that would also be constructed in Alternative 4, a much larger area (approximately four acres) would be needed to accommodate additional public parking for 10-15 vehicles. In this area, which has been previously used as an orchard, mostly nonnative vegetation would be removed and the area re-graded and surfaced with gravel or asphalt-concrete pavement. Compared to existing conditions, there would be increases in soils impacts from loss of vegetative cover, compaction and alteration or loss of soil permeability. To minimize impacts to nearby wetlands, the parking area would include sediment barriers and drains along its edges. If pavement is applied, runoff during storms would accelerate the speed of runoff and there could be additional erosive forces applied to areas along the pavement edges (where drains could mitigate this by concentrating runoff). Nonetheless, some erosion could occur during storm events along the roadside or where soils are uncompacted.

#### Impact Avoidance, Minimization and Mitigation Measures

Environmental protection measures that would be included as appropriate to the alternative actions include:

- Implement standard erosion control measures such as silt fences and/or sand bags to minimize the potential for soil erosion (because disturbed soils are susceptible to erosion until revegetation or construction is completed).
- Revegetate disturbed areas and/or restore the areas as close as possible to pre-construction conditions as soon as practicable following construction.
- Minimize excavated areas to safely accomplish proposed work.
- Cover excavated areas during non-work periods.
- Use a raised boardwalk type construction to reduce impacts on wetland soils, vegetation, and hydrologic functions, including floodplain waters.
- Incorporate drainage alongside the edges of parking areas to improve infiltration and slow runoff.

Environmental protection measures specific to the education camp construction include, but are not limited to:

- Preserve the natural resources within the project boundaries and outside the limits of work in their existing condition or restore to an equivalent or improved condition as approved by the Contracting Officer.
- Arrange construction activities to minimize pollution (erosion, trash, etc.) to maximum practical extent.
- Limit clearing, excavation, and grading to those areas of the project site necessary for construction.
- Minimize exposed and unprotected soils.
- Complete excavation and grading during the dry season to the maximum extent possible.
- Construct new facilities on soils suitable for development (NPS PWR 2008).
- 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 (NPS PWR 2008).
- Spray water on the construction site, if necessary, to reduce fugitive dust generated by construction and soil disturbance (NPS PWR 2008).
- Reuse excavated materials where possible in the project area (NPS PWR 2008).
- Prepare and approve a Hazardous Spill Plan before construction begins. Ensure that spill containment supplies are kept on site (NPS PWR 2008).
- Minimize possible petrochemical leaks from construction equipment by regular monitoring and checking of construction equipment to identify and repair any leaks (NPS PWR 2008).
- Encourage the use of vegetable oil in place of hydraulic fluid in heavy equipment (NPS PWR 2008).
- Following construction, revegetate construction areas in a timely period with appropriate native plants (NPS PWR 2008).

Cumulative Impacts: Among the past, present and reasonably foreseeable actions that would contribute to cumulative effects on soils at Mitchell Hill include past use as a state education trust property by the Washington Department of Natural Resources. This resulted in modifications to the varied forest and meadows at the site, including impacts to soils from construction of logging roads, from compaction, and from other forest management actions over decades. Similarly, the formerly intact shoreline of Westcott Bay and connected adjacent forest has been modified by a variety of human uses over time, from Native American use of the area to development of the site **as a boy's camp, to removal of trees** and other native vegetation to construct the development now found on the site. Numerous old fencelines and structures are found in the area. These have contributed a variety of impacts to soils, including associated with wetlands at the site.

When the impacts from Alternative 1 are added to the impacts from past, present and reasonably foreseeable future actions, such as minor adverse and long-term beneficial impacts from improving Garry oak woodlands at English Camp and Mitchell Hill and ongoing maintenance of trails throughout English Camp, there would be contribution of minor cumulative impacts from Alternatives 1-4 from relocation construction of the education camp and negligible to minor impacts from trail improvements at Mitchell Hill and Westcott Bay under Alternatives 2-4. These would be combined with similar cumulative effects from construction of new trail segments under these same alternatives. The contribution to cumulative impacts from Alternatives 2 and 3 would be minor, while the contribution from Alternative 4 would range to moderate from additional development of larger parking areas and a new entrance road to Westcott Bay.

Conclusion: Alternative 1 would continue to result in mostly minor to moderate localized adverse effects. There would also be minor to moderate localized adverse impacts from relocation and construction of the education camp at English Camp. Implementation of Alternative 2 would have minor to moderate localized adverse impacts from a variety of management actions at Mitchell Hill and Westcott Bay. These include relocation and construction of the education camp at English Camp and modifying parking areas and trails at Westcott Bay and Mitchell Hill. Long-term minor to moderate beneficial impacts would result from a variety of resource protection measures. Alternative 3 would result in similar localized adverse impacts from many of the same actions. In contrast, overall impacts from Alternative 4 would be greater from creating larger parking areas at both sites and a new entrance road at Westcott Bay. The action alternatives would contribute a variety of negligible to moderate adverse and beneficial effects from trail modifications, including some realignment of trails to meet their designated standards in all alternatives and from construction of accessible trails at both sites.

## 2. Water Resources Impacts

### a. Impacts to Water Quality and Quantity

Water quality characteristics include the chemical, physical and/or biological characteristics of water, such as temperature, dissolved oxygen, suspended sediment, nutrients, and chemical pollutants. The concentrations and interactions of these elements not only affect the ability of organisms to survive but exhibit a great degree of natural variation among water resources. Evaluation of impacts is based on existing water quality information, where available, and best professional judgment of water quality status based on similar local areas where information is not available.

#### Impacts from Alternative 1

English Camp: Ongoing impacts from the education camp would continue. Although current use of the site affects wetlands from placement of tents and daily activities within a wet meadow, human waste is confined to portable outhouses and food waste is contained within a cook trailer. Both are later transported offsite. Parking occurs nearby on uplands. When the camp is in use, the area is generally dry, free of the shallow surface waters and/or saturated soils that may be present during the rainy season. Repeated trampling of wetland vegetation, however would continue to result in sedimentation of sheet flow through the wet meadow. Because surface waters are somewhat distant from the area, overall effects would remain minor. As a result, direct impacts to water quality are minimal, resulting from use of the wet meadow when it rains. Although parked vehicles may leak fluids, these would penetrate the soil, where they could have negligible to minor effects on groundwater, but would be filtered by chemical and biological processes in soil before reaching ground or surface water resources, such as Garrison or Westcott Bay (from 0.31 to 0.27 miles distant, respectively).

Relocating the education camp on the south side of the road would have the potential for short-term impacts to water quality that would be alleviated by the use of best management practices and mitigation measures during construction (by the construction stormwater pollution prevention plan – SWPPP). Long-term impacts would be improved over those occurring at the current site, because the new site is not within a wetland. Other impacts would be similar but improved, because the new site is also not near surface waters. Water use at the cookshelter would be filtered by passage through a septic drainfield. Design estimated use of 400 gallons per day. As with the current site, there would be no impacts from human waste because vault toilets would be constructed and these would be pumped periodically to remove waste, which would then be treated at the island wastewater treatment facility (similar to current conditions with the portable toilet waste).

Ongoing impacts on water quantity from continued provision of water to the education camp are ongoing. A well and pumphouse adjacent to the area have a capacity of one gallon per minute and water storage of 1,000 gallons in an onsite tank. Although camp use is not metered, overall use is relatively low because the water is used only for cooking and drinking purposes, not for sanitary facilities.

Use of water would initially be similar to use at the current site, however, if use expanded or if use becomes more consistent year-round, impacts on water quantity would also increase, resulting in minor effects that would not exceed the capacity of the well or storage tank.

Ongoing informal kayak access to Westcott Bay from the education camp and occasional public use would continue to have negligible long-term adverse effects on shoreline resources at the edge of Garrison Bay. Use would not be distinguishable from existing regular public use of the shoreline as visitors from English Camp wander along the edge of the bay.

Mitchell Hill: Water quality may be adversely affected in streams and wetlands due to clogged or inappropriately sized culverts that may increase sediment; hiker, horse and equestrian use of trails that cross streams without appropriate drainage features, such as bridges or culverts; trails through wetlands without boardwalks or turnpikes; visitor access in sensitive riparian areas; and unsustainable trails on steep or unstable slopes. Although no specific measurement of water quality standards has occurred at Mitchell Hill, it is likely that ongoing impacts are generally negligible to minor but may rise to moderate in some areas from inappropriate trail design and placement, lack of maintenance, and multiuse, such as concentrated localized impacts from horse excrement. Without specific actions to reduce impacts, such as replacement of undersized culverts or reconstruction of trails through wet areas, these impacts would continue.

Westcott Bay: The most likely impacts to water quality at Westcott Bay would be from the septic system for the existing house, however based on recent inspections, there are no problems with the functioning of the septic system and minimal administrative use of the house is not likely to change that. Minimal administrative use of the house also affects water quantity, however that use is negligible. Because the septic tank is equipped with an audible alarm that would sound when the water has reached a certain level and the septic tank cannot be used, there is a built-in back-up system to minimize effects. This alarm can also sound during winter storm events that raise the groundwater table and saturate the area around the septic tank. Under this alternative, intermittent administrative use of the house, including use of the bathroom and kitchen would continue. As a result, there would continue to be negligible to minor long-term adverse impacts to water quality. Additional water quality impacts could also occur from sheet erosion over at-grade trails in the area during extreme tides or winter storm events, however these too would likely continue to be undetectable because there are no newly disturbed areas.

#### Impacts from Alternative 2

English Camp: Impacts from informal kayak launching would be the same as in Alternative 1. With the relocation and development of a new education camp on the north side of the Administrative Road, short- and long-term impacts to water quality and quantity would be the same as described in Alternative 1 but would occur in a different location. Like the site on the south side of the road, the proposed new location is in an upland site and no surface waters are nearby. Soil tests have revealed that groundwater is more than two feet below the surface. During testing for the septic system none of the test holes reached saturated soils or water. Potential impacts to groundwater quality would result from drainage of water from the kitchen facility to the drainfield, however, because the drainfield would be designed to accommodate this use, overall impacts would be minimal.

Mitchell Hill: Implementation of resource protection measures and rehabilitation of trails that do not meet multiuse standards would result in a range of negligible to minor short-term adverse and long-term beneficial effects to water quality. Similarly, replacement of undersized or poorly functioning culverts and bridges and construction of boardwalks or turnpikes through wetlands would alleviate the impacts from hiker, horse and mountain bike use as well as sedimentation currently affecting water resources at Mitchell Hill. Although there would continue to be equestrian use of trails, leading to impacts from horse manure, many of the existing erosion areas, impediments to surface flows, and conditions leading to degradation of water quality would be corrected, including soil erosion and surface water runoff from storm events. Water quality in riparian areas would be protected by closing or rerouting use away from these sensitive resources. No impacts would be anticipated from marking and clearing the Old Military Road for use as a

hiking trail, since it is located well away from water resources.



Figure 24: Creek through Cedar Grove

Improvements to the small parking area at the end of Horse Trail Road would not affect water resources because best management practices and stormwater pollution prevention measures (SWPPP) would be implemented. This would minimize water quality impacts from stormwater runoff from contaminants, such as grease, oil, and antifreeze, which could otherwise be flushed into waterways. Because specific designs have not been developed and because this action requires coordination with San Juan County, it would require additional environmental impact analysis prior to implementation.

Westcott Bay: Converting the house to a picnic shelter and removing the septic system would have long-term beneficial effects on water quality and quantity at the site. Although there would be potential short-term impacts from dislodging soil during construction of the vault toilet, administrative parking area

and small visitor use parking area as well as reconstruction of the Point Trail, mitigation measures in the construction SWPPP and those identified below would contain any potential sediment. It is unlikely that storm surges would cause coastal flooding to reach the upland site where the toilet would be constructed, however, to address anticipated sea level rise, the unit could be constructed to be moveable. Overall impacts would be similar from either facility. Impacts would also be reduced from the implementation of trail resource protection measures. Short-term impacts would be negligible to minor, while long-term impacts would be mostly beneficial and direct from removal of the septic system. Installing water runoff barriers, such as French drains,

around the edges of proposed parking areas would reduce the potential for long-term minor adverse impacts from runoff and would make potential impacts from sediment or other pollutants undetectable against the background of natural and existing erosion and runoff.

#### Impacts from Alternative 3

English Camp: Impacts associated with the education camp would be the same as in Alternative 2. Although there would be additional parking associated with kayak launching at the bottom of the Administrative Road, this parking would be on durable uplands, where nonnative pasture grasses are effective at retaining soil. Because of the low, intermittent use, no additional impacts to water quality would be anticipated.

Mitchell Hill: In the long-term, water quality impacts would be the same as Alternative 2. In the short-term, because there would be more multiuse trails retained, until these were modified to reduce impacts, existing impacts (similar to Alternative 1) would continue.

Westcott Bay: Impacts to water quality would be similar to those in Alternative 1 from retaining the house for administrative and visitor uses, however, there would be more regular use of the toilet facilities in the house by staff and special use permittees. Impacts would be the same as in Alternative 2 from construction of a vault toilet, rehabilitation of the Point Trail and construction of administrative parking. In addition, there would be impacts and mitigation measures similar to Alternative 2 from the construction of a larger parking area in a location to be determined off of West Valley Road. In this area although vegetative cover would be removed, resulting in an increased potential for surface water runoff, erosion and sedimentation, mitigation measures, would also be used. Although the parking area would be larger it would continue to have permeable pavement and surface runoff protection measures to reduce and/or prevent potential impacts. Therefore long-term impacts would be the same as in Alternative 2. A slight increase in short-term impacts, however, would occur as a result of the larger parking area, additional trails (from the junction of Roche Harbor and West Valley roads and from the new parking area to link to the Westcott Bay Connector Trail) however the SWPPP would mitigate this potential. Because specific designs for the new parking area have not been developed and because this action requires coordination with San Juan County, it would require additional environmental impact analysis prior to implementation.

#### Impacts from Alternative 4

English Camp: Impacts associated with the education camp would be the same as in Alternative 2.

Mitchell Hill: Impacts associated with trail system improvements and culvert modifications would be the same as Alternative 2. Although there could also be a slight potential for impacts to water quality from the proposed 2-3 backcountry campsites, these impacts would be mitigated by the **use of an advance reservation system that included training in Leave No Trace™ techniques**. In addition, there would be additional impacts from the construction of a much larger parking and horse trailer turnaround. Because specific designs have not been developed, this action would require additional environmental impact analysis prior to implementation. Mitigation measures would be the same as for other small proposed parking areas, therefore overall impacts would be minor, however because the area is situated adjacent to a seasonally wet forested area, additional mitigation measures would need to be identified during planning.

Westcott Bay: Impacts from retaining the house and repurposing it as a visitor contact station/nature center would be similar to Alternative 1, however, there could be more frequent use of the septic system (similar to Alternative 3).

Construction of a new access road, parking area and spur trail would increase the potential for short-term impacts to water quality similar to those in Alternative 3, but would continue to be

mitigated by the use of best management practices and the SWPPP. Similarly, long-term impacts would be mitigated by the same resource protection measures to prevent impacts to Westcott Bay from parking area runoff. Because specific designs have not been developed, this action would require additional environmental impact analysis prior to implementation.

Constructing a formal kayak launch along the edge of Westcott Bay would minimize long-term impacts to water quality and vegetation from trampling by creating a physical launch ramp that would be used for this activity. Although there would also be long-term impacts from creation of the launch ramp, these would be finite and once the ramp was constructed, the potential for additional impacts to the bay would generally decrease. Because specific designs have not been developed, additional environmental impact analysis would occur prior to implementation of this action.

#### Impact Avoidance, Minimization and Mitigation Measures

Measures that would be included in the proposed project to minimize impacts to water quantity and quality include:

- Work with San Juan County to implement appropriate mitigation measures to help reduce impacts on water quality at Westcott Bay, since the entire county is classified as an aquifer recharge area.
- Provide education through required permits for kayak launching and for equestrian use to minimize visitor use impacts on water resources.
- Integrate runoff control systems into designs for parking areas and other development near water features to minimize water pollution.
- Use low impact development techniques for stormwater management.
- Develop sediment control and prevention plans for projects that could affect water quality.
- Implement erosion control measures to minimize discharge to nearby water bodies.
- Regularly inspect construction equipment for leaks of petroleum and other noxious materials to prevent water pollution.
- Construct low impact toilets, such as vault toilets, rather than flush toilets.

#### *Measures specific to the construction of the Education Camp*

- Erosion control measures would consist of appropriate BMPs for storm water discharge, including but not limited to silt fencing, barrier protectors, straw bales, temporary soil retention blankets, excelsior drainage filters, sediment traps and berms.
- Berms and excelsior drainage filters would be used to form sediment traps and to control runoff into creeks, streams, marshes, access roads, well areas, and the staging areas.
- Erosion control measures would be used to contain only direct precipitation in the construction zone. The contained water would be allowed to percolate into the ground or drain slowly through the drainage filter sediment traps.
- Runoff velocity would be reduced and surface water flow would be directed away from all fuel containment, storage, and borrow areas.
- Excess water used for dust control would be contained within the demolition areas by the erosion control measures.
- The contractor would furnish, install, maintain, and operate necessary control measures and other equipment necessary to prevent erosion as described in the Stormwater Pollution Prevention Plan (SWPPP).
- Before the work begins, sufficient equipment would be available on the site to ensure that the operation and adequacy of the erosion control system could be maintained.

- Ensure erosion and sediment control structures remain effective throughout excavation and grading operations. Inspect control structures after each rain event. Promptly repair breaches which occur.

#### *Trail Resource Protection Measures*

- Close trails social trails, trails, that go down steep embankments toward streams and trails above 20% slope to multiuse.
- Maintain trails to prevent soil erosion, improve trail drainage, and improve water quality: installation of water bars, dips, cross-drains, culverts, raising and stabilizing surface, etc.
- Install bridges or boardwalks where appropriate, such as to the point at Westcott Bay. In addition, conduct bank stabilization where needed to protect archeological and marine resources.
- Allow horse and mountain bike use only on those trails identified on NPS maps.
- Encourage multiuse when trails are dry and not muddy.
- Require visitors to stay on designated trails.

Cumulative Impacts: Past, present and reasonably foreseeable future actions would be the similar to those described above under *Impacts to Soils*. No specific use of water resources at Mitchell Hill has been identified associated with past Washington Department of Natural Resources use of the site, however, water from the area is used by/flows through downstream private properties. No consumptive use of or provision of water would occur under Alternatives 1-4 at Mitchell Hill. Therefore, there would be no cumulative impacts from Alternatives 1-4 on water quantity at Mitchell Hill.

Cumulative impacts to water quality would continue from the array of steep trails, some of which also occur adjacent to surface water resources. It is likely that these impacts combined with compaction of the area from past logging by DNR has resulted in an array of minor to major adverse impacts on water quality. Among these include a reference from San Juan County to impacts associated with potential DNR construction of an entrance road to the site in a stream corridor. This proposal apparently resulted in changing the county right of way from along the bed of a stream to the current location at Horse Trail Road. The proposal also resulted in a series of letters between DNR and the county to resolve the potential threat. (<http://sanjuanco.com/Planning/Docs/Subarea%20Plans%20files/Trust%20Lands%20Guidelines%205.pdf>).

There have also been direct and indirect impacts from construction of the house and septic system. Although the house and septic system (tank and drainfield) are located in uplands, it is likely that the pipe between these is located in wetlands. Recent construction of the Westcott Bay Connector Trail has also affected wetlands in the area from construction of two trail bridges constructed over intermittent and perennial stream channels.

When the impacts of past, present and reasonably foreseeable future actions are added to the impacts of Alternatives 1-4, there would continue to be negligible to minor adverse cumulative impacts on water quality. For trails, these impacts would be negligible where well-constructed and minor to moderate where poorly constructed. Implementation of resource protection measures and actions to mitigate ongoing wetland impacts, with wetland appropriate structures, would increase opportunities for cumulative beneficial effects primarily in the action alternatives (2-4), but also in Alternative 1 associated with the relocation of the education camp.

Conclusion: Ongoing minor adverse effects on water quality and quantity would continue in Alternative 1; however relocation of the education camp would result in long-term beneficial impacts on water quality and wetlands. In comparison, effects would improve in Alternative 2

from removal of the septic system at Westcott and from implementation of trail and wetland resource protection measures at Mitchell Hill and Westcott Bay as well as from relocation of the education camp. Except for the removal of the septic system, other beneficial effects in Alternative 2 would also occur in Alternatives 3 and 4. In all alternatives, mitigation measures would prevent or mitigate short- and long-term impacts to water resources, including water quality from mitigation measures used in construction of new parking areas, modifications to trails near water resources, and from implementation of erosion protection measures on trails.

## b. Impacts to Wetlands

Known wetlands within the planning areas are found at the current education camp, Westcott Bay and at Mitchell Hill. As part of the evaluation process for this DCP, a wetlands delineation was completed at Westcott Bay to analyze potential impacts from proposed development near the house. The delineation included field work to identify hydric soils, wetland vegetation, and to develop a wetlands map. It also included confirmation of the wetland at the current education camp.

### Impacts from Alternative 1 (No Action)

English Camp: The Education Camp is currently located in a wetland (Seney 2014). This area (which is currently used by Oregon Museum of Science and Industry campers in the summer) is comprised of a wet meadow surrounded by red alders (*Alnus rubra*). The meadow is wet during the winter and after periods of rain.

Under Alternative 1, ongoing impacts to approximately one acre of wetland resources (soils, vegetation and water) would continue from placement of tents, vehicles, a trailer and other support equipment directly on the meadow during summer use. Impacts that likely occur include soil compaction, possibly impeding water flow; vegetation trampling, compaction, and loss; and possible contamination of water from sedimentation and campsite use. Under current conditions, additional degradation and possible loss of this wetland would occur over time, however because the education camp is slated to move to a location further west on the Administrative Road, there would be long-term beneficial impacts on wetlands from passive revegetation, combined with restoration of wetland hydrology through removal of the trailer and from eliminating seasonal camping in the wet meadow. These impacts would be eliminated upon construction of the new education camp facility. Until that occurs, existing impacts would continue and would continue in violation of NPS policies that call for restoration of previously degraded wetlands and of natural wetland functions. Because no restoration of this area has been identified in previous planning, rehabilitation would be passive and would continue to result for some time to come in a degraded wetland, a long-term adverse impact.

Westcott Bay: The wetlands field work and mapping effort focused on the area surrounding the house out to the lagoon and overlook point (Figure 26).

The area surveyed covered approximately 1.1 acres, of which 0.7 acres of wetlands were identified using U.S. Army Corps of Engineers (ACOE) and NPS procedures. All three factors that define a wetland -- hydric soils, wetland hydrology, and hydrophytic (wetland dependent) vegetation -- were found on the site (including in nine of the 14 sample areas) (Seney 2014). Recent human impacts are evident in the vegetation, soils, and land surrounding the house. Previous use of the area included a summer camp and disturbance from this or other uses includes nonnative grasses, an old orchard, and fill material.

Current limited visitor and administrative use of the site would continue to adversely impact wetlands on the informal Point Trail. Trampling of wetland vegetation occurs as people walk to the point and beyond onto the spit. When the tide is in and during storm surges this vegetation trampling may also affect other wetland characteristics, such as water quality. Compaction of

wetland soils has also occurred as a result of the footpath and because trails have not been formally delineated through signs.

Mitchell Hill: Under this alternative, no new resource protection measures would be implemented to protect riparian areas or other wetland vegetation within visitor use areas, such as trails. Trails that currently provide access to sensitive riparian areas and trails that cross wetlands without appropriate or with deteriorated wetland structures (bridges, boardwalks, culverts, etc.) would continue to adversely impact wetland resources (soils, vegetation, and water quality and habitat for water dependent animal species). The Mitchell Hill trail system contains approximately six known locations where structures are needed and several trails that provide access to a riparian area. Among these areas is a long section of the Inner Loop Road, which is wet most of the year. Although several cross-drains have been provided, the area above the trail contains a small pond and surface flow remains evident through this area. Because it is a multiuse trail, tracks of horses, hikers and bicyclists can be seen in the muddy conditions. Under Alternative 1, there would continue to be long-term adverse impacts on this area.

#### Impacts from Actions Common to Alternatives (2-4)

English Camp: The education camp would be relocated north of the Administrative Road, which is also the access road to the current camp. There would be no new impacts on wetlands from relocating the camp to this location and existing impacts would be eliminated, including through both passive and active restoration, resulting in long-term beneficial impacts on wetlands compared to the interim condition in Alternative 1.

Mitchell Hill: Trail resource protection measures would improve management of wetland resources, especially within riparian corridors. Installation of trail bridges and other structures to protect wetlands would have short-term minor adverse effects from the potential for sedimentation combined with long-term beneficial effects from minimizing human trail use impacts, including sedimentation from horse, bicycle and foot traffic through wet areas.



Figure 25: Impacts during Wet Conditions

Westcott Bay: Installation of a vault toilet and parking area would not affect wetlands because these would be developed in an upland site and would include resource protection measures to minimize offsite impacts, including wetlands.

Reconstruction of the Point Trail would affect wetlands. To mitigate existing and future impacts to wetlands, the trail would be constructed as a boardwalk through wetlands and as an at-grade (surface) trail in uplands. Temporary impacts to wetlands would occur from use of people and machinery to construct the boardwalk, which would require trampling within wetlands. Mats

could be placed over concentrated work areas to protect wetland plants from the adverse effects of trampling, which would otherwise compress or break off plant parts. Long-term minor adverse impacts would occur from placement of posts to hold the boardwalk in place. These would be set on or dug into the soil to hold the boardwalk. In either case, each post would affect up to 100 square inches of surface and if they were set in the ground, approximately 18 cubic feet of wetland soils. Although the boardwalk portion of the trail would shade a portion of the wetland, it is likely that plants would fill in the area where the informal Point Trail now exists and with scarification (raking) to decrease compaction would recover more quickly. Overall impacts to wetlands would be less than 0.1 acres and would be long-term and adverse but would be improved by construction of the boardwalk.

If the footings for the boardwalk were excavated, because the area affected would be small (less than 0.1 acre), the proposed project would not require a wetlands statement of findings and would have minimal impacts on hydric soils, which would be more than compensated for by relocation of the Education Camp from its current wetland location to a point higher on the Administrative Road and by subsequent passive (and/or active) restoration of that wet meadow.

#### Additional Impacts from Alternative 2

Westcott Bay: Removing the house, septic system, and drainfield and converting this upland area to a picnic shelter would result in **an overall “net gain” of wetlands**, if the line feeding the septic system is removed. Although the house, septic tank and leach-field are located in uplands, there is a small (1.5-2-inch line) from the septic tank to the drainfield that likely passes through wetlands. This alternative would result in short-term localized adverse impacts on wetlands during removal of septic system line combined with long-term negligible localized beneficial impacts on wetlands because the area it covers is small.

#### Additional Impacts from Alternative 3

Westcott Bay: Retaining the house for administrative and/or special visitor uses under this alternative would continue to have the potential for long-term negligible to minor adverse effects on wetlands. Future repairs to the drainfield line could result in wetlands impacts if it remains in place. Otherwise, future repairs could include restoring the wetland by removing the line and rerouting it along the roadway. In either case, mitigation measures would be implemented to reduce any potential adverse impacts. In addition, there would be periodic inspections of the septic tank and drainfield to ensure that they are functioning properly and not adversely affecting nearby wetlands. There would be negligible to minor long-term localized adverse impacts to wetland resources.

Mitchell Hill: Impacts would be the same as described above in *Impacts from Actions Common to Alternatives (2-4)*. Although locating a vault toilet and picnic tables inside the gate near the trailhead would be constrained by the presence of the wetland resources near the entrance to Mitchell Hill, these would be placed in an upland location away from wetlands vegetation and mitigation measures would ensure that there would be no non-target adverse effects. As in Alternative 2, overall impacts to wetland resources would be localized, long-term and beneficial.



Figure 26: Westcott Bay Wetland Delineation

#### Impacts from Alternative 4

Westcott Bay: Impacts to wetland resources under this alternative would be similar to those under Alternative 3, in that the house and associated facilities would be retained for administrative and visitor use.

Providing access to an improved kayak launch site at Westcott Bay from the Westcott Bay Connector Trail would have localized minor to moderate adverse impacts to wetland resources in Westcott Bay from **allowing kayak access and launching from a developed site at water's edge**. Although specific designs for the launch have not been developed, the launch would minimize overall impacts and to the degree possible would be constructed off site and set in place.

Mitchell Hill: Impacts to wetland resources would be the same as in Alternative 3.

Cumulative Impacts: See *Impacts to Water Quality and Quantity*.

Conclusion: Existing minor adverse wetland impacts from the at-grade informal Point Trail would continue in Alternative 1. Alternatives 1-4 would increase protection for wetland resources by relocating the education camp to an upland site and restoring the old camp that is in a wetland. There would also continue to be long-term adverse impacts to wetlands from retaining the line between the septic tank and drainfield that passes through wetlands. Under the action alternatives (2-4) moving the education camp would offset existing impacts from the septic system utility line (Alternative 2) and from future construction of the Point Trail as a boardwalk in wetlands (Alternatives 2-4). Because other mitigation measures would also be implemented there would be long-term net beneficial effects to wetlands in all action alternatives.

#### Impact Avoidance, Minimization and Mitigation Measures

Measures that would be included in the proposed projects to minimize impacts to wetlands include:

- Time projects undertaken adjacent to or near wetlands to occur during the dry season, usually late summer
- Employ appropriate best management practices when working in or near wetlands.
- Stage and protect excavated materials to prevent potential sedimentation impacts, including minimizing the amount of disturbed earth area and the duration of soil exposure to rainfall.
- Develop and implement a comprehensive Spill Prevention/Response Plan that complies with federal and state regulations and addresses all aspects of spill prevention, notification, emergency spill response strategies for spills occurring on land and water, reporting requirements, monitoring requirements, personnel responsibilities, response equipment type and location, and drills and training requirements.
- Develop and implement a Stormwater Pollution Prevention Plan (SWPP).
- Ensure that actions consider high tides and the high groundwater table at Westcott Bay.
- Integrate runoff control systems into designs of parking areas and other developments near water to minimize water pollution.
- Design proposed activities to avoid surface water, ponds, seeps, springs, and wetlands to the degree possible.

*Prevention of Fuel Spills*: The following BMPs to control adverse impacts of fuel spills would also be used:

- Conduct refueling activities at least 100 feet from water sources.
- Identify and provide containment devices, such as temporary earth berms, for areas where refueling or maintenance of equipment would occur.
- Make absorbent pads available to clean up spills.
- Restrict the location of fueling sites and ensure requirements for spill containment, and other measures to safeguard aquatic and terrestrial habitat from construction-related contaminants are identified.

### c. Impacts to Floodplains

The only regulatory floodplain (100-year floodplain) within the three planning areas is located at **Westcott Bay**. As required under NPS Policy, Director's Order 77-2 and Executive Order 11988 Floodplain Management, a Floodplain Statement of Findings was prepared for the Westcott Bay area because the proposed project is a Class I Action (requiring documentation). This Statement of Findings can be found in Appendix 3.

#### Impacts from Alternative 1 (No Action)

Westcott Bay: There would continue to be no adverse impacts from ongoing actions and activities that take place at Westcott Bay. This 70-acre addition to the park was acquired in 2013 with the existing house, septic system (including septic tank, utility line and leach field), and footpaths on the property. The non-historic house was built in the 1970s and modified in 2011. The house is currently used by the NPS for administrative purposes and on occasion for special public uses or ranger-led interpretive programs. Currently, no overnight use is occurring.

Although the site is located in a floodplain, there is a low probability of significant flooding occurring in San Juan County, and there is a low risk associated with flooding events predicted to occur (San Juan County 2011). The Westcott Bay area is expected primarily to be affected by storm surges during extreme high tides. Although, some improvements are needed to improve connection to its foundation, the house at Westcott Bay is in good condition (Lam, Balachowski, and Arzarian 2014). The first floor is raised approximately four feet above the ground and does not appear to pose a risk from flooding. Based on the expected intensity of inundation in the area around the house, such a minor event would be unlikely to result in its loss or additional impacts to the floodplain.

#### Impacts from Alternative 2

Westcott Bay: Removing the house, adding a picnic shelter, and improving the Point Trail could increase day use, but there would continue to be no overnight use. Visitor improvements and amenities would include: delineated parking area for up to five administrative vehicles (including accessible public parking), a vault toilet, and conversion of the house into a picnic shelter for public gatherings and administrative functions. Other improvements would include an accessible trail from the house to a scenic overlook of the bay. Public parking would be limited year-round for accessibility and special use permittees.

As noted under Alternative 1, flooding potential in the area is very low. Although visitor use would be expected to increase slightly under this alternative, in case of a flood during extreme winter weather conditions that produce storm surges, mitigation measures to protect floodwater values and to protect property and life would be employed (see below). By implementing mitigation strategies, this alternative would not impact floodplains or floodplain values and would protect life and property.

#### Impacts from Alternative 3

Westcott Bay: Retaining the house and repurposing it for administrative use (seasonal housing, for community events, educational programs, etc.) would potentially increase visitor use (similar to Alternative 2). Because this is the current preferred alternative and because it is not practicable to **relocate the existing development and human activities outside of the floodplain**, the NPS has prepared a draft Floodplains Statement of Findings to ascertain the risk from these uses and to ensure that floodplain values and risks to human life and property would be minimized (Appendix 3).

As noted above, the frequency of flooding in San Juan County is very low. Westcott Bay has approximately 2,670 feet of waterfront with no development along the shoreline, except a footpath. By implementing the mitigation measures identified in the statement of findings and

below, this alternative would have no effect on floodplains or floodplain values. As in other alternatives, floodplain values would be protected and proposed actions, including mitigation measures would ensure that risks to human life and property would be minimal.

#### Impacts from Alternative 4

Westcott Bay: In addition to retaining the house, this alternative would add a new access road and parking lot, and trail from the parking area to the proposed visitor contact station. Although this new development would contribute to stormwater runoff from the road and parking area, these facilities would be outside the 100-year floodplain and would not directly impact floodplains or floodplain values. Therefore, although site development would be different, impacts to floodplains would be the same as in Alternative 3.

#### Impact Avoidance, Minimization and Mitigation Measures

Westcott Bay is within the 100-year floodplain and the proposed action (preferred alternative) would include overnight use of the site; therefore, the following measures would be implemented to minimize impacts to floodplains:

- Integrate runoff control systems into designs of parking areas and other developments near water features to minimize water pollution.
- Use low impact development (LID) techniques for stormwater management (see current San Juan County – Town of Friday Harbor Hazard Mitigation Plan).
- Construct proposed administrative parking area to allow permeability into the soil, thereby avoiding increases in surface water runoff from storm events.
- Construct new facilities, such as vault toilet and parking area, in uplands to avoid floodplain values or floodwaters.
- Construct a raised boardwalk for the Point Trail to reduce impacts on wetland soils, vegetation, and hydrologic functions, including floodplain waters.

#### *Actions to Minimize Risk to Life*

- Cancel temporary special events planned in the area if major seasonal storms that may cause flooding are forecasted.
- Close the gate and post signs warning visitors of the potential flood hazard from coastal flooding, tidal surges, and high winds.
- Remove residents of the Westcott house to temporary shelter during major storm events (heavy rains and high winds). Occupants would be instructed to evacuate the premises immediately and not return until storm warnings and any flood waters have subsided.
- Use the audible alarm system on the house septic tank as a warning for residents and visitors to the area to evacuate. (*Note*: This warning system does not indicate that water is entering the building, only that the ground is saturated to a point that seawater intrusion has likely occurred into the tank and that low level flooding/ponding surrounding the house is occurring or may occur.)
- Ensure that the house has phone line and that the phone is in good working order to allow overnight occupants to call for help if needed. Post emergency phone numbers near the phone.
- Locate a copy of the current San Juan County/Friday Harbor Hazard Mitigation Plan in the Westcott house and ensure that it is easily accessible and periodically reviewed.
- Develop park standard operating procedures for overnight use of the house, including evacuation procedures (in case of a flood caused by either coastal storm surges or a tsunami).
- Westcott Bay occupants would evacuate immediately to higher ground in extreme conditions, such as in the rare case of a tsunami.

#### *Actions to Minimize Risk to Property*

- No new capital investments (buildings) would be constructed in the floodplain.
- Locate vault toilet in an upland area (above 100-year floodplain).
- Store NPS valuable equipment or important documents on the loft level of the house, or temporarily relocate these items to park headquarters during the winter.
- Construct the accessible trail to the scenic overlook (Point Trail) to avoid impeding floodwaters.
- Develop proposed parking (Alternatives 3 and 4) in an upland site, including mitigation measures to avoid increasing surface stormwater runoff through placement of impermeable surfacing.
- Loss of the house at Westcott Bay is a rare risk the NPS is willing to accept. Such loss or damage could also include future associated small-scale development, such as the unpaved administrative parking area, vault toilet, and short accessible trail (boardwalk).

Cumulative Impacts: See also *Impacts to Water Quality and Quantity*.

Flooding in San Juan County is infrequent and rarely causes damage to property, utilities, drinking water supplies, or roads. Extremely rare is the impact of flooding on human life.

Cumulative impacts on floodplain values and waters at Westcott Bay are difficult to quantify but include past use of the area as an international **boy's camp which appears to have included filling** and possible dredging of the adjacent lagoon as well as unknown impacts from water use. There are also unknown contributions from past and present operations of the Westcott Bay Shellfish Farm operation.

When the impacts of past present and reasonably foreseeable future actions are added to existing impacts on floodplains, there would continue to be negligible adverse effects on floodplain values that would not impede floodwaters. Alternative 1 would have no additional contribution to cumulative effects, although ongoing negligible impacts would continue. Although Alternatives 2-4 would add a new vault toilet and would expand parking, they would not affect existing conditions regarding short-term overnight occupancy and the extent of overall development within the floodplain. In fact, Alternative 2 would eliminate the potential for overnight use. With mitigation measures, the alternatives would not contribute to cumulative impacts on floodplains. With the implementation of mitigation measures that take into account floodplain values, protection of life and property, including trail resource protection measures, cumulative impacts on water quality would likely be beneficial.

Conclusion: By implementing mitigation strategies, the alternatives would be unlikely to impact floodplains or floodplain values and would protect life and property.

## C. Biological Resources

### 3. Impacts to Vegetation

Impacts to vegetation were analyzed by reviewing existing literature and characterizing the effects based on the types of impacts that could occur, and then analyzing factors that could contribute to vegetation impacts under each alternative. Potential impacts from management actions are based on professional judgment and experience with similar actions. Potential impacts specific to the relocation of the education camp and Westcott Bay were analyzed by NPS park and regional staff professionals, and staff from the Kwiáht: Center for the Historical Ecology of the Salish Sea.

Impacts from Alternative 1 (No Action)

English Camp: Current Education Camp: As noted in *Impacts to Soils*, because the group camp is within a wetland, there is ongoing disturbance, primarily compaction of soil and loss of vegetation associated with hydric soils that would ordinarily support wetland vegetation. This is a result of trampling that occurs during use and especially from setting up tents in the wetland meadow. Because the site is allowed to rest during the wettest part of the year when the camp is not in use, vegetation, although stunted and/or sparse in some areas, persists in the meadow and in the vicinity of camp activities. Some areas, however, are denuded, where vegetation loss and compaction have occurred. Under current camp use, tents would continue to be erected directly on vegetation within the wet meadow (an area of approximately one acre) and trampling would continue to occur as campers use the area between the cook trailer/picnic area and the meadow. Although now denuded, it is likely that the cook trailer/picnic area would also have been part of the wet meadow, although they are located on slightly higher terrain and do not appear to be as wet as the meadow. Overall impacts to vegetation have been localized, moderate to major and long-term in the wet meadow.

Future Education Camp: Approximately 2.0 acres of second growth Douglas-fir forest would be impacted by the construction of the Education Camp on the south side of the Administrative Road. As noted in *Impacts to Soils*, much of the area would continue to include low-lying shrubs and trees interspersed among the tent platforms, buildings and structures. Where buildings or structures and the septic system tank and drainfield were placed, vegetation (including trees, shrubs, forbs and nonvascular plants such as ferns and mosses) would be cleared to bare soil and removed from the site. Some of the trees that were removed would be used for future campfires.

Proposed facilities and the potential area they would encompass are described above under *Impacts to Soils*. Vegetation impacts would be dispersed over the project area to construct various components of the camp, such as the cookshelter/gathering space, 10-15 tent platforms, double vault toilet, septic tank and drainfield, circulation footpaths, staging area and accessible parking area. Plant species that would be removed would include: ocean spray, salal and snowberry. Because this site has not been disturbed like the site proposed for use in Alternatives 2-4 (an old woodcutting/maintenance storage area) and because the area is not as level, it is likely that more trees (primarily Douglas-fir and western hemlock) and shrubs (such as salal) would be removed from a larger area to minimize grading of some of the hummocky areas on the site. Therefore, in an effort to provide a more diverse camp area in harmony with its setting, and to avoid over-grading the more intact areas of this site, it is likely that overall impacts would affect a slightly larger area than on the north side of the road in Alternatives 2-4. Overall impacts on vegetation would be long-term, localized, and negligible to major, affecting much of a 1.5 acre site along the Administrative Road.

The current location of the education camp, approximately one acre, would be restored to natural conditions by removing existing compaction through scarification and then allowing for passive revegetation to occur. Scarification would have short-term adverse impacts on soil compaction and any remaining vegetation but would increase the opportunity for vegetation to reestablish in affected areas. Although initial beneficial effects would result from discontinuing use, as noted under soils, restoration of vegetation and erasure of evidence of impacts in this area would take many years. Because it has been used seasonally, the wet meadow has had short periods without use. Nonetheless, vegetation loss and disturbance are evident and nonnative species are present. Therefore, restoration would also likely need to include active means of removing nonnatives and reseeding and/or replanting native species.

Mitchell Hill and Westcott Bay: Because there would be no new construction, excavation, or ground disturbance from new facilities, roads, trails, or parking areas at Westcott Bay or Mitchell Hill, there would be minimal impacts on vegetation in these areas. Existing impacts would continue.

Westcott Bay: Existing long-term impacts, including from the presence of nonnative species would continue. Other impacts to vegetation, including short-term disturbance and loss from ongoing removal of old and abandoned structures on the property would also occur. Removal of the structures, however, would result in opportunities for long-term localized beneficial impacts in these areas from native plant restoration over time.

Current impacts to vegetation from trail use would continue due to the lack of adequately delineated trails, trail signs, and NPS trail maps. Social trails may continue to develop resulting in slight loss of vegetation and localized fragmentation of plant communities. Because use is primarily occurring on existing routes and because it is minimal due to limited access to the area, changes would be slight and would continue to have local impacts on a small area (such as from trampling along the edges of the Point Trail or along the Westcott Bay Connector Trail, or from visitors wandering around the former orchard area).

Mitchell Hill: Current impacts to vegetation from off-trail uses would continue due to the lack of adequately delineated trails, trail signs, and NPS trail maps. These minor to moderate long-term adverse impacts to native vegetation would also result from continued use of social trails at Mitchell Hill. Existing impacts to vegetation from visitor use include those from people hiking, biking or horseback riding off-trail, trampling vegetation, and forming social trails. Because formal trails are confusing and signs or maps showing authorized trails or uses are mostly unavailable, there are more impacts. Because trails would continue to be unsigned and confusing to follow, it is likely that social trails would continue to develop. Loss of vegetation would continue to include changes in the abundance or distribution of individuals in a local area, but would not affect the viability of local populations.

At Mitchell Hill, trails that currently go through sensitive resources (herbaceous balds and bluffs and riparian areas) would remain open to multiuse. Although the park would work to refine the trail system, systematic mitigation measures would likely be undertaken over time. Vegetation would continue to be trampled and lost as a result of ongoing trail use by all user groups from efforts by hikers, equestrians, and cyclists to yield to another trail user, inadvertently trampling vegetation and/or loosening the soil. Trail widening resulting in localized soil erosion and vegetation loss would continue to be detectible. Indirect impacts from disturbed soils include subsequent loss of vegetation from erosion during storm events and/or from exposed roots caused by ongoing trail use. In

addition, areas where soil has been disturbed would continue to result in an ongoing potential for nonnative invasive species to occur. Seeds and seed heads could continue to be inadvertently transported in on the fur of dogs or horses and spread along trails by hiker, equestrian, and cyclist use. Effects on vegetation would continue to consist of both short- and long-term minor to moderate adverse impacts.

Because there would be no changes in roads or parking for visitor or administrative use, there would be no additional impacts to vegetation. Existing impacts would continue. The



Figure 27: Parking Area Near House

lawn near the house would continue to be impacted by cars parking on the grass. Repeated driving, parking, and turning around on the grass may result in eventual loss of much or all of the vegetation cover in this area, depending on the frequency of use (Figure 27).

#### Impacts from Actions Common to Alternatives (2-4)

English Camp: Relocating the education camp to the north side of the Administrative Road would have a range of impacts on vegetation, including removal, disturbance and rehabilitation. The north side of the road has been previously disturbed from use as a wood cutting/maintenance activity and storage area (Figure 18).

The project area has been superficially used by the NPS for maintenance purposes, particularly surrounding the existing parking/storage area in the western portion of the campground (sic) project area and within the clearing near the well house. Most of the storage piles consist of bucked up trees, brush, trimming material, split rail fencing scraps and rock. Additionally two groupings of red brick are located at the north side of the parking/storage area. One pile is neatly stacked while the other, located not far away, sits in a pile against a fir tree (Ripin 2015).

Compared to Alternative 1, there would be fewer trees removed because the density of mature trees on the north side of the road is less than on the south side. As in Alternative 1, vegetation impacts would be dispersed over the project area to construct various components of the camp, such as the cookshelter/ gathering space, 10-15 tent platforms, double vault toilet, septic tank and drainfield, circulation footpaths, staging area and loading/unloading and accessible parking area. Combined, overall impacts would affect up to 1.5 acres. Combined the square-footage of planned facilities would be approximately 14,535 square feet (0.33 acre).

As described in the soils section, construction activities would result in the following direct impacts to vegetation:

- vegetation removal for the following facilities:
  - Cookshelter/gathering space: (44 feet x 80 feet) 3,520 square feet
  - Double vault toilet: 167 square feet
  - Accessible tent platform (1): 390 square feet
  - Tent platforms (9): 252 square feet each, 2,268 square feet total
  - Campfire amphitheater: (40 feet diameter) 1,256 square feet
  - Septic tank (1,000 gallon) excavation: 200 square feet
  - Septic drainfield construction: 540 linear feet (6 inches wide x 8 inches deep) (270 square feet)
  - Bus/vehicle drop off area: (60 feet diameter) 1,414 square feet
  - Accessible/administrative parking (2 spaces): 1,800 square feet
  - Circulation pathways: (650 linear feet x 5 feet wide)
  - Staging area: 5,652 square feet
  - Waterline (pump house to cookshelter): 1,752 linear feet
- vegetation compaction from onsite storage of materials and equipment used in construction; the use of heavy equipment moving back and forth across the site as needed to construct facilities, excavate water and electrical lines and to insert the septic tank, as well as to construct the septic system drainfield.

Mitchell Hill: *Implementation of Trail Sustainability Standards*: Under all action alternatives, development of trail sustainability standards would contribute to reducing adverse impacts, such as erosion on trails, which would indirectly benefit vegetation. Although designating trails would result in short-term minor to moderate localized adverse impacts on vegetation, they would result in long-term beneficial impacts from concentrating visitor use on new, sustainably developed routes, thereby limiting the development of social trails. Trails designated for foot traffic would likely have fewer vegetation impacts than those that accommodated equestrian and bicycle use.

However, those accommodating multiuse would be designed or rehabilitated with additional sustainable features.

Approximately 2.67 miles of trails would be restored under Alternative 2, 2.2 miles under Alternative 3 and 1.71 miles under Alternative 4. Closure would allow for revegetation to occur as cessation of use led to duff increase from needle and leaf fall, thereby providing suitable places for windblown or animal-carried seeds to germinate. Revegetation could also proceed more quickly and would be less likely to include nonnative invasive plants if closed trails were raked to reduce compaction, seeded and scattered with native materials, such as branches and other trail vegetation clearance trimmings. Vegetation impacts would be beneficial and long-term due to trail rerouting, closures, or use restrictions in sensitive resource areas (e.g., riparian vegetation, steep herbaceous balds). Beneficial vegetation impacts also would occur because of restoration of social and/or duplicate trails, and implementation of sustainable design standards.

In addition to beneficial impacts from implementing sustainable design standards and from using these standards to improve existing hiking and multiuse trails, there would be long-term beneficial impacts from rerouting or closing trails in sensitive resource areas and from restoring social and duplicate (parallel) trails. Vegetation compaction and loss have occurred to varying degrees on park trails, particularly on steeper sections that are more susceptible to erosion. Off-trail hiking and use of social trails in the park extend the amount of vegetation trampling and compaction beyond designated trails, increasing overall vegetation loss.



Figure 28: Proposed Location of Education Camp under Alternatives 2-4

Until trail sustainability standards were applied, there would continue to be long-term minor to moderate adverse effects on vegetation from visitors avoiding wet areas by traveling adjacent to existing trails. Until signs were installed at trail junctions and improved trail maps provided, there would continue to be creation of social trails due to the confusing nature of the trail system.

As described under soils, there would also continue to be adverse impacts on soils and vegetation from use during wet periods, when footprints of people and horses and bicycle ruts are formed. These allow for channeling and/or ponding of water and cause uneven runoff, resulting in soil erosion, which may also affect plants. As with soils, existing impacts from user-created features, such as banked turns and jumps on trails would also remain until these areas were rehabilitated. Rehabilitation would also include ongoing trail maintenance and efforts to improve trail conditions that would continue until these conditions were alleviated. These would include the installation of culverts and cross drains that would improve the ability of steeper trails to hold

vegetation. The range of sustainability measures combined with increased trail maintenance would have long-term beneficial effects on vegetation.

*Old Military Road Trail:* Improvements to mark and clear the Old Military Road as a hiking trail would result in minor long-term adverse effects from clearing vegetation, such as trees, shrubs and forbs that have grown up since the road passed into disuse. Future rehabilitation and preservation maintenance actions could later open some areas of the road to its full width. Approximately 0.5 miles would be cleared to a width of approximately 6-8 feet fulfilling a double purpose of recreating the hiking trail and performing preservation maintenance on an historic structure.

*Cedar Grove Trail:* Similarly, establishing a single path through the cedar grove would result in ongoing negligible to minor long-term adverse impacts to vegetation from continued use of an at-grade trail through this seasonally wet area, which has affected vegetation from users trying to avoid the wet areas. Long-term beneficial effects would be contributed from closing parallel and social trails and from allowing natural revegetation of trails through the area, while additional adverse effects would also be contributed from rerouting short sections of trail to avoid sensitive resources. As noted elsewhere, future creation of an accessible trail through the cedar grove would be explored and would require separate environmental impact analysis because there would be additional disturbance needed to construct an accessible at-grade and boardwalk trail through the area.

Westcott Bay: Constructing a new vault toilet would result in removal of vegetation from an upland area (approximately 166 square feet) as would establishing a parking area near the Westcott house to accommodate approximately five parking spaces. Because much of this area is covered by nonnative pasture grasses, overall effects on vegetation would be limited.

Improvements to the Point Trail would result in both long-term adverse and beneficial effects. Adverse effects on vegetation would occur during construction, including from compacting vegetation during staging of materials and from excavating post holes for the boardwalk supports. Beneficial impacts would occur from allowing plants to grow up to and even under the boardwalk and from restoration of impacted areas. Because the trail would be constructed as an accessible trail, it would also be widened and leveled where needed, resulting in additional impacts from vegetation removal. Where practicable, wetland plants would be salvaged and replanted. Impacts would extend over the trail, which would be approximately 0.25 mile in length and approximately 3-5 feet wide.

In contrast, improvements to the Westcott Bay Connector Trail would cause fewer impacts. Among these impacts would be installation of culverts and improvement of trail tread, including potential installation of turnpike through moist areas. As with the Point Trail, short-term adverse effects during construction would be coupled with long-term beneficial effects from directing visitors onto formal, sustainable trail surfaces.

Informal kayak access would continue to be allowed via Garrison Bay, which could result in minor ongoing adverse impacts to vegetation, such as from intermittent trampling of pasture grasses as users carry in their kayaks.

#### Impacts from Alternative 2

In addition to *Impacts from Actions Common to Alternatives 2-4*, there would be impacts at Mitchell Hill from designating a range of trails for hiking only or multiuse and from constructing a small parking area at Horse Trail Road in cooperation with San Juan County. At Westcott Bay, additional impacts would be related to removing the house and septic system and converting the

area occupied by the house to a picnic shelter and from constructing a small onsite parking area for up to ten vehicles, affecting an area of less than 0.25 acre.

Mitchell Hill: *Trails:* Under this alternative, approximately 2.67 miles at Mitchell Hill would be rehabilitated and/or closed, while 3.84 miles would remain open to multiuse and 3.82 miles would become hiker only. In addition, to trails through sensitive areas being designate hiker only, trail sections with a 20% or greater slope for 100 feet or more (approximately 3.8 miles) would be hiker only. Combined, this would produce almost five miles of hiking only trails at Mitchell Hill and would reduce vegetation impacts in these areas that currently allow multiple use under Alternative 1. Although multiuse would continue on former logging roads and other trail sections (3.6 miles), incremental negligible to minor localized adverse impacts to vegetation would occur over time, especially where trail users left the trail to avoid wet or muddy sections. Trampling of vegetation, compaction and erosion of trail tread, and trail muddiness are impacts associated with trail corridors. Trail erosion causes gullies and can cause impacts immediately adjacent to the trail corridor by exposing tree roots. Erosion of duff also dries out the soil substrate adjacent to trails which is critical to ground cover, grasses and understory plant health and success, causing further impacts and trail widening (Duffy et al. 2012).

*Parking:* Additional vegetation impacts would be incurred at the main Mitchell Hill trailhead due to parking expansion at the end of Horse Trail Road, on San Juan County land. Working with the county to expand parking would have long-term minor to moderate localized adverse impacts from excavating, re-grading and adding parking area. Mitigation measures would be used to avoid impacts to nearby wetlands and uplands, including adjacent private property on both sides of the road. Less than 0.25 acres would likely be affected, including some existing roadway. Because an agreement with the County and preliminary designs are unavailable, additional environmental impact analysis would be required.

Westcott Bay: Impacts from removing the house would include short-term adverse localized vegetation impacts (compaction) caused by heavy equipment during removal. Similarly, removal and closure of the septic system would also affect vegetation, including from loss and compaction. Because much of the vegetation in the vicinity of the house and septic system is nonnative, there would be minor localized impacts, especially because the picnic shelter would likely be smaller than the footprint of the house (1,100 square feet). Where native species were present, these would be salvaged and replanted to the extent practicable. Because the septic tank line is located in wetlands, depending on further analysis, it would either be capped in place or removed, whichever would have fewer long-term adverse effects. Eventually, there would be long-term beneficial impacts to vegetation from removal of the septic system and restoration of the drainfield (less than 0.25 acres). Actions would include removing the tank and infiltration system, removing nonnative plants, reducing compaction, and then restoring vegetation through seeding and/or planting. Another small area adjacent to the uplands near the septic system would be used for the small parking area. Less than 0.25 acres of mostly nonnative pasture grasses would be removed and surfaced with more durable materials to accommodate parking. French drains would be installed along the western edges of the parking area to ensure runoff was filtered before draining toward Westcott Bay.

At Westcott Bay, the informal parking area near the Westcott house would be improved to accommodate approximately five parking spaces. Improvements would provide a delineated parking area, which may eliminate vegetation compaction from cars parking in random spots and/or driving off-road. Vegetation impacts would be beneficial, long-term and localized compared to the current conditions because the parking area would be permanent and mitigation strategies would be implemented, which could include signing, parking for special uses only, or parking by permit only.

### Impacts from Alternative 3

In addition to *Impacts from Actions Common to Alternatives 2-4*, this alternative would have impacts at English Camp from improving kayak access to the English Camp dock; at Mitchell Hill from trail system modifications; and at Westcott Bay from constructing a new connector trail from the junction of West Valley and Roche Harbor Roads to meet a connector trail into Westcott Bay; from continued use of the house; and from establishing a new public parking area off of West Valley Road in an area yet to be determined.

#### English Camp

In addition to the above impacts, kayakers would be permitted to park at the bottom of the Administrative Road to launch from the English Camp dock. There is no formal parking at the end of the Administrative Road. Existing nonnative pasture grasses would be trampled by foot traffic and compacted by vehicles, which also occurs to some degree under current conditions, albeit less frequently. If vegetation loss or erosion were a problem, the area could be formalized as a parking area. Overall impacts would be long-term, localized and minor.

#### Mitchell Hill

*Trails:* In this alternative, approximately 2.2 miles of trail at Mitchell Hill would be rehabilitated and/or closed, while 5.98 miles would remain open to multiuse and 2.15 miles would become hiker only. Therefore, vegetation impacts would be similar to those in Alternative 2, including from reducing these impacts on trails that were closed due to sensitive resources, rehabilitated to meet their designated standards, or were designated hiking only. Unlike Alternative 2, however, some steeper sections would be available for multiuse. Combined there would be a range of short-term minor to moderate localized impacts combined with long-term negligible to minor impacts from use, including from ongoing activities to maintain vegetation clearance on the trail system.

*Parking:* Although impacts from construction of a small parking area at the end of Horse Trail Road in cooperation with San Juan County would be the same as in Alternative 2, an additional area of approximately 200 square feet in a previously disturbed area would be affected for the placement of low impact toilets. A small number of picnic tables could also be placed.

#### Westcott Bay

*Trail:* Construction of a multiuse connector trail from Roche Harbor Highlands and West Valley Road parking to Westcott Bay as well as a short trail from a parking area along West Valley Road (to be determined) that links to this new connector trail would have long-term minor to moderate localized adverse impacts. The trail for the road intersection would be approximately 0.58 miles long, while the trail from the new parking area to Westcott Bay would be approximately 0.30 miles long. Both would be constructed as multiuse trails and the trail from the new parking area would also be accessible. Therefore, they would likely be approximately 3-5 feet wide and would result in the removal of forested vegetation from an area comprising approximately 0.35 acres and 0.18 acres, respectively.

*House:* Ongoing use of the house would have minimal adverse impacts on vegetation because that use would be similar to existing conditions. The current footprint of the house would not be altered. Any vegetation impacts from administrative, visitor use, or special park uses would be short term and mitigated through education efforts, signing and/or ranger presence.

*Parking:* Additional vegetation impacts would occur at Westcott Bay from improved offsite parking proposed adjacent to West Valley Road on a portion of Westcott Bay. Although the location for this additional parking area is undetermined, there would be long-term moderate localized adverse impacts from construction of a parking area that would accommodate 5-10 vehicles (< 0.5 acre). Because a specific site and designs have not been completed, this action would require further environmental impact analysis including cooperation with San Juan

County in mitigating the impacts of the parking area by potentially reducing the speed along this section of roadway.

#### Impacts from Alternative 4

Because there would be new parking areas at Mitchell Hill and Westcott Bay and new road access to Westcott Bay, there would be more impacts to vegetation in this alternative. In addition to *Impacts from Actions Common to Alternatives 2-4*, there would be a new larger parking area with horse trailer turnaround constructed at Mitchell Hill and a new road and parking area constructed at Westcott Bay. In addition, the house at Westcott Bay would be used as a visitor contact station/nature center and a more formal kayak launch would be constructed near English Camp and Westcott Bay. As in other alternatives, there would also be additional small-scale development at both sites, including picnic tables, benches and the potential for hitching posts, where needed.

English Camp: Vegetation impacts would be the same as in Alternative 2 because this alternative also calls for relocating the Education Camp to the north side of the Administrative Road.

Mitchell Hill: *Trails:* Under this alternative more multiuse trails (7.2 miles) would be designated than in other action alternatives (Alternative 3 would have 6.4 miles) but fewer than in Alternative 1 (10 miles). Compared to Alternative 1, there would be more vegetation impacts from implementing measures to rehabilitate trails to meet their designated uses, including from rerouting to avoid steep or sensitive areas. Because this alternative would have the fewest miles of hiking only trails, overall impacts from ongoing trail use would be similar to Alternative 1, except for where trails were closed or relocated away from sensitive areas. As noted under *Impacts to Soils*, it is likely that multiuse trails would continue to have greater impacts on soils and vegetation than hiker only trails.

*Parking:* Compared to other alternatives, impacts to soils and vegetation from constructing trailhead parking area at Mitchell Hill would increase. Instead of parking located outside the gate on Horse Trail Road, a new parking area would be constructed on NPS land inside the existing gate. (See description and potential impacts of this area under *Impacts to Soils*). Construction of this approximately 0.5 acre parking area would require additional environmental impact analysis to minimize impacts to sensitive forest communities located near the gate. Proposed designs have not been fully developed. Impacts on vegetation would likely be moderate to major from excavation and grading and from clearing, resulting in loss of vegetation.

*Backcountry camping:* Proposed backcountry campsites on Mitchell Hill would be identified in durable areas, where effects on native vegetation would be minimal. Because there would be a small number (2-3) of low impact sites and they would be under an advance reservation system with no access to water, it is unlikely that they would promote more use or more off-trail impacts. Although resource protection measures would help offset impacts, because this would be a new activity for the park, impacts would need to be closely monitored. Because specific sites have not been identified, additional environmental impact analysis would also be required prior to implementation.

Westcott Bay: *Trails:* As in Alternative 3, the trail from the parking area would be designed for multiuse, resulting in impacts to vegetation on a very short (0.25 mile x 5.0 feet wide) trail to access facilities at Westcott Bay.

*House:* Vegetation impacts would be similar as those in Alternatives 1 and 3 from retaining the house as a visitor contact station/nature center. Although modifications to the interior of the house would be made, outside modifications would be limited to providing an accessible path (approximately 100 feet long by five feet wide) to the house through an upland area. Additional

inadvertent vegetation impacts could occur should large groups, such as school groups, use the nature center. Converting the house into a visitor contact station/nature center would require providing an accessible entrance to the building. The existing septic system would also continue to be used.

*New Road:* Constructing a 0.3 mile long access road from West Valley Road to Westcott Bay would have moderate to major long-term adverse effects from loss of vegetation (including numerous trees, shrubs and forbs); compaction of soils; runoff into adjacent vegetated areas; and potential contamination of soils from vehicle use. Overall impacts would be somewhat localized but would be long-term and likely moderate to major since they would encompass an area of up to four acres and would involve excavation, grading and fill placement. Estimated loss of vegetation would cover approximately 1,500 linear feet x 20 feet (30,000 square feet), not including the parking area, which would encompass another 10,000 square feet for 10-15 vehicles. Although a variety of mitigation measures would be employed to reduce potential impacts to soils and vegetation and Westcott Bay, most impacts would remain adverse.

*Kayak Launch:* There would be minor to moderate localized long-term adverse effects on shoreline vegetation along Westcott Bay from developing a carry-in kayak access point off the Westcott Bay Connector Trail. Although specific designs have not been developed, the launch site could encompass up to 100 square feet and would be situated to minimize overall impacts. Among other options, possible locations for this launch point include the small cove where the Bell Point Trail meets the Westcott Bay Connector Trail.

#### Impact Avoidance, Minimization and Mitigation Measures

Measures that would be included in the proposed project (as appropriate to the alternative actions) to minimize impacts to vegetation include:

- Monitor visitor use areas for impacts beyond the footprint of developed areas.
- Use public education, revegetation of disturbed areas with native plants, erosion control measures, and barriers to control impacts on plants from erosion or creation of social trails.
- Develop revegetation strategies for disturbed areas, including requiring the use of genetically appropriate native species.
- Revegetation plans for the former education camp would be developed.
- Minimize the introduction of nonnative species by using only weed-free materials for road and trail construction, repair, and maintenance; ensuring equipment arrives on-site free of mud or seed-bearing material; certifying all seeds and erosion control material as weed-free; identifying and treating areas of noxious weeds before and after construction; importing clean materials, such as topsoil and/or treating these before they arrive on site; regularly inspecting areas that serve as introduction points for invasive plants (education camp construction sites, staging areas, and other development zones); certifying rock and gravel sources to ensure these are free of noxious weed species; and monitoring locations of ground-disturbing operations for at least three years following the completion of construction projects.

**Cumulative Impacts:** The past, present and reasonably foreseeable actions that would contribute to cumulative effects on soils at Mitchell Hill and Westcott Bay are noted under soils. Vegetation in the current location of the education camp also has also been affected by past development, including logging and road building in the area as well as by use of the area for the camp. The sites for the proposed education camp also show evidence of use, including logging, homesteading and/or agriculture (an old well site was found during archeological survey of the north side of the road).

When the impacts of the alternatives are added to the impacts from past, present and reasonably foreseeable future actions, there would continue to be minor to moderate cumulative adverse effects on vegetation. Except for construction of the education center in either location (Alternatives 1-4) and proposed construction of an entrance road and parking area at Westcott Bay (Alternative 4), the alternatives would not contribute substantially to altering vegetation. Instead, some wetland vegetation restoration would occur and other actions, such as implementing resource protection measures would be likely to have long-term beneficial effects on vegetation. These beneficial effects derive from reducing overall impacts by rerouting trails to avoid steep or sensitive areas, closing parallel and social trails and minimizing other existing vegetation impacts. Elsewhere incremental vegetation impacts, such as from modifying trails in the cedar grove and at Westcott Bay and creating a hiking only trail on the Old Military Road, would contribute negligible to minor cumulative adverse effects. As noted in *Impacts to Soils*, use of trail sustainability standards would improve parkwide trails planning and management, resulting in indirect long-term beneficial effects on vegetation from reducing erosion.

Conclusion: All alternatives would result in minor to moderate localized adverse impacts on vegetation from relocation and construction of the new education camp. Alternatives 2-4 would also result in a variety of resource protection measures used to protect vegetation, both directly and indirectly. Ongoing vegetation impacts would come from recreational use of park sites, including trails and newly developed areas. Because most impacts would occur in previously disturbed areas or would be to rehabilitate areas adversely affected by recreational use, numerous actions would result in long-term beneficial effects. Alternative 1 would have greater impacts related to ongoing recreational uses, while Alternative 4 would have greater impacts from development. Alternative 2 would alter recreational use more by designating more hiking only trails, while Alternative 3 would have both ongoing impacts from multiuse trails and reduced impacts from some additional hiking only trails. Because new development would delineate and direct visitor use to designated trails, current vegetation impacts from social and unmarked trails would diminish substantially.

#### 4. Impacts to Special Status Species and Communities

Although there are no federally listed species present at either Mitchell Hill or Westcott Bay, sensitive plant communities/associations at Mitchell Hill include herbaceous balds and bluffs as **identified in the park's vegetation mapping project** (Rocchio et al. 2012). Garry oak woodlands are also found at Mitchell Hill and coastal cutthroat trout may be present in the stream. At Westcott Bay, a sensitive coastal wetland plant community is present.

##### Impacts from Alternative 1

English Camp: There would be no impacts to special status species at English Camp because no special status species are known from the area.

Mitchell Hill: Although Garry oak woodlands are considered sensitive, overall impacts to this community would continue to be minimal because existing trails would continue to affect the primarily nonnative understory of this community. Because off-trail impacts could continue to occur, there would continue to be a potential for negligible to minor adverse effects in this community.

Herbaceous balds and bluffs have been identified by San Juan County as a sensitive vegetation type. This plant community exists in numerous locations on Mitchell Hill, including adjacent to existing multiuse trails. As a result, ongoing trail use at Mitchell Hill would continue to impact sensitive plants, including mosses and forbs, such as fawn lily, camas, chocolate lily and shooting star, associated with this plant community. Long-term impacts from trampling and bicycle tires running over the edges of these trails where they pass through herbaceous balds and bluffs would also continue to occur. In addition, it is likely that these communities, which are open and offer



Figure 29: Trail through Herbaceous Bald

unique views and few impediments to visitor use, would continue to be impacted by social trails. Because no trail resource protection measures are proposed under this alternative, there would continue to be long-term localized minor to moderate adverse impacts.

The sensitive Western Hemlock - Western Red Cedar - Red Alder / Western Skunk Cabbage – Lady-Fern (*Tsuga heterophylla* - (*Thuja plicata* - *Alnus rubra*) / *Lysichiton americanus* - *Athyrium filix-femina*) Forest Association **identified in the park's** vegetation mapping project is a hardwood- conifer swamp which occurs in two locations at Mitchell Hill, including in the cedar grove. According to the report, it occurs in perennially saturated soils and is sensitive to changes in hydrology or water quality (Rocchio et al. 2012). Under Alternative 1, there would be no additional impacts to this plant community; however existing impacts, including from a network of

parallel and social trails in the cedar grove would continue to have minor to moderate localized adverse effects on this plant community.

Other sensitive plant associations found at Mitchell Hill include the Western Red cedar - Grand fir / Sword fern Forest Association, which although common on Mitchell Hill, is

unique because it is found only in the rainshadow of the Olympic Mountains and on Vancouver Island where it occurs in a very specific environment (Rocchio et al. 2012). According to the report, this plant association is limited in extent and some of the best remaining examples on San Juan Island are at Mitchell Hill. No specific impacts would occur under Alternative 1 or under the action alternatives (2-4) that would affect the extent or distribution of this plant community.

**Coastal Cutthroat Trout:** Because several trails at Mitchell Hill provide access to stream channels that may be inhabited by coastal cutthroat trout, there could be negligible to minor long-term adverse impacts on this species and its habitat, including from possible erosion on one of the steeper trails that descends to this area as well as from trails that cross over this area.

**Westcott Bay:** According to the park's vegetation mapping project, the imperiled *Salicornia virginica* - *Distichlis spicata* - *Triglochin maritima* - (*Jaumea carnosa*) herbaceous vegetation type occurs in very narrow strips along the shoreline of Garrison and Westcott bays (Rocchio et al. 2012). During the wetlands survey for Westcott Bay, the above-named and other species associated with this community type were found in wetlands near the house at Westcott Bay.

Under Alternative 1, the foot trail that leads from the house to the point would continue to pass through this vegetation type as an at-grade surface trail, which would continue to result in periodic trampling of plants associated with this community that lie adjacent to the trail, a minor, localized long-term adverse effect.

#### Impacts from Actions Common to Alternatives 2-4

English Camp: As in Alternative 1 there would be no impacts to special status species at English Camp.

Mitchell Hill: Impacts would be similar to Alternative 1; however resource protection measures common to Alternatives 2-4 would reduce adverse impacts to sensitive forested plant associations and herbaceous balds and bluffs.

As described under “Impacts to Soils and Vegetation,” the proposed Cedar Grove Trail would be constructed. Although there would be short-term adverse effects from construction of this trail, these effects would be combined with and overshadowed by long-term beneficial effects from closure of the multiple parallel and social trails that have increased compaction and resulted in loss of understory vegetation throughout the cedar grove. In addition, existing informal bridges would be replaced with new structures that would increase the length of the span to reduce erosion from periodic higher flows in these areas, a long-term beneficial effect on improving hydrological function in the cedar grove.

Later, following additional design, some portions of the cedar grove trail that are adversely affecting this forest resource would be reconstructed to improve accessibility and to mitigate the resource impacts caused by an at-grade trail. Another change that would occur in the cedar grove, under all action alternatives would be converting the trails in this area to hiker only trails. This would limit adverse impacts that are evident from bicycle use of wet trails in this area. It is likely that the new trail designated through the cedar grove would be up to 0.75 miles in length, up to five feet wide (to allow for passing), thereby affecting approximately 0.45 acres. Although there would be a wide range of adverse effects during construction, long-term beneficial effects would result from mitigating existing impacts from the extensive network of at-grade informal trails.

Although herbaceous balds are especially sensitive in areas where visitor multiuse trails cross these plant associations and where off-trail traffic occurs (which causes soil disturbance, vegetation trampling, and potential root exposure) these conditions would be expected to improve with the implementation of trail resource protection measures. Under these guidelines, trail users would be encouraged to stay on designated trails; some trails would become hiking only; and the trail system would become standardized with signs. Combined with future modifications to reroute trails that currently do not meet multiple use standards, but which would remain multiuse, these actions would improve protection for herbaceous balds and other sensitive plant associations.

Coastal Cutthroat Trout: Analysis of Mitchell Hill indicates that **this** “parcel functions primarily, if not solely as the source of roughly 80-90 percent of the peak winter flows to the cutthroat habitat downstream on private lands, and over 90 percent of the summer flows” (Barsh 2014). These flows allow the fish to survive in this unnamed creek that flows into Garrison Bay (Barsh 2014).

Although the status of coastal cutthroat trout is still under consideration by the USFWS, improvements to potential habitat for the fish within the park could result in long-term beneficial effects on the fish. Alteration of stream flow impediments both within and outside the park would allow the fish to move upstream onto the Mitchell Hill property. Although it is unknown where the fish spawn, the headwaters of the stream at Mitchell Hill are likely within the park or adjacent to it on Roche Harbor Highlands property (Barsh 2014). Additional research at Mitchell Hill on

NPS lands within the stream reach is needed to determine stream flows, water depth, and to possibly confirm fish presence.

Proposed trail resource protection measures, including improving cross-drains and culverts, and managing visitor use have the potential to reduce existing minor to moderate adverse impacts from unnatural sedimentation that may enter fish habitat and to result in long-term beneficial effects on this unique population of coastal cutthroat trout. Cleaning out culverts and replacing damaged or undersized culverts would likely increase stream flows and improve habitat for fish. Depending on the results of additional research, other resource protection measures or habitat enhancement measures could be proposed to further reduce overall impacts and to improve habitat quality for coastal cutthroat trout associated with Mitchell Hill. These include modifications to the places where the road crosses the creek. Because specific plans have not been developed, these actions would require future environmental impact analysis to implement.



Figure 30: Cedar near Stream Headwaters

Westcott Bay: The sensitive Pickleweed – Saltgrass- Seaside Arrowgrass – Marsh Jaumea (*Salicornia virginica* - *Distichlis spicata* - *Triglochin maritima* – *Jaumea carnosa*) plant association would benefit from trail resource protection measures and increased visitor use management. These would include construction of a boardwalk where the trail passes through wetlands and signs instructing visitors to stay on established trails. Reducing trampling of the plants in this community by construction of a boardwalk through area wetlands would have long-term beneficial effects on this plant community.

#### Additional Impacts from Alternative 2

Impacts would be the same as identified above in *Impacts from Actions Common to Alternatives 2-4*. In addition, there would be long-term beneficial effects on the sensitive plant community in the wetlands at Westcott Bay from removing the house and associated septic system (including the tank, line and drainfield). There could also be slight beneficial effects from removing this potential source of contamination close to Westcott Bay. Because there is no evidence that the system is improperly functioning, overall benefits would likely be negligible.

Because Alternative 2 would have more hiking only trails compared to other alternatives, there could also be long-term beneficial effects on trails now multiuse that pass through sensitive plant communities. Proposed parking areas and other development would not affect sensitive plant communities, including the three forest associations and herbaceous balds.

#### Additional Impacts from Alternatives 3-4

Impacts on special status species and communities would be the same as described in *Impacts from Actions Common to Alternatives 2-4*. Although other actions are proposed in Alternative 3,

these would not be expected to result in additional adverse impacts on special status species or communities.

At Mitchell Hill, beneficial effects could occur if multiuse trails passing through herbaceous balds are rerouted or redesignated hiker only, upon further assessment of existing impacts. Although the proposed parking area under Alternative 4 at Mitchell Hill appears to be in a sensitive plant community, this area is actually devoid of forest vegetation and proposed actions to construct a turnaround would avoid impacting areas of intact forest around it. Because specific designs have not been developed for the parking area and horse trailer turnaround, however, future environmental impact analysis would be required.

At Westcott Bay, if the utility line for the septic system was relocated out of wetlands, there could be long-term beneficial effects. Except for the utility line, the other components of the area are outside of wetlands. Relocation of the utility line (such as along the roadway) would preclude the need for future maintenance that could affect these wetlands, thus eliminating the potential for future impacts from repairing or replacing it.

#### Impact Avoidance, Minimization and Mitigation Measures

Measures that would be included in the proposed project to minimize impacts to special status species and communities include:

- Increase monitoring of special status species and communities where impacts are likely to occur.
- Determine the type and severity of impacts from future changes in management actions and visitor use at English Camp, Mitchell Hill and Westcott Bay.
- Identify visitor use management strategies that would provide long-term protection for special status species and communities.
- Mitchell Hill: Monitor trail use near herbaceous balds and bluffs to determine whether changes in trail designations are necessary to prevent potential resource degradation. Use monitoring to inform resource protection decisions/strategies.
- Remove and rehabilitate duplicate trails, especially where these adversely affect sensitive plant communities.
- Require visitors to stay on designated trails where applicable (in sensitive plant communities as identified on revised NPS trail map).
- Eliminate and rehabilitate social trails.

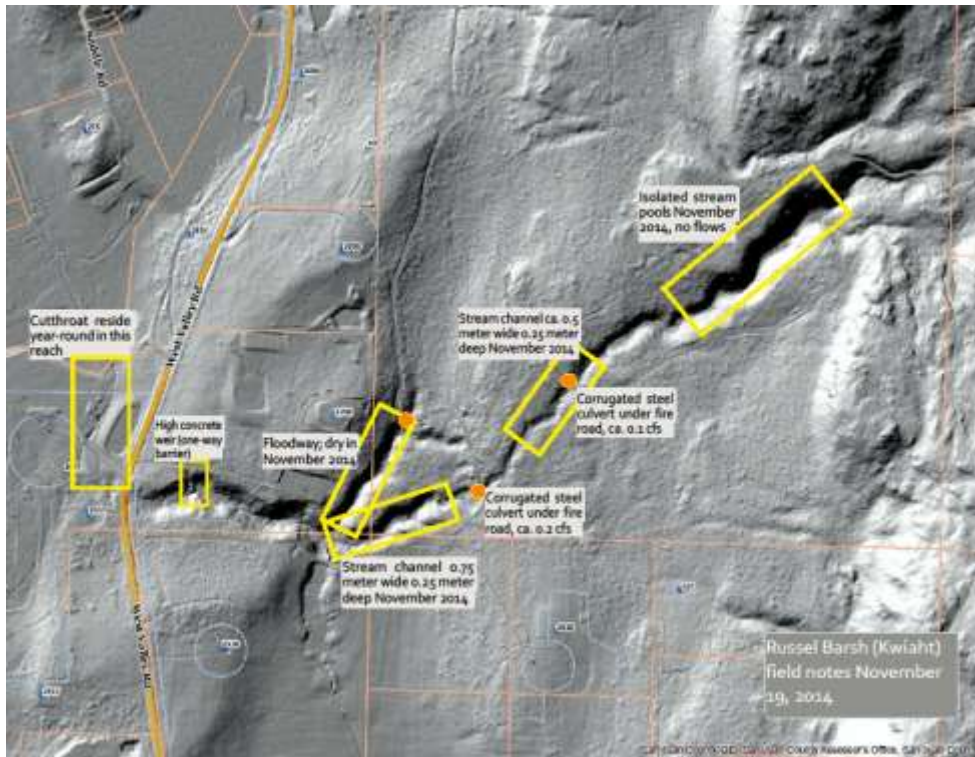


Figure 31: LiDAR map showing stream within Mitchell Hill flowing from NE to SW (including notes about coastal cutthroat habitat)

Impact avoidance, minimization and mitigation measures to minimize impacts specific to coastal cutthroat trout would at Mitchell Hill include:

- Evaluate creek and creek crossings for opportunities to improve bank stabilization and water quality.
- Minimize access to creek from Mitchell Hill trail system.
- Consider installation of a stream gauge or pressure transducer at the most downstream fire culvert (Cady Mountain Trail).
- Involve local youth in fish monitoring projects.
- Provide outreach to local landowners downstream of the park regarding trout conservation, encouraging involvement with monitoring projects and potential future habitat restoration.
- Consider adopting buffers for the creek, similar to San Juan County ordinances for critical areas for fish and wildlife habitat.

Cumulative Impacts: There have been a range of impacts at Mitchell Hill that have both affected streams and plant communities through logging and unregulated recreational activities. Similarly, **the former boy's camp operation** and shellfish harvesting as well as past logging have affected forest resources at Westcott Bay. Outside the park boundary, habitat for coastal cutthroat trout has been altered by agricultural and ranching operations, culverts, road building, stream diversions and other human activities, such as stocking of nonnative fish species in adjacent waters (Barsh 2010). At Mitchell Hill, logging, road building (including installation and poor maintenance of culverts) and trail construction (including on steep slopes) have affected coastal cutthroat and their habitat.

When the impacts from actions in the alternatives are combined with past, present and reasonably foreseeable future actions, there would continue to be moderate adverse effects on special status

species and habitats, however the contribution of the alternatives to these effects would be small. No currently listed species are found at English Camp, including Mitchell Hill and Westcott Bay. Although existing impacts to coastal cutthroat would continue, over time the park would work to alleviate impacts from undersized culverts and roads on coastal cutthroat habitat. The alternatives would not contribute to cumulative adverse effects on coastal cutthroat. Negligible to minor beneficial effects on special status species and communities could be contributed in the action alternatives (2-4) from implementation of resource protection measures and from modifications to the trail system. These modifications could include closure of parallel or duplicate trails, modification of trails in sensitive areas, and from other actions.

Conclusion: Proposed actions in the alternatives would be not likely to adversely affect special status species, including coastal cutthroat trout if they are present at Mitchell Hill. If special status plants are later found near proposed developments or improvements, actions would be relocated to avoid or minimize adverse effects.

## D. Cultural Resources

### 1. Impacts to Prehistoric and Historic Archeological Resources

A midden at Westcott Bay is documented as an archeological site. Additional investigation of this midden occurred in December 2014. In addition, culturally modified trees and another potential archeological site have been documented at Mitchell Hill. Because the Mitchell Hill property is more than 320 acres, it has not been fully surveyed for archeological resources. As a result, areas proposed for ground disturbance, including modifications to existing trails, would need to be analyzed prior to implementation of proposed actions in the alternatives.

#### Impacts from Alternative 1

English Camp, Mitchell Hill and Westcott Bay: There would be no additional impacts (no adverse effect) on known archeological resources as a result of the implementation of proposed actions in the alternatives.

English Camp: A well-pipe identified during the 2014 survey of the proposed education camp site at English Camp is likely a relic from 20<sup>th</sup> century agricultural use that took place before the NPS acquired the property in 1968 (Ripin 2015). Although there is a potential for discovery of additional previously unidentified archeological resources, including associated with surveyed areas for the education camp, mitigation measures identified below would be used to avoid impacts to any previously unidentified archeological resources that may be found during ground disturbance.

Mitchell Hill: Routine, ongoing maintenance of the trail prism (area originally affected by construction activities) and ongoing visitor use of the trail system would continue to result in additional ground disturbance in previously disturbed areas. Because the maintenance projects and/or discovery of these resources would employ mitigation measures noted below, there would be no or minimal effects on archeological resources (no adverse effect).

Westcott Bay: There would be no new impacts to archeological resources at Westcott Bay because no new development is proposed at Westcott Bay under this alternative. Existing impacts, such as natural bank erosion along the bay side of Westcott Bay would continue, primarily during winter storm events. This could contribute to minor to moderate cumulative adverse impacts if it affected the midden at Westcott Bay. Current impacts, however, would continue to be negligible to minor from the low visitation, and limited public access, which contribute to a low probability for illegal collection within or disturbance of the area.

#### Impacts from Alternatives 2-4

English Camp, Mitchell Hill and Westcott Bay: Implementation of trail and resource protection measures would result in long-term beneficial impacts to archeological resources, if these were later found. Improvements would include protection of archaeological resources through monitoring, trail resource protection measures, and visitor use management strategies. Educational efforts and interpretive programs also would help reduce impacts.

Future trail projects to ensure that designated trails meet trail sustainability standards would have the potential for disturbing previously unknown or undiscovered archeological resources. Specific actions would include protecting archeological sites if found, and designating trails that pass through or adjacent to sensitive archeological resource sites as hiking only, rerouting them; or eliminating their use. If trails remained for hiking, known sites would be protected through additional mitigation measures, such as by ensuring areas were covered or assessed for potential impacts from foot traffic and for risks from illegal collection of artifacts. There would also be a negligible potential for impacts from installation of trail and interpretive signs at all locations which would be limited by the use of mitigation measures (see below).

English Camp: Pedestrian and shovel probe surveys conducted for the proposed education camp site did not find archeological resources within the area of potential effects for the proposed camp. There would be no effect on archeological resources from actions to construct the education camp under Alternatives 2-4. Because the survey of the site suggested monitoring during construction, this recommendation would be carried out, further reducing the potential for impacts.

Mitchell Hill: Work to rehabilitate the trails to meet their designated standards would be primarily contained within the existing trail prism (including cut and fill slopes). Because, archeological resources protection laws were either not in place during initial construction or were not addressed it is unknown whether archeological surveys were conducted for existing logging roads and trails and/or whether archeological resources were found in most of the site. Two reports submitted to the state archeological office from the Washington Department of Natural Resources, however, did document culturally modified trees, which would remain unaffected by proposed actions in this plan.

Because there is no evidence of archeological resources investigations over most of the area at Mitchell Hill, there would continue to be a potential to encounter subsurface archeological resources during rehabilitation of the existing trails and logging roads. Because mitigation measures would be employed (see below) there would be no adverse effect on archeological resources from the implementation of these alternatives.

Closure of trails where sensitive resources are located or converting these to hiker only trails would have long-term beneficial effects on archeological resources from reducing or eliminating disturbance. Additional modifications to trails to improve their sustainability would also have net long-term beneficial effects, although the potential for initial impacts would be higher depending on the results of future archeological surveys. If archeological resources are encountered during trail modification activities, the preferred method would be to avoid impacts by covering over and/or rerouting the trail to avoid the potential in the future. Specific actions would be determined in consultation with an archeologist and the State Historic Preservation Office, who would be notified of and provided with documentation of potential finds.

Opening up the route of the Old Military Road would have the potential for minor to moderate short- and long-term adverse effects but would result in an overall beneficial effect on archeological resources from preservation of this route through the park and from connecting its importance to the history of the English Camp National Historic Landmark. Because the area

encompassed by the road has become overgrown with small trees, forbs and shrubs, and features along the road, such as cuts and fills and rock walls have become obscured through the years, vegetation removal, including ground disturbance would be required to rehabilitate the route for designation as a hiking only trail.

Westcott Bay: There would be a potential for adverse impacts to occur from the construction of the Point Trail boardwalk/at-grade trail on a known archeological site. Because the wetland portion is the most likely to contain archeological resources, constructing this portion of the trail as a boardwalk by setting it on pier blocks or using a limited number of posts would have the least likelihood of impacting previously unidentified archeological resources. Railings would likely limit the potential for visitors to explore off-trail.

Similarly, modifications to the Westcott Bay Connector trail and other areas, would be unlikely to affect archeological resources because mitigation measures would be employed to survey for and identify these in advance and if there is potential for these to be identified during subsurface work, that work would be monitored by an archeologist. If artifacts are found, the preferred mitigation would be to avoid further impacts by assessing the significance of the site and relocating project work to avoid it. Overall impacts from proposed actions would be expected to have no or negligible to minor adverse effects.

#### Additional Impacts from Alternative 2

Mitchell Hill: Rehabilitation and closure of the three trails (Boy Scout Camp, Hops Farm and Pipe Gate South trails) that cross from private land onto park property would have no effect on archeological resources. There is no indication that these trails have the potential for subsurface archeological resources and most actions would include covering, rather than excavating the soil surface.

Designation of five trails and two segments as hiker only and seven trails and two segments as multiuse would continue to result in impacts to previously disturbed areas and would not result in new impacts to archeological resources. Expansion of the small parking area near the gate on Horse Trail Road would be done in cooperation with San Juan County and would be implemented so as to have no effect on archeological resources.

Westcott Bay: In addition to actions common to all alternatives, Alternative 2 calls for conversion or replacement of the house with a picnic shelter, an increased number of public parking spaces at the site (10), and construction of a link between the Roche Harbor Highlands Trailhead parking area at the junction of West Valley and Roche Harbor roads to Westcott Bay. As with other actions proposed in the alternatives that have not yet undergone proposed archeological survey, these actions would be unlikely to affect archeological resources because mitigation measures would be employed to survey for and identify potential subsurface resources in advance and if this survey indicates there is potential for resources to be identified during subsurface work, that work would be monitored by an archeologist and other actions implemented if resources were found.

#### Additional Impacts from Alternative 3

Mitchell Hill: Impacts from constructing a small parking area at the end of Horse Trail Road in cooperation with San Juan County would be the same as in Alternative 2. Similar to Alternative 2, designation of two trails and three segments as hiker only and 12 trails and three segments as multiuse would continue to result in impacts to previously disturbed areas and would not result in new impacts to archeological resources.

Westcott Bay: In addition to actions common to all alternatives, Alternative 3 calls for continued use of the house, construction of a trail from a new (undetermined location) parking area off of

West Valley Road and construction of a trail to link this small (5-10 space) parking area to Westcott Bay. Like Alternative 2, it also calls for construction of a link between the Roche Harbor Highlands Trailhead parking area at the junction of West Valley and Roche Harbor roads to Westcott Bay. Mitigation measures to protection archeological resources from construction of these facilities would be the same as in Alternatives 2-4.

#### Additional Impacts from Alternative 4

Mitchell Hill: Constructing a larger parking area at the end of Horse Trail Road on NPS land inside the current gate would require additional environmental impact analysis to ensure that archeological resources would not be affected. Similar to Alternatives 2 and 3, designation of three trails as hiker only and 15 trails as multiuse would continue to result in impacts to previously disturbed areas and would not result in new impacts to archeological resources.

Reconstruction of the Sandwith Orchard Trail to accommodate equestrian use would have a high potential for affecting historic archeological resources associated with the homestead. There are a number of surface deposits which include materials associated with the homestead. Although the specific modifications are unknown, the grade of the trail would be modified from an average grade of 17-20 percent over approximately 500 feet to lessen the grade to meet park equestrian use standards established as part of this DCP. In addition, the trail would be widened from 10 inches to an average width of 36 inches to accommodate wider equestrian use. Combined, there would be a potential for long-term minor to moderate adverse effects on archeological resources, however a range of resource protection measures would be used to avoid, minimize or mitigate adverse effects, likely through collection and curation of artifacts found. Although the Orchard area has been determined ineligible for the National Register, artifacts hold historical value associated with the history of the park and the location of this area in the GMP Cultural Zone.

Westcott Bay: In addition to actions common to all alternatives, Alternative 4 calls for continued use of the house, construction of a new road and parking area off of West Valley Road and construction of a trail to link the parking area to Westcott Bay. Like Alternative 3, it also calls for construction of a link between the Roche Harbor Highlands Trailhead parking area at the junction of West Valley and Roche Harbor roads to Westcott Bay. Mitigation measures to protect archeological resources from construction of these facilities would be the same as in Alternatives 2-4.

#### Impact Avoidance, Minimization and Mitigation Measures

Measures that would be included in the proposed planning area to minimize impacts to archeological resources would include:

- Conduct archeological surveys prior to implementation of any actions that require ground disturbance.
- Any construction, maintenance, or visitor use activity that results in inadvertent discovery of human remains would stop immediately and follow provisions outlined in the Native American Graves Protection and Repatriation Act (1990). In compliance with the Native American Graves Protection and Repatriation Act of 1990, the NPS would also notify and consult concerned Native American representatives for the proper treatment of human remains, funerary and sacred objects, should these be discovered during the course of the project.
- Monitor archaeological resources for evidence of potential impacts from either natural processes or from visitor use of the area, and address concerns as they are identified.
- Archeological survey and monitoring of actions along the Old Military Road would occur to identify and record anything that might be uncovered during proposed work to reopen the route.

- Inform contractors of resource protection measures, including those to protect archeological sites, or historic properties.
- Should presently unidentified archeological resources be discovered during construction, work in that location would be halted, the site secured, and the park would consult according to 36 CFR 800.11 and, as appropriate, provisions of the Native American Graves Protection and Repatriation Act of 1990. Any archeological site would be properly recorded by an archeologist and evaluated under the eligibility criteria of the *National Register of Historic Places*.
- If found resources are determined eligible, appropriate measures would be implemented either to avoid further resource impacts or to mitigate their loss or disturbance (e.g., by data recovery excavations or other means) in consultation with the Washington State Historic Preservation Office.

**Cumulative Impacts:** Cumulative impacts to archaeological resources are based on the analysis of past, present, and reasonably foreseeable future actions in Westcott Bay, in combination with the potential effects of the proposed alternatives. Humans have used the area for thousands of years and each group has had some impact on the resources of the culture that came before. This includes previous owners of the property and the adjacent shellfish farming operation.

Archeological resources in the park have likely been adversely affected to varying degrees from past construction-related disturbances (prior to the advent of archeological resources protection laws); visitor impacts and vandalism; and erosion and other natural processes. Compared to past actions, the proposed actions considered in this plan would have fewer effects than those that have occurred over the past 100 years. Future actions would take into account the significance of prior use of the sites and would ensure that actions to avoid, minimize or mitigate potential impacts would occur. Existing impacts, such as natural bank erosion along the bay side of Westcott Bay would continue, primarily during winter storm events. This could contribute to minor to moderate cumulative adverse impacts if it affected the midden. It is also likely that this area, much of which is not within the park, since it has been retained by the Conservation Fund and is under use by the adjacent shellfish farm, may have had an unknown degree of adverse effects from this past and present use.

Because mitigation measures would be employed to avoid or minimize impacts to potentially unidentified cultural resources in other proposed and future park projects, it is likely that these would protect archeological resources from additional impacts. There would be no construction-related contributions that would affect known eligible archeological resources and therefore no cumulative impacts from Alternatives 1-4. There is a slight possibility; however, that future proposed work could affect currently unidentified cultural resources. Because mitigation measures would be implemented as noted above, Alternatives 1-4 would not be expected to contribute to cumulative effects on archeological resources.

**Conclusion:** Alternatives 1-4 would have the potential to adversely affect archeological resources, but because mitigation measures would be employed, they would be anticipated to have no effect or no adverse effect on archeological resources.

## 2. Impacts to Historic Structures and Cultural Landscapes

Effects on the Old Military Road (approximately 0.5 mile) at Mitchell Hill from the alternatives were considered. Although the Old Military Road is likely eligible as a historic property, this portion of it has not been nominated or added to the National Register of Historic Places. The Sandwith Orchard (at English Camp, adjacent to Mitchell Hill) was also analyzed for potential effects from actions in the alternatives. Although the Sandwith Orchard has been found ineligible for the National Register, the park manages the orchard as part of its GMP Cultural Zone.

Because no historic structures or cultural landscapes are known from Westcott Bay, there is no additional analysis of this area.

#### Impacts from Alternative 1

*Old Military Road:* There would continue to be minor to moderate adverse effects on the Old Military Road because this alternative would not change current conditions. The road is currently overgrown with vegetation and it is difficult to follow. Most visitors are unaware of it. There would be no ongoing actions that would improve or degrade the character-defining features of the Old Military Road. Because preservation maintenance of its character-defining features has not occurred since it was abandoned after the encampment, it is likely that natural erosion occurring along the road corridor combined with vegetation overtaking the road corridor have had adverse effects. Because no specific actions have been undertaken to improve its condition, there would continue to be minor to moderate long-term adverse effects on the Old Military Road under Alternative 1.

*Sandwith Orchard:* Among the potential ongoing impacts within the orchard are vegetation trampling, soil compaction and/or erosion from hikers that go off-trail or from creation of social trails. Because only low impact recreational activities are currently permitted in the cultural zone, there is no equestrian or mountain bike use. Under Alternative 1, these adverse impacts from ongoing low impact visitor use (hiking, ranger-led interpretive walks, and sightseeing) would continue to be negligible to minor and long-term.

#### Impacts from Alternative 2

*Old Military Road:* This alternative would improve the Old Military Road by eliminating vegetation that has grown up since it was abandoned and by preserving other character-defining features. Depending on consultation with historic preservation specialists, the full road width (8 feet) would be preserved. Because historic resources are often best preserved through use, the trail would be designated for visitor use. This use would be restricted to hikers and other low impact recreational activities, such as wildlife viewing, photography, ranger-led interpretive walks, and sightseeing.

Prior to clearing vegetation from the route, there would be archeological surveys and an inventory of its character-defining features (such as a cultural landscape inventory). Depending on future use, as on other trails at Mitchell Hill, some interpretive information could be added. Mitigation measures to protect the Old Military Road would be implemented to ensure the integrity and significance of the historic road is maintained and preserved. Compared to Alternative 1, there would be long-term beneficial effects from reestablishing the integrity of this historic resource through rehabilitation.

*Sandwith Orchard:* Impacts would be the same as in Alternative 1.

#### Impacts from Alternative 3

*Old Military Road:* Impacts would be the same as in Alternative 2.

*Sandwith Orchard:* Impacts would be the same as in Alternative 1.

#### Impacts from Alternative 4

*Old Military Road:* Impacts would be the same as in Alternative 2.

*Sandwith Orchard:* To improve equestrian access to Mitchell Hill, the Sandwith Orchard Trail would become a hiker-equestrian trail. Mountain bicycling would continue to be prohibited. Access to Mitchell Hill is currently difficult for equestrians. Equestrians currently access Mitchell

Hill Trails via private lands adjacent to the park or by walking on the edge of West Valley Road to the Horse Trail Road entrance to the park.

Equestrian access via West Valley Road to Horse Trail Road has been described as unsafe by equestrians because it includes travel on West Valley Road, a busy roadway with a speed limit of 45 mph, and because the substrate of the trail along West Valley Road is seasonally wet. This access route is also outside the park. Although improving access along this road has been discussed with San Juan County, it is unlikely to be improved because of the narrow county easement for the roadway and because extending that easement could affect private property adjacent to the road.

The Sandwith Orchard trail is currently approximately 10-inches wide and has an average grade of 17 percent, although it is steeper in some sections, likely exceeding a 20 percent grade for another 100 feet (NPS NOCA 2002a, NPS SAJH 2012). The recent analysis of equestrian use in the park, which opened some trails at American and English camps to equestrian use, determined the Sandwith Orchard Trail was unsuitable for equestrian use. The trail would need to be improved to accommodate equestrian use. The primary improvements would include reducing the grade and widening the trail, including trail clearance to accommodate equestrian use.

As discussed elsewhere, this would have a range of short- and long-term minor to moderate adverse impacts on soils, vegetation and archeological resources (primarily historic resources related to Sandwith Homestead use). Permitting equestrian use would also require modifying the intent of the GMP cultural zone in this area to include horse use.

As noted in the Cultural Landscape Inventory prepared for the declined nomination of the Sandwith Orchard to the National Register, horse use is likely consistent with the homestead. The following is among the several references to horse use:

Farmers on the island regularly helped one another with harvesting crops, picking fruit, threshing grain, and other farm work. At times, equipment and horses were borrowed or rented, and plant material, such as seeds and fruit tree cuttings, were shared and traded.

**Fruit varieties common to both Crook's and Sandwith's orchards suggest that such sharing occurred among these neighbors (NPS PWR 2009:22 of 87).**

Because such use, however, was not provided for by the GMP, this action would amend the GMP and would have minor to moderate long-term adverse effects on the Sandwith Orchard area, which is managed as a cultural landscape by the park, despite its being ineligible for the National Register.

#### Impact Avoidance, Minimization and Mitigation Measures

Measures that would be included to minimize impacts to historic structures and/or cultural landscapes would be the same as identified above for archeological resources. In addition the park would:

- Nominate the Old Military Road through Mitchell Hill to the National Register as part of the English Camp National Historic Landmark.

**Cumulative Impacts:** A range of past, present and reasonably foreseeable future actions have affected historic structures and cultural resources at English Camp and Mitchell Hill. These include cessation of the military encampment period and the advent of homesteading in the San Juan Islands, as well as the decision in the GMP to continue to manage the Sandwith Orchard as a cultural landscape and to include it in the Cultural Zone.

Over time, military encampment features, such as buildings and structures, fell out of use and/or the buildings were moved elsewhere on the island or abandoned. With establishment of the park in 1966, some of these were procured and since then some former buildings, whose provenance

has been determined, have been relocated to the camps, while others still extant at the camps have been restored. As a result, moderate to major cumulative adverse effects over time have been combined with similar moderate to major long-term beneficial effects from analysis and preparation of historic documentation leading to restoration or rehabilitation of some features and landscapes associated with the military occupation at English Camp. Part of the impetus for the recent acquisition of Mitchell Hill was because it includes a portion of the Old Military Road.

Early acquisition by the NPS included the Sandwith Orchard (1972), which itself includes an Old Military Road trace along 1,200 feet of its northwest boundary (NPS PWR 2009: 9 of 87). Later this area was cited as one of four remaining examples in the national park system of a late 19<sup>th</sup> century orchard (NPS 2009 in NPS PWR 2009: 46 of 87).

As noted in the CLI, the military road trace at the Sandwith Orchard includes remnants of a retaining wall that lined the road (NPS PWR 2009: 21 of 87) and is important to the spatial organization of the site:

The military road, built by the British Royal Marines in the 1860s and still in use during **Sandwith's time, would have connected the farm to other fields, as well as to Crook's homestead, Hoffmeister's farm, and other points on the island. Through the extant orchard, the location of artifacts and stone structures, vegetation patterns, and the military road trace, this spatial organization can be discerned today** (NPS PWR 2009: 24 of 87).

The road was constructed between 1865 and 1872 (NPS PWR 2009: 28 of 87). It facilitated transportation between American and English Camps and was improved by the British through surfacing and lining with stone walls, however its original origin was as a cross-island road **constructed by the Hudson's Bay Company before the arrival of the military** (NPS PWR 2009: 33 of 87).

Recent (2009) restoration of the historic scene at Sandwith orchard included replanting of 23 historic fruit trees to add to the original 13 extant trees, which date to 1865. The goal of the replanting was to rehabilitate part of the orchard to depict a representative sample of the landscape during the period of significance (NPS PWR 2009: 48 of 87). Other actions called for by the report include:

Remove wild rose, Douglas fir, and other vegetation that is growing within the prism of the historic road trace and within the historic cherry hedgerow along the road. The material should be removed by flush cutting the vegetation to the surface with no ground disturbance (NPS PWR 2009: 80 of 87).

According to the report:

The uncontrolled growth of wild rose is impacting the military road trace, by growing into the cherry hedgerow which marks the edge of the road. Douglas fir and other native vegetation are also growing in the road prism and are deteriorating the visibility of the road trace (NPS PWR 2009: 81 of 87).

When the effects of actions in Alternative 1 are added to the effects of past, present and reasonably foreseeable future actions, such as vegetation removal along the trace of the Old Military Road, there would continue to be minor to moderate adverse effects on historic structures and cultural landscapes combined with long-term beneficial effects. Similarly, Alternatives 2-4 would add minor incremental adverse impacts combined with long-term beneficial effects on preserving this historic resource by reopening the route of the Old Military Road and establishing a hiker only trail through it. Alternatives 2-3 would add incremental beneficial effects from continuing to protect the Sandwith Orchard landscape by maintaining the hiker only trail now providing access to Mitchell Hill through the area. Alternative 4 would add both incremental minor to moderate adverse and beneficial effects from opening the area to

equestrian use and from modifying the intent of the GMP to include equestrian use in this part of the cultural zone.

Conclusion: There would be no effect on the English Camp National Historic Landmark. There would be no adverse effect on the Old Military Road or its potential contribution to English Camp under Alternatives 1-4. Beneficial effects from preservation maintenance and/or rehabilitation would occur in Alternatives 2-4 from reopening the Old Military Road as a hiking trail. Adverse impacts to the Sandwith Orchard would be negligible to minor and long-term under Alternatives 1-3 and minor to moderate and long-term under Alternative 4.

## E. Visitor Experience

### 1. Impacts to Visitor Use Access

Impacts from Alternative 1 (No Action)

English Camp, Mitchell Hill and Westcott Bay: There would be no changes in and therefore no impacts to visitor access to English Camp, Mitchell Hill or Westcott Bay under Alternative 1. Existing minor adverse and beneficial impacts would continue from visitors accessing the new areas from the main visitor parking area at English Camp. From English Camp, interim connector trails would continue to provide hiking access to Mitchell Hill and Westcott Bay. Because the trails to the new sites were initially identified as interim access, they have remained unsigned, which would continue to be a minor to moderate short-term adverse effect on visitor access.

Access to the education camp would remain the same – by special arrangement via the Administrative Road (located off West Valley Road). Although there is currently no accessible parking at either site, arrangements could be made to provide accessible parking at Westcott Bay in the future.

The trail from English Camp to Mitchell Hill begins near the top of Young Hill. From that point, it is less than 0.25 miles to Mitchell Hill. From the English Camp parking area, Mitchell Hill is approximately 0.77 miles. Visitors could also continue to access Mitchell Hill from a parking area on San Juan County land outside NPS land at the site. Because there is very limited parking (3-5 spaces) at this site, there would likely continue to be days and times when access from this location was unavailable to some visitors, a long-term minor localized adverse effect because parking would continue to be available at English Camp (a distance of 1.15 miles by road and 0.77 miles by trail).

Although there would continue to be no public parking at the Westcott Bay site itself, public parking would continue to be available at English Camp. The trail from English Camp to Westcott Bay begins from the Bell Point Connector Trail at a point near the water (Westcott Bay). From the English Camp parking area, Westcott Bay is approximately 1.5 miles. Road access and parking to the developed site at Westcott Bay would continue to be limited to administrative vehicle use and occasional authorized public use. Visitor access to Westcott Bay would also continue to be adversely impacted, with some visitors becoming discouraged by the gate closure, signs located both on- and offsite discouraging access and use, the lack of NPS signs directing visitors to the area, and the lack of on-site parking.

Overall impacts under Alternative 1 from restricted road access, no or limited on-site parking, and lack of accessibility at both Westcott Bay and Mitchell Hill would continue to have long-term minor to moderate adverse effects on the visitor access and transportation.

#### Impacts from Alternatives 2-4

Access and parking at English Camp would be the same as in Alternative 1, including for the education camp. In addition, there would be long-term beneficial effects on visitor access and transportation from retaining and formalizing the English Camp Connector Trail and Westcott Bay Connector Trail by signing these from English Camp. Working with San Juan County to provide signs directing visitors to parking for Mitchell Hill would also improve visitor access to these sites.

#### Additional Impacts from Alternative 2

Mitchell Hill: Expanding parking on Horse Trail Road in cooperation with San Juan County would have long-term beneficial effects on visitor access to the site. Providing a small number (5-7) of additional spaces would provide additional parking for those visitors who may have had to park at English Camp or elsewhere and hike in to the site, when the current parking is full, a long-term beneficial effect on visitor access. Because the trail system at the site is large and diverse enough to accommodate more use, providing this additional parking is not likely to adversely affect visitor experience at the site. Overall accommodation of visitor parking would be dependent on minimizing impacts to area resources and cooperation with the San Juan County.

Westcott Bay: Providing a small number of parking spaces (approximately 5) at Westcott Bay for accessibility and special use permittees would improve some access to the site, while minimizing impacts on the adjacent neighborhood. Effects from a small number of cars entering the site from this county road would likely be similar to, but fewer than, effects from the adjacent parking that has been provided by the shellfish farm for daily sales.

The park would issue permits for accessible parking and for parking in conjunction with special use permits. Providing a small number of on-site parking spaces for these purposes would improve access for some visitors, a negligible to minor long-term beneficial effect.

#### Additional Impacts from Alternative 3

Mitchell Hill: Impacts to visitor access would be the same as under Alternative 2.

Westcott Bay: Providing a new parking area off the West Valley Road at Westcott Bay would have moderate long-term beneficial effects on providing access to the site. The exact site has yet to be identified for this parking due to the need for cooperation with San Juan County regarding the speed along the curved edge of the proposed site. This parking is intended to link to a spur trail that would extend further into the site, a distance of approximately 0.25 mile. In addition, there would be improved access from the parking area at the corner of Roche Harbor and West Valley roads by establishing a multiuse trail to link to the site. Because the proposed parking area would provide an alternate accessible means to access Westcott Bay, there would be moderate long-term beneficial effects on visitor access to the site that would be available to more people and that, unlike Alternative 2, would not require access via the county-owned Westcott Drive.

#### Additional Impacts from Alternative 4

Mitchell Hill: Developing an on-site visitor use parking area, including a horse trailer turnaround inside the park gate would have moderate long-term beneficial impacts from improving visitor and administrative access to Mitchell Hill. Providing parking for 10-15 vehicles and at least one horse trailer would greatly improve opportunities for parking and would not require expansion of parking on the county-owned Horse Trail Road.

Westcott Bay: Providing an access road (approximately 0.25-0.5 miles long) to Westcott Bay off of West Valley Road and an onsite parking area would greatly improve visitor and administrative access to the site. The parking area would provide 15-20 spaces and would be improve access to

the site for special events and interpretive activities, including to the visitor contact station also proposed in Alternative 4.

#### Impact Avoidance, Minimization and Mitigation Measures

The following measures would minimize impacts to visitor experience (including access, visitor use opportunities, interpretation and education and safety):

- Monitor visitor use at Mitchell Hill and Westcott Bay to help quantify potential future impacts to visitor experience (including use and enjoyment/satisfaction). Among the monitoring factors which should be considered are: perceived tolerance levels among diverse user groups/visitor conflicts, changes in resource conditions and visitor use levels due to changes in park visitor management/policies, and visitor expectations.
- To the extent practicable implement construction projects that would directly impact visitor experience (including use, enjoyment and safety) outside peak visitor use periods.
- Manage noise levels during construction projects to minimize objectionable noise, and use standard noise abatement measures such as locating noise sources distant from high visitor use areas and scheduling work to minimize noise levels in visitor use zones.
- Provide alternative means of access to visitor use area if needed to improve visitor safety during construction periods.
- Publicize construction closures that affect visitor use areas, and provide project updates **through press releases and the park's website.**
- Manage vehicle traffic and contractor hauling of materials, supplies, and equipment within the construction zone to minimize traffic disruptions nearby, especially along Administrative Road.
- Develop a safety plan prior to the initiation of construction to ensure the safety of visitors, workers, and park staff.
- Use structures such as boardwalks and fences to route people away from sensitive natural and cultural resources, while still allowing access to key visitor use opportunities, such as viewpoints.
- Provide vegetative screening, where appropriate, to protect key views or vistas.
- Develop strategies to minimize conflicts between bicyclists, hikers, and equestrians at Mitchell Hill (such as by installing yield signs, instituting the Leave No Trace program, and involving local user groups in trail projects).
- Ensure maps and trailhead information have authorized NPS trails labeled with approved uses.

Cumulative Impacts: Past, present and reasonably foreseeable future actions have contributed to cumulative beneficial and adverse effects on visitor access and visitor use opportunities at Mitchell Hill and Westcott Bay. Among these are past uses at all sites, as well as current interim management of Mitchell Hill and Westcott Bay. Actions that also affect visitor access to the site include the modifications to the shellfish farm, including the provision of new onsite short-term parking for customers that is close to the NPS portion of the property, which has resulted in additional use of the Westcott Drive entrance to the site. There are also impacts on access from signs in the neighborhood adjacent to the park on the county-owned road that discourage visitors interested in accessing the area. In addition, there would continue to be range of beneficial and adverse cumulative impacts from impeding or expanding access to English Camp, Mitchell Hill and Westcott Bay through park projects such as fire management actions in Garry oak woodlands and from providing special visitor use opportunities, such as special events and ranger-led programming.

Long-time use of English Camp for a range of visitor uses would not change under the alternatives in this plan. There would be no contribution to cumulative effects on visitor access from relocating the education camp from one part of English Camp to another, however there

would be cumulative beneficial effects on visitor use opportunities from relocation of the camp because the camp would be relocated to a location that suitable for year-round use and because there would be opportunities to restore a wet meadow. This contribution to beneficial effects on visitor use opportunities would occur under all alternatives.

Impacts from new interpretive and educational actions would add to past, present and ongoing visitor use opportunities available at English Camp, including the seasonal Visitor Center, ranger-led programs, junior ranger program, school field trips, citizen science activities, living history demonstrations and special events such as the annual Encampment. Reasonably foreseeable future associated planning actions at English Camp that would contribute to interpretive and educational cumulative impacts would be potential rehabilitation and reuse of the Crook house as a new visitor contact station, including offices. Reuse of the Crook house would improve visitor understanding of the distinction between the encampment era and the subsequent Crook family era at the site and contribute overall additional moderate benefits to interpretation. When the actions in Alternatives 2-4 regarding the provision of new interpretive services and materials are added to impacts from past, present and reasonably foreseeable future actions, there would continue to be a trend toward improving interpretation beyond the military encampment story within the park. Because there would be more interpretive and educational activities in Alternatives 3 and 4, there would be more benefits in these alternatives. Alternative 1 would also trend toward increased (minor to moderate) beneficial cumulative effects from improvements to the education camp. Because Alternatives 2-4 would also improve the education camp as well as other interpretive and educational materials and activities, overall cumulative beneficial effects would be greater (moderate) in these alternatives.

Because Mitchell Hill and Westcott Bay are new areas in English Camp, past actions that would affect visitor use include Washington Department of Natural Resources ownership of Mitchell Hill prior to NPS ownership and private property ownership of Westcott Bay by the Webb family. Under DNR, Mitchell Hill was open to visitor access and a wide range of visitor use opportunities, including hiking, bicycling, equestrian and motorized uses. Motorized uses ended prior to the NPS taking possession. The other uses, however, have continued as intended via commitments made prior to the transfer of the site to the NPS. Access to Mitchell Hill under DNR and the NPS includes via Horse Trail Road, a county road, via English Camp both through previously unauthorized cross-country hiking and via the current English Camp Connector Trail, as well as access via surrounding private lands, including the Boy Scout camp (Camp Bogardus) and other properties.

When impacts of the actions in the alternatives are added to past, present and reasonably foreseeable actions at Mitchell Hill, there would be negligible cumulative beneficial effects under Alternative 1 from recent slight improvements, such as trailhead maps placed by the San Juan Island Trails Committee. There would be minor to moderate cumulative beneficial effects under Alternatives 2-4 from improving management of the trail system, formalizing new trail connections from English Camp, and increasing parking at the site. There would be an additional contribution to cumulative beneficial effects from a greater increase in parking and amenities under Alternative 4. Although visitor use opportunities would remain the same at Mitchell Hill, there would be both cumulative beneficial and adverse effects from designating more hiking only trails in Alternatives 2-4, compared to existing multiuse under Alternative 1. Depending on the visitor, changes in trail designations among the action alternatives, some of which provide more or fewer multiuse opportunities would be beneficial or adverse.

Because Westcott Bay was not open to public use prior to interim ownership by the Conservation Fund and transfer to the National Park Service, when the impacts of the actions in the alternatives are added to the impacts from past, present and reasonably foreseeable actions, there would be moderate cumulative beneficial effects on visitor access from continuing to allow visitor use

under all alternatives. Alternatives 3 and 4 would likely contribute the greatest beneficial effects from providing direct access to the site for more visitors; however Alternative 2 would also have cumulative beneficial effects on access from providing a small number of parking spaces at the site that would be available to visitors. Compared to the history of the site, even Alternative 1, with its limitations on driving to and parking at the site would continue to result in cumulative beneficial effects because of the new opportunities to experience this unique site.

Conclusion: Alternative 1 would continue to have minor to moderate beneficial effects on visitor experience at Mitchell Hill and Westcott Bay. Although the majority of visitors would continue to visit American and English Camps, the additional visitor use opportunities provided by the new sites increase the potential that both residents and visitors would return to the park to enjoy these other resources. As access improves in Alternatives 2-4, visitor experience at both sites would be improved. Although there would be a perception of minor to moderate adverse effects on bicyclists and equestrians from designation of trails through sensitive resource areas for hiking only, protecting these areas would benefit all visitors. Similarly, although all alternatives maintain multiuse trails at Mitchell Hill, there could be a perception of lost opportunities from the establishment of some hiking only trails, which would be greater in Alternative 2 compared to Alternatives 3 and 4. Overall effects from the alternatives would generally be beneficial and would provide more amenities than currently present, including toilets at Westcott, accessible trails, improved parking and other benefits (Alternatives 2-4). Alternatives 3 and 4 would also provide toilets at Mitchell Hill and improvements to kayaking opportunities. In all alternatives (1-4) the new education camp would improve visitor use and enjoyment over current conditions, and would provide more opportunities for education groups in a desirable setting.

## 1. Impacts to Visitor Experience (Visitor Use Opportunities, Interpretation and Education, and Safety)

Mitchell Hill and Westcott Bay are newly acquired areas, thus very little visitor use data specific to these areas is available; however, there is a large body of research on overall visitor use and experience in national parks. Evaluation of impacts is based on existing data for English Camp, public scoping for the plan, best available natural and social science research, and the best professional judgment of NPS staff. Evaluating visitor use and experience is a complex relationship between use levels and experiential quality, which is related to visitor perceptions (tolerance levels among user groups and their encounters/behaviors, increased use levels-crowding perceptions, levels of development, and perceived user impacts on the resource in relationship to the quality of the visitor experience). In other words, visitors perceive impacts to visitor experience differently.

NPS policies define visitor carrying capacity as “the type and level of visitor use that can be accommodated while sustaining the desired resource and visitor experience conditions in the park” (NPS 2006). Implied in this definition is recognition of a quality environment and a quality recreational experience (Kuss et al. 1990). Although this plan does not propose visitor carrying capacities for Mitchell Hill or Westcott Bay, it is important to recognize related visitor use and experiential factors that may contribute to impacts on visitor experience as a result of the proposed actions. Analysis includes additions or losses of visitor use opportunities, changes in their availability, and changes in the likely quality of visitor experience or recreational opportunities.

### Impacts from Alternative 1

*Overview:* Generally, because there would be no change in the type or number of recreational opportunities under Alternative 1, existing impacts would continue. Among these are beneficial impacts from new visitor use opportunities and probable increases or changes in visitation as a result of new areas being added to the park (Mitchell Hill and Westcott Bay); ongoing adverse and beneficial impacts from shared use of undesignated trails at Mitchell Hill; ongoing beneficial

effects from providing an education center in the park; ongoing beneficial effects from interpretive and educational programming, including that associated with new areas; and ongoing adverse and beneficial effects from limited implementation of resource protection measures. Visitors would continue to be able to participate in a wide range of opportunities, including hiking, sightseeing, photography, birdwatching, mountain bicycling, equestrian use, kayaking, interpretive and educational activities, etc. Horse use would continue to require a permit in the park and would continue to be allowed only on authorized trails as outlined in the **Superintendent's compendium** (including at American and English camps and Mitchell Hill).

Mostly beneficial effects on visitor use opportunities would continue to occur from provision of the following visitor use opportunities:

- Multiuse of all trails at Mitchell Hill;
- Hiker only opportunities for all trails at Westcott Bay;
- Hiker only trails elsewhere in the park except for recently designated equestrian use of approved trails per permit modifications;
- Informal kayaking from English Camp for the education camp and others; and
- Consistent with the GMP, the park would continue to provide day-use only access, except associated with administrative use and the education camp.

English Camp: Education Camp: Initially, under Alternative 1, there would be no change in the education camp. The existing location would continue to be used and minimal facilities (portable toilets, portable trailer for cooking, picnic tables, and camping area) would continue to be provided. Upon relocation and construction of the new facility to the south side of the Administrative Road, however, there would be new opportunities for visitors to this facility. Among these enhanced visitor services would be a:

- new cookshelter,
- campfire/amphitheater area,
- raised tent platforms (including an accessible one),
- vault toilet,
- loading/unloading zone, and
- accessible parking.

The small amphitheater would provide an improved setting for educational programs. Because there would be electrical outlets in the cookshelter, it would also provide opportunities for programming during inclement weather. The improved facility could also attract other local and regional educational institutions. Compared to current conditions, this alternative would provide a better facility for educational groups, resulting in moderate long-term localized and potentially regional beneficial effects on visitor experience (since many education groups come from elsewhere in the Pacific Northwest). These long-term beneficial effects would be coupled with short-term minor to moderate localized adverse effects on education camp participants and others near the construction area during construction of the new education camp. Combined, however, there would be mostly beneficial effects on education camp participants from use of an improved facility.

Mitchell Hill: Impacts would be similar to those that occurred under previous management of the site by DNR, however, the park would continue to obliterate user-created features such as bicycle jumps and dips and ramps on area trails. Because all trails would remain multiuse under Alternative 1 and minimal resource protection measures would be implemented, users would generally continue to use all trails with no restrictions. Based on anecdotal information, there are few visitor use conflicts at the site, perhaps because of limited parking or the generous trail etiquette behavior of most users. With the addition of this area to the park, new opportunities for hiking, mountain bicycling and equestrian use were added and these would continue

unrestricted, a long-term beneficial effect on the perception of most visitors, however some visitors have indicated during public comment periods that they would prefer some hiking only trails and/or fewer multiuse trails. As a result, some visitors would continue to perceive the current condition under Alternative 1 as adversely affecting their experience. Some visitors would also continue to perceive safety issues from near misses that have occurred or could occur on narrow and/or steep trails available for multiuse, especially when encountering a bicyclist or horse at speed, traveling downhill, or coming from around a blind corner.

There could also be ongoing minor adverse effects from continued increases in visitor use without implementation of area improvements or resource impact mitigation measures. These include crowded parking at the trailhead, which will likely intensify as the area and the opportunities within it become more well-known. Without anticipated resource protection measures being implemented, the perception of the quality of the visitor experience on the part of some visitors could be reduced. This would especially be true of visitors who had experience with high quality experiences at other national parks and anticipated the same experience in this park. Adverse effects that are occurring, but which have not yet been alleviated through the implementation of resource protection measures include:

- the quality of water resources protection structures (for instance, trail bridges in the cedar grove);
- erosion on trails;
- miscellaneous trail features that are not on maps or explained (such as rock cairns, structures, an old car, old fencelines, and some user-created features);
- the presence of nonnative invasive plants;
- evidence of trail cutting and numerous social trails; and the
- lack of formal trailhead signs, especially, the lack of wayfinding signs to the site and on the trail system, etc.

There would also continue to be beneficial effects from the informal use of these private property access trails.

Westcott Bay: There would be negligible to minor long-term beneficial effects from use of the house on a limited basis for administrative purposes and for authorized special events. New recreational opportunities, including hiking and sightseeing, would also continue to provide long-term beneficial effects on visitor use opportunities. The range of low impact recreational opportunities and low visitation because of perceived difficulties in accessing the area would likely continue to contribute to a high quality visitor experience for those visitors who choose to use the area; however, overall recreational opportunities and visitor enjoyment would continue to be limited by this limited access (hiker only) and could be perceived as an adverse impact on those visitors who are unable to walk moderate distances over varied terrain. There would also continue to be potential adverse effects on visitors who may experience a lack of welcome in the Westcott Drive neighborhood and on the Westcott Drive neighborhood from visitors using the county-owned Westcott Drive as a turnaround before entering the park another way.

Minimal maintenance of unsigned trails and ongoing wetland resource impacts from the trail to the point could continue to adversely affect the experience of some visitors. Similarly, some visitors could be deterred from using the deck of the house because of possible concerns about whether it is available for visitor use because it is unsigned. There would also continue to be long-term beneficial effects on safety from continued removal of derelict structures and fencelines from the site, as well as from the connector trail from English Camp. Combined, there would be a range of negligible to moderate localized adverse and beneficial effects on visitor use opportunities from ongoing management of Westcott Bay under Alternative 1.

Impacts from Actions Common to Alternatives 2-4

English Camp: The wide range of beneficial impacts from relocation of the education camp would be the same as in Alternative 1, except that the education camp would be relocated to the north, rather than the south, side of the Administrative Road.

Mitchell Hill: Compared to Alternative 1, implementing resource protection measures, developing trail sustainability standards, and modifying designated trails to meet the standards would have long-term minor adverse and beneficial effects on visitor use opportunities. This would depend on whether visitor experience was improved from finding resources in better condition and/or whether visitors were displeased at some trails being closed, rerouted, or restricted to certain recreational uses to protect sensitive resources.

Mitchell Hill would provide new opportunities to highlight special status fish, such as the coastal cutthroat and its habitat. Long-term beneficial effects could be regional as the importance of trout habitat restoration is elevated and outreach to the public ensues. Effects could be similar to work that is done regarding the island marble butterfly at American Camp.

Beneficial impacts to visitor recreational opportunities and experiences would be seen in the newly delineated Cedar Grove and Old Military Road trails, development of trail linkages to the island-wide trail system, and in areas where there would be a perceived reduction in crowding, visitor use conflicts, and resource impacts on trails that formerly allowed multiple-use. Other **visitor improvements for Mitchell Hill that would benefit the visitor's experience include: a new NPS trails map, a trailhead bulletin board inside the gate at the end of Horse Trail Road, and low impact signs at various trail junctions.**

Westcott Bay: Ongoing activities such as removing derelict structures would be the same and would have effects similar to Alternative 1. Other improvements, including the provision of vault toilets for public use and the reconstruction of the Point Trail to minimize wetlands impacts and improve visitor experience would also result in long-term beneficial effects on visitor experience by improving opportunities for longer site visits and for a better understanding of park resources.

Mitchell Hill and Westcott Bay: Compared to Alternative 1, there would be long-term beneficial effects from improved signs, such as trailhead bulletin boards, maps, trail designation signs, trail names and trail etiquette signs, where appropriate, at Mitchell Hill and Westcott Bay. These wayfinding signs would reduce the likelihood of getting disoriented or lost on trails. Adding other minor facilities, such as bike racks and benches, where appropriate, would also enhance visitor experience at both sites.

Unlike Alternative 1, there would be a range of beneficial and adverse effects on visitor use opportunities, depending on the individual, from implementation of resource protection measures: hiker only trails in the cedar grove, Old Military Road and the Point Trail; signs to and maps of both sites; improvements to the connector trails from English Camp; improved access; and establishment of designated trails that would eventually meet key standards for resource protection at both sites, etc. There would also continue to be long-term beneficial effects from maintaining access to adjacent recreational lands that connect to park lands.

Compared to Alternative 1, designation of trails for hiking and/or multiuse at Mitchell Hill and Westcott Bay, depending on the alternative, would have long-term beneficial or adverse effects for the same reasons noted above under Alternative 1. Similarly, some visitors would benefit from hiker only trails, while other visitors would find the trails impeding their desired visitor experience. As a result, there would be combined beneficial and adverse effects on visitors from designating this type of trail; nonetheless resources would also be improved so much of the balance would weigh on the side of beneficial effects, especially in sensitive areas, such as wetlands, riparian areas and herbaceous balds.

Other beneficial effects common to all alternatives would continue to include: trail improvements, new construction, reroutes/closures/rehabilitation, signing and maps, and mitigation measures to reduce current resource impacts, etc. Over time, these measures and trail designations may be refined, depending on monitoring results for resource impacts, visitor experience and visitation. If increases in visitation occur over time as a result of improvements, visitor experience may be affected by crowding, visitor use conflicts and/or resource impacts; however, these adverse impacts would be minimized through mitigation measures, including active management of the area.

The addition of these new areas to the park offers outstanding opportunities to highlight natural and cultural resources themes and to promote healthy recreation (NPS PWR 2014). Encouraging visitors to spend more time by walking to the areas from English Camp and/or by continuing to explore new recreational opportunities at both sites would continue to contribute to benefits offered by the park. Enhancing these opportunities with interpretive and educational media and facilities would likely improve visitor understanding of the park and its resources.

Providing a range of interpretive materials (brochures, maps, trailhead bulletin boards and/or kiosks, as appropriate) and occasional guided walks and talks would increase visitor understanding of the sites by providing material and information that reflects each unique site. As these sites become better known, visitor appreciation and experiential learning would be enhanced and result in minor to moderate long-term beneficial impacts on visitor experience, including interpretation and education.

#### Additional Impacts from Alternative 2

Mitchell Hill: Improvements that would benefit visitor use opportunities at Mitchell Hill would include working with San Juan County to provide improved parking at the site, which would improve opportunities for visitor use of the area, especially for those needing accessible parking, which would be combined with improvements, resulting in long-term beneficial effects. Compared to Alternative 1, of the approximately 10 miles of existing trails at Mitchell Hill, approximately five miles of hiker only trails would be designated and approximately 3.6 miles of trails would be designated for multiuse. The proposed changes would result in long-term local to regional beneficial impacts on visitor experience for hikers, but may be perceived as a minor to moderate adverse impact on visitor use opportunities for equestrians and mountain bicyclists. Closure of the trails that currently access the park from private lands would also result in long-term minor to moderate adverse effects on visitor use opportunities, including for adjacent local residents and some equestrians who currently rely on these trails for access. Generalized impacts from retaining multiuse trails would be the same as in Alternative 1, however, because there would be more opportunities for hiker only trails in Alternative 2, there would be more opportunities for these visitors, if desired, to avoid shared use trails.

Although negligible long-term adverse impacts would be experienced by equestrians and mountain bikers that would not be permitted to use certain trails at Mitchell Hill or any trails at Westcott Bay, overall impacts to visitor recreational opportunities and experiences at Mitchell Hill and Westcott Bay would be long-term minor to moderate and beneficial including for local and regional visitors. Based on the most recent visitor use survey (Littlejohn 1995), the three most highly ranked recreational opportunities and experiences (sightseeing, walking/hiking on trails, and taking photographs) would be improved, affecting most visitors.

Westcott Bay: At Westcott Bay, in addition to Impacts from Alternatives 2-4, there would be both short-term adverse impacts from construction and long-term beneficial impacts from providing new picnicking opportunities from converting the house at Westcott Bay to a picnic shelter. The undeveloped nature of Westcott Bay would continue to provide low key recreational activities.

Kayaking opportunities would remain unchanged from Alternative 1. As a result, beneficial impacts would continue to be negligible and long-term.

Compared to Alternative 1, allowing a small number of visitors to use the Westcott Drive entrance to access the park would have long-term minor to moderate adverse effects on some residents of the Westcott Drive neighborhood, who believe this county road should not provide access to the park. Because this use would be limited to those needing accessibility and special use permittees, overall adverse effects would be limited.

#### Additional Impacts from Alternative 3

Under this alternative, overall recreational opportunities would increase, allowing more visitor use and enhancing the visitor experience at both Mitchell Hill and Westcott Bay, as well as at English Camp from providing better access to kayakers.

English Camp: Kayaking would be encouraged by providing access to the Administrative Road at English Camp. Because this road is typically for administrative and education camp use, special use permits, including measures to minimize safety and resource impacts would be issued for this activity.

Mitchell Hill: Compared to Alternative 1, there would be fewer multiuse trails, however, compared to Alternative 2, there would be more. Except for trails that pass through sensitive resource areas or include very steep sections over a large distance, trails would be designated multiuse. Of the approximately 10 miles of trails at Mitchell Hill, 6.4 miles would be available for multiuse, and approximately 1.1 miles would be available only for hiking. Unlike Alternative 2, community access trails would remain multiuse (as in Alternative 1) and management of these would be through an agreement with private landowners willing to provide public access through their property. Among those who have already indicated a willingness to provide this is the Boy Scout camp. Combined, these actions would provide more recreational opportunities for equestrians and mountain bicyclists and would be more similar to existing conditions than Alternative 2. Because there would be fewer options for those who preferred hiker only trails, there would also be minor adverse effects on this user group.

Providing low impact public toilets and a small number of picnic tables would allow for more convenient visitor use at the site while minimizing some impacts to resources, an additional minor long-term beneficial effect. Similar to Alternative 2, trailhead parking improvements at Mitchell Hill would include accessible parking. Although only a small number of additional spaces would be provided, it is likely that these could double or nearly double the amount of parking currently available.

Westcott Bay: As in other action alternatives, improvements (Point Trail reconstruction, vault toilet, signs, benches and a bike rack) would contribute long-term beneficial effects on visitor use opportunities. Unlike Alternative 2, retaining the house and repurposing it for administrative, educational, or special uses would improve opportunities for use of the site. There would be a potential to expand current interpretation and educational opportunities, to include: Native American special events or cultural demonstrations in addition to the ranger-led programs and these activities would be supported by new onsite parking and access. Use of the house for park housing, however temporary, would discourage visitors from approaching the house and/or using the deck as a place to contemplate the area, a long-term adverse effect on visitor use opportunities.

Among the most beneficial actions that would improve visitor use opportunities would likely be the provision of a small onsite parking area that would be located off West Valley Road. This

parking area, constructed in a previously disturbed second-growth forest, would be well-signed and would provide direct access to the site via a short accessible multiuse trail.

Combined, there would be a range of diverse recreational opportunities that would enhance the quality of the visitor experience. Although short-term adverse effects would occur during construction, overall impacts would be beneficial and long-term and could extend beyond the local area to the region from the improved opportunities to experience this outstanding resource.

This alternative proposes more trail construction at Westcott Bay than Alternative 2, which would include a Roche Harbor Highlands to Westcott Bay Connector Trail and an associated spur trail off West Valley Road. Additional multiuse recreational opportunities would be offered on these trails, increasing the diversity of the trail system at Westcott Bay. Impacts on visitor use and experience would be beneficial, long-term, and widespread because the trails would connect to the island-wide trail system. Bicycling is a popular activity on the island during the peak visitor use season. This user group in particular would benefit from the additional miles of trails available for use within the park. All user groups using the trails at Westcott Bay would benefit by having an added park destination with a scenic view, and would be able to enjoy proposed visitor services associated with the house.

Mitchell Hill and Westcott Bay: In addition to the interpretive materials identified in *Impacts from Actions Common to Alternatives 2-4*, there would be a potential for providing self-guided interpretive trails. Media used could include: signs, brochures, and/or podcasts. Various user groups could be targeted using different media, such as podcasts and other accessible devices. As visitor use increases and monitoring data provides better demographic information and visitor preferences for learning about the park, brochures and other media could be updated. Compared to Alternative 1, this alternative would result in minor additional beneficial impacts on visitor interpretation and education.

#### Additional Impacts from Alternative 4

Visitor use opportunities would be similar to other alternatives except that in Alternative 4, there would be larger onsite parking areas for both Mitchell Hill and Westcott Bay and the parking area at Mitchell Hill would also provide room for a horse trailers. At Westcott Bay, there would be new kayak access from a more formal launch developed near the junction of the Westcott Bay Connector Trail and the Bell Point Trail or in another suitable location. Although visitors would benefit from this additional opportunity; it would affect resources along Westcott Bay (see other resource sections). Because the launch has not been designed nor a specific location identified, additional environmental impact analysis would be needed prior to implementation.

At Mitchell Hill, there would be new visitor use opportunities for overnight camping. A small number of backcountry sites (2-4) would be designated and would require a permit, likely including reservations in advance. Because this would add public overnight use in the park, which has heretofore been day use only, this action would amend the GMP through this plan. This new recreational opportunity may benefit some visitors, while others could find it unnecessary or adverse. Overall, there would be changes to visitor experience and satisfaction from this change in park use. This could have beneficial or adverse effects on visitor expectations, perceived visitor conflicts, and/or changes in the perception of the area as undeveloped. If it became a consistent or popular activity, there could also be impacts on visitor perception of crowding within this relatively small visitor use area. As with the proposed kayak launch, additional environmental impact analysis, including identification of a specific location would be completed prior to implementation. Guidelines would minimize impacts by locating potential sites away from water resources in durable, previously impacted areas and would not include options for campfires.

English Camp: Actions and impacts would be similar to Alternative 2 except that instead of informal kayaking at English Camp, a more formal kayak launch would be developed (see above).

In addition, there would be new equestrian trail access through the Sandwith Orchard to Mitchell Hill. This connector trail was suggested through public scoping. It was also evaluated as part of the earlier equestrian trail analysis report by park staff (NPS SAJH 2012). At that time, it was found to be inappropriate for horse use because it is located within the cultural zone (currently identified for foot traffic in the GMP); because its tread is too narrow (10 inches); and because it has an average grade of 17 percent for 400 feet and likely exceeds a 20 percent grade for another 100 feet. In addition to these considerations evaluated in 2012, current equestrian access from West Valley Road would be difficult. Despite these issues, it would be designated as an equestrian access trail in Alternative 4 and would be modified to meet equestrian use standards. This would (as noted in other sections) result in numerous impacts, including to soils and vegetation. It could also affect previously unidentified or known resources from the Sandwith Orchard, which although ineligible for the National Register is managed as a park cultural resource. Pending additional planning and environmental impact analysis, a reroute that would meet equestrian trail standards, including for safe access from West Valley Road would be identified and designed. If feasible, this trail would provide an alternative access route for equestrians that would minimize the need to travel on the seasonally wet shoulder of West Valley Road to access Mitchell Hill. Because there are only a small number of equestrians who currently use the park (approximately fourteen permits are issued parkwide per year), there would be minimal beneficial effects on equestrian visitor use opportunities from providing this access.

Mitchell Hill: Under this alternative, Mitchell Hill would have 7.2 miles of multiuse trails, more than any other action alternative. In addition to the hiking only trails that would be common to all alternatives, a new hiking only view trail would be developed to provide a scenic view of Garrison Bay. Combined with all the other visitor use improvements and new developments, this alternative would provide the most recreational opportunities. Combined these actions would result in long-term beneficial and minor adverse impacts from the potential and perception of crowding related to new development, user group conflicts, and potential for additional resource impacts.

Westcott Bay: Converting the house into a visitor contact station/nature center would have long-term beneficial effects from providing a new visitor use opportunity at Westcott Bay and in the park. This site near the water would allow for a range of new interpretive and educational programming that would enhance the visitor experience and more opportunities to learn about the natural and cultural resources of the area. The nature center, however, would likely attract more visitors and encourage more use of the area, which may adversely impact the visitor experience because of perceived crowding, especially during the peak visitor use season. Because the site is small, however, the current quiet and secluded nature of the area may be disrupted by an increase in visitation. These changes in visitation could impact visitor expectations, and visitor experience and enjoyment may be impacted negatively due to perceived crowding, a decline in solitude, and changes in natural quiet. Nonetheless, this alternative could provide many opportunities for expanded and beneficial long-term interpretive and educational opportunities. This could result in minor to moderate beneficial and adverse effects on visitor experience.

This would also result in more use of the new road and parking area proposed under this alternative and would therefore, likely have both moderate beneficial and minor to moderate adverse effects on visitor experience, depending on the expectations of park visitors.

At Westcott Bay the short spur trail from a proposed new parking area near the Westcott Bay Connector Trail would provide alternate new access to the site, a long-term beneficial impact to visitor experience and recreational opportunities.

The development of a new road to access Westcott Bay would greatly increase visitation to the area. Compared to other alternatives, the site would be the most accessible under Alternative 4, with a new road, parking area and trail providing direct access. As in Alternative 3, this new parking area, which would be well-signed, would decrease the likelihood that visitors would try to access the site through Westcott Drive. Depending on the expectations of visitors to the site, the new road and parking area could be perceived as a beneficial or adverse impact on visitor experience. If the easier access also increased visitation, some visitor crowding could ensue during peak visitor use periods and could also result in associated resource impacts to the sensitive natural and cultural resources at the site. Some of the characteristics that visitors and public comments have noted, such as the quiet and solitary nature of the bay and wildlife viewing opportunities, could be disrupted by increased visitation. As a result, there would likely be a range of visitor experiences, including some long-term adverse and beneficial effects, depending on visitor need for access, expectations and whether their visit occurred during the peak season or at another time of year.

Impact Avoidance, Minimization and Mitigation Measures: See Visitor Access (above)

Cumulative Impacts: See Visitor Access (above)

Conclusion: See Visitor Access (above)

## F. Park Operations

### Impacts from Alternative 1

*Ongoing Operations:* Park operations would generally remain unchanged. Administration, interpretation, maintenance and resources management operations would continue. There would continue to be negligible to moderate intermittent adverse impacts on park operations from management of Mitchell Hill and Westcott Bay, including from the need to maintain the areas. Periodic concerns would also arise associated with management of the existing education camp. Small amounts of funding and staffing would continue to be directed toward actions to improve visitor use management and park natural and cultural resources in these areas. Ongoing concerns from residents adjacent to Westcott Bay would also likely continue to impact administrative operations, as would occasional lost individuals at Mitchell Hill (due to the lack of a signed trail system) as well as the occasional need to address resource impacts from multiuse of trails at the site.

Under the no action alternative, no specific zoning would be applied to the new areas. Minimal facilities, including trailhead parking on San Juan County lands outside the gate at Mitchell Hill and the house, roads and informal parking areas at Westcott Bay would continue to be used.

*New Education Camp:* The new education camp would result in additional buildings and structures that would need to be maintained by the park. Because these would be new and would be constructed sustainably, it is likely that initially, limited effects to maintain the facilities would occur. Later, as buildings and structures aged, increasing maintenance needs would result.

The improved education camp would also result in an opportunity to restore the former site of the education camp. Due to the proximity and former use by the education camp, it is likely that camp participants could be involved in this effort. Over time, this seasonally wet meadow could be restored using a combined effort from park staff, students, educators and volunteers.

Impacts from Actions Common to Alternatives 2-4

Initially, ongoing actions to manage Mitchell Hill and Westcott Bay would continue. Later, with inputs of funding and perhaps additional staffing, overall resource conditions and visitor use management operations would improve. Under the action alternatives, new zoning of each of the areas consistent with the GMP would be applied. These zones would vary based on the components of the alternatives and would generally have beneficial effects from ensuring that management of these areas is consistent with management of other similarly zoned areas in the park.

Some actions in the alternatives could be implemented with existing staffing and funding. Many, however, would require additional planning and design and would need supplemental funding and/or staffing. Several of these would likely require additional community conversations, such as meetings with park neighbors and cooperators. Some of the bigger changes would require additional environmental impact analysis carried through the planning and design phase of the construction projects.

All action alternatives call for the construction of new facilities, such as the improved education camp, parking and signs which would need to be maintained by the park. Existing staff would have to take on more responsibilities and expend existing funding to address these, a minor to moderate adverse effect on park operations, depending on whether additional sources of funding and staffing could be procured.

A series of management actions would be required to implement resource protection measures on the trail system at Mitchell Hill. Among these would include determining the need for multiuse trail reroutes to avoid excessively steep slopes; identifying and constructing trail structures to improve protection for water resources; and constructing reroutes to avoid sensitive resources. Although the specific designations for trails would vary among alternatives, this need would be consistent among the alternatives.

Construction of accessible trails (to the point at Westcott and the Cedar Grove Trail at Mitchell Hill) and marking and clearing of the Old Military Road would require additional sources of project funding. This would also be true for the vault toilets at Westcott Bay.

Mitchell Hill and Westcott Bay would be evaluated for the placement of picnic tables, benches, trail signs, bike racks and other small-scale features. There would also be impacts from providing trail system maps, trailhead kiosks or bulletin boards and from working with the county to create and install roadway directional signs to the sites.

#### Additional Impacts from Alternative 2

In addition to *Impacts from Actions Common to Alternatives 2-4* there would be several other components to Alternative 2. Among the key actions that would require changes in park management operations would be removal of the house, construction of small administrative and public parking areas at Westcott Bay and implementing trail system modifications. Actions such as these would have both short- and long-term adverse impacts on park operations. Afterwards, there would be both long-term adverse impacts from maintenance and long-term beneficial effects from making visitor use opportunities to be easier to manage.

Removal of the house would minimize the need for continued maintenance of this facility, freeing resources that could be used for other park management activities. There would also be additional administrative needs from working with the county to establish parking at Mitchell Hill.

### Impacts from Alternative 3

In addition to *Impacts from Actions Common to Alternatives 2-4* there would be several other components to Alternative 3. Among the key actions that would require changes in park management operations would be reuse of the house for overnight administrative uses, such as for an artist-in-residence or park housing. There would also be potential opportunities to manage the house for uses by community groups or others. Continued administrative use of the house gives the park a variety of options that minimally conflict with park neighbors (NPS SAJH 2014).

Other actions that would require changes in park management would be identifying a specific location for, designing and constructing a small parking area and access trail off West Valley Road in cooperation with San Juan County and an access trail from the junction of Roche Harbor and West Valley roads to Westcott Bay. There would also be more opportunities for increased interpretation in Alternative 3, including from additional provision of programming, and interpretive media to enhance visitor experiences. As in Alternative 2, actions such as these would have both short- and long-term adverse impacts on park operations from the needs for implementation. More facilities would also mean more long-term maintenance needs.

### Impacts from Alternative 4

In addition to *Impacts from Actions Common to Alternatives 2-4*, key actions that would require changes in park management operations would be use of the house as a day use visitor facility, such as for a nature center classroom or visitor contact station; construction of much larger parking areas at Mitchell Hill (also including new low impact toilets) and Westcott Bay and implementation and management of new recreational activities, such the new kayak launch at Westcott Bay and backcountry camping at Mitchell Hill; as well as construction of two new trails – a viewpoint of Garrison Bay and a loop trail linking English Camp, Westcott Bay and Mitchell Hill. More intensive use of the house could result in some conflicts with park neighbors, depending on the frequency and noise associated with its use.

Combined these actions would have short- and long-term adverse and beneficial effects on park operations. Compared to other alternatives, there would be more and larger facilities to manage that would both improve visitor experience and increase the need for park management operations.

### Impact Avoidance, Minimization and Mitigation Measures

Measures that would be included in the proposed project (as appropriate to the alternative actions) to minimize impacts to park operations include:

- Construct sustainable facilities that adhere to mitigation measures to reduce impacts on park natural and cultural resources.
- Seek commitment from NPS and regional offices for implementation funding.
- Identify opportunities for partnerships to accomplish proposed actions in the alternative selected for implementation.

Cumulative Impacts: Past, present, and reasonably foreseeable future projects have affected or may affect park operations. These include past planning efforts, such as the GMP which established goals and objectives for park management. Implementation plans, such as this one are tiered off of the GMP and require staff time. Ongoing planning efforts, such as prairie restoration, Crook house rehabilitation and proposed changes in the visitor center at American Camp would also result in an increased workload for park staff as plans are being prepared. Later, as plans are completed, there are long-term implications, such as redirecting funding and staffing toward implementation. Achieving results is the goal of all planning efforts. In the NPS, these results are most tied to improving the condition of natural and cultural resources, which would result in long-term benefits to the park and park operations.

When the actions in the alternatives are added to the effects of past, present and reasonably foreseeable actions, there would continue to be a small contribution to cumulative adverse effects on park operations in Alternative 1. Contributions in the action alternatives (2-4) would be moderate, with the most infrastructure and therefore impacts on park operations in Alternative 4.

Conclusion: Alternative 1 would continue to have a range of beneficial and adverse effects on park operations, including from the need to manage existing and new facilities, such as the education camp. Alternatives 2-4 would increase the number of park facilities and infrastructure, resulting in new and ongoing management operations, including for administration, interpretation, natural and cultural resources management and maintenance. Overall impacts on park operations would likely increase across the alternatives, with the most adverse impacts in Alternative 4, followed by Alternative 3 and Alternative 2.

## V. Chapter 5: Consultation and Coordination

### A. History of Public Involvement

#### 1. Public and Alternatives Scoping

Approximately 382 acres of uplands, forests and shoreline became part of English Camp in 2010 and 2013. Public scoping for this development concept plan (DCP) began March 19, 2013 for Westcott Bay with a public scoping meeting and 30-day public comment period. Mitchell Hill was added to the planning process in 2014 with another public scoping meeting (trails work-session) held on January 22, 2014. Prior to including Mitchell Hill in the DCP planning process, the park also held two public meetings with user groups (for equestrians on July 23 and for bicyclists on July 24) and one combined meeting regarding Mitchell Hill on July 31, 2013. As planning for both sites commenced, a Trails Workshop for Mitchell Hill was held on February 27, 2014, and on April 22, 2014 an Alternatives Scoping meeting (based on a preliminary range of alternatives for both Mitchell Hill and Westcott Bay) occurred. Although the formal alternatives scoping period for the combined DCP ended on May 22, 2014, however comments continued to be accepted through the development of the environmental assessment.

The summary of the combined public open houses and alternatives scoping meetings includes comments received for Mitchell Hill and Westcott Bay. There were a wide range of suggestions on how to best preserve and protect the area for future use and enjoyment.

In addition to comments received during the seven public meetings/workshops, the park received 82 letters, emails, and comments on the optional public comment form during the DCP comment periods.

#### Westcott Bay

*Access and Parking:* Although there was strong neighborhood opposition to public access via the county-maintained Westcott Drive, a small number of commenters supported neighborhood (including general public) access to the park via Westcott Drive. Others recommended providing a small parking area with accessible spaces along West Valley Road and constructing a walking trail to the site. Some supported very limited on-site access via Westcott Drive for accessibility and NPS administration.

*Trails:* Public comments suggested that Westcott Bay be linked to English Camp via existing north trending trails, such as the Bell Point Trail. There was also support to connect the trails at the site with trails in the Roche Harbor area, and to trails on Mount Young and Mitchell Hill. Other suggestions for trails included: short loop trails on-site, existing paths through the forest to the pond and along the shoreline, accessible trails, and low maintenance trails that would be usable in all weather conditions.

*Recreational Opportunities:* Many commenters suggested that Westcott Bay be set aside for “very low impact activities that allow terrestrial and aquatic wildlife to remain undisturbed,” such as hiking, kayaking, sightseeing and wildlife viewing. Commenters also supported “opportunities to experience tranquil and natural sounds, and sweeping vistas of the bay.” Several people used “pristine” or “natural” when describing the site and its potential visitor experience. Comments were received regarding: bicycling, camping, horseback riding, motorized vehicle use, motor boat

or kayak use/launching and anchoring, public or private group camping, public parking, and commercial use.

*Unique Character of the Bay and Protection of Natural and Cultural Resources:* Many commenters preferred a low level of development that preserves the quiet and undeveloped character of the land, including minimizing effects on night skies by not providing lighting and encouraging screening of any development at the site from the bay side. Some believe there are outstanding opportunities for wetland restoration. Other commenters noted the need to inventory and monitor resources prior to impacting the area, and to research its connections with Native Americans.

*Facilities:* Some commenters recommended removal of dilapidated non-historic structures, while others thought the main house could be moved or repurposed but recommended that new infrastructure be limited. Suggestions for the house included occupancy by NPS staff or volunteers, use as office space, or use as an educational or community group gathering place (noting its deck/fire pit). Individuals both favored and opposed providing garbage cans, restrooms, benches, and picnic tables. Some commenters also suggested hike-in or kayak-in camping.

Commenters were generally not in favor of an education camp at the Westcott Bay site because of potential adverse effects on air quality from transportation and campfires, wetlands, wildlife, natural quiet, private property, and property values. Others noted the need to protect the fragile area from overuse and/or that having an education camp could compound issues regarding access and traffic. Among those who favored an education camp, suggestions included keeping the facility small and low key, with boat-in or walk-in access, and/or locating camping away from nearby private property. Alternative locations for the education camp suggested Mitchell Hill and other locations at English Camp, such as near the current facility or in the area suggested by the general management plan.

#### Mitchell Hill

*Access and Parking:* Many of the comments regarding Mitchell Hill were about access to the site, especially equestrian access. In general, the public recognizes the lack of adequate public access and parking for Mitchell Hill. Although it is outside the scope of the proposed plan, some commenters suggested redesigning West Valley Road to allow safe equestrian access to park trails from private property. Trailhead parking for both standard vehicles and horse trailers was suggested, including associated on the county-owned Horse Trail Road, where parking now occurs. Some comments were in favor of, as well as against, public access to the park via private property.

*Trails and Recreational Opportunities:* Many commenters would like to see no change in the trails and their designated uses on Mitchell Hill, advocating that most trails remain multiuse, while others thought that some trails should be closed to bicycles and horses during wet seasons to prevent resource damage. As with Westcott Bay, there was also support to connect the trails to the island-wide trail network. Several commenters suggested linking all three English Camp areas via a hiking or multiuse trail; others suggested use of the Old Military Road as a trail.

Several commenters were concerned about future proliferation of signs on the trails and how that could contribute to the area losing its naturalness. Many thought it better to put more trail information on the maps and fewer in the field to improve navigation.

Public support for recreational opportunities included: mountain biking, hiking, and horseback riding. Comments ranged from those in favor of multiuse (including hiking, biking and horseback riding) to those in favor of single uses, such as only hiking, on most or some specific trails. Others

mentioned opportunities for solitude, wildlife viewing, hike-in and horse-in camping, and providing an accessible trail in the Cedar Grove area.

*Facilities:* Many commenters preferred fewer on-site facilities and development, but some thought benches and hitching posts would be appropriate. Several commenters indicated support for a new access route or new trail connection possibly via Sandwith Orchard, especially for horses because West Valley road is too narrow, dangerous, and seasonally wet. There were numerous comments supporting restrooms and garbage facilities at main trailheads.

## 2. Public Review

This EA is being made available to the public, federal, state and local agencies and organizations through press releases distributed to a wide variety of news media, direct mailing, placement on **the park's website** and announcements in press releases as well as in local public libraries. Copies of the document may also be obtained from:

Copies of the document may be obtained from PEPC or San Juan Island National Historical Park:

*Internet:* <http://parkplanning.nps.gov/sajh> (PEPC Project Number 46431)

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

*Phone:* 360-378-2240 or *Fax:* 360-378-2615

Written comments will be accepted at the following email address or can be posted at the following website:

*Email:* [sajh\\_information@nps.gov](mailto:sajh_information@nps.gov)

*Internet:* <http://parkplanning.nps.gov/sajh> (PEPC Project Number 46431)

Written comments may also be sent to the superintendent.

*Note to Reviewers:* NPS practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. Individual respondents may request that we withhold their home address from the record, which we will honor to the extent allowable by law. If you want the NPS to withhold your name and address, you must state this prominently at the beginning of your comment. The NPS will make all submissions from organizations and businesses, and from individuals identifying themselves as representatives or officials or organizations or businesses, available for public inspection in their entirety.

Responses to comments on the EA will be addressed in the proposed Finding of No Significant Impact (FONSI) or will be used to prepare an Environmental Impact Statement (EIS) (if appropriate).

## B. List of Preparers and Persons, Agencies and Organizations Consulted

NATIONAL PARK SERVICE  
San Juan Island National Historical Park

P.O. Box 49, Friday Harbor, Washington  
Lee Taylor, Superintendent  
Ken Arzarian, Chief of Maintenance  
Gina Pearson, Environmental Protection Specialist (preparer)  
Mike Vouri, Historian/Chief of Interpretation  
Jerald Weaver, Chief of Integrated Resources

Pacific West Regional Office, Seattle  
909 First Avenue, Seattle, Washington, 98104  
Hoa Lam, Engineer  
Rose Rumball-Petre, Environmental Protection Specialist (preparer)  
Kirstie Haertel, Archeologist  
Gretchen Luxemberg (retired Historian)  
Karen Vaage (retired Landscape Architect)

Washington Office  
Water Resources Division  
1201 Oakridge Drive, Suite 250, Fort Collins, Colorado 80525  
Michael Martin

Redwood National and State Parks  
South Operations Center 1212000 Highway 101, Orick, California 95555  
Joe Seney, Chief, Geologic Services

Kwiáht Center for the Ecology of the Salish Sea  
P.O. Box 415, Lopez Island, Washington, 98261  
Russel Barsh, Fisheries Biologist

University of Washington  
Burke Museum of Natural History and Culture  
Box 35-3010, Seattle, WA 98195-3010  
Julie K. Stein, Executive Director

San Juan County  
Public Works Department  
P.O. Box 729, Friday Harbor, Washington 98250  
Rachel Dietzman, P.E., County Engineer

## C. Agency Consultation and Permitting

For the action alternatives, the following are among the agencies and permit processes which may be necessary based on proposed actions:

Washington State Historic Preservation Office  
The English Camp National Historic Landmark District is listed on the National Register of Historic Places (NRHP), however actions in the alternatives would have no effect on contributing features. The Old Military Road at Mitchell Hill may be eligible for the National Register as a contributing feature to the English Camp National Historic Landmark District. As a result, proposed rehabilitation of this feature would include identification of an area of potential effects (APE) and would be undertaken in consultation with the SHPO.

U.S. Fish and Wildlife Service  
In accordance with section 7(c) of the Endangered Species Act of 1973, as amended (16 USC 1531 et seq.), it is the responsibility of the federal agency (National Park Service) proposing the action to determine whether the alternatives would adversely affect any listed species or designated

critical habitat. The U.S. Fish and Wildlife Service and the National Marine Fisheries Service were notified and asked to provide a list of potential threatened, endangered, and special status species in the vicinity of the proposed project. There are no special status species that would be impacted by the project activities. One species, the coastal cutthroat trout, which is currently not known from, but may later be found at Mitchell Hill, however, has been proposed for listing. If the potential for future effects to this species were later identified, the park would reopen consultation with the USFWS.

**Special Regulation: Bicycle Use**

Following decision-making on this environmental assessment and signing of the Finding of No Significant Impact (if applicable), the park would promulgate a special regulation in the Federal Register to continue to allow bicycle use on trails within the park. Until that occurs, bicycle use **would continue to be permitted via the superintendent's compendium.**

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# Appendix 1: Related Laws and Policies

The National Park Service Organic Act 1916 (16 USC, Sect. 1)

This act sets forth the fundamental purpose and overall management framework for all national park units: **“...To conserve the scenery and the natural and historic objects and wild life 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 Environmental Policy Act (NEPA) (42 USC 4341 et seq.)

NEPA requires the identification and documentation of the environmental consequences of federal actions. **Regulations implementing NEPA are set forth by the President’s Council on Environmental Quality (CEQ) (40 CFR, Parts 1500–1508).** CEQ regulations establish the requirements and process for agencies to fulfill their obligations under the act. The purposes of this act are:

**“To declare a national policy which will encourage productive and enjoyable harmony between man and his environment and biosphere and stimulate the health and welfare of man, to enrich the understanding of the ecological systems and natural resources important to the Nation, and to establish a Council on Environmental Quality.”**

National Historic Preservation Act 1966, as amended (16 USC 470)

Section 106 of the National Historic Preservation Act directs Federal agencies to take into account the effect of any undertaking (a federally funded or assisted project) on historic properties. **“Historic property” is any district, building, structure, site, or object that is eligible for listing in the National Register of Historic Places because the property is significant at the national, state, or local level in American history, architecture, archeology, engineering, or culture.**

Section 110 of the Act states that federal agencies shall assume responsibility for the preservation of historic properties, develop a program that identifies and evaluates historic properties, and manages them in a **“way that considers the preservation of their historic, archaeological, architectural, and cultural values...”**

Clean Water Act (33 USC 1241 et seq.)

Under the Clean Water Act it is a national policy to restore and maintain the chemical, physical, and biological integrity of the nation’s waters, to enhance the quality of water resources, and to prevent, control, and abate water pollution.

Endangered Species Act (16 USC 1531 et seq.)

The Endangered Species Act (ESA) requires federal agencies, in consultation with the Secretary of the Interior, to carry out programs for the conservation of listed endangered and threatened species. The ESA also directs federal agencies, in consultation with the Secretary of the Interior, to ensure that actions authorized, funded, or carried out by an agency is not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. Consultation with the U. S. Fish and Wildlife Service is required if there is likely to be an effect.

Washington State Shoreline Management Act 1972

**This law was adopted with the goal of “preventing the inherent harm in an uncoordinated and piecemeal development of the state’s shorelines.” It is meant to protect the quality of water and the environment, and to preserve and enhance public access to shorelines.**

National Park Service Management Policies 2006

This document provides further interpretation and policy guidance relating to laws, proclamations, executive orders, regulations, and special directives affecting the national park system.

Conserve and Provide for Enjoyment of Park Resources and Values 1.4.3: “National Park Service managers must always seek ways to avoid, or to minimize to the greatest extent practicable, adverse impacts on park resources and values. However, the laws do give the Service the management discretion to allow impacts **to park resources and values when necessary and appropriate to fulfill the purposes of a park**, so long as the impact does not constitute impairment of the affected resources and values.

The fundamental purpose of all parks also includes providing for the enjoyment of park resources **and values by the people of the United States... it is the enjoyment of all the people of the United States** and includes enjoyment both by people who visit parks and by those who appreciate them from afar. It also includes deriving **benefit (including scientific knowledge) and inspiration from parks**, as well as other forms of enjoyment and inspiration. Congress, recognizing that the enjoyment by future generations of the national parks can be ensured only if the superb quality of park resources and **values is left unimpaired, has provided that when there is a conflict between conserving resources and values and providing for enjoyment of them, conservation is to be predominant.** This is how courts have consistently interpreted the Organic Act.”

Visitor Use 8.2: “Management controls must be established for all park uses to ensure that park resources and values are preserved and protected for the future. If and when a superintendent has a reasonable basis for believing that an ongoing or proposed public use would cause unacceptable impacts on park resources or values, the superintendent must make adjustments to the way the activity is conducted in order to eliminate the unacceptable impacts. If necessary, the superintendent may (1) temporarily or permanently close a specific area; (2) prohibit a particular use; or (3) otherwise place limitations on the use to ensure that impairment does not occur. Restrictions placed on recreational uses that have otherwise been found to be appropriate will be limited to the minimum necessary to protect park resources and values and promote visitor safety and enjoyment.”

Trails and Walks 9.2.2: “Trails and walks provide the only means of access into many areas within parks. These facilities will be planned and **developed as integral parts of each park’s transportation system** and incorporate principles of universal design. Trails and walks will serve as management tools to help control the distribution and intensity of use. All trails and walks will be carefully situated, designed, and managed to:

- **reduce conflicts with automobiles and incompatible uses;**
- allow for a satisfying park experience;
- allow accessibility by the greatest number of people; and
- **protect the park’s resources.**

Heavily used trails and walks in developed areas may be surfaced as necessary for visitor safety, accessibility for persons with impaired mobility, resource protection, and/or erosion control. Surface materials should be carefully selected, taking into account factors such as the purpose and location of a trail or walk, the potential for erosion, and other environmental impacts.

Trail planning will take into account NPS interest in cooperating with federal, state, local, and tribal governments, as well as individuals and organizations, to advance the goal of a seamless network of parks. These partnership activities are intended to establish corridors that link together, both physically and with a common sense of purpose open spaces such as those found in parks, other protected areas, and compatibly managed private lands.”

Hiking Trails 9.2.2.2: “Trail design will vary to accommodate a wide range of users and will be appropriate to user patterns and site conditions.”

Equestrian Trails 9.2.2.3: “Equestrian trails and related support facilities may be provided when they are consistent with park objectives and when site conditions are suitable.”

General Agreement between the National Park Service and the International Mountain Bicycling Association (IMBA) (NPS 2010)

In 2005 the NPS and the IMBA signed a General Agreement regarding mountain bicycling use in the national park units within the national park system. In March 2010 the agreement was renewed for an additional five years. This agreement establishes the basis for the NPS to work with IMBA and other affiliates, such as the San Juan Island Trails Committee, on issues related to mountain bicycling. The Final Rule on bicycle use in the national park system was issued in 2012 to provide guidance for park management planning and operational enforcement.

Final Rule Making: 36 CFR Part 4: Vehicles and Traffic Safety – Bicycles 2012

In summary: this rule amends current regulations for designating bicycle routes and managing bicycle use within park units throughout the National Park System. It authorizes park superintendents to open existing trails to bicycle use within park units under specific conditions, in accordance with appropriate plans and in compliance with applicable law. It also retains the current requirement for a special regulation to authorize construction of new trails for bicycle use outside developed areas.

## Appendix 2: GMP Management Zones and Definitions

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	<p>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.</p>	<p>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.</p>	<p>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.</p>	<p>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.</p>
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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	<p>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.</p>	<p>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.</p>	<p>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.</p>	<p>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.</p>
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# Appendix 3: Draft Floodplains Statement of Findings

## Mitchell Hill and Westcott Bay Developmental Concept Plan

### Environmental Assessment

#### Introduction

It is the policy of the National Park Service (NPS) to preserve floodplain values and minimize potentially hazardous conditions associated with flooding.<sup>1</sup> **Specifically, the Service will**

- protect, preserve, and restore the natural resources and functions of **floodplains**;
- avoid the long- and short-term environmental effects associated with the occupancy and **modification of floodplains**; and
- **avoid direct and indirect support of floodplain development and actions that could adversely affect the natural resources and functions of floodplains or increase flood risks.**<sup>2</sup>

To implement NPS floodplain policy, proposed actions (such as those in a Developmental Concept Plan) are classified into one of three action classes. Depending upon the action class, one of three “**regulatory floodplains**” applies (100-year, 500-year, or Extreme). If a proposed action is found to be in an applicable regulatory floodplain and relocating the action to a non-floodplain site is considered not to be a viable alternative, then flood conditions and associated hazards must be quantified as a basis for management decision making and a formal Statement of Findings (SOF) must be prepared.<sup>1</sup> The SOF must describe the rationale for selection of a floodplain site, disclose the amount of risk associated with the chosen site, and explain flood mitigation measures.

Proposed management actions in the Mitchell Hill and Westcott Bay Development Concept Plan and Environmental Assessment include current administrative and potential future uses of the Westcott Bay house (one-story with loft, 2 bedroom, 1 bath, 1,100 square feet with a raised deck) and immediate surrounding environment (parking area to accommodate 5-10 vehicles and two short < 1 mile trails). The NPS Westcott Bay parcel is a new land addition (approximately 70 acres) to San Juan Island National Historical Park, which was acquired in 2013 with the existing house on the property. The non-historic structure was built in the 1970s with additions in 2011. This house and the surrounding tent platforms (most have been removed because they were dilapidated and a safety hazard) were formerly used as a **boy's camp**.

The proposed action would include administrative and community uses of the site, and may include occasional or seasonal overnight occupation of the house. Physical development of the site for visitor recreational opportunities and enjoyment will be minimal. Some of the actions associated with the proposal may include delineation of a non-paved parking area to accommodate 5-10 cars, picnic facilities and vault toilet, a foot path approximately ½ mile long, and an accessible trail (approximately 575 feet) to a scenic overlook of the bay. No overnight public camping or campground development is proposed in the area. Currently, there is no overnight occupation of the house.

Although no major developments are proposed in the project area, nor are there existing features that negatively impact floodplain values, the existing house lies within an area that is mapped as a floodplain, and future options may include overnight use of the house, thus the proposed action is deemed to fall into a Class I Action.

Class I Action: include location or construction of administrative, residential, warehouse, and maintenance building; non-excepted parking lots; or other man-made features which by their nature entice or require individuals to occupy the site, are prone to flood damage or result in impacts to natural

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<sup>1</sup> National Park Service. 2002. Procedural Manual #77-2: Floodplain Management. 18pp

<sup>2</sup> National Park Service. 2006. Management Policies: 4.6.4 Floodplains.

floodplain values. Class I Actions are subject to the floodplain policies and procedures if they lie within the 100-year floodplain (the Base Floodplain).<sup>1</sup>

The park's General Management Plan hydrology map shows the Westcott Bay area to be within the 100-year floodplain (The Regulatory Floodplain), referencing FEMA as the source.<sup>3</sup> Further investigation to the FEMA map shows the project area to be potentially within Flood Zone A, or the non-detailed 100-year floodplain; however, there was no datum to reference this information. Consultation with the National Park Service's Water Resources Division Hydrologist and Floodplains Specialist helped the park determine that the U.S. Army Corp of Engineers have determined the "Base Flood Elevation for most of San Juan County to be 12-15 feet."<sup>4</sup> For purposes of this project we are assuming that the project area is within the 100-year floodplain. Therefore, a Statement of Findings is being prepared because the proposed future use of the Westcott house is a Class I Action, within the 100-year floodplain, and relocation of this action to a non-floodplain area is not a viable or feasible option.

#### Justification for Use of the Floodplain

The Westcott house existed on the property when it was acquired by the National Park Service in 2013. The house is useable and relocating the house, deck, and septic system/ leach field outside the floodplain would not be financially feasible. There is no alternative site that is already impacted/ developed to provide a viable option for relocation, and other options are likely to be within the 100-year floodplain as well. Moving the house or building a new one at a different site would cause new adverse and long-term impacts to the natural resources. An access road to the Westcott house already exists, and any relocation of the house would require the building of a new access road, causing further resource impacts. The proposed action would include mostly excepted actions under PM-77-2, including visitor picnic facilities, foot and access trails, and a small non-paved parking area. Overnight use of the house and the installation of a vault toilet for visitor use and special events would be the only non-excepted uses/ actions. The proposed action would not impact floodplain values or waters.

#### Description of Site Specific Flood Risk

Although the proposed action is within the 100-year floodplain, the frequency of flooding is very low and is not identified on the San Juan County GIS maps as a frequently flooded area. San Juan County's main flood hazard is from coastal flooding, which occurs throughout the county on shorelines with low-lying developments.<sup>4</sup> The Westcott Bay NPS property has approximately 2,670 feet of waterfront with no developments along the shoreline, except a foot path. The Westcott house is situated away from the bay-front and sheltered behind a forested area with an open grassy vegetated area to the east. The house is east of the bay approximately 250 feet, faces a protected lagoon formed by a spit approximately 410 feet to the south, and sits approximately 11.2 feet above mean sea level. A small percentage of developed low-lying shoreline does occasionally experience storm-related coastal flooding. According to San Juan County Operations Manager, Russ Harvey, these events generally last twelve hours or less.<sup>5</sup> The last known storm event that caused property damage and impacted domestic water occurred during the 1996-97 winter storms, which affected areas throughout Washington State that normally are not prone to flooding.<sup>5</sup>

Certain inland and lowland areas of San Juan County are vulnerable to tidal flooding or storm surge when specific conditions occur simultaneously including high tide, heavy rain and the accumulation of runoff surface water (storm water runoff), and severe winds (storm surge).<sup>5</sup>

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<sup>3</sup> National Park Service. 2008. San Juan Island National Historical Park, General Management Plan. Figure 17.

<sup>4</sup> San Juan County, WA. Best Available Science Synthesis. 2011, Reference No. 100814. Chapter 5: Best Available Science for Frequently Flooded Areas. Prepared by: Adamus Resource Assessment, Inc., et. al.

[http://www.co.san-juan.wa.us/cdp/docs/CAO\\_BASsynthesis/BAS\\_SYN%28FINAL%29\\_V2\\_Protected.docx.pdf](http://www.co.san-juan.wa.us/cdp/docs/CAO_BASsynthesis/BAS_SYN%28FINAL%29_V2_Protected.docx.pdf)

<sup>5</sup> San Juan County/Town of Friday Harbor – Department of Emergency Management. 2011. Natural Hazards Mitigation Plan, Section 7. Flood.

San Juan Island and County lacks large river drainage systems and mountain snowpack, thus storm water runoff is not a frequently occurring natural hazard. As described in the San Juan County Hazard Mitigation Plan: “Storm water runoff floods are typically the result of manmade environmental changes, such as altered wetlands, undersized drainage systems, and the increase of impermeable surfaces in conjunction with new construction. Less common or rare are floods resulting from shoreline erosion; structural failure of dams and ponds; and, potentially, tsunamis.”<sup>5</sup>

San Juan County has determined which areas are “at risk” of flooding and only one area on San Juan Island was identified, which is not Westcott Bay. Also, based on past events, “there is a low probability of significant flooding occurring in San Juan County, and there is a low risk associated with flooding events that will occur.”<sup>5</sup> The Westcott house first habitable floor level is raised approximately four feet above the ground and does not appear to be a flood hazard.

#### Description of Mitigation Actions

##### *Actions to Minimize Risk to Life*

- In the event that large seasonal storms are forecasted and may cause flooding, temporary special events planned in the area will be cancelled. Also, the gate into the area will be closed and signs posted warning visitors to stay out because of potential coastal flooding, tidal surges, and high winds.
- Overnight use of the Westcott house during the storm season would be discouraged. If overnight use occurs during high storm events (heavy rains and high winds), occupants should evacuate the premises immediately and not return until storm warnings and any flood waters have subsided.
- An audible alarm system is on the house septic tank which can warn users of the area to evacuate. This warning system does not indicate that water is entering the building, only that the ground is saturated to a point that seawater intrusion has likely occurred into the tank and that low level flooding/ponding surrounding the house is occurring or may occur.
- Ensure house has phone line and phone in good working order so overnight occupants can call for help if needed. Have emergency phone numbers easily accessible.
- Have a copy of the current San Juan County/Friday Harbor Hazard Mitigation Plan in the Westcott house and easily accessible.
- Park standard operating procedures should be developed for the temporary or overnight use of the house to include evacuation procedures in case of a flood, caused by either coastal storm surges or a tsunami.
- In an extreme and rare case of a tsunami, occupants of the house and area should immediately evacuate the premises and go to higher ground.

##### *Actions to Minimize Risk to Property*

- There is currently no capital investment on the site.
- When a vault toilet is installed it will be sited in an upland area (above 100-year floodplain).
- NPS valuable equipment or important documents would be stored on the loft level of the house, or temporarily relocating these items to the headquarters building during the winter storm season.
- Construction of accessible trail to scenic overlook would be constructed in such a way as not to impact flood waters or create a dam.
- Parking area would be developed in an upland site and constructed in such a way as not to impact surface storm water runoff. Construction material used would allow permeability into ground.
- The NPS accepts the risk and rare event that may result in the loss of the existing Westcott house and any future associated small scale developments such as a small non-paved parking area, vault toilet, and short accessible boardwalk type trail.

#### Summary

Flooding in San Juan County is infrequent and rarely occurs to the level of causing damage to property, utilities, drinking water supplies, or roads. Extremely rare is the impact of flooding on human life. The park will guard against risks to human life or property damage associated with flooding, and will use proven measures already developed by the Town of Friday Harbor and San Juan County. The proposed project will not contribute to flood hazards that already exist.