



United States
Department of
Agriculture

Forest Service

Tongass
National Forest
R10-MB-713a

August 2011



White Sulphur Springs Cabin, Bathhouse, and Trail

Environmental Assessment

Volume A, Environmental Assessment

Tongass National Forest
Ketchikan, Alaska



White Sulphur Springs Cabin, Bathhouse, and Trail Environmental Assessment - Key Acronyms and Other Terms

ACMP	Alaska Coastal Management Plan	NAGPRA	Native American Graves Protection and Repatriation Act
ADF&G	Alaska Department of Fish and Game	NEPA	National Environmental Policy Act
AIRFA	American Indian Religious Freedom Act	NFS	National Forest System
ANCSA	Alaska Native Claims Settlement Act	NHPA	National Historic Preservation Act
ANILCA	Alaska National Interest Lands Conservation Act	NMFS	National Marine Fisheries Service
BMP	Best Management Practices	NOAA	National Oceanic and Atmospheric Administration
CEQ	Council on Environmental Quality	ROS	Recreation Opportunity Spectrum
CFR	Code of Federal Regulations	SD	Service Day
CZMA	Coastal Zone Management Act	SHPO	State Historic Preservation Officer
DN	Decision Notice	SOPA	Schedule of Proposed Actions
EA	Environmental Assessment	SUA	Special Use Authorization
ESA	Endangered Species Act	TE	Threatened and Endangered
FONSI	Finding of No Significant Impact	Forest Plan	Tongass Land and Resource Management Plan
FSH	Forest Service Handbook	TTRA	Tongass Timber Reform Act
FSM	Forest Service Manual	USFWS	United States Fish and Wildlife Service
IDT	Interdisciplinary Team	VCU	Value Comparison Unit
LUD	Land Use Designation		

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Front Cover: Left - 2004 Photo of White Sulphur Springs Cabin. Right – 2007 Photo of White Sulphur Springs Bathhouse.

Printed on Recycled Paper



INTRODUCTION

Document Structure

The Forest Service has prepared this Environmental Assessment for the White Sulphur Springs Cabin, Bathhouse, and Trail project in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This Environmental Assessment discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives. The document is organized into four parts: an introduction, alternatives, existing conditions/environmental consequences, and consultation and coordination.

Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record located at the Sitka Ranger District Office in Sitka, Alaska.

Background

Existing Condition

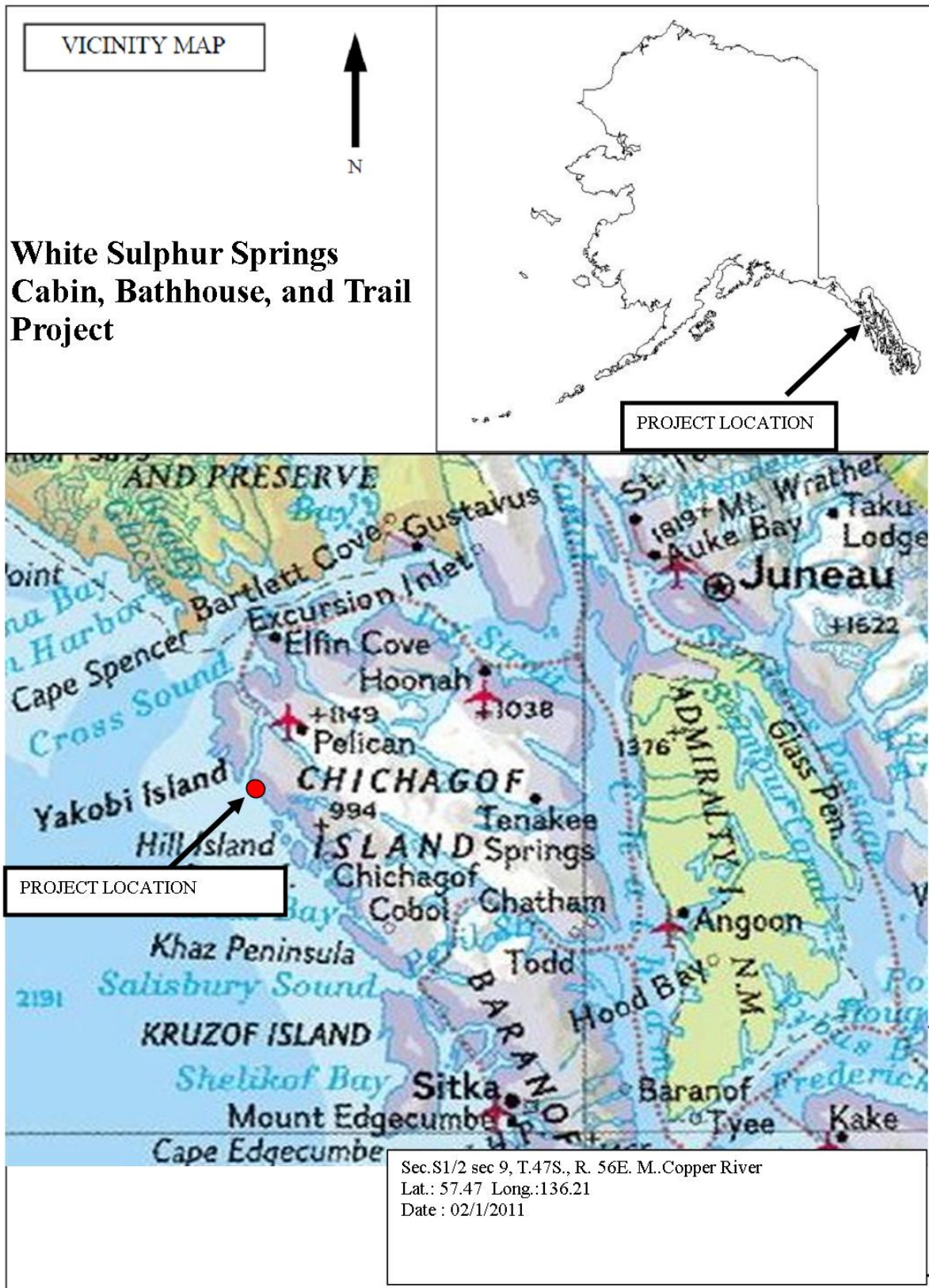
This project site is located in the West Chichagof-Yakobi Wilderness Area. It is about 65 miles northwest of Sitka, Alaska, on northwestern Chichagof Island and is accessible by boat. The community of Pelican is 23 miles to the northeast. White Sulphur Springs Cabin and Bathhouse are on the exposed shore of Chichagof Island with a panoramic view of the Pacific Ocean (Figure 1). Waves, wind, and location can make the site challenging to access, particularly during poor weather and in short winter daylight hours.

Early cabin and bathhouse constructions were done by hunters, trappers, and miners using the area. It is reported that a cabin and bathhouse existed in 1916 and speculated that a Dr. White operated the facility as a health spa during that time. The most recent reconstruction was in the 1966, prior to wilderness designation in 1980. Prior to 1966 there were period of time when there was no bathhouse at the site.

The bathhouse, cabin, and trail have structurally deteriorated enough to need substantial construction work to remain usable. The cabin and bathhouse receive regular maintenance; however exposure to harsh conditions has taken its toll on both structures. The existing cabin site is located on organic soils adjacent to a bedrock and cobble beach.

The existing cabin is a 12' x 14' (168 sq. ft.) Pan Abode style built in 1966; it has two single and two double bunk beds. The southwest corner of the cabin is settling and the floor is rotting near the door. End joints on the walls show signs of rot. The cabin has a Styrofoam block foundation which is not structurally tied to the ground. The outhouse is also in need of replacement due to rot in the structure.

Figure 1: White Sulphur Springs Cabin, Bathhouse, and Trail Vicinity Map





The bathhouse, also built in 1966, is perched over bedrock on a foundation of cinderblock piers. The block corners have cracked and crumbled (see Figure 2). The warm springs come from fissures in the bedrock just above the high tide line. The rear wall of the bathhouse has extensive rot. Water leaking from the holding tank has kept the sill of the building soaked and accelerated rot. The rafters have fungal growth and all doorways are showing signs of decay. The holding tank for the warm water leaks in spite of continued patching. The interior walls of the bathhouse contain carvings of local boat names from past visitors.

Figure 2: White Sulphur Springs Bathhouse Foundation Showing Crumbling Concrete

The trail was originally constructed by the Civilian Conservation Corps (CCC) in 1935. The existing trail has several bridges and slippery puncheon that are in need of replacement. Some structures are rotting; other sections have deep muddy holes. The existing trail is a composite of split puncheon, boardwalk, gravel, organic muck, and boards found on the beach or left over from cabin construction. People using this uneven trail in the evening have a hazardous journey back to Mirror Harbor in the dim evening light.

Recreational Use

The bathhouse at White Sulphur Springs is used by people renting the cabin, outfitter/ guides, fishermen, kayakers, campers, and boaters from Pelican and other places visiting for a bath. The cabin is rented, on the average, 86 nights per year. It is the 9th highest use cabin out of 25 cabins on Sitka Ranger District. Approximately 82 guided clients use the bathhouse per year. Overcrowding sometimes occurs at the site during the summer months. Several different groups may use the indoor and outdoor warm water pools directly in front of the cabin.

Management Direction

White Sulphur Springs is located in a Land Use Designation (LUD) of Wilderness in the Tongass National Forest Land and Resource Management Plan (Forest Plan, USDA Forest Service 2008). This project site is located in the West Chichagof-Yakobi Wilderness Area. The Alaska National Interest Lands Conservation Act of 1980 (ANILCA) and Forest Service policy allow for the continuation of existing public use cabins in Alaska wilderness areas like this one. We must also consider the Wilderness Act of 1964, which requires us to preserve wilderness character and to provide for areas to be managed in contrast to other lands. In addition, objectives for wilderness in the Forest Plan (2008, p. 3-8) are:

Maintain trails and primitive facilities that are in harmony with the natural environment and that promote primitive recreation opportunities. Feature facilities designed primarily to provide resource protection and encourage smaller group size, and emphasize challenge and risk instead of convenience.

Congress designated the West Chichagof-Yakobi Wilderness on December 2, 1980 under ANILCA. Except as otherwise expressly provided for in ANILCA, this Wilderness is administered in accordance with applicable provisions of the Wilderness Act of 1964. The

provisions of both Acts must be considered together. ANILCA includes provisions that allow for some activities in Alaska wilderness that are prohibited in the Wilderness Act. These provisions acknowledge the importance of continuing uses established prior to ANILCA and also the unique conditions in Alaska. Section 1315(c) of ANILCA provides a specific exception to the 1964 Wilderness Act's prohibition of structures and states the following:

Previously existing public use cabins within wilderness designated by this Act, may be permitted to continue and may be maintained or replaced subject to such restrictions as the Secretary deems necessary to preserve the wilderness character of the area.

Internal management direction in the Forest Service Manual - Wilderness Management Chapter 2320.6, states the following:

Where a choice must be made between wilderness values and visitor or any other activity, preserving the wilderness resource is the overriding value. Economy, convenience, commercial value, and comfort are not standards of management or use of wilderness. Because uses and values on each area vary, management and administration must be tailored to each area. Even so, all wilderness areas are part of one National Wilderness Preservation System and their management must be consistent with the Wilderness Act and their establishing legislation.

Trails are an acceptable improvement in wilderness and should follow design standards specified in the Trails Management Handbook (FSH 2309.18).

Internal management direction in the Forest Service Manual for the Alaska Region – R10 2323.13b(2), states:

New and replacement cabins or shelters will use design drawings approved for wilderness use. Appurtenant structures to the cabins will be limited to an outhouse and a woodshed at each cabin or shelter.

Decisions to remove existing cabins or shelters or to build new ones will be made through the NEPA process.

In terms of Forest plan direction, goals and objectives for the Wilderness LUD are:

To manage all designated Wilderness to maintain an enduring wilderness resource while providing for public access and uses consistent with the Wilderness Act of 1964 and ANILCA.

To protect and perpetuate natural biophysical and ecological conditions and processes.

To provide a high degree of remoteness from the sights and sounds of humans, and opportunities for solitude and primitive recreation activities consistent with wilderness preservation.

Manage recreation activities to meet the appropriate levels of social encounters, on-site developments, methods of access, and visitor impacts indicated for the adopted or existing Recreation Opportunity Spectrum (ROS), as appropriate.

Provide trails and primitive facilities that are in harmony with the natural environment and that promote primitive and semi-primitive recreation experiences.

Feature facilities designed primarily to provide resource protection and encourage smaller group size, and emphasize challenge and risk instead of convenience.

Recreation Opportunity Spectrum (ROS) guidelines are provided in the Forest Plan and are used to guide management activities in order to maintain or attain a range of recreation opportunities. Guidelines for each ROS class describe the physical, social, and managerial setting components that affect the kind of experience forest visitors may expect. White Sulphur Springs and trail fall within the Semi-Primitive Motorized ROS class, which includes the following setting indicators:

Nearby sights and sounds of human activity are rare, but distant sights or sounds may occur. Setting is located within ½-mile of infrequently travelled waterways.

Facilities and structures generally do not exceed Development Scale II (rustic).

User meets less than 6 parties per day in Wilderness during 80 percent of the primary use season. Maximum party size is 12 people.

Visitor caused impacts may be noticeable, but not degrading to basic resource elements. Site hardening is very infrequent, but, when it occurs, is in harmony with, and appropriate for, the natural-appearing backcountry setting.

In the Forest Plan, the standards and guides for the Wilderness LUD include: 1) Provide development facilities appropriate to the Recreation Opportunity Spectrum (ROS) setting after determining that the private sector is not able or willing to meet the demand. 2) Provide barrier-free, accessible facilities appropriate to the site development level and area ROS setting. 3) Prioritize and schedule trail construction and maintenance to meet public needs for existing trails and waterways providing access to recreation cabins.

With these considerations in mind, we must determine the management method that would have the least amount of impact to the physical resources and experience of wilderness. To help determine the minimum requirements necessary for this project, a Minimum Requirements Decision Guide (MRDG) process was begun during alternative development and finished just prior to completion of this EA. The MRDG process was used as a tool in evaluating the alternatives and is used as information by the Responsible Official as they make the decision. For the White Sulphur Springs project, retaining the cabin, bathhouse, and trail structures as well as utilizing a helicopter, motorized equipment, and mechanical transport (these last three are identified as prohibited uses in Section 4(c) of The Wilderness Act) were considered. The Wilderness Act prohibits these last three uses “except as necessary to meet minimum requirements for administration of the area.” When determining the minimum requirement, the potential disruption and degradation of wilderness character and resources are considered and given priority over economic efficiency and convenience. If a compromise on wilderness resources or character is unavoidable, actions that preserve wilderness character and/or localized, short term adverse impacts have priority. The completed MRDG for this project is included in the Project Record.

Purpose and Need for Action

The purpose of this project is to address safety concerns and deferred maintenance items at the White Sulphur Springs Cabin, Bathhouse, and Trail in a manner consistent with the Wilderness Act of 1964, the Alaska National Interest Lands Conservation Act of 1980, the

Tongass National Forest Land and Resource Management Plan (Forest Plan, USDA Forest Service 2008), and other Forest Service direction.

There is a need for work on the White Sulphur Springs Cabin, Bathhouse, and Trail because these facilities have structurally deteriorated to the point that, without action, these facilities will become a safety hazard to occupants in the near future. With the deterioration of the facilities there is a need to reassess which facilities are necessary in this wilderness location, and how to manage for uses that have been established at this site prior to the designation of the wilderness.

Proposed Action _____

The Forest Service's Proposed Action (Alternative 1) for the White Sulphur Springs project would:

- replace the bathhouse, soaking tub, and holding tank in place,
- remove the old cabin and replace it with a new, larger, accessible cabin, outhouse, and woodshed in a new location approximately 100 feet northwest of the existing site,
- add a short section of trail to access the cabin, and
- reconstruct the trail using a helicopter for moving materials and power tools for construction.

This cabin and bathhouse (which includes the holding tank) are considered to be historical (see the Heritage Resources section in this EA). Mitigation measures (such as retention of other historical cabins on the Sitka Ranger District, photo documentation of the cabin, bathhouse and holding tank, and re-using a portion of the existing carved bath house wall) would be used to compensate for the negative effects caused by the project.

See Chapter 2 for a complete description of the Proposed Action.

Decision Framework _____

The Tongass National Forest Supervisor will be the Responsible Official for this proposal. Based on the environmental analysis in this EA, the Responsible Official will decide whether or not, and how, to replace the cabin, outhouse, and bathhouse at White Sulphur Springs and rebuild portions of the trail from Mirror Harbor to the cabin and bathhouse site. The Responsible Official has the authority to choose the No Action Alternative, the proposed action, other action alternatives, or portions of the action alternatives, and implement the project according to the decision. Such decisions and the rationale for the decision would be documented in the project Decision Notice (DN).

Public Involvement _____

The proposal was first listed in the Tongass National Forest Schedule of Proposed Actions in October of 2007. The proposal was provided to local tribes and tribal corporations, the public, and other agencies in 2007 for comment during scoping. Written communication with Sitka Tribe of Alaska, Sealaska Corporation, the Division of Coastal and Ocean Management of the Alaska State Department of Natural Resources, and the City and Borough of Sitka surfaced no concerns for the project at that time. A public service announcement was placed in the Daily Sitka Sentinel, KCAW, and KIFW radio stations to

encourage public comment on the proposal. Copies of the scoping letter for this project were sent to individuals and organizations identified from a comprehensive mailing list developed for recreation projects. Copies were also available for distribution at the Sitka District Office. Some comments were received and are reflected in the significant issues.

Additional information and comments gathered since 2007 led the Forest Service to update and adjust the proposed action and provide additional alternatives to the public for consideration. A scoping update letter was sent to 65 individuals, groups, businesses, agencies and tribal entities in November 2010. This letter explained adjustments, additions, and preliminary effects to wilderness character, and asked for additional comment. Affected communities received copies of this letter for public posting. Additionally, the Sitka Ranger District published a display advertisement informing the public about the project in the Daily Sitka Sentinel on December 10, 2010.

A legal notice of the 30-day comment period for this project was published in the Daily Sitka Sentinel on November 22, 2010. The scoping update letter informed the public that “In an effort to complete this analysis before allocated funding is lost, the 30-day comment period on this proposal will begin soon...” and requested people’s comments by the end of that 30 day comment period. The comment period closed on December 22, 2010.

A legal notice of the 30-day comment period for this project was published in the Ketchikan Daily News on June 17, 2011, the newspaper of record for the Tongass National Forest Supervisor’s Office. Forrest Cole, Tongass Forest Supervisor, is the responsible official for this project. The comment period ended on July 18, 2011.

Ninety people or organizations sent a diverse array of comments in response to the scoping update letter. Eighty-nine of the comments were received during the first 30-day comment period. No comments were received during the June 2011 comment period. All the alternatives and nearly every component of all alternatives received support and opposition. For example, people were concerned that using a helicopter would negatively affect wilderness character through disturbance while others suggested helicopters would benefit wilderness character by reducing the length of the disturbance. Some comments said the bathhouse was needed for safety; others said it was not needed for safety. Some comments suggested alterations to improve the proposal such as moving the cabin back away from the trail a small distance to provide separation instead of down the coastline 100 feet. Many comments suggested using materials found on site for the trail or in southeast Alaska for the cabin. Many comments suggested removing the bathhouse and returning the spring area to its natural condition while other comments suggested removing both buildings. Many stated that the bathhouse pre-dated the Wilderness designation and suggested that should be a reason for rebuilding the bathhouse. Some comments suggested reconstructing or replacing the bathhouse as is (replacing it in-kind). All comments will be addressed through this analysis.

A news article about the White Sulphur Springs project was published in the Sitka Daily Sentinel on February 25, 2011.

The White Sulphur Springs project has been a topic at monthly Tribal Council meetings with the Sitka Tribe of Alaska and with the Resource Protection Director of the Tribe. No concerns have been expressed.

The Forest Service has consulted with the State Historic Preservation Officer (SHPO) regarding the eligibility of cultural resources recorded as part of this inventory and the effects of this project on those resources. The cabin, bathhouse, and trail have all been found to be eligible to the National Register of Historic Places. We received concurrence on our determinations of eligibility for the sites recorded, with our determination of Adverse Affect for the cabin and bath house portion of this project, and on our determination of no adverse affect for the trail construction portion of this project. Mitigations to negate previously mentioned adverse affects were proposed in the report. The Forest Service has developed a Memorandum of Agreement with the State Historic Preservation Officer (SHPO) which addresses these mitigations.

This EA and a decision notice, when it is completed, will be mailed to those people who responded to scoping as well as other interested people. Copies of the mailing list, scoping letter, and any correspondence received regarding this EA will be available in the project record at the Sitka Ranger District.

Issues

The Forest Service separates issues into two groups: significant and non-significant. Significant issues are defined as those directly or indirectly caused by implementing the proposed action and represent disputes, disagreements, or debate about the effects of the proposed action. Significant issues are those issues that drive the development of alternatives.

Significant Issues:

The Forest Service identified five significant issues from public and internal scoping for this project.

Issue 1: Moving the cabin to a new location would create an additional area of ground-disturbance in the wilderness and reduce both the convenience and accessibility of the cabin to bathhouse users.

Issue 2: Using a helicopter to move materials and using mechanized equipment during construction/reconstruction would have a negative effect on wilderness character such as undeveloped and outstanding opportunity for solitude.

Issue 3: Having a bathhouse in wilderness negatively affects wilderness character such as untrammeled, undeveloped, and outstanding opportunity for primitive recreation. Additionally, reconstructing or replacing a bathhouse in wilderness may not be in accordance with the Wilderness Act and ANILCA.

Issue 4: Replacing the cabin would adversely affect a 1960's era recreation structure and would be more costly than reconstructing it. Replacing or removing the bathhouse would adversely affect a 1960's era recreation structure.

Issue 5: Using processed materials for trail building such as milled lumber or crushed gravel may not fit within the wilderness character.

Non-significant Issues

Non-significant issues were identified as those: 1) outside the scope (not related to the effects) of the proposed action; 2) already decided by law, regulation, Forest Plan, or other higher level decision; 3) irrelevant to the decision to be made; or 4) conjectural and not

supported by scientific or factual evidence. The Council on Environmental Quality (CEQ) NEPA regulations require this delineation in Sec. 1501.7, "...identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3)..."

The public identified concerns and made suggestions about cabin design elements such as, preserving bathhouse carvings, and providing for water temperature regulation of the tub. These relevant concerns and suggestions were treated the same between the action alternatives and were incorporated into the design. Because these non-significant issues are incorporated into all action alternatives, they did not drive the development of individual alternatives.

The recommendation to reconstruct the bathhouse and preserve the concrete holding tank was considered as an alternative. However, this alternative was eliminated from further consideration because reconstruction is not a reasonable option for these structures based on their condition and structural integrity, the cost of reconstruction, and the uncertainty of success. The bathhouse has decay in the foundation and in the structure. The first five courses of the southeast corner wall timbers are rotting, at least two bottom timbers around the entire perimeter have substantial rot and are in need of replacement, and portions of the concrete block foundation are crumbling. The concrete making up the holding tank and soaking tub were made with local materials and are now crumbling, leaking through patches, and draining onto the building sills; this is further degrading the building and would cause problems with a new building if it were built around the tank and tub. The building's initial structural design may not have been sufficient to stand up to the extreme wind loads on the outside coast. In the 1980's high winds blew off the entire roof, and in 2002 high winds blew the front doors into the warm springs pool and buckled the east and west walls. These structural failures have been repaired in a manner that probably did not resolve the structural inadequacies. The building also needs painting and staining. The deferred maintenance actions for the bathhouse are estimated at 90% of replacement costs. Finally, reconstruction of this type of building can be extremely difficult depending on the methods initially used to attach the wall timbers; if spikes were used, which was a common practice, the walls cannot be disassembled without damaging the timbers.

Permits, Certifications, and Other Requirements _____

The Forest Service will also be required to obtain a 401/404 permit (water quality certification/discharge of fill material in wetlands or waters) from the U.S. Army Corps of Engineers for trail construction.

Planning Record_____

Additional documents, including more detailed analysis of project area resources, may be found in the project planning record located at the Sitka Ranger District Office in Sitka, Alaska. Other reference documents such as the Forest Plan are also available at the Sitka office. The Forest Plan is also available on the Internet and CD-ROM.

This page left blank intentionally.

ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This section describes and compares the alternatives considered for replacing the cabin and bathhouse at White Sulphur Springs and rebuilding portions of the trail from Mirror Harbor to the cabin and bathhouse site.

It includes a description of each alternative and a map of the proposed alternative. This section also presents the alternatives in comparative form to display options for the decision maker and the public.

Alternatives

Five alternatives were considered in detail: The Proposed Action (Alternative 1), three additional action alternatives, and the No Action Alternative (Alternative 5). Alternatives 1 through 4 are the same as those discussed in the scoping update letter. Table 1 summarizes the major actions which would occur in each alternative; the full description of the alternatives continues below the table. Maps of the alternatives are shown in Figures 3 through 8 at the end of Chapter 2. Figure 5 displays the cabin, trail, and rock source location for all the alternatives.

Table 1: Comparison of Alternatives by Major Activity

Proposed Activity	Alt. 1 (Proposed Action)	Alt. 2	Alt. 3	Alt. 4	Alt. 5 (No Action)
Replace bathhouse with another bathhouse structure	Yes	No	Yes	Yes	No
Remove bathhouse	No	Yes	No	No	No*
Replace bathhouse with outdoor soaking pool with decking for safe access	No	Yes	No	No	No
Replace cabin (with a larger structure to meet accessibility requirements)	Yes	Yes	Yes	No	No
Reconstruct existing cabin at current location	No	No	No	Yes	No
Move cabin location and outhouse	Yes (100 ft)	Yes (30 ft)	No	No	No
Move woodshed	Yes	Yes	No	No	No
Construct up to 150 feet of trail to access cabin	Yes	Yes	No	No	No
Reconstruct existing trail using mainly imported gravel and re-used boardwalk	Yes	No	No	No	No
Reconstruct existing trail using mainly local native material found on site or in SE Alaska and re-used boardwalk	No	No	Yes	Yes	No
Reconstruct existing trail using mainly local native material found on site or in SE Alaska and no boardwalk	No	Yes	No	No	No
Use helicopter and power tools for construction	Yes	No	No	No	No

*Alternative 5 does not propose removal of the bathhouse, but the expectation is that safety concerns would require that this bathhouse be closed and removed within a few years

Alternative 1

The Proposed Action

The Proposed Action, Figures 4 and 5 at the end of Chapter 2, was developed to address the purpose and need for this action as well as address some of the concerns expressed about the use of this area. The Forest Service proposes the following actions.

Bathhouse

Remove the existing bathhouse, including the concrete soaking pool and holding tank used to fill the soaking pool. The existing Pan Abode style bathhouse structure would be replaced by a building of similar size on the same site. The soaking pool would be reconstructed in its current location. A mortared 2-foot by 2-foot stone basin/holding tank for the warm springs source would direct spring water over a cascade of boulders into the soaking pool. A waterline would lead from the stone basin to a washbasin located at the exterior of the bathhouse. When the valve on the waterline is opened, fresh water from the stone basin would flow from the stone basin to the washbasin. This system would also serve to stop the flow of warm water into the soaking pool to allow cooling of the pool and draining it for maintenance.

The building style would be rustic: large timbers would support the roof and the siding would be rough-cut yellow cedar board-on-board siding with wood framed windows, including the large sliding window facing the ocean. The roof would be translucent Lexan, similar to the existing roofing material. A shed framed roof with cedar shakes would protect the door. The proposed bathhouse would be barrier free. Some boulders, either from above mean high tide at four area beaches or from a commercial source, would be used in construction.

Cabin

The existing cabin, outhouse, and woodshed would be removed. A new cabin would be constructed approximately 100 feet northwest of the existing site. The replacement cabin would be a 1-story Alaska Region standard design 15' x 17' "Pan Abode" style structure, with a six person capacity (two single and two double bunk beds); this is the smallest available standard design certified by the Regional Office. Two skylights would be installed. Floor and roof insulation would be installed to reduce the amount of fuel needed to heat the structure. The cabin would be an Architectural Barriers Act (ABA) accessible structure that would require it to be larger than the existing 12' x 14' cabin. The woodshed would be replaced in a location close to the new cabin site. The outhouse would be replaced in a location between the new cabin site and the bathhouse. See Figure 4.

Trail

Suitable material from the existing cabin would be reused to replace some boardwalk and trail structures. The existing boardwalk planks that are not decayed would be reused; the decayed boards would be removed from the trail. Gravel would be used to surface most sections of the trail.

Connected Actions:

- The original cabin site would be rehabilitated with rocks and logs and revegetated with plugs of on-site species.
- Approximately 150 feet of new trail would be added to the end of the existing trail to access the new cabin site.
- Five small spruce trees removed to develop the new cabin site would be cut and used for firewood. Slash would be removed.

- Select trees between the cabin site and the beach would be limbed to provide a view of the ocean from the cabin.
- Approximately 45 6 to 8 inch diameter yellow cedar snags (dead trees) within the vicinity of the trail would be cut and used for trail tread.
- About 70 cubic yards of gravel that resembles gravel found in the area would be purchased from a commercial source and brought to the site by barge for surfacing sections of the trail.
- Approximately ten cubic yards of generally boulder-size stone would be removed from above mean high tide at four locations along the shoreline of Bertha Bay, just south and southeast of White Sulphur Springs for site construction. Angular stone would be used for stone steps, open drains, and site rehabilitation. Large rounded stone from the beach immediately in front of the bathhouse would be used to create the stone basin in the bathhouse. Local material is proposed for use due to its natural appearance and abundance near the project area. But if inadequate amounts are available above mean high tide, stone would be acquired from a commercial source.
- A helicopter would be used to move gravel from the barge to selected locations on the trail. It would also be used to move materials for the cabin and bathhouse to shore for use during construction. A cement mixer and battery powered rock drill would be used during bathhouse foundation work. Total estimated helicopter operating time would be five days of six hours per day. The trail will be closed during this period. Use of the motorized equipment and wheelbarrow is estimated at three days.

Design Elements Specific to Alternative 1:

- Deteriorated planks would be removed from the site. Sound treated planks would remain on site and be reused in trail construction.
- A privacy screen or other structure will be created out of existing bathhouse carving-covered wood; this screen will be installed in the new bathhouse.
- A washtub for dishes, etc. would be placed on the outside of the new bathhouse and will provide the same function as the existing washtub.

Mitigation Measures:

- Rock and gravel acquired from a commercial source would be provided that are free of viable invasive plant seeds. Equipment and tools used for construction will be cleaned to avoid contamination by invasive plant seeds or parts. Only aggregate from an active stockpile that is located in a seed-free zone would be used. Notification one week before moving material from the stockpile would be provided to allow for inspection for weeds.
- The White Sulphur Springs Cabin and Bathhouse (including the holding tank) are considered to be historical (see the Heritage Resources section in this EA). Mitigation measures would be used to compensate for the adverse effects caused by the project: The Sitka Ranger District has identified four 1960-1971 historic period cabins (two pan-abode, two A-frame designs) that the Tongass intend on retaining into the foreseeable future (as identified in a letter to the State Historic Preservation

Officer by the Regional Forester). Site-specifically, photo documentation of the cabin, bathhouse and holding tank, including all elevations and associated features will also occur. Additionally, a portion of the existing carved bath house wall would be re-used to create a screen in the new bathhouse between the bathing area and the changing area.

Proposed activities are expected to occur over the course of two summer seasons and take up to 45 days to complete. Activities are expected to occur in 2011 or 2012, dependent on funding and timing.

Alternative 2

Alternative 2 was developed to be responsive to concerns about the effects of the bathhouse on wilderness and wilderness character. Alternative 2 also responds to concerns about the effect of motorized and mechanized equipment or transportation on wilderness character; no helicopter would be used to transport materials and no power tools would be used for construction. Only primitive tools would be used in the project. Hand tools and other non-motorized tools would be used for all demolition and construction activities.

Alternative 2 was modified here to address people's concerns about cabin location and screening from the warm springs; see Figures 6 and 5 at the end of Chapter 2. The location of the cabin and woodshed were adjusted to provide slightly more separation and screening between the cabin, trail, and spring. Trail construction materials were modified to address concerns about effects on wilderness and to retain Civilian Conservation Corp (CCC) style construction.

Bathhouse

The existing bathhouse walls and roof and the holding tank would be removed, creating an outdoor soaking pool. The exposed face of the existing concrete pool would be faced with stone to provide a naturalistic appearance. Rock or wood decking would be built around the pool for access. Stone from above mean high tide would be used.

A mortared 2 foot by 2 foot stone basin/holding tank for the warm springs source would direct spring water over a cascade of boulders into the soaking pool. This system would serve to stop the flow of warm water into the soaking pool to allow cooling of the pool and draining it for maintenance.

Cabin

The cabin work would be the same in Alternative 2 as described in Alternative 1, a 15' x 17' "Pan Abode" style structure, except that the cabin would be rotated and moved slightly (30 feet or less) uphill from the current location to provide additional privacy for cabin users. The woodshed would be reconstructed between the spring and the cabin to provide screening and a place to keep clothes dry for pool users. The outhouse will be reconstructed.

Trail

Thirty feet or less of new trail will be added to access the new cabin.

Trail reconstruction in Alternative 2 would use local native materials such as Alaska yellow cedar, mineral soil or gravel/rock from above mean high tide where possible depending on

availability onsite. Construction style will include corduroy or puncheon. The resulting trail would contain no boardwalk.

Connected Actions:

- While use of local native materials onsite would be preferred, wood, stone, and/ or gravel from a commercial source in SE Alaska may be boated into the site for trail surfacing, soaking pool facing, and to construct the holding tank. Similar to Alternative 1, approximately 12 cubic yards of stone from above mean high tide or a commercial source may be used in construction if local material is not available.
- Yellow cedar trees up to 500 feet from the trail may be cut and used for corduroy or puncheon. Sound standing dead trees would be selected wherever possible.

Mitigation Measures:

- Mitigation measures similar to Alternative 1 would be used to compensate for the adverse effects caused by the project to historical structures: four Sitka Ranger District historic period (1960-1971) cabins (two pan-abode, two A-frame designs) would be retained into the foreseeable future (as identified in a letter to the State Historic Preservation Officer by the Regional Forester). Site-specifically, photo documentation of the cabin, bathhouse and holding tank, including all elevations and associated features will also occur. Additionally, a portion of the existing carved bath house wall would be re-used in the construction of the new woodshed wall between the pool and the cabin.

Proposed activities are expected to occur over the course of one to two summer seasons and take up to 105 days to complete. Activities are expected to occur in 2011 or 2012, dependent on funding and timing.

Alternative 3

Alternative 3 was developed in response to concerns about relocating the cabin and the effects of that relocation; see Figures 7 and 5 at the end of Chapter 2. Alternative 3 also responds to the effects of motorized and mechanized equipment or transportation on wilderness character. No helicopter would be used to transport materials and no power tools would be used for construction.

Bathhouse

The bathhouse work would be the same as described in Alternative 1.

Cabin

In Alternative 3, the existing cabin, outhouse and woodshed would be replaced in their current locations. The replacement cabin would be the same design as described in Alternative 1.

Trail

The trail reconstruction would include suitable material from the existing cabin and boardwalk trail would be reused to replace some boardwalk and trail structures. The existing boardwalk planks that are not decayed would be reused; the decayed boards would be removed. The trail would include less stretches of boardwalk than the existing trail.

Puncheon or corduroy would be constructed where insufficient quantities of boards are available.

Connected Actions:

- While use of local native materials onsite would be preferred, wood from a commercial source in SE Alaska may be boated into the site for trail surfacing. Approximately ten cubic yards of stone from above mean high tide or from a commercial source may be used in construction as described in Alternative 1.
- Yellow cedar trees up to 500 feet from the trail may be cut and used for corduroy or puncheon. Sound standing dead trees would be selected wherever possible.

Mitigation Measures:

- Mitigation measures would be the same as Alternative 1

Proposed activities are expected to occur over the course of two summer seasons and take up to 105 days to complete. Activities are expected to occur in 2011 or 2012, dependent on funding and timing.

Alternative 4

Alternative 4 was developed in response to concerns about the cost and effect of replacing the cabin and the effect of relocating the cabin; see Figures 8 and 5 at the end of Chapter 2. Alternative 4 also responds to the effects of motorized and mechanized equipment or transportation on wilderness character and the effects of relocating the cabin. No helicopter would be used to transport materials and no power tools would be used for construction. Suitable material from the existing bathhouse would be reused to replace some boardwalk and trail structures. The existing boardwalk planks that are not decayed would be reused; the decayed boards would be removed from the trail.

Bathhouse

The bathhouse work would be the same as described in Alternative 1.

Cabin

The existing cabin would be reconstructed in its current location. The cabin would likely be jacked up off its foundation; the floor, foundation, and if needed, the bottom logs would be replaced. Interior shelving and countertops would be replaced. No additional trail would need to be constructed to access the cabin. The outhouse and woodshed would be replaced in their current location.

Trail

The trail reconstruction would include suitable material from the existing cabin and boardwalk trail would be reused to replace some boardwalk and trail structures. The existing boardwalk planks that are not decayed would be reused; the decayed boards would be removed. The trail would include less stretches of boardwalk than the existing trail. Puncheon or corduroy would be constructed where insufficient quantities of boards are available.

Connected Actions and Mitigation Measures:

- While use of local native materials onsite would be preferred, wood, stone, and/or gravel from a commercial source from SE Alaska may be boated into the site for trail surfacing, soaking pool facing, and to construct the holding tank. Approximately ten cubic yards of stone from above mean high tide or a commercial source may be used in construction as described in Alternative 1.
- Yellow cedar trees up to 500 feet from the trail may be cut and used for corduroy or puncheon. Sound standing dead trees would be selected wherever possible.
- No helicopter or motorized tools would be used in this alternative.
- A privacy screen or other structure will be created out of existing bathhouse carving covered wood; this screen will be installed in the new bathhouse.

Proposed activities are expected to occur over the course of two summer seasons and take up to 105 days to complete. Activities are expected to occur in 2011 or 2012, dependent on funding and timing.

Alternative 5**No Action**

Under the No Action Alternative the White Sulphur Springs Cabin and Bathhouse, as well as the outhouse and woodshed, would not be replaced or reconstructed and the trail would not be reconstructed, see Figures 3 and 5 at the end of Chapter 2,. Minor deferred maintenance would be completed on the existing facilities as funding allows. The current annual maintenance regime would continue. The expected effect is that the facilities, including all the buildings and the concrete soaking tub, would likely need to be closed and removed within 3 to 10 years (bathhouse within 3 years, cabin within 10) due to unsafe structural conditions. In other words, Alternative 5 does not propose removal of the bathhouse or cabin, but the expectation is that safety concerns would require that these structures be closed and removed within a few years (FSM 2332.1). Similarly, deterioration of the trail and trail conditions would continue and worsen.

Project Design

Best Management Practices (BMPs) are required for implementation in all action alternatives to prevent soil erosion and maintain soil quality (FSH 2509.22). The following applicable BMPs are further described in the Soils and Wetland Resource report for this project:

- 12.5 - Wetland identification, evaluation, and protection
- 12.8 - Oil Pollution Prevention and Servicing/Refueling Operations
- 12.17 - Revegetation of Disturbed Areas
- 14.2 - Location of Transportation Facilities
- 14.3 - Design of Transportation Facilities
- 14.5 - Road and Trail Erosion Control Plan
- 14.6 - Timing Restrictions for Construction Activities
- 14.9 - Drainage Control to Minimize Erosion and Sedimentation

14.18 - Development and Rehabilitation of Gravel Sources and Quarries

16.1 - Recreation Facilities Planning and Location

16.4 – PRACTICE: Trail Construction and Maintenance

Additionally, the following project design elements would apply to all the action alternatives and are additional to those described in the alternatives above.

- The existing outdoor pool would remain as is in all alternatives.
- Water temperature regulation in the tub will occur through a method to divert water from entering the tub, similar to the existing plumbing.
- An additional botany survey before construction begins is recommended to alleviate concerns related to newly listed sensitive plant species.
- *Piperia unalascensis*, slender-spire orchids sometimes grow at the base of cedar trees. Cutting trees to the ground is not recommended. This type of ground disturbance could damage or destroy these plants if they are present. Cover cut stumps with moss.
- All structures shall be built of materials which blend and are compatible with the immediate and surrounding wilderness landscape. Building materials are expected to include yellow and red cedar and stone typically found on the site.
- All stone will only be removed from the Federal lands.
- Equipment and materials used would be clean and free of invasive plant seeds and materials to avoid the spread of invasive species.
- All equipment and tools that come into contact with aggregate or are used at the work site would be thoroughly washed before coming to the area (at a site where weed spread is not a concern) to remove all soil, debris, and other material that could contain weed seed or weed parts.
- Forest Service personnel and contractors will be made aware of the risks that activities cause for introduction and spread of invasive plants. During construction the clover patch in front of the cabin will be covered with tarps or roped off to help prevent weed seeds or contaminated soil from being transported to the trail or new cabin site. Dandelion plants in the project area will be dug up and disposed of to prevent seed production. The purple foxglove plants should be carefully dug up and handled with gloves (foxglove is toxic) and disposed of to prevent seed production.
- Do not block streams or impede drainage with waste material from construction.
- Minimize traffic across any wetlands outside of the construction area as the soils there are easily rutted.
- Trail width would be kept to 24 inches or less.
- When excavating borrow material or harvesting cedar for trail reconstruction use only areas cleared by archaeologists, botanist, and soil scientist.
- Any bared soil from any phase of construction or borrow source should be rehabilitated with stockpiled topsoil or duff. Large areas (generally over 100 square

feet) of bared mineral soil, especially areas adjacent to streams should be seeded or replanted. Plants native to the area originating near the project will be used for any restoration of revegetation work.

- Borrow sources should be as small as possible while still meeting project needs. If possible, make several small borrow pits rather than one large one. Flatten any steep banks of borrow areas when completed.
- Avoid storing any material in wetlands. Stipulations required in the Army Corps of Engineers permit will be met.
- If unanticipated discoveries of cultural resources or items protected by the Native American Graves Protection and Repatriation Act are discovered during implementation, work should cease in the immediate vicinity, and the Contracting Officer's Representative or Technical Representative will be notified and in turn notify Sitka District Archaeologist. The Sitka Ranger District in consultation with the appropriate Native organization and the State Historic Preservation Office will determine a course of action.
- If any previously undiscovered endangered, threatened or sensitive species or key habitat for Management Indicator Species (MIS) are encountered at any point in time prior to or during the implementation of this project, a district biologist would be consulted and appropriate measures would be enacted.
- If a goshawk nest is identified in the analysis area, a district biologist must be contacted. The Forest Plan directs for the development of a nest buffer and stopping of any continuous disturbance (in particular, use of a helicopter) likely to result in nest abandonment within 600 feet of the active nest from March 15-August 15. Forest Plan standards and guidelines will be applied.
- The cabin and bathhouse would likely be closed during structural work; the trail may be closed at times for safety. Individuals working on the structures may use the cabin or they may camp in the vicinity during activities.

Project Monitoring _____

The project area will be monitored for invasive plants for 2 years after completion of the project.

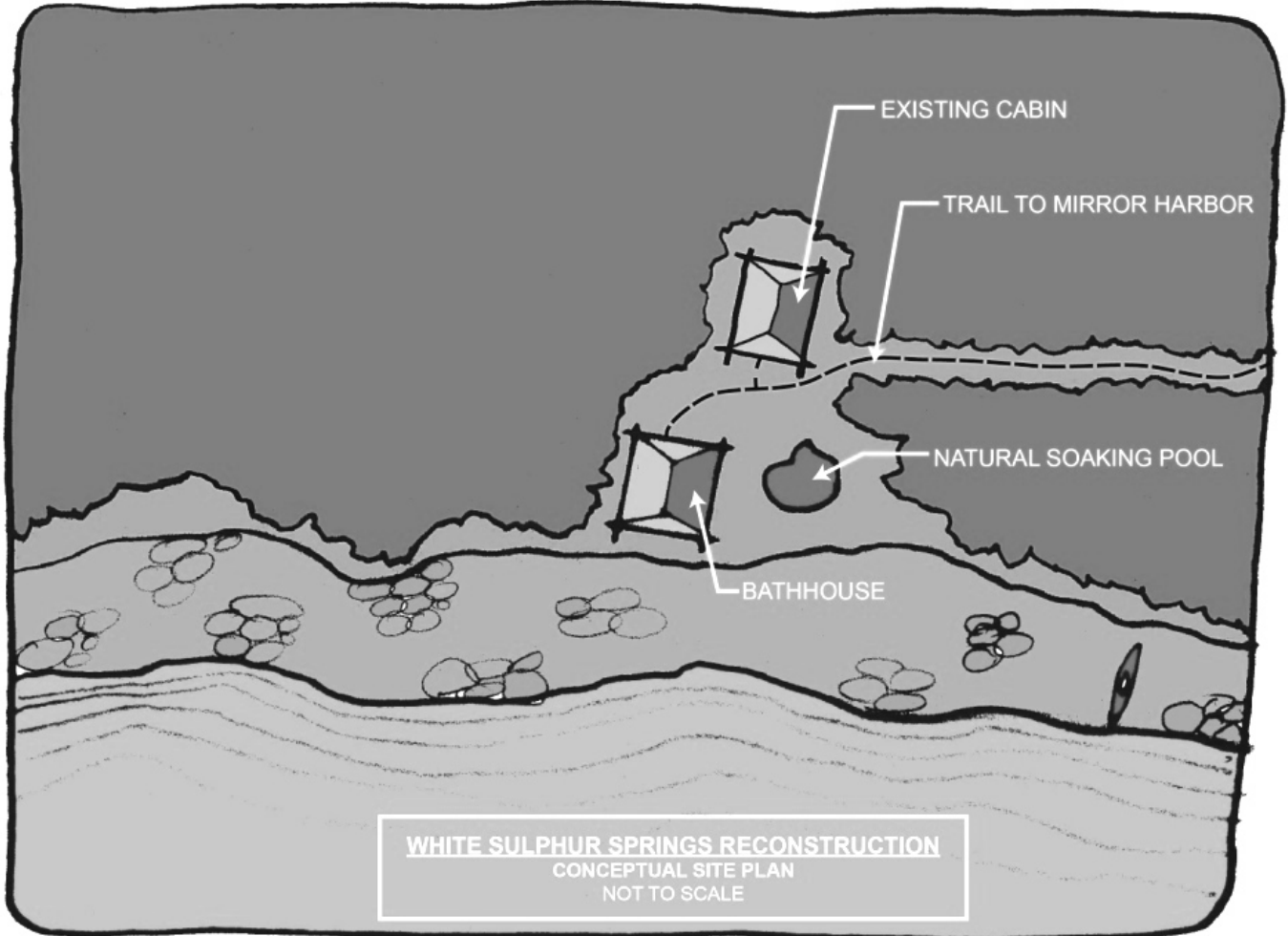
Dispersed camp sites should be evaluated to determine changes and level of use every two years.

Any changes in condition of the warm springs pools and buildings will be monitored during annual maintenance visits. Any unauthorized structures will be removed.

Comparison of Alternatives _____

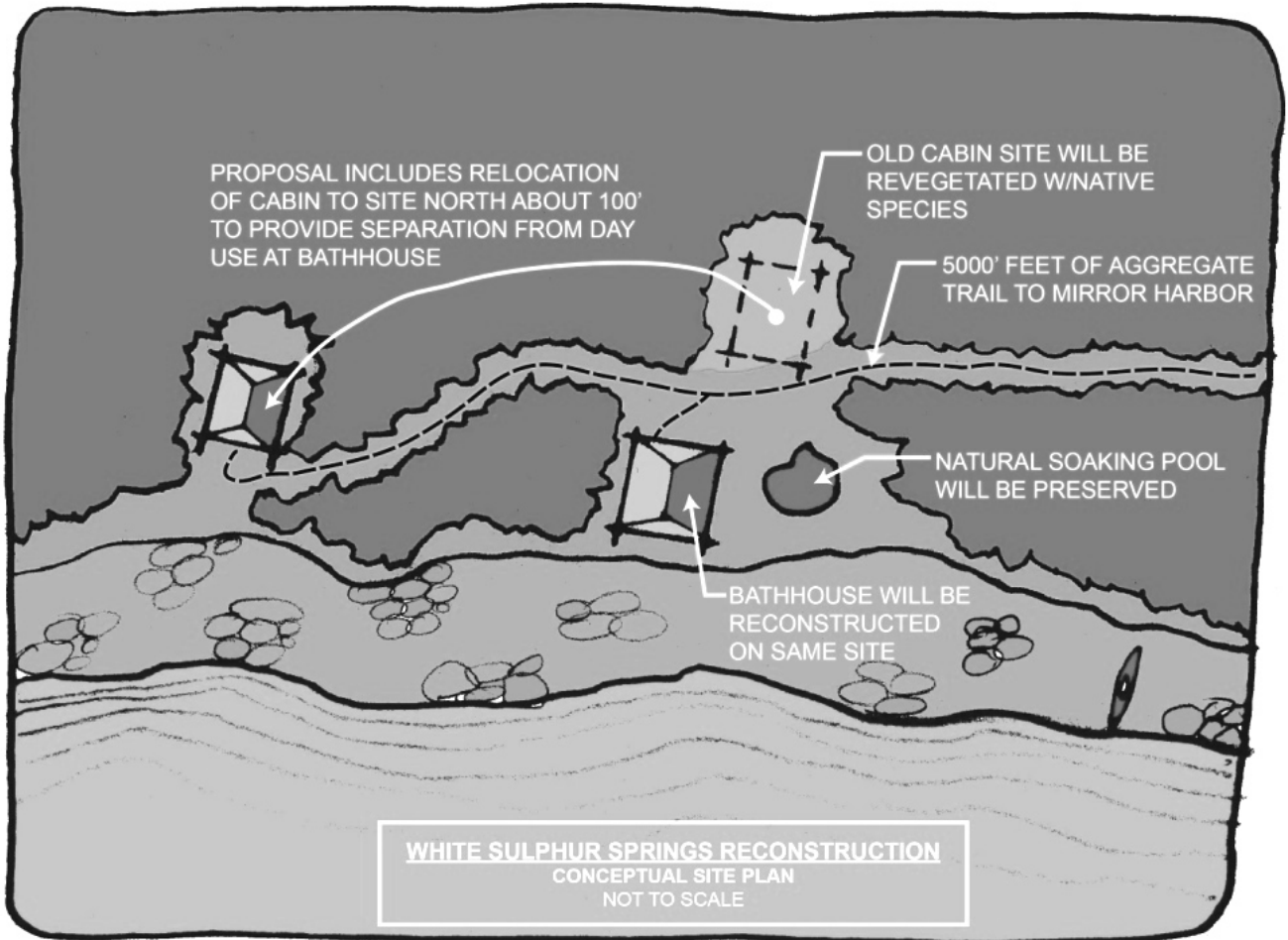
A summary of the alternatives by activity is displayed in Table 1 in "Alternatives" (above). The effects of the alternatives are displayed in Chapter 3.

Figure 3: Existing Bathhouse, Cabin, Trail Site (Alternative 5 and location of structures in Alternative 4)



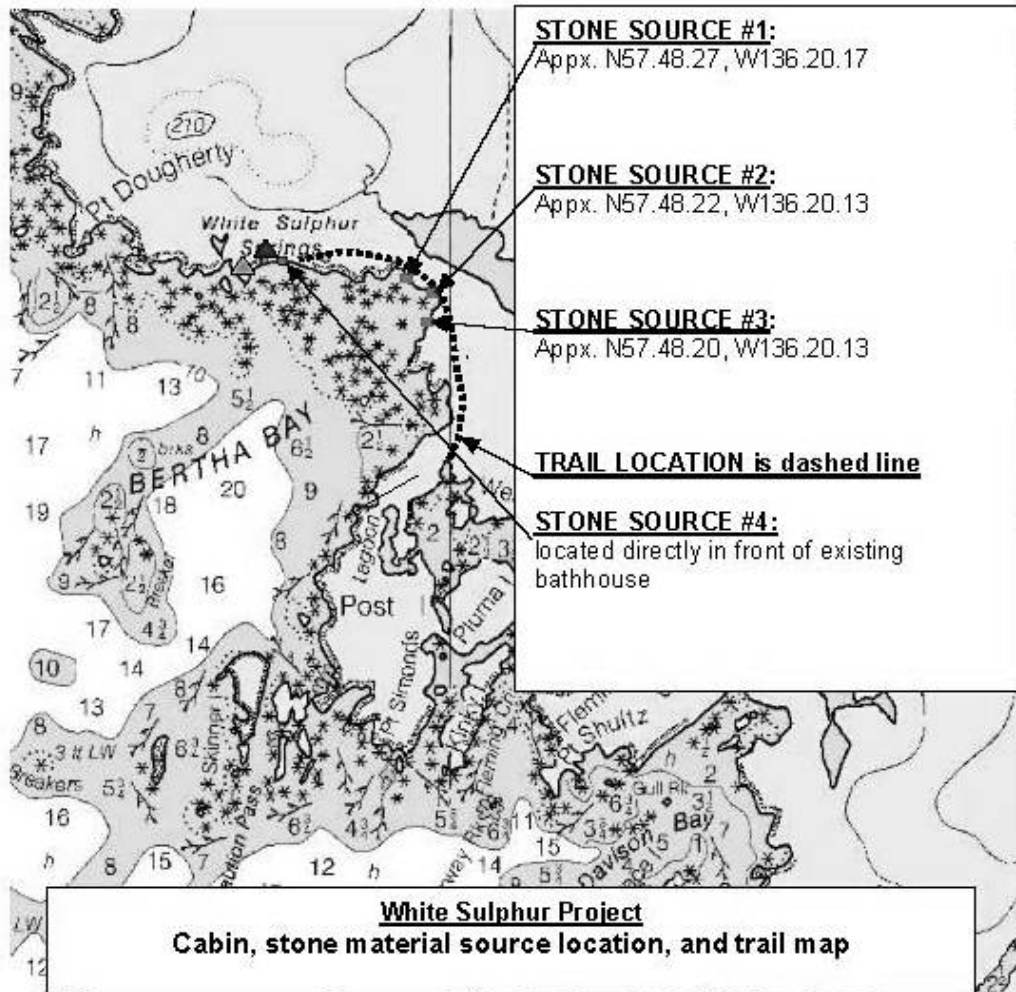
ALTERNATIVE 5
NO ACTION

Figure 4: Alternative 1, Proposed Action



ALTERNATIVE 1

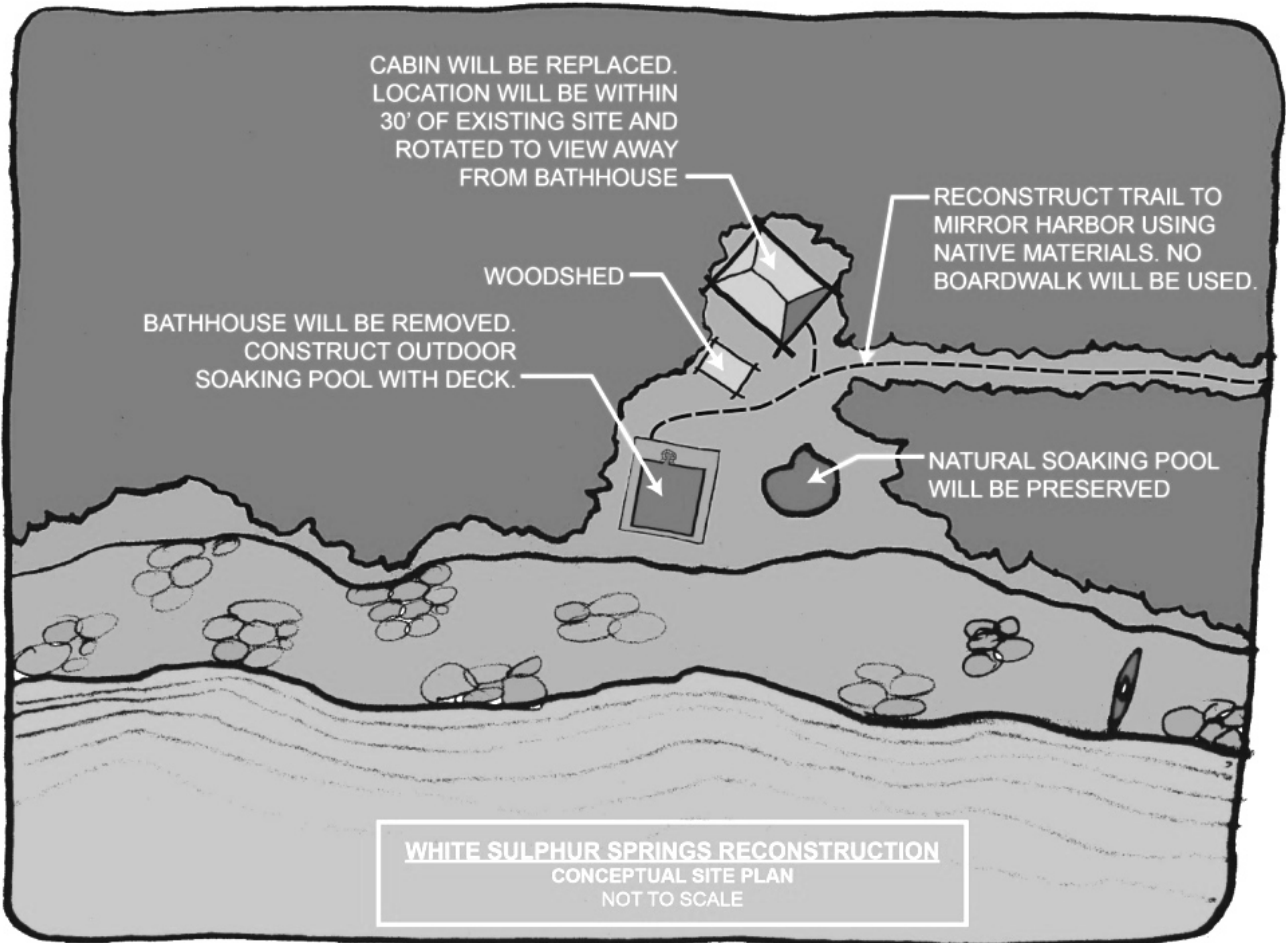
Figure 5: Rock Sources, Cabin, and Trail Locations – All Alternatives



▲ Existing (Alternatives 3, 4, and 5) Cabin Location; Alternative 2 cabin location would appear similar to the existing spot at this scale

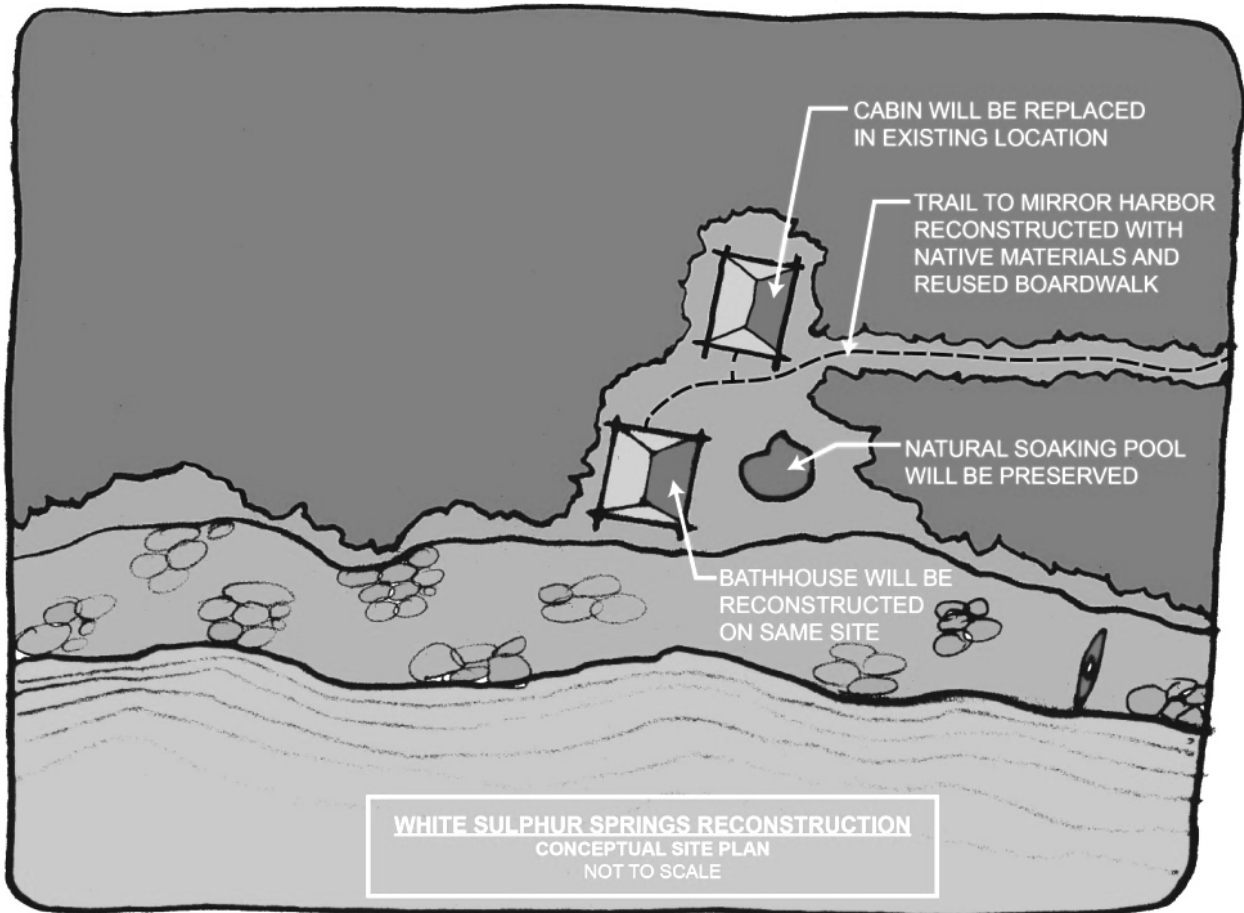
▲ Alternative 1 Cabin Location

Figure 6: Alternative 2



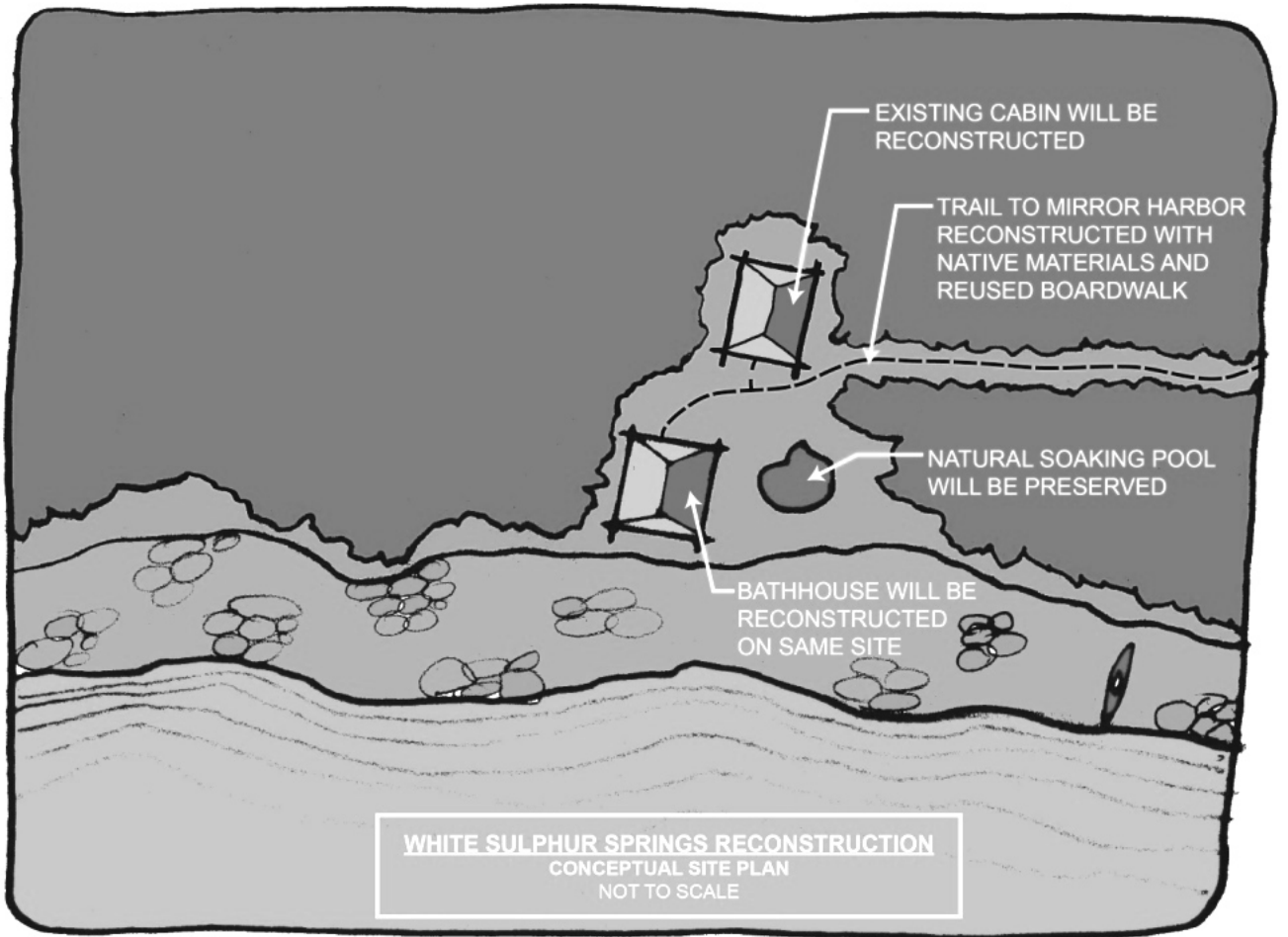
ALTERNATIVE 2

Figure 7: Alternative 3



ALTERNATIVE 3

Figure 8: Alternative 4



ALTERNATIVE 4

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Introduction

This section briefly describes the affected environment of the project area and the potential changes to the environment due to implementation of the alternatives. It also presents analytical basis to the comparison of alternatives presented in Table 1. Direct, indirect, and cumulative effects are disclosed. Effects are quantified where possible, but qualitative discussions are also included.

The following discussion of resources and potential effects associated with each of the alternatives takes advantage of existing information included in the Forest Plan Final Environmental Impact Statement (EIS); other project Environmental Assessments (EAs); project specific resource reports and related information. Where applicable, such information is briefly summarized and referenced to minimize duplication.

The planning record for this project includes all project specific information, including resource reports and other results of field investigations used to support the analysis and conclusions in this EA. These reports, Water and Fisheries Resource, Management Indicator Species, Sensitive Plant Species, and Heritage Resources, as well as a Biological Evaluation for Threatened, Endangered, and Sensitive Species were prepared for the White Sulphur Cabin, Bathhouse, and Trail project. This information was used to reach the conclusions in this EA. The planning record also contains information resulting from Tribal correspondence and public involvement.

Analyzing Effects

This section summarizes the physical, biological, social and economic environments of the affected project area and the potential changes to those environments due to implementation of the alternatives. The Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA) includes a number of specific categories to use for the analysis of environmental consequences. Several of these categories are applicable to the proposed project and alternatives. They form the basis of much of the analysis that follows and are explained below.

Direct, Indirect, and Cumulative Effects

Direct environmental effects occur at the same time and place as the initial cause of action. Indirect effects occur in time or are spatially removed from action. Cumulative effects result from the incremental effects of actions taking place over a period of time.

Unavoidable Adverse Effects

Implementation of any alternative may cause some adverse environmental effects that cannot be effectively mitigated or avoided. Unavoidable adverse effects can result from managing one resource at the expense of others. The application of Forest Plan Standards and Guides, Best Management Practices (BMPs), project specific design, mitigations, and monitoring are all intended to limit the extent, severity, and duration of potential effects.

Short-term Use and Long-term Productivity

Short term uses and their effects, are those activities that occur annually or within the first few years of project implementation. Long term productivity refers to the capability of the land and resources to continue producing goods and services long after the project has been implemented. Under the Multiple-Use Sustained Yield Act and the National Forest Management Act, all renewable resources are to be managed so that they are available for future generations. Because the project area is a Wilderness Area, it is not designated for long term timber productivity.

Irreversible and Irretrievable Commitments

Irreversible commitments imply a loss of future options. The term “irreversible commitment” applies primarily to the effects of an action on the use of non-renewable resources such as minerals or cultural resources or to the qualities of resources, for example soil productivity, that are renewable only after long period of time. If on site materials such as rock, ash, or soil are used for trail replacement, there would be an irreversible commitment of those resources.

Irretrievable commitments apply to the loss of production or use of a natural resource. For example, while an area is covered by a building, the trees that would have grown on the site are irretrievably lost. Negative effects to wilderness character such as solitude or undeveloped are irretrievable commitments of those resources.

A discussion of how these terms should be used when considering environmental consequences is found in the Code of Federal Regulations (40 CFR 1502.16). The definitions above are found in the Forest Service Handbook (FSH 1909.15.05).

Analysis of Effects

The analysis of effects has been organized with Recreation, Wilderness, and Heritage at the beginning to reflect the importance of the significant issues identified in Chapter 1, followed by other resources in alphabetical order.

Recreation _____

Affected Environment

Both the bathhouse and cabin, which are approximately 50 feet apart, were built in 1966 and have structurally deteriorated. Both are Pan Abode log style structures. The southwest corner of the cabin is settling and the floor is rotting near the door. End joints on the walls show signs of rot. The cabin has a Styrofoam block foundation which is not structurally tied to the ground. A deteriorating outhouse and woodshed are also located on the site. Fresh water for cabin users and bathers is collected in a rain barrel and gutter system from the bathhouse roof. Another water source is the tannic muskeg water located near the cabin site.

The bathhouse is perched over bedrock on a foundation of cinderblock piers. The bathhouse has decay in the foundation and in the structure. The first five courses of the southeast corner wall timbers are rotting, at least two bottom timbers around the entire perimeter have substantial rot and are in need of replacement, and portions of the concrete block foundation are crumbling. The springs come from fissures in the bedrock just above the high tide line. The concrete making up the holding tank and soaking tub were made with local materials and are now crumbling, leaking through patches, and draining onto the building sills; this is further degrading the building. The rafters have fungal growth and all doorways are showing signs of decay. The

holding tank for the warm water leaks in spite of continued patching. The bathhouse interior has a changing room with bench and a wood deck that surrounds the soaking tub. Interior walls of the bathhouse have carvings of many boat names and people that have visited the springs since the bathhouse was built. In addition to the bathhouse, there is a second warm springs pool adjacent to the site that is not covered by a structure. A large fire pit with a bench is located adjacent to the bathhouse.

In the 1980's high winds blew off the entire roof of the bathhouse, and in 2002 high winds blew the front doors into the warm springs pool and buckled the east and west walls. These structural failures have been repaired in a manner that probably did not resolve structural inadequacies.

The current White Sulphur cabin area displays some use impacts to the site. Site damage such as a tree burned by the campfire, indiscriminate chopping on trees or tree removal adjacent to the cabin site have occurred at this site.

The 1 mile long trail leading from the anchorage at Mirror Harbor to the cabin and bathhouse is the most heavily traveled wilderness trail on Sitka Ranger District. An average of 86 groups rent the cabin annually and many use the trail to access the cabin. An estimated 6 groups per week use the warm springs during the summer season. Group size averages 4 people. During rough sea conditions bathers anchor in Mirror Harbor and hike the trail. Because of the popularity of the springs and access to the Districts highest use wilderness cabin, this trail receives far more use than any other wilderness trail on the District. The original trail was built around 1935. The current trail is a composite of split puncheon, boardwalk, gravel, organic muck, and boards found on the beach or left over from cabin construction. The trail has several bridges and slippery puncheon that are in need of replacement. Some structures are rotting; other sections have deep mud holes. People take evening soaks and spend the night on their boats in Mirror Harbor. The bathers journey back to Mirror Harbor in the trails current condition presents hazards in the dim evening light. The White Sulphur Trail is a class 3 trail. Trail classes are general categories reflecting intended design and management standards. Trail Class Attributes include tread and traffic flow, obstacles, constructed features, signs, and typical experience.

The bathhouse at White Sulphur is used by people renting the cabin, outfitter/ guides and their clients, fishermen, kayakers, boaters, campers, and day boaters from Pelican visiting for a bath. The cabin is rented, on the average, 86 nights per year. It is the 9th highest use cabin out of 25 cabins on Sitka Ranger District. Approximately 82 guided clients use the bathhouse per year. This number is far below the 266 outfitter/guide clients allocated annually in Shoreline EIS decision.¹

An average of 30-50% of the nights reserved at the cabin are by people from southeast Alaska (other than Sitka), 8-30% are Sitkans, 4% are from other parts of Alaska, and 13-14% are from outside of Alaska. Unguided day use numbers of the area are anecdotal and estimated from cabin log entries at 6 parties per week during the summer months. Conflicts between cabin renters and bathhouse users have been documented in cabin logs; however, positive interactions

¹ The decision on the Shoreline EIS currently determines management of outfitter/guide use of the Sitka Ranger District shoreline area consistent with the Forest Plan. Management of outfitters and guides is necessary to balance commercial and non-commercial recreation opportunities, reduce potential for user conflict, and maintain quality recreational experiences for all users without degrading forest resources. White Sulphur is located in Use Area 04-15 West Chichagof-Hoonah/Sitka Ranger Districts. As stated in Shoreline EIS, outfitter/guide use will not displace unguided users at the White Sulphur Springs bathhouse.

between groups have also been documented. Dispersed campsites located at a minimum of 500 feet from the cabin site are used by tent users attracted to the area by the springs. Four dispersed sites have been documented in the vicinity of the bathhouse, however only two show signs of frequent use.

Besides soaking in the warm springs visitors may hike the rugged coastline or inland muskegs. Dry Pass Trail intersects the trail to Mirror Harbor. Dry Pass Trail, built by the CCC leads to Sealevel Slough, where people fish for salmon, bear watch, or just enjoy the hike.

Effects to recreation were evaluated using the following criteria and conditions found in the ROS Users Guide, the Forest Plan, Forest Service Manual (FSM) direction and concerns documented during scoping:

Recreation Opportunity was compared between alternatives using consistency with Semi-primitive motorized ROS class and with wilderness LUD.

ROS conditions –

- Moderate probability of experiencing solitude, closeness to nature, tranquility. High degree of self reliance, challenge and risk. (FSM 2311.1 –ROS Users Guide)
- Predominantly natural appearing environment.(FSM 2311.1 –ROS Users Guide)
- Low concentration of users but often evidence of others.(FSM 2311.1 –ROS Users Guide)
- Minimum on site controls and restrictions present but subtle.(Site development 2 – FSM2300)
- Vegetative alterations very small in size and number widely dispersed and visually subordinate. (FSM 2311.1 –ROS – R6-REC-118-94-chart)
- Access for people with disabilities is difficult and challenging. (FSM 2311.1 –ROS – R6-REC-118-94-chart)
- Rustic and rudimentary facilities primarily for site protection. No evidence of synthetic materials. Use undimensioned native materials. .(Site development 2 – FSM2300)

LUD conditions –

- Maintain existing public use cabins and/or shelters at present or improved condition. Consider additional public use cabins and/or shelters only when needed for health and safety purposes (ANILCA 1315(d)).
- Appurtenant structures to the cabin or shelter will be limited to a toilet, a woodshed, and minimum structures necessary for resource protection and accessibility.(Forest Plan REC3(E3))
- Reconstruct and maintain trails so that they appear to be part of the Wilderness environment and not an intrusion upon it. (Forest Plan TRAI1(C1))
- Provide protection to resources.(Forest Plan TRAI2(A4))

Health and Safety – (External Scoping comments)

- Potential for conflict between cabin and bathhouse users.
- Accessibility of facilities for recreationists
- Safety of facilities on the site.

Trail Management Objectives – trail class, maintenance standards (FSM 2353.12)(FSH 2309.18)

- Hazards do not exist along the trail
- Trail development is consistent with ROS

Site impact – (External Scoping comments)

- Potential for user created impact
- Project related impact

Environmental Consequences

Direct/Indirect Effects

Alternatives 1, 2, 3, 4, and 5

Each alternative has both negative and positive effects to Recreation.

All action alternatives improve recreation opportunity, health and safety, meet trail management objectives, and reduce site impacts by reconstructing the trail and improving the site facilities to a varying extent.

All action alternatives eliminate deferred maintenance, decrease the overall tread width on the trail in wet areas where visitors have widened the trail and reduce soil erosion and vegetation impacts along the trail corridor.

All action alternatives benefit the unique warm springs experience offered at White Sulphur by continuing to provide this opportunity. Although Alternative 2 proposes bathhouse removal, the opportunity to soak in the warm springs is maintained with outdoor pools. The remaining alternatives retain the bathhouse bathing experience that has been enjoyed for many years.

Alternative 1 will displace a little used dispersed campsite site located approximately 30 feet north of the bathhouse. Additional trail to access the new cabin location will pass directly adjacent to the site. Bathers walking between the cabin and bathhouse would increase disturbance to campers.

The work will take more time in Alternatives 2 through 4, because of restrictions on motorized/mechanized tools to complete work. Availability of facilities for recreational use at White Sulphur will be reduced during the longer period of construction. This will reduce revenue from cabin rental and outfitter/guide use. Duration of work on the facilities will be shorter in Alternative 1 because of the planned use of helicopter and motorized tools. Less time will be needed to complete work on the cabin in Alternative 4 since the majority of the structure will remain intact.

Green Top cabin located on nearby Yakobi Island may receive increased use during the period when the project at White Sulphur Springs is being implemented. Use or availability of dispersed campsites in the vicinity of White Sulphur may decline because of construction activities or displacement by workers.

ROS conditions –

Alternative 1 requires the most vegetative site disturbance. The 150 feet of additional trail to access the new site and relocating the outhouse and woodshed in proximity to the new cabin all require excavation and vegetation removal. The new bathhouse design will have a more rustic appearance than the existing structure and will be barrier free but will be approximately 100 feet away from the cabin. Increased spacing between the cabin and bathhouse will create more of a hardship for the elderly or disabled to travel back and forth.

Alternative 2 most closely meets the rustic, rudimentary, and naturalistic requirement for this ROS. Removing the bathhouse, building an outdoor pool, and removing boardwalk from the trail to be replaced with native wood all meet the ROS intent. Some vegetative disturbance will occur when the cabin is moved no more than 30 feet from its current location and with the increase in cabin size, however no trees will be removed. A small bathhouse changing area will be extended from the woodshed. Sections of the existing bathhouse wall that has boat name carvings will be used to construct the changing area. Saving these carvings will help retain the local fishing culture associated with the bathhouse. Access into and around the tub may be more challenging for the elderly or people with disabilities. Since this alternative uses native wood for the trail reconstruction it will have the largest effect on trailside vegetation.

Alternative 3 replaces both structures and improves the trail using existing suitable boardwalk. Because the cabin and woodshed will be replaced in the same location little additional site or vegetation disturbance will occur except for the cabin size increase. Less on-site native material will need to be used for trail reconstruction.

Alternative 4 completes deferred maintenance on the cabin. The cabin footprint will not change since the cabin size will remain 12' x 14'. The trail will be reconstructed using existing suitable boardwalk and suitable material from the existing bathhouse. On site native materials needed for trail reconstruction may be slightly more than Alternative 3 because lumber from the existing cabin will not be available for reuse.

Alternative 5 (no action) will have no effect on existing vegetation or conditions currently found on the site, however erosion of trailside vegetation will continue from hikers avoiding failing trail structures.

LUD conditions –

All alternatives with the exception of Alternative 2 replace or maintain existing buildings in present or improved condition. Alternative 2 removes the bathhouse (a non-appurtenant structure). In Alternatives 1, 3, 4, and 5 using boardwalk materials on the trail is an intrusion upon wilderness value. Eventually gravel sections of the trail in these alternatives will be covered with forest litter and more closely appear to be part of the Wilderness. Native material used in Alternative 2 most closely meets the intent of trail wilderness construction by eliminating boardwalk. All alternatives with the exception of Alternative 5 provide protection of resources by improving the trail, with the exception of tree removal which is addressed in the ROS section.

Health and Safety –

Moving the cabin in Alternative 1 may reduce encounters and potential conflict between cabin renters and those using the bathhouse while providing more privacy to both groups. Dispersed camping however, may increase close to the bathhouse since the cabin and related structures will not be occupying that space, again creating opportunity for conflict. Design plans include

revegetating the abandoned cabin site and placing stones in the area to make it difficult to camp. Exposure time for bear encounters with people traveling between the cabin and bathhouse will be increased. In Alternative 2 the cabin will be rotated slightly with a view to the south and not directly toward the tub. The woodshed with attached changing area will be rebuilt and placed between the cabin and the new outdoor pool to provide screening for bathers. Access to the facilities will be improved in all action alternatives. The cabin would remain available for safety in all action alternatives. Because deferred maintenance will continue to accumulate and will be addressed only as budget allows in Alternative 5, structures will become unsafe over time, requiring their removal. If no structures remained at White Sulphur, no buildings at the site will be available for emergency shelter. Green Top Cabin and several privately owned cabins are located in Green Top Harbor on the southwest tip of Yakobi Island approximately 6 miles to the northwest of White Sulphur; however crossing Lizianski Inlet to access Green Top can be hazardous due to conflict between tidal currents and open ocean swells. Few structures are available for emergency use in the West Chichagof/Yakobi Wilderness. A high degree of self reliance, challenge and risk are criteria and conditions used to describe the Semi-Primitive Motorized ROS that is designated along the shoreline of this Wilderness.

As part of the project, we will work to disseminate the information about the changes to the site. This includes informing guidebook producers, releasing statements to local news sources, and posting it on the Forest and cabin reservation websites.

Trail Management Objectives –

In Alternative 5 the trail will soon not meet standard because of the poor condition of some of the trail structures. All action alternatives will meet the criteria by reconstructing the trail. Only Alternative 2 will meet the design criteria for the ROS class. Over time the appearance of the gravel trail in Alternative 1 will meet the criteria as the trail is covered with forest litter.

Site impact –

Potential for dispersed camping near the bathhouse is increased in Alternative 1 because the cabin will not be on site to discourage dispersed camping there. Moving the cabin and building more trail will cause additional impacts to the site by increasing the site footprint. Developing a new site for a cabin and related structures creates opportunity for use impacts to the site. Past experience shows that site damage such as cutting trees for campfire burning, indiscriminate chopping on trees adjacent to the site, and hammering nails into trees for hammocks, or tying lines frequently occurs. This has happened to some extent at the current site.

People using the bathhouse and cabin from nearby communities have strong attachments to the type of experience that is offered there currently. With the removal of the bathhouse in Alternative 2, risk of having makeshift shelters built over the springs may increase as people adjust to a bathing experience exposed to weather. Site impact in Alternatives 3 and 4 will not change from the existing condition except for short term effects from demolition and replacement of facilities.

Cumulative Effects

Alternatives 1, 2, 3, 4, and 5

There are no other activities proposed within the analysis area or within the West Chichagof-Yakobi Wilderness. Therefore, no cumulative effects to recreation opportunity are noted beyond those described for the White Sulphur Springs project.

Wilderness

Affected Environment

The White Sulphur bathhouse and cabin facilities and trails are located inside the West Chichagof-Yakobi Wilderness Area boundary. This wilderness area was designated by Congress under the Alaska National Interest Lands Conservation Act of 1980. The attraction to this area is White Sulphur Warm Springs which is located in the wilderness. Due to the popularity of the springs and the proximity of the soaking pools to the cabin, there is concern that the wilderness experience may be degraded for some cabin and springs users.

Wilderness Character:

Effects to wilderness character will be measured using the following qualities:

Untrammeled - Discuss the degree to which the components or processes of ecological systems are intentionally controlled or manipulated.

Undeveloped - Identify how human developments will not be evident and wilderness will continue to be in contrast to other areas of increasing mechanization. Include the effects of the use of any motorized equipment, mechanical transport, structures, or installations on maintaining the undeveloped quality of wilderness character.

Natural - Describe the potential for protection, impairment, or restoration of natural conditions (air, water, soil, wildlife, fish, plants, etc.) including endangered, threatened, or rare species, natural biological diversity, and self-regulating ecosystems. Discuss effects related to protecting natural conditions within the regional landscape (i.e. insects, disease, or non-native species).

Outstanding opportunities for solitude or a primitive and unconfined type of recreation - Identify how opportunities for visitors to experience solitude or a primitive and unconfined type of recreation will be protected or impaired. Describe the effects that will be noticeable to the visitor and that could affect their experience in wilderness. Include effects on visitors from the use of motorized equipment, mechanical transport, landing of aircraft, structures, or installations.

Unique components that reflect the character of this specific wilderness - Identify what values of this wilderness are not accounted for in the above qualities, and describe the effects to these additional values.

Environmental Consequences

Direct/Indirect Effects

Alternatives 1, 2, 3, 4, and 5

All action alternatives improve the natural quality of wilderness character by reconstructing the trail. This action decreases the overall tread width in wet areas where visitors have widened the trail and reduces soil erosion and vegetation impacts along the trail corridor.

All action alternatives benefit the unique hot springs experience offered at White Sulphur by continuing to provide this opportunity. Although Alternative 2 proposes bathhouse removal, the opportunity to soak in the warm springs is maintained with outdoor pools.

All action alternatives degrade the undeveloped, untrammled, and unconfined recreation qualities by continuing to have structures and improvements at this site. Alternatives 1 and 2 also have a negative impact on natural quality from additional vegetation and site disturbance from moving the cabin.

Alternatives 1, 3, and 4 replace the bathhouse, which degrades the primitive and unconfined qualities of recreation. The bathhouse and associated amenities provide convenience and comfort rather than challenge and risk.

Alternative 2 removes the bathhouse; this provides a more primitive and unconfined recreation experience and a less developed site. The effect of human development is still present with the open pool design, but much less so than if the bathhouse was still in place. There are no boardwalk sections along the trail, which would detract from the primitive setting. There would be negative effects to the natural quality from additional vegetation and site disturbance by moving the cabin. However, the new location would provide greater separation from the springs, improving opportunities for solitude, and improve the visual aspects of the site by vegetative screening.

As discussed in Chapter 1 of this EA, the management of the West Chichagof-Yakobi Wilderness Area is regulated by a number of laws, regulations, rules and direction, notably the Wilderness Act, ANILCA and Forest Service direction. Within these regulations, there is ambiguity with interpretation of the laws and policy, and thus difficulty in determining the legality of replacing the White Sulphur bathhouse in the West Chichagof-Yakobi Wilderness Area. One interpretation would not allow for bathhouse replacement because the bathhouse is not a cabin (or a shelter under Forest Service direction). In some people's minds a cabin or shelter is a structure designed to allow you to get warm and sleep. These individuals feel that a bathhouse does not fit that description, that ANILCA does not have an allowance for bathhouses, and that a bathhouse is for comfort and convenience, not safety. Another interpretation of these laws and policy is that ANILCA provisions exempt the pre-existing bathhouse structure from portions of the Wilderness Act, thus allowing for bathhouse replacement.

Untrammled

Alternative 1 (Proposed Action), Alternative 3, and Alternative 4 - The replacement bathhouse continues to degrade the untrammled quality of wilderness by diverting the natural flow of water from the spring into a manmade holding tank, which then flows out onto the ground and resumes its free flowing course. The cabin and trail do not impact the untrammled quality of wilderness character.

Alternative 2 – Removing the bathhouse and constructing an outdoor pool continues to degrade the untrammeled quality of wilderness by diverting the natural flow of water from the spring into a manmade holding tank, which then flows out onto the ground and resumes its free flowing course. The cabin and trail do not impact the untrammeled quality of wilderness character.

Alternative 5 (No Action) – The existing bathhouse would continue to divert water into a holding tank, having a negative effect on the untrammeled quality of wilderness character. The cabin and trail do not impact the untrammeled quality of wilderness character.

Undeveloped

Alternative 1 (Proposed Action) - Structures in wilderness degrade the undeveloped quality of wilderness character. Replacing the buildings and reconstructing the trail continues to keep human developments obvious and visible to visitors. In addition, the new cabin design is slightly larger than the existing structure. This increase in size is a negative effect on wilderness character. However, the new bathhouse design would improve upon the undeveloped character by using more rustic materials and design that will blend in more with the natural setting. In addition, moving the cabin would reduce the “complex” of buildings at the springs. The new cabin site would be situated such that it would be less visible from the water when approaching the site and it would not be seen from the springs. The proposed action to limb select trees between the cabin and the beach to improve the view would increase visibility of the cabin from the water.

Regarding the beach gravel trail, whether or not a gravel surface makes human developments more apparent is debatable in this setting. Beach gravel and larger sizes of rock along the shoreline can be seen from the trail and some of this material is found mixed into the forest fringe through which the trail traverses. In addition, it is clear that using gravel would result in less wood structures and, over time, the surface would naturalize by accumulating leaf litter and other vegetative debris. However, the importing of gravel is a fairly permanent improvement and gives some people a more developed “road-like” feeling. The gravel layer may also take years to compact down to a desirable walking surface, which may result in a “noisy” walking experience due to the shifting gravel. This was the case on the Pack Creek trail in Admiralty National Monument, which took approximately five years for the gravel to settle.

This alternative also adds a new section of trail for cabin access, which increases the amount of development in the wilderness.

The Wilderness Act defines a wilderness area as “...land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man’s work substantially unnoticeable...” Helicopter and motorized equipment would provide short periods of disruption to these qualities.

Alternative 2 – Structures are prohibited uses in wilderness that degrade this quality. Removal of the bathhouse moves the site to a more undeveloped state, however the constructed pool and other improvements continue to have an impact. Moving the cabin back about 30 feet would make it less visible from the water when approaching the site. It would still be visible to springs users. The new cabin design is larger than the existing structure. This increase in size is a negative effect on undeveloped quality of wilderness character.

Visually, the primarily corduroy or puncheon trail surface would be an improvement over the existing boardwalk because it would reduce the amount of straight lines and lumber. Also, wood is a material that naturally fits in with this setting. However, there would still be an increase in manmade structures along the trail which would have an overall negative effect on this quality. This alternative also adds a new section of trail for cabin access, which increases the amount of development in the wilderness.

Alternative 3 and Alternative 4 – Structures in wilderness degrade the undeveloped quality of wilderness character. Replacing the buildings and reconstructing the trail continues to keep human developments obvious and visible to visitors. The proximity of the buildings and visibility from shore make this even more obvious to visitors. In addition, the new cabin design used in Alternative 3 is slightly larger than the existing structure. This increase in size is a negative effect on wilderness character. However, the new bathhouse design would improve upon the undeveloped character by using more rustic materials and design that will blend in more with the natural setting.

Visually, the primarily corduroy or puncheon trail surface would be an improvement over the existing boardwalk because it would reduce the amount of straight lines and lumber. Also, wood is a material that fits in with the forested setting. However, there would still be an increase in manmade structures along the trail which would have an overall negative effect on this quality.

Alternative 5 (No Action) – Structures in wilderness degrade the undeveloped quality of wilderness character. The buildings and trail would continue to keep human development obvious and visible to visitors until the structures were removed.

Natural

Alternative 1 (Proposed Action) - With rehabilitation after cabin removal, the impact area at the springs site will decrease in size. However, moving the cabin will degrade the natural quality in the new site due to removal of vegetation and site disturbance at the new location as well as the new section of trail. And it is likely that despite rehab efforts of the old cabin site, the area around the springs will become more prolific with tent campers as there is additional space at the site. The cabin provided a certain level of control over the amount of use that will no longer exist once the cabin is moved.

Trail reconstruction will likely improve the natural quality by decreasing the overall tread width in wet areas where visitors have widened the trail. The reconstructed trail will reduce soil erosion and vegetation impacts along the trail corridor. However, the new section of trail will degrade this quality due to removal of vegetation and site disturbance.

Alternative 2 – Moving the cabin and constructing a new section of trail will degrade the natural quality due to removal of vegetation and site disturbance.

Trail reconstruction will likely improve the natural quality by decreasing the overall tread width in wet areas where visitors have widened the trail. The reconstructed trail will reduce soil erosion and vegetation impacts along the trail corridor.

Alternative 3 and Alternative 4 – The two new buildings will have similar effects on the natural quality as currently exists. The existing facilities preclude vegetation and other natural processes from occurring within their footprints. Trail reconstruction will likely improve the natural quality by decreasing the overall tread width in wet areas where visitors have widened

the trail. The reconstructed trail will reduce soil erosion and vegetation impacts along the trail corridor.

Alternative 5 (No Action) – In the short term, the structures will continue to contain the use to a smaller impact area

Solitude or Primitive/Unconfined Recreation

Alternative 1 (Proposed Action) - All of the facilities degrade the unconfined quality by directing the use of the area to developed facilities. With respect to solitude, social encounters will be reduced between cabin and bathhouse users by moving the cabin away from the bathhouse. However, there will still be encounters between the two user groups and it is likely that despite rehab efforts of the old cabin site, the area around the springs will become more prolific with tent campers. Regarding the primitive quality of wilderness, the bathhouse does not enhance this quality, but instead degrades it by providing convenience and comfort rather than challenge and risk.

In the short term, the use of helicopter and motorized equipment are prohibited uses in wilderness that will impact solitude and primitive recreation. Estimated operating time would be five days. The Wilderness Act defines a wilderness area as "...land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude..." Helicopter and motorized equipment are in stark contrast to these qualities.

Alternative 2 – All of the facilities degrade the unconfined quality by directing the use of the area to developed facilities. However, removing the bathhouse and providing an open pool improves upon the primitive and unconfined qualities. The comfort and convenience that the bathhouse and amenities provide are contrary to wilderness values. Social encounters between cabin and springs users will continue to occur, reducing the opportunities for solitude.

Alternative 3 and Alternative 4 – All of the facilities degrade the unconfined quality by directing the use of the area to developed facilities. The comfort and convenience that the bathhouse and amenities provide are contrary to wilderness values. Social encounters between cabin and springs users will continue to occur, reducing the opportunities for solitude.

Alternative 5 (No Action) – Retaining the buildings will continue to result in visitor encounters among user groups. As the buildings become unsafe to use, the recreation opportunity provided at this site will shift to more tent camping and utilizing the outdoor soaking pool. Although this shift is toward a more primitive experience, the presence of deteriorating structures will likely detract from the overall experience.

For all alternatives, regardless of the configuration and degree of development, maintaining a complex of structures around the warm springs reduces the opportunities for solitude at this site.

Other unique components

Alternative 1 (Proposed Action), Alternative 3, and Alternative 4 - The attraction to this area is the White Sulphur Springs, which is located in the wilderness. These structures and uses were present many years before ANILCA was passed in 1980. Earlier versions of the White Sulphur

cabin and bathhouse predate the West Chichagof – Yakobi Wilderness Area designation by many decades. Visitors value the cabin and bathhouse and the experience it provides. By retaining the bathhouse and utilizing some of the old graffiti boards in the new structure, the unique experience offered at this location for so many years will continue to be provided.

Alternative 2 – Removing the bathhouse changes the experience that has historically been available, however the warm springs experience is still available.

Alternative 5 (No Action) – By taking no action, the buildings will soon become unsafe for the public and the unique experience offered at this location for many years will no longer be provided.

Cumulative Effects

Alternatives 1, 2, 3, 4, and 5

If Alternative 5 (no action) is selected, the structures would eventually become unsafe for public use. At that time, the structures would be removed and the site restored to natural conditions. Without the buildings to contain the use, it is likely that vegetation and soils would be impacted as new campsites develop around the warm springs. In addition, the lack of a toilet would result in human waste impacts and unhealthy conditions for both visitors and the natural resources.

There are no other activities proposed within the analysis area or within the West Chichagof-Yakobi Wilderness. Therefore, no cumulative effects to wilderness character are noted beyond those described for the White Sulphur Springs project.

Heritage Resources

Affected Environment

The proposed project area is located within the High Sensitivity Zones for heritage resources as defined in the Region 10 Programmatic Agreement between the USDA Forest Service, the Advisory Council on Historic Preservation, and the Alaska State Historic Preservation Office (USDA Forest Service 2010).

There have been two previous investigations conducted within this project's area of potential effect (APE). The first project was Section 110 surveys conducted by Michael Hilton in 1993 (Hilton 1993). The second project was conducted by Jeremy Karchut in 2007 and included in the annual report to SHPO as projects conducted under the annual PA. Both projects included field surveys to current standards.

The Forest Service has conducted inventories for this project and consulted with the State Historic Preservation Officer regarding the eligibility of cultural resources recorded as part of this inventory and the effects of this project on those resources.

Two structures within the APE have been evaluated for eligibility to the National Register of Historic Places (NRHP) and found to be eligible. The cabin and bathhouse are historic structures built during a period defined as a significant period in the development of recreation uses on the Tongass National Forest. The period of significance spans 1960 to 1971. Both the bathhouse and the cabin are believed to be from this period. The bathhouse and cabin have been evaluated using the historic context document *Everyone's Cabin in the Woods* by Lantz (2010). This document was prepared as a broad examination of the historic recreation cabins in the Alaska Region. The bathhouse and cabin were determined to be eligible for nomination to the National Register of

Historic Places by the Forest Service in *White Sulphur Springs Cultural Resource Report, Report No. R2010100531024*, Kinsman 2010.

Two other cultural resource sites were recorded during the inventory; the Mirror Harbor Trail (SIT-813) was determined eligible to the NRHP and recreation residence cabin ruins (SIT-801) was determined not eligible to the NRHP.

The trail was originally constructed by the Civilian Conservation Corps (CCC) in 1935 and is eligible for the National Register of Historic Places based on the trails association with that event in history.

We received concurrence on our determinations of eligibility for the sites recorded, with our determination of Adverse Affect for the cabin and bath house portion of this project, and on our determination of no adverse affect for the trail construction portion of this project.

Environmental Consequences

Direct/Indirect Effects

Alternatives 1, 2, 3, 4, and 5

All alternatives (including the long-term effect of Alternative 5, no action) pose an adverse affect to the historic bathhouse structure because the existing historic structure would be removed (now or in the future) as a result of all alternatives. The action alternatives would mitigate the adverse effect on this historic property. This historic bathhouse would be documented in photos. Additionally, an element of the former bathhouse would be saved and used as a structural element at the site in Alternatives 1, 2, 3, and 4.

All alternatives, with the exception of Alternative 4, pose an adverse affect to the historic cabin because the existing historic structure would be removed (now or in the future) in these alternatives. Alternatives 1, 2, and 3 as proposed for this project would mitigate the adverse effect on this historic property by documenting this historic building in photos. Additionally, retaining other cabins on Sitka Ranger District as example structures from this historic period provides a district-wide level of mitigation. Alternative 4 would have No Adverse Affect on this historic property as this alternative proposes to reconstruct the existing cabin. Mitigations to negate the adverse effects on the bathhouse and the cabin have been developed in consultation with SHPO in a memorandum of agreement.

In terms of the trail, Alternative 2 would produce the least effect due to reconstruction using puncheon, corduroy, and mineral soil. Puncheon is the preferred material and method of construction as puncheon was historically used by the CCC. Alternative 2 poses the least effect to the historic nature and value of this trail as no boardwalk is proposed. This alternative would allow the trail to be constructed using rustic style materials either obtained locally or from a commercial source. Choosing a rustic style or method of construction would lessen the effects of new trail construction on this historic site. Alternative 2 would provide a trail that is in keeping with the historic feeling and values that one would associate with the original style of trail construction due to the use of more rustic, "local" materials.

However, these alternatives propose to use both local native materials and some existing boardwalk and cabin materials for trail structures. The list of potential trail materials included in these alternatives includes gravel, wood materials such as puncheon and corduroy, reused boards, and mineral soils.

Reused boards would be the least desirable material to use as they are of a commercially manufactured nature and would stand out as such. Puncheon is the preferred material and was historically used by the CCC. Alternatives 1, 3 and 4 include the use of existing boardwalk and cabin materials for trail structures

Alternative 1 proposes to use portions of the existing cabin and boardwalk to create structures (bridges and boardwalk) and much of the trail will be gravel constructed trail. While gravel trail construction is not in keeping with the historic rustic style of trail construction that one would expect from a CCC trail, the initial effect to the historic feeling and nature of a gravel trail would become less evident over time. Alternatives 3 and 4 will have similar effects to the historic values of this trail as Alternative 1 only that the effects would be slightly mitigated by reducing the amount of gravel used. Reconstruction of the trail would pose no adverse effects to the historic value or eligibility of this trail because the work would not affect the trail's association with its event in history. Though reconstruction would affect materials and look of the trail, this trail was not considered eligible based on its design or construction; thus a change in design or construction does not affect its eligibility. Alternative 5, the No Action Alternative would pose no adverse affect to the trail.

Indirect effects are not expected due to the intensive nature of this inventory, however there is still a possibility that sites yet undiscovered may still exist in the project area. Indirect effects are not expected during trail construction the trail corridor was surveyed for cultural resources resulting in one the trail being identified as historic.

SHPO concurred with this determination of Adverse Affect for the cabin and bath house portion of this project, and with our determination of no adverse affect for the trail construction portion of this project in a letter addressed March 7, 2011. Mitigations to negate previously mentioned adverse affect were proposed in the report. The Forest Service has developed a Memorandum of Agreement with the State Historic Preservation Officer (SHPO) which addresses mitigations to negate the adverse affects of this proposed undertaking to these eligible cultural resources.

Cumulative Effects

Alternatives 1, 2, 3, 4, and 5

Cumulative effects to cultural resources are not expected.

Fisheries

The White Sulphur Cabin and Bathhouse project is located in Value Comparison Unit (VCU) 2670. The VCU is often defined as the analysis area because it approximates a watershed boundary and often represents the use area of fish and wildlife species. This analysis area is located in a Wilderness LUD. The total project area covers about 0.5 acre. The project site is located between sea level and 30 feet above sea level, approximately 60 feet away from mean high tide.

Affected Environment

Fisheries in Sitka Ranger District contribute to the economic, recreational, and subsistence needs of area residents and visitors to the area. Sea Level Slough and its inlet stream are located 0.15 miles east of the White Sulphur Springs outside the area of activity. According to the Tongass National Forest GIS data and Alaska Department of Natural Resources (2006), these waters

support coho salmon (*Oncorhynchus kisutch*), sockeye salmon (*O. nerka*), Dolly Varden char, and cutthroat trout populations. Additionally, there is marine environment adjacent to the project area where salmonids likely occur. There are no mapped Class I, II or III (fish bearing and associated) streams in the Tongass National Forest GIS in the area where activity will occur, though there are a few small drainages that drain to the ocean. Coho salmon, pink salmon, Dolly Varden, and cutthroat trout are Management Indicator Species (MIS) for the Tongass National Forest.

Environmental Consequences

Direct/Indirect Effects and Cumulative Effects

Alternatives 1, 2, 3, 4, and 5

The proposed project would have negligible direct, indirect, and cumulative effects to pink salmon, coho salmon, Dolly Varden char, and cutthroat trout, as well as sockeye salmon because, while proposed trail activities may reduce sedimentation, no Class I, II, or III streams are present, the improvements to drainages would be very limited and other habitat parameters are not expected to change. Current fishing and disturbance levels are not expected to change with this project or with future management.

There would be no effects to fish and fish habitat from removal of stone for building because few species are thought to be supported by this high-energy gravel beach area and because the stone would be removed from above mean high tide. Additionally, removing a small amount of small boulders and cobble above mean high tide is expected to have negligible impact to drainage or to long-term impact on transport processes and wave action because of the location and limited nature of the removal. No measurable effects to fish or fish habitat are expected from parking a barge and moving gravel and other materials from the beach to the trail and cabin because the barging operation would be short-term, material transport would mainly occur on and along the trail, and wave action would erase any signs of material transport along the beach.

Essential Fish Habitat (EFH) Assessment

This assessment follows the agreement dated August 25, 2000 between the National Marine Fisheries Service and the USDA Forest Service and includes: 1) a description of the Proposed Action; 2) an analysis of individual and cumulative effects of the action on Essential Fish Habitat (EFH), the managed species, and associated species such as major prey species, including affected life histories; 3) the USDA Forest Service's views regarding effects on EFH; and 4) a discussion of proposed mitigation, if applicable.

Sea Level Slough and its inlet stream are located 0.15 miles east of the White Sulphur Springs Recreation area outside the area of activity. According to the Tongass National Forest GIS data and Alaska Department of Natural Resources (2006), these waters support coho salmon, sockeye salmon, Dolly Varden char, and cutthroat trout populations.

Additionally, there is marine environment adjacent to the project area where salmonids likely occur. The area where small boulders and cobble are being considered for removal is small, exposed, and has no fish streams associated with it. This is not a known herring spawning area, nor are other marine-associated fish species known to spawn in the gravels (Kyle Moselle, ADF&G, pers. com.). It is thought that few species permanently utilize the intertidal zone

because of the energy associated with the area's wave action; and those that do are subject to periodic removal of habitat by storm-generated waves. Wave action also produces and periodically removes sediment in this area. Food sources for pacific salmonids and other marine species likely inhabit this area.

The alternatives would have negligible direct, indirect, and cumulative effects to freshwater or marine EFH because, while proposed trail activities may reduce sedimentation, there are no improvements to stream habitat and other habitat parameters are not expected to change.

The proposed action would have "no adverse effects" on EFH because there are no Class I, II or III streams in the project activity area and the project would not measurably modify fish habitat in or near the project area. This project, including moving rock and other materials from a barge to the site, would not cause erosion or sedimentation which could reduce quality or quantity of fish habitat in the marine environment adjacent to the analysis area. The rock material to be removed would be removed above mean high tide during low tide conditions when the site would be naturally dewatered. The use of small boulders above mean high tide does not require consultation with National Marine Fisheries Service for EFH since the removal of these materials will have "No Adverse Effects" on EFH. The end result is that, while there may be a very limited improvement to drainages in the area the USDA Forest Service does not anticipate any negative effects on federally managed fish species due to implementation of this project.

Scenery

The analysis area for Scenery includes the trail from Mirror Harbor to White Sulphur Cabin and Bathhouse, and the footprint of the bathhouse and cabin (called White Sulphur from here on).

The Forest Plan (USDA Forest Service 2008a) established Visual Priority Travel Routes (VPRs) and Use Areas that are locations from which the scenery is viewed for the purpose of determining effects to scenery. For this project, there are two relevant VPR's: the Gulf of Alaska along the outer coast of Baranof and Chichagof Islands, and White Sulphur Springs trail (#560) as well as the view from White Sulphur Springs cabin. The *Moderate* scenery quality objective refers to landscapes that "appear slightly altered." Noticeable deviations must remain visually subordinate to the landscape character being viewed. The *Low* scenery quality objective refers to landscapes that "appear moderately altered where deviations begin to dominate the landscape character."

Affected Environment

The project area contains three features that influence scenery: the trail, the cabin, and the bathhouse.

The existing trail is a hodgepodge of different construction techniques: step and run boardwalk, gravel surfacing, eroded natural surfacing and plank bridges. The gravel surfacing, as forest litter accumulates on its surface, appears similar to a game trail in contrast to portions of the trail made of wood (boardwalk, puncheon, and bridges) that present a more manufactured appearance. The eroded natural surface trail segments present a degraded appearance. The resulting existing Scenery Integrity Objective (SIO) of the trail is *Low* and as such is out of compliance with the Forest Plan guideline of *Moderate*.

The cabin and bathhouse are of Pan Abode style milled log building construction painted dark brown. The Forest Service *Built Environment Image Guide* (BEIG) provides architectural design guidelines for structures and provides examples of architectural details that are appropriate for a given area. Considering the BEIG examples, the cabin is an attractive, classic design that borrows on the appropriate styles. The bathhouse, with its lack of detailing and dilapidated appearance, has relatively little architectural merit and does not conform to the BEIG guidelines.

The cabin and the bathhouse are located 40 feet apart and are seen together from the VPR and the anchorage in Bertha Bay. This creates a relatively dense development pattern on an otherwise wild and undeveloped coastline and along with the dilapidated appearance of the bathhouse results in an Existing Scenery Integrity (ESI) rating for the cabin and bathhouse of *Low* and as such is out of compliance with the Forest Plan guideline of *Moderate* scenic integrity for structures allowed in wilderness areas.

Environmental Consequences

Direct and Indirect Effects

Alternative 1

Under this alternative, the cabin would be relocated to a less visible location which would reduce opportunities to view both structures together whether from the VPRs or from within locations within the wilderness. The bathhouse would be replaced with a more rustic structure. These changes would decrease the existing visual impact and improve the site rating from *Low* scenic integrity to *Moderate* scenic integrity. Likewise, the trail scenic integrity would be improved from *Low* to *Moderate* as a result of removing the dilapidated trail structures and replacing them with gravel and competent wooden structures.

Alternative 2

Under this alternative, the removal of the bathhouse and its replacement with a low-profile deck structure would improve the site's appearance, decrease density of structures and improve the scenery rating from a *Low* scenic integrity to a less cluttered appearing *Moderate* scenic integrity. However, if makeshift visitor-made structures are built over the springs the scenic integrity could be reduced to *Low*.

The trail scenic integrity would be improved from *Low* to *Moderate* as a result of removing the dilapidated trail structures and replacing them with gravel and competent wooden structures.

Alternatives 3 and 4

Under these alternatives, the bathhouse would be replaced with a more rustic and attractive structure, however the density of development would remain unchanged. Based on the improved appearance of the bathhouse, the resulting site condition would have *Moderate* scenic integrity; however the presence of both buildings seen together would make these alternatives less compatible with wilderness related SIOs than Alternatives 1 and 2.

The trail scenic integrity would be improved from *Low* to *Moderate* as a result of removing the dilapidated trail structures and replacing them with gravel and competent wooden structures.

Alternative 5

Under this alternative, in the short term, the existing facilities and trail that is left in place would maintain the current *Low* scenic integrity for both facilities. When the facilities are removed the cabin and bathhouse site would return to a natural condition meeting the *High* or *Very High* scenic integrity. Given the popularity of the site and the likelihood of inclement weather there, it is likely that makeshift structures would be constructed by visitors to replace the shelter that the existing structures now provide. The presence of such ad hoc structures could result in *Low* scenic integrity at the site.

The trail would continue to degrade and the scenic integrity would remain *Low*.

Direct, Indirect, and Cumulative Effects

Alternatives 1, 2, 3, 4, 5

There are no other known activities planned in the area, so there would be no cumulative effects.

Soil and Wetlands

The analysis area includes the trail from Mirror Harbor to White Sulphur Cabin and Bathhouse, and the footprint of the bathhouse and cabin (called White Sulphur from here on).

Affected Environment

The White Sulphur area is rocky, windblown, place heavily influenced by glaciation and the more recent eruptions on Kruzof Island. The terrain is characterized by the low relief of a glacial plain meeting the uplifted wave-cut marine terraces. Ash from Mt. Edgumbe is evident on some southern and eastern facing landforms, especially at sea level (Nowacki et al., 2001).

The soils of the White Sulfur area are best described as shallow muskeg and wet scrubby timbered soils. Organic matter decomposes slowly and accumulates on site. Drainage throughout White Sulphur is generally poor with few areas of well-drained soils. Small, coarsely graveled beaches intersperse the steep rocky cliffs. Well-drained areas are dominantly on the beach berm where Sitka Spruce dominates the overstory with several areas of scrubby alder cover. The closest approximation would be soil map units (SMU) 73 in the Chatham Area Guide (USFS, 2003). Soils are either shallow to bedrock or very deep and gravelly.

The White Sulphur trail is mostly located on the ecological map unit F45 (Billings, 1974). This is approximately the 42P soil map unit on the Chatham Area Inventory (USFS, 2003), which does not cover the White Sulphur Project area. These are somewhat poor and poorly drained forest soils that are shallow to moderately deep. Since this area was not mapped with the rest of the National Forest System lands, it does not have a soil map unit. However, the closest fit for soils would be a St. Nicholas-Wadleigh complex with a little Kaikli mixed in (see soils description in Table 2).

Table 2: Summary of Soil Ecosystem Types in the White Sulfur Project Area.

Ecosystem Type	Chatham Area Inventory Equivalent	Description
F45	42P	Somewhat poorly and poorly drained mineral and organic soils formed in glacial deposits. Depth ranges from shallow to moderately deep to bedrock or other impermeable layer. Likely St. Nicholas, Wadleigh, and Kaikli soils. These areas include the Beach Fringe of soils under the Alder-Sitka Spruce vegetative cover.
M2	62M	Unforested, deep, poor fen organic soils, most likely Kina. Flat, glacial lowlands
MF5	62T	Forested and unforested, deep, organic soils, most likely Kushneahin and Kina soils. Flat, glacial lowlands.

Wetlands

White Sulphur is about 62% wetland, 37% upland, and 1% live stream (the trail crosses 3 small intermittent or ephemeral drainages which drain into Bertha Bay). This number was derived from the trail log (Appendix A of the Soils Specialist Report), air photos, Billings (1974) report, and the NWI maps. The total length of the trail is about 5,055 feet, just under 1 mile. Please see Appendix A for explanation of the trail log.

Table 3: Wetland along the trail

Component Percentage	Wetland	Upland	Fresh Water	Total length
	(feet)			
33% Wetland	44	89	--	133
50% Wetland	648	648	--	1,295
67% Wetland	307	151	--	458
75% Wetland	110	37	--	146
100% Wetland	2,011	--	--	2,011
100% Upland	--	965	--	965
Stream Crossing/Bridge	--	--	47	47
Total	3,119	1,889	47	5,055
Percents	62%	37%	1%	

The NWI maps show the entire project area as forested/emergent wetland (PFO4/EM1B). While this is true at a coarse scale, it ignores several islands of non-wetland along the trail and cabin site. These better-drained areas are evident on the air photos by the coarse-textured, dark conifers along the beach gravels. Billings' (1974) report noted a mosaic of somewhat poorly and poorly drained areas adjacent to White Sulphur. Somewhat poorly drained soils are considered upland (non-wetland) soils, while the poorly drained soils are wetlands.

Wetland Types in White Sulphur

The wetlands in the White Sulphur project area are generally forest to scrubby forested wetlands. The soils are both organic (histosols) and poorly drained mineral soils either over bedrock or compact glacial till.

Forested Wetlands – Forested wetlands include a number of forested plant communities with hemlock, cedar, or mixed conifer overstories, and ground cover consisting largely of skunk cabbage and deer cabbage. Forested wetlands are on poorly or very poorly drained hydric mineral or organic soils. They are most common on gently sloping hill slopes or benches and in transitional areas between open wetland and upland forest. These wetlands function as recharge areas for groundwater and streams, and for deposition of sediment and nutrients.

Estuarine Wetlands – Estuaries are unique brackish environments where fresh water mixes with saltwater. They are the most valuable wetland in the project area, supporting complex and productive ecosystems for critical fish and wildlife habitat. Estuarine wetlands (E1UBL) are mapped in Mirror Harbor, at the start of the trail.

Environmental Consequences

Direct, Indirect, and Cumulative Effects

Alternatives 1, 2, 3, 4, 5

Not all of the proposed activities would occur on wetlands. All proposed cabin sites (which includes the cabin, woodshed, and outhouse) are located on uplands adjacent to the beach berm. This includes the current location, the location 100 feet away (Alternative 1), and the location 30 feet away (Alternative 2).

The trail would stay in its current footprint regardless of the construction method. The existing trail crosses both wetlands and uplands (Table 4). The proposed trail would either be 5,055 feet (Alternative 3, 4) or 5,205 feet (Alternatives 1 and 2). It is assumed that all wetlands along the trail would be filled by wood, gravel, or rock. All alternatives would meet the requirements for a Nationwide Corps of Engineers permit. Alternatives 1 and 2 fill in very slightly more wetland than Alternatives 3 and 4 but the effects are very similar across all alternatives.

Table 4: Impacts to Wetlands

Alternatives	Estimated Length wetland filled (ft)	Estimated Acres wetland filled
Alts 1 and 2	3,269	0.15
Alts 3 and 4	3,119	0.14
Alt 5	None	None

Subsistence Uses

Affected Environment

Sections 810 and 811 of ANILCA requires a federal agency having jurisdiction over public lands in Alaska to analyze the potential effects of proposed land use activities on subsistence uses and needs, and to include a distinct finding on whether the proposed action may significantly restrict subsistence uses and access. Subsistence analysis usually focuses on three factors relating to fish and wildlife resources. These are: 1) abundance and distribution of the resource; 2) access to the resource; and 3) competition for the resource.

The cities of Pelican, Hoonah, and Sitka are classified as rural and receive subsistence priorities under ANILCA. Subsistence fishing may occur where fish-bearing streams occur in Sea Level Slough and its stream system. Subsistence hunting may occur in the analysis area. Subsistence plant gathering may occur in the analysis area where blueberry and other preferred plants may occur. The White Sulphur area is not a known high use area for subsistence.

Environmental Consequences

Direct/Indirect Effects and Cumulative Effects

Alternatives 1, 2, 3, 4, and 5

The action alternatives will not result in a change or restriction of access to subsistence resources, given the continuance of a cabin and trail, and the small scale of effects. Alternative 5 represents no change to subsistence resources. Facilities construction and trail reconstruction at White Sulphur Springs, in the short term, would have minor direct and indirect effects on Sitka black-tailed deer. Individuals may be temporarily impacted due to presence of people and noise during cabin construction and trail reconstruction, which may reduce foraging in the project area during the time of proposed activities. However, in the long term, replacing the White Sulphur Springs recreation facilities would have a negligible effect on Sitka black-tailed deer because the trees to be removed are limited and are not in the optimal productive old growth forest (POG) desired for winter habitat. The existing cabin and trail use already cause disturbance. Given the current and continuing relatively high level of human disturbance, deer may be avoiding the area and would continue to avoid the area during high use. Therefore, there will not be any effects on the abundance and distribution of subsistence resource. With general activities in the White Sulphur area remaining the same, there is not expected to be a change or increase in competition for subsistence resources. If the cabin were eventually removed as described in Alternative 5, the Forest Service would not be restricting access to the area for subsistence uses and users. Rather people would have to bring tents and camp there or use their boat to camp in the area and use of the area would likely continue. Consistent with sections 810 and 811 of ANILCA, this project was evaluated to determine potential effects on subsistence opportunities and resources. Because there would be no change in abundance and distribution of, access to and competition for subsistence resources, the proposed project will not result in a restriction of subsistence uses.

Threatened, Endangered, Sensitive, Rare, and Invasive Plants

Affected Environment

Young spruce and hemlock forest surrounds the White Sulphur cabin area. The forest fringe is strongly influenced by exposure to the open ocean to the southwest. Rocky shoreline, tidal pools, and small beaches are typical of the shoreline. The trail to the Mirror Harbor passes through old growth timber, forested wetlands, and meadows. In Mirror Harbor the shoreline mixed-conifer forest includes yellow cedar, hemlock, pine and spruce.

Common understory plants include false azalea, pacific crab apple, foamflower, skunk cabbage, shield fern, lady fern, oak fern, five-leaved bramble and bunchberry. Other habitats found in and near the project area are the following: tall shrublands, rocky areas, rock outcrops, gravel, seeps, wet areas, fens, moist-wet meadows, lake and lakeshore

PLANTS KNOWN OR SUSPECTED.

Only one plant species, *Polystichum aleuticum* C. Christens, occurs in Alaska that is listed as Threatened, Endangered or Proposed for listing by the US Fish and Wildlife Service under the Endangered Species Act. This species is restricted to the Adak Island in the Aleutian island chain (Talbot 2002). Thus, this project would not affect Threatened, Endangered or Proposed plants.

Rare plants are those tracked by the Alaska Natural Heritage Program (ANHP) that are known or suspected to occur on Chichagof Island. Six sensitive plants and one lichen are known or suspected to occur on Chichagof Island (Table 5). The list of rare plants is located in the Resource report for General Vegetation, Rare Plants and Invasive Species located in the project record.

Botany surveys for this project occurred on June 21-22, 2005. Previous botany surveys of the project area occurred in 1979. A total of 9 botany surveys are recorded for the project area. No Sensitive or rare plants were documented from these surveys. The Forest Service Region 10 Sensitive Species list was updated in November, 2009. Two of the plant species added to the Sensitive list are suspected in the project area and would not have been searched for in the previous botany surveys. Records for these botany surveys can be found at the National Resource Information (NRIS) database, or in the associated botany reports for this project. Suggested mitigation for this project includes an additional botany survey before construction begins.

A few non-native plant species were found near the cabin. The presence of non-native ornamental and culinary plants around the cabin is most likely a living remnant of a previous long term occupant who lived at the hot springs. Purple foxglove, chives, a large, presumably non-native shrub and the non native grasses and clover were probably intentionally planted at the site. Dandelion may have hitched a ride with a construction worker or visitor.

Non-native plants are ranked through the Weed Ranking Project, a cooperative project managed by The Alaska Natural Heritage Program. Plants are ranked on a scale from 0-100, with the higher ranking indicating higher potential for invasiveness. White clover, with a rank of 59, was the highest ranking weed. None of the weeds currently found at White Sulphur are considered highly invasive and none are considered a Tongass priority for control.

The sensitive plants listed below (Table 4) are suspected to occur in the project area since the area contains appropriate habitat and is within the known or suspected range of the plants.

Table 5: Sensitive plants known or suspected on Chichagof Island or closely associated islands

Plant Name	Habitat	Distribution on Chichagof Island
<i>Botrychium spathulatum</i>	Upper beach meadows, meadows, subalpine (associated with carbonates)	Chichagof Island, Whitestripe Lake area
<i>Botrychium tunux</i>	Sandy beaches, dunes, and sandy upper beach meadows, subalpine meadows, especially on limestone	Chichagof Island, Whitestripe Lake area and Game Creek area - found on carbonate mountain ridges.
<i>Botrychium yaaxudakeit</i>	Sandy beaches, dunes, and sandy upper beach meadows, subalpine meadows, especially on limestone	Suspected on Chichagof. Known from Inian Island, which is very near Chichagof Island in Icy Strait.
<i>Lobaria amplissima*</i> (lichen)	Forest fringe of exposed ocean beaches – grows on mature spruce, hemlock and crabapple trees	Suspected on Chichagof Island, within range of known populations which are known from Yakutat and Baranof Island.
<i>Piperia unalascensis*</i>	Open coniferous forest, meadows, streambanks,	One small population known near Doolth Mtn, approx. 12 miles SE of project area. Also known on Baranof Kruzof, and P.O.W. Islands
<i>Romanzoffia unalascensis</i>	Rock outcrops, streambanks, and forest edge	Few widely scattered populations known across SE Alaska, South Central Alaska, and the Aleutian Islands.
<i>Tanacetum bipinnatum</i> subsp. <i>huronense*</i>	Upper beach meadows or dunes	Single population known in SE Alaska on Kruzof Island.

* New additions to the Region 10 Sensitive Plant list. The *Lobaria* and *Piperia* are the two species that would not have been searched for in project surveys.

Environmental Consequences

Direct/Indirect Effects

Alternatives 1, 2, 3, 4, and 5

No invasive plants have been seen beyond the immediate warm-spring site and cabin area, however they could be spread by new construction and the accompanying disturbance occurring in any of the action alternatives.

Botany surveys of the area found none of the sensitive species present in or near the project area. However, the sensitive species list was updated in 2009 and so some of the newly added species and their habitats may have been overlooked by previous botany surveys. Suggested mitigation for this project includes an additional botany survey before construction begins. A determination of: may impact individuals or habitat, but not likely to cause a trend toward Federal listing or a loss of viability, was given for all alternatives for this project.

Alternative 1

Tree removal and new cabin location, wood shed and outhouse construction will expand the area of site disturbance.

Removal of old cabin and bath house and reconstruction of new bath house and trail will cause localized compaction of soil, ground disturbance, trampling and crushing of plants.

Removal of about 45 small diameter cedar snags for use on the trail will increase trampling, off trail disturbance and damage to existing vegetation. This activity has the potential to impact *Piperia unalascensis*, which is often associated with cedar stands. Impacts to *Lobaria amplissima* are possible from cutting of trees or large tree branches anywhere along the beach fringe area of this project. Impacts to rare plants are also possible from these activities.

New cabin location, new trail construction, importation of 70 cubic yards of commercial gravel, and use of local cedar trees will increase area of disturbance and likelihood of introduction or spread of invasive species. Use of helicopter and power tools reduces time of construction, and increases efficiency, thus reducing the local disturbance somewhat.

Alternative 2

Vegetation removal and new cabin location, wood shed and outhouse construction will expand the area of site disturbance. Removal of old cabin and bath house and reconstruction of soaking pool and trail will cause localized compaction of soil, ground disturbance, trampling and crushing of plants.

Selection and removal of an unspecified number of cedar snags or living trees within 500 feet of the trail for trail construction, has the potential to impact *Piperia unalascensis*, which is often associated with cedar stands.

Use of local mineral soil and gravel from undetermined locations on site will increase trampling, soil compaction, damage and destruction of vegetation in the area. Impacts to *Lobaria amplissima* are possible from cutting of trees or large tree branches anywhere along the beach fringe area of this project. Impacts to rare plants are also possible from these activities. Added time for project completion due to non-mechanized hand tool use and no helicopter use will cause more ground disturbance and soil compaction throughout the project area.

Use of more local materials for trail construction increases the off-site disturbance and alteration or destruction of some habitat. Use of non mechanized hand tools will increase the time required for project and the amount of off trail disturbance.

Alternatives 3 and 4

Removal of old cabin and bath house and re-construction of both in same or similar locations will cause localized compaction of soil, ground disturbance, trampling and crushing of plants.

Selection and removal of an unspecified number of cedar snags or living trees within 500 feet of the trail for trail construction, has the potential to impact *Piperia unalascensis*, which is often associated with cedar stands. Impacts to *Lobaria amplissima* are possible from cutting of trees or large tree branches anywhere along the beach fringe area of this project. Impacts to rare plants are also possible from these activities. Use of local mineral soil and gravel from undetermined locations on site will increase trampling, soil compaction, damage and destruction of vegetation in the area. Added time for project completion due to non-mechanized hand tool

use and no helicopter use will cause more ground disturbance and soil compaction throughout the project area.

Use of more local materials for trail construction increases the off-site disturbance and alteration or destruction of some habitat. Use of non mechanized hand tools will increase the time required for project and the amount of off trail disturbance.

Alternative 5

The No Action Alternative will allow further deterioration of the trail and consequent erosion. If cabin closure results from this alternative, local use would decrease and so would indirect effects to cabin and trail area.

Cumulative Effects

Alternatives 1, 2, 3, and 4

White Sulphur warm springs had at least one long term occupant prior to the construction of the Forest Service Recreation Cabin in the 1960's. A small shack and primitive bath house shelter were reported near the existing site. The current cabin is frequently used. Other uses in the project area include outfitting and guiding, camping, hunting, and hiking relating to recreational and kayak trips, and cabin maintenance activities. Effects of these activities include, occasional tree cutting, brush cutting, trampled vegetation, soil disturbance, hardening of use areas, and the introduction of invasive species. The cumulative effects from all four action alternatives will vary in the amount of short term disturbance but will result in a similar amount of cumulative effects since they all will result in use of the site similar to the existing condition. The potential introduction of invasive species by any of these alternatives could result in a much larger impact to wilderness character and ecological attributes of the area.

Alternative 5

The No Action Alternative would have minimal cumulative effects. The eventual closure of the cabin and bathhouse would result in less use of the site.

Wildlife

Affected Environment

Management Indicator Species (MIS)

Management indicator species (MIS) are vertebrate or invertebrate species whose response to land activities can be used to predict the likely response of other species with similar habitat requirements. Thirteen animal species have been identified as MIS for the Tongass National Forest. Only those MIS that area suspected to occur, or have habitat adjacent to the White Sulphur site will be discussed here, since they are the only species that could be affected by the project (see Table 6).

Table 6: Description of the habitat and occurrence of wildlife management indicator species in the analysis area.

Species	Occurrence in the Project Area
American Marten	Marten were transplanted to Baranof and Chichagof Islands (MacDonald and Cook 2007, p. 87). Marten primarily occur in old growth areas. The nearest old growth area occurs about 1.2 miles from White Sulphur Springs
Bald Eagle	Bald eagles commonly occur in lower elevation riparian habitats, adjacent to lakes, and along the shoreline in the analysis area. A bald eagle nest has been documented at Point Weigle, 2 miles south of White Sulphur Springs.
Brown Bear	Brown bears may commonly occur in the analysis area.
Brown Creeper	Brown creepers primarily occur in old growth areas. The nearest old growth area occurs about 1.2 miles from White Sulphur Springs
Hairy Woodpecker	Hairy woodpeckers primarily occur in old growth areas. The nearest old growth area occurs about 1.2 miles from White Sulphur Springs
Red-breasted Sapsucker	Red-breasted sapsuckers primarily occur in old growth areas. The nearest old growth area occurs about 1.2 miles from White Sulphur Springs
Red Squirrel	Red squirrels, also a transplanted species, may commonly occur in the analysis area.
River Otter	River otter may occur in the aquatic habitat near the project area.
Sitka Black-tailed Deer	Sitka black-tailed deer commonly occur in the analysis area.
Vancouver Canada Goose	Vancouver Canada geese may occur in the project area.

Threatened, Endangered, Proposed and Sensitive (TEPS) Animal Listed Species

The U.S. Fish and Wildlife Service (USFWS) lists four animal species as threatened or endangered (TE) in Alaska. According to Steve Brockmann with the USFWS, the TE animal species listed in Alaska do not occur on the Tongass National Forest, and there are no species proposed for listing in the project area - therefore they do not occur in or around the analysis area (pers. comm. Steve Brockmann, February 12, 2007, USFWS Consultation Log Number 71440-2007-SL-0027, and reconfirmed January 9, 2008, United States Department of the Interior (USDI) FWS Consultation Log Number 71440-2008-SL-0017). Of the six salmon species and eight marine mammal species listed as TE and under National Marine Fisheries Service (NMFS) jurisdiction, only the endangered humpback whale and threatened Steller sea lion are commonly observed in the coastal waters of the Tongass National Forest (NMFS 2003). A detailed effects analysis was not completed for TE species listed in Alaska that have not been documented to occur in Southeast Alaska or on the Tongass National Forest.

1. Humpback Whale (*Megaptera novaeangliae*)

The humpback whale was listed as an endangered species as a result of over-exploitation from commercial whaling (NMFS 1991, p. 15). Major objectives of humpback whale recovery include maintaining and enhancing habitat and rescuing human related mortality, injury and disturbance.

Humpback whales commonly occur in the inside waters of the Alexander Archipelago and are regularly sighted in the Inside Passage and coastal waters of the southeast Alaska panhandle from Yakutat Bay south to Queen Charlotte Sound.

Critical habitat has not been designated by NMFS for the humpback whale. Humpback whales are commonly found in the waters surrounding the analysis area. Specific Forest Plan direction for humpback whale is given on pages 4-98 to 4-99 (USDA 2008a).

2. Steller Sea Lion (*Eumetopias jubata*)

Steller sea lion habitat includes marine and terrestrial areas. Adult Steller sea lions congregate at rookeries for breeding and pupping. Rookeries are generally located on relatively remote islands, often in exposed areas that are not easily accessed by humans or mammalian predators. Haulouts are areas that are used by adult sea lions during times other than the breeding season, and by non-breeding adults and subadults throughout the year. Sites used as rookeries in the breeding season may be used as haulouts as well. Sea lions will also use other rocks, reefs, beaches, breakwaters, navigational aids, floating docks and sea ice as resting areas. Rookery and haulout locations are specific and use of these sites changes little from year to year (NMFS 1992, p. 2).

The NMFS has designated critical habitat for this species including major rookeries and haulouts in Southeast Alaska (identified in 50 CFR 226). Steller sea lions are common in the waters surrounding the analysis area. There are no rookeries or haulouts designated as critical habitat within the marine waters directly adjacent to the analysis area (50 CFR Part 223 and 226). Specific Forest Plan direction for Steller sea lions is given on pages 4-93 and 4-98 to 4-99 (USDA 2008a).

Sensitive Species

Sensitive species are those plant and animal species identified by the Regional Forester for which population viability is a concern on National Forest System lands within the region. The Alaska Region Sensitive Species List was last updated in 2009 (Table 7) (FSM 2600 Supplement No.: R-10 2600-2009). The Regional Sensitive Species List continues to be revised as new information dictates.

Table 7: Alaska Region (R10) listed sensitive species.

Common Name	Scientific Name
Kittlitz's murrelet	<i>Brachyramphus brevirostris</i>
Northern goshawk	<i>Accipiter gentilis laingi</i>
Black oystercatcher	<i>Haematopus bachmani</i>
Aleutian Tern	<i>Sterna aleutica</i>
Dusky Canada goose	<i>Branta canadensis occidentalis</i>

Kittlitz's murrelet is a small diving seabird that is closely associated with glacial habitats along the Alaska mainland coast. The only American population occurs in Alaskan waters from Point

Lay south to northern Southeast Alaska (Endicott and Tracey Arm). Due to the Kittlitz's murrelet's association with glacial habitat, this species occupies areas outside of the analysis area.

Goshawk inhabit forested lands throughout North America, favoring dense stands of conifer or deciduous old growth for nesting habitat. The White Sulphur recreation facilities are located in a mix of beach front, mature forested habitat, muskeg, and lake shore. The forest in the area is fairly open and scrubby; it likely provides foraging habitat rather than nesting habitat. The nearest productive old growth forest (POG) is about one mile away. There are no documented goshawk nest sites within 20 miles of the analysis area; although goshawk surveys have not been conducted in this area. Forest Plan standards and guidelines require the maintenance of an area of not less than 100 acres of POG, if it exists, generally centered over a nest tree or probable nest tree. Continuous disturbances likely to result in nest abandonment within the surrounding 600 feet of the nest are not permitted from March 15 to August 15.

Black Oystercatchers are shorebirds with a small global population (estimates of 8,500 – 11,000 individuals). The majority (65%) of the population breeds in Alaska (Brown et al. 2001).

Oystercatchers feed on intertidal marine invertebrates. Foraging habitat is primarily rocky shores exposed to surf action, sheltered gravel or sandy shores, and soft sediment shores in protected bays. Nesting sites include mixed sand and gravel or cobble and gravel beaches, exposed rocky headlands, rocky islets, rock outcroppings, low cliffs, alluvial outwashes, and tidewater glacial moraines (Tessler et al. 2007). The Alaska Department of Fish and Game documented black oystercatchers in the Myriad Islands, 19 miles south of the project area.

Aleutian Terns breed in Alaska and Siberia. In Alaska, Aleutian Tern colonies extend as far north as the Chukchi Sea, and as far south as the Aleutian Islands, and as far east as the Glacier Bay (USDI 2006d). The winter range of the Aleutian Tern is mostly unknown; however, observations indicate that this species winters in Asian coastal waters.

The Dusky Canada goose subspecies does not occur in the Tongass National Forest.

Other Species of Interest – Migratory Birds

The Tongass National Forest has identified 40 protected bird species that may occur on the forest (Tongass National Forest Migratory Bird Treaty Act list available in the Project Record). Twenty of these species are identified as species of concern in SE Alaska (Boreal Partners in Flight 1999).

Nearly all species in the MBTA list whose abundance is categorized as abundant or common are likely to occur in the analysis area.

Environmental Consequences

Direct, Indirect and Cumulative Effects

Alternatives 1, 2, 3, 4, and 5

MIS

A trail, cabin, and bathhouse already exist and are used in the area; thus, disturbance effects are already occurring. Facilities construction and trail reconstruction at White Sulphur Springs, in the short term, would have minor direct and indirect effects on brown bear, river otter, marten, bald eagle, brown creeper, hairy woodpecker, red-breasted sapsucker, red squirrel, Sitka black-tail deer, and Vancouver Canada Goose, though the scale of effects would be small. Individuals of these MIS wildlife species may be temporarily impacted due to presence of people and noise during cabin construction and trail reconstruction, which may reduce perching or foraging in the project area during the time of proposed activities. However, in the long term, replacing the White Sulphur Springs recreation facilities or removing the bathhouse would have a negligible effect on bald eagle, brown creeper, hairy woodpecker, red-breasted sapsucker, Vancouver Canada goose, and Sitka black-tailed deer because the trees to be removed are limited, and the project area does not provide the optimal nesting, breeding, and/or wintering habitat of these species. The effect to marten, brown bear, red squirrel, and river otter will also be negligible in the long term because, though some individuals may decide to relocate, it would not be such a hardship that there would be any consequence to the individual or its population. In addition, given the current and continuing relatively high level of human disturbance, some of these MIS species may be avoiding the area and would continue to avoid the area, while other species would continue to use the area despite the human use. Proposed trail activities may improve stream habitat which may provide a negligible improvement in fish and habitat availability, therefore negligibly benefiting bald eagles, brown bears, and river otter. The action alternatives would utilize some yellow cedar snags and trees cut from around the project area and along the trail but would not change the character of the landscape or modify effects on wildlife.

Alternatives 2, 3, and 4, are less intrusive to local wildlife species due to construction workers not making excessive noise with power tools and helicopters. But the added time needed for construction does increase disturbance. Alternative 5 would maintain current effects until removal activities briefly increase disturbance.

Cumulative effects to all wildlife MIS species would be negligible. The proposed trail work would reinforce the trail, thus increased use and other activities would not be expected to impact sedimentation on stream or marine habitat. Because the area is already used by trail users, cabin users, and anglers, disturbance levels are already relatively high, and any increase in human use would likely maintain a similar disturbance level. Animals that are currently avoiding the forested area would continue to avoid the area, and some animals avoiding the riparian area may return to the area because of the new trail design reducing erosion and sedimentation to the stream.

Threatened, Endangered, Proposed (TEP), and Sensitive Animal Species

The project area was analyzed to assess the direct, indirect, and cumulative effects of the proposed project on TEP species or their critical habitat (50 CFR 402.14, FSM 2671.44).

Humpback whales and Steller sea lions can inhabit shallow coastal areas where they are increasingly exposed to human activity. Recovery plans for the humpback whale (NMFS 1991, p. 25) and the Steller sea lion (NMFS 2008) identified potential human induced factors that affect individual reproductive success, alter survival, and/or limit the availability of habitat for these species. National Forest management activities that could have an effect on habitats or populations of these species generally fall into the categories of direct disturbance, acoustic disturbance, and habitat degradation (including effects to prey species). These effects are generally associated with the development and use of marine access facilities (MAFs), increased marine activities, and activities that alter stream habitat that flows into marine environments. Replacing the recreation facilities at White Sulphur Springs would have negligible direct, indirect, or cumulative effects to the humpback whale and Steller sea lion because while activities would cause a minimal increase in marine and beach activities, the increase would be brief (2 summers), small (materials for a few small buildings and a trail), and generally outside of whale and sea lion habitat. Future increased recreation site use would be expected to have a negligible cumulative effect on marine habitat due to only a limited increase in marine access. The proposed project would have “no effect” on species listed by the FWS or their habitat because there are no listed species in the analysis area. This project would have “no effect” on species listed by the NMFS or their habitat because they do not occur in or around the analysis area or effects to individuals or their habitat will be negligible and critical habitat will not be affected. All project activities would be conducted in a manner consistent with the ESA and regulations.

The alternatives would have no direct, indirect or cumulative effect to Kittlitz’s murrelet or dusky Canada goose because these species do not occupy these habitats or do not occur in or near the analysis area. The alternatives would have no direct, indirect or cumulative effect to Aleutian tern because activities would not alter the shoreline area adjacent to the project site that provides potential foraging habitat, and this species is highly unlikely to occur in the analysis area.

Activities at the recreation facilities and trail at White Sulphur Springs would not affect breeding or nesting goshawks because the project does not occur within 600 ft of POG which provides ideal nesting habitat, and there are no documented goshawk nest sites within 20 miles of the project area. Tree removal related to moving the cabin and trail activities would slightly reduce potential foraging habitat along the trail, but effects would be negligible because the trees to be removed are limited. Noise disturbances and presence of people during construction of facilities and trail may affect individual goshawks by causing avoidance of foraging during project activities, but these effects would be negligible because it shouldn’t be difficult for a non breeding goshawk to avoid such a small area while foraging. The bathhouse, cabin, and trail already exist and are used in the area; thus, disturbance effects are already occurring.

If a nest were found, Forest Plan standards and guidelines would be applied which would effectively reduce impacts. Given the current and continuing relatively high level of human disturbance, goshawk likely avoid the area for nesting and would continue to avoid the area with continued or increased use.

Replacing the recreation facilities and trail or removing the bathhouse at White Sulphur Springs would not affect breeding or nesting black oystercatchers because these birds likely already avoid the area due to current human presence. Increased noise disturbances and presence of people during construction of facilities and trail may affect individual black oystercatchers by

causing avoidance of foraging in the adjacent marine environment during project activities, but these effects would be negligible because of the small scope and size of the project, and activities would minimally alter the shoreline area that provides potential foraging habitat. The bathhouse, cabin, and trail already exist and are used in the area; thus, disturbance effects are already occurring.

Table 8: Summary of determinations for sensitive species.

Species	Determination ¹
Kittlitz's murrelet	No impacts
Northern goshawk	May impact individuals but not likely to cause a trend to federal listing or a loss of viability"
Black oystercatcher	May impact individuals but not likely to cause a trend to federal listing or a loss of viability"
Aleutian Tern	No impacts
Dusky Canada goose	No impacts

Other Species of Interest – Migratory Birds

Effects would be similar to those described for MIS wildlife species.

Other Required Disclosures

Many federal laws and executive orders require project-specific planning and environmental analysis on federal lands. Most of this analysis can be found in the sections above. While most related laws and Executive Orders pertain to all federal lands, some of the laws are specific to Alaska.

Clean Air Act

Emissions anticipated from the implementation of any alternative would be of short duration and are not expected to exceed State of Alaska ambient air quality standards (18 AAC 50). Using nearby or locally-sourced materials as described in some of the alternatives would reduce the project's overall carbon dioxide emissions.

Coastal Zone Management Act of 1972, As Amended

Under the Coastal Zone Management Act (CZMA), activities of Federal agencies that affect any land or water use or any natural resource of the coastal zone must be carried out in a manner that is consistent to the maximum extent practicable with the enforceable policies of the State's approved coastal management program. The Alaska Coastal Management Program expired on June 30, 2011, pursuant to State law. Thus, there is no approved coastal management plan for Alaska, and no requirement for a consistency determination or review under the CZMA. The Forest Service will continue to take into consideration the views of State agencies and local communities, however, as part of the NEPA process and other procedures to collaborate with stakeholders.

Magnuson-Stevens Fishery Conservation and Management Act of 1996

The Magnuson-Stevens Fishery Conservation and Management Act of 1996 requires consultation with the NMFS on activities that may adversely affect Essential Fish Habitat (EFH). This project will not adversely affect EFH (see the fisheries section of this EA); therefore, no further consultation with NMFS is required on this project.

CONSULTATION AND COORDINATION

The Forest Service consulted the following individuals, Federal, State, and local agencies, tribes and non-Forest Service persons during the development of this environmental assessment:

INTERDISCIPLINARY TEAM MEMBERS:

Annemarie LaPalme, Recreation and Team Leader
J. Perry Edwards, Robert Miller, Maura Santora, Fisheries, Wildlife, Subsistence
Jacquie Foss, Wetlands and Soil
Barth Hamberg, Jim Beard Scenery
Jay Kinsman, Archaeology
Brad Kriekhaus, Botany
Jennifer McDonald, Wilderness
Michelle Putz, Writer/Editor

INTERNAL ASSISTANCE:

Carol Goularte, Sitka District Ranger
Karen Iwamoto and the Tongass National Forest Supervisor's Office Joint Review Team
Stephen Kimball, Region 10 USDA Forest Service Wilderness Program Manager
Peggy Marcus, Sitka Ranger District Recreation Staff

FEDERAL, STATE, AND LOCAL AGENCIES:

Advisory Council on Historic Preservation
Alaska State Historic Preservation Office
State of Alaska, Alaska Department of Fish and Game
State of Alaska, Dept. of Natural Resources, Division of Coastal and Ocean Management
U.S Fish and Wildlife Service

TRIBES AND CORPORATIONS:

Central Council of the Tlingit and Haida Indian tribes of Alaska
Hoonah Indian Association
Huna Totem Corporation
Sealaska Corporation
Shee Atika Inc
Sitka Tribe of Alaska

References Cited

- Alaska Department of Natural Resources. 2006. City and Borough of Sitka Coastal Management Plan, Final Plan Amendment. Alaska Coastal Management Program. 179 pp.
- Billings, Richard F. 1984. Soils of West Chichagof – Yakobi. USDA Forest Service internal report.
- Boreal Partners in Flight Working Group. 1999. Landbird conservation plan for Alaska Biogeographic Regions. 109 p.
- Brown, S., C. Hickey, B. Harrington, and R. Gill. 2001. The U.S. Shorebird Conservation Plan, 2nd edition. Manomet Center for Conservation Sciences, Manomet, MA.
- Hilton, M.R. 1993. Cultural Resource Inventory of the West Chichagof Wilderness Area, Project # R1993100532069, on file USDA Forest Service Office, Sitka Alaska.
- Lantz, N. 2010. Everyone's Cabin in the Woods: Historic Context for Public Recreation Cabin in the Alaska Region-1960-197, Project # R2010100534008, unpublished manuscript on file USDA Forest Service, Regional Office, Juneau Alaska.
- National Marine Fisheries Service (NMFS). 1991. Recovery plan for the humpback whale (*Megaptera novaeangliae*). Prepared by the Humpback Whale Recovery Team for the National Marine Fisheries Service, Silver Spring, Maryland. 105 pp.
- NMFS. December 19, 2003. Letter from Kaja Brix (NMFS) confirming the current list of Threatened & Endangered species that occur in Southeast Alaska.
- NMFS. 2008. Recovery Plan for the Steller Sea Lion (*Eumetopias jubatus*). Revision. National Marine Fisheries Service, Silver Spring, MD. 325 pp.
- Nowacki G., P. Krosse, G. Fisher, D. Brew, T. Brock, M. Shepard, W. Pawuk, J. Baichtal, E. Kissinger. 2001. Ecological Subsections of Southeast Alaska and Neighboring Areas of Canada. USDA Forest Service Alaska Region R10-TP-75. October 2001.
- Tessler, D.F., J.A. Johnson, B.A. Andres, S. Thomas, and R.B. Lanctot. 2007. Black Oystercatcher (*Haematopus bachmani*) Conservation Action Plan. International Black Oystercatcher Working Group, Alaska Department of Fish and Game, Anchorage, Alaska, U.S. Fish and Wildlife Service, Anchorage, Alaska, and Manomet Center for Conservation Sciences, Manomet, Massachusetts. 115 pp.
(http://www.whsrn.org/shorebirds/conservation_plans.html)
- USDA Forest Service. 2001. Built Environment Image Guide for the National Forests and Grasslands. US Forest Service. FS-710, December, 2001.

USDA Forest Service. 2003. Chatham Area Soils Inventory User Guide. US Forest Service, Tongass National Forest. Unpublished.

USDA Forest Service. 2008a. Tongass Land and Resource Management Plan. Forest Service, R10-MB-603b.

USDA Forest Service 2004 Shoreline Outfitter/Guide Record of Decision and Final Environmental Impact Statement, R10 –MB-519a.

USDA Forest Service. 2008b. Tongass Land and Resource Management Plan, Final Environmental Impact Statement, Plan Amendment. Forest Service, R10-MB-603c.

USDA Forest Service. 2010. Third Programmatic Agreement Among the United States Department of Agriculture- Forest Service, Alaska Region; the Advisory Council on Historic Preservation; and the Alaska State Historic Preservation Officer Regarding National Historic Preservation Act, Section 106 Compliance in the Alaska Region of the Forest Service, United States Department of Agriculture. On file, Tongass National Forest, Regional Office Juneau, AK.

USDI Fish and Wildlife Service. 2006d. Alaska Seabird Information Series. Aleutian Tern. Anchorage Alaska. pp. 53-54. 2 pp.