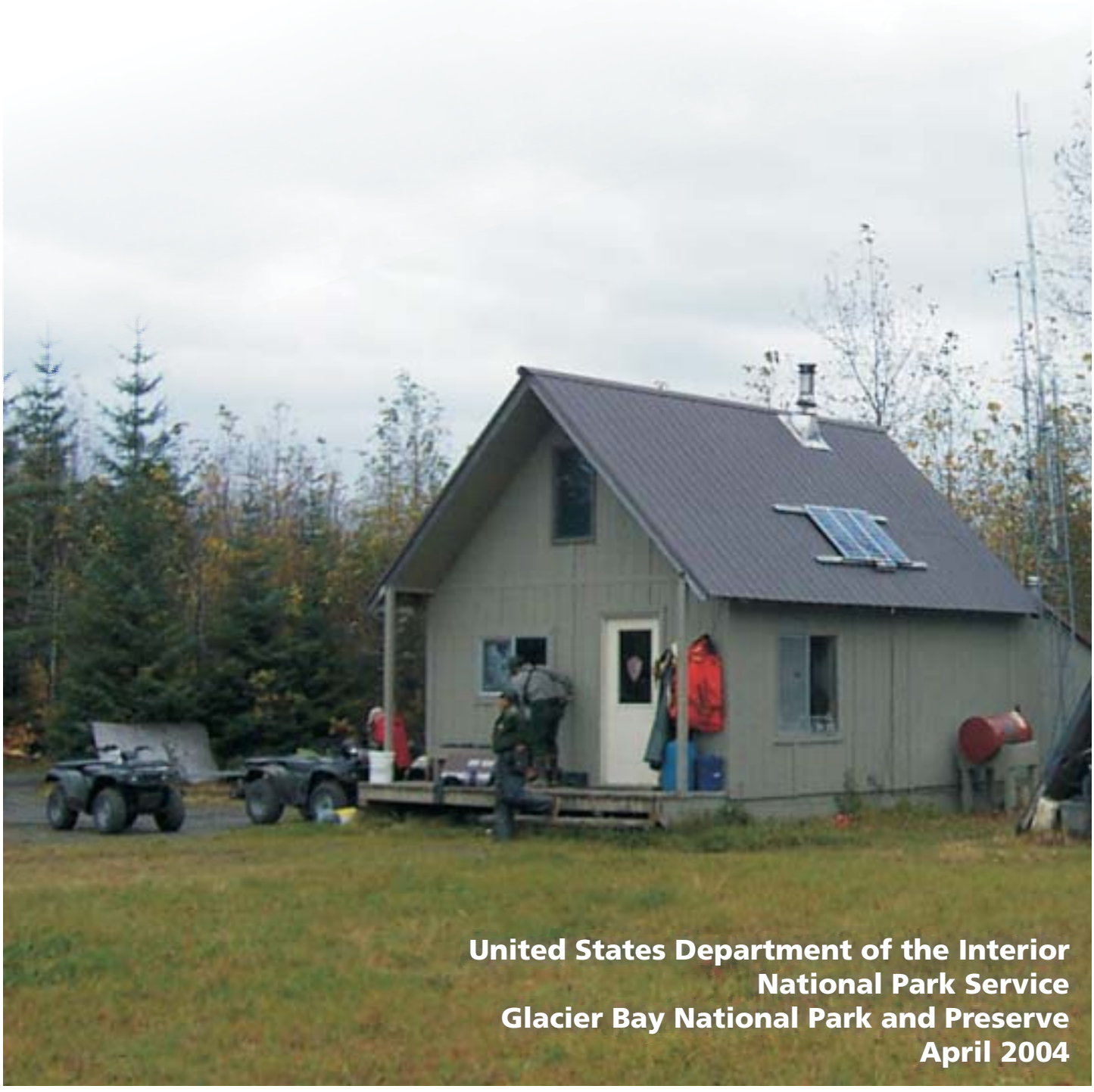
Environmental Assessment

Dry Bay Facility Improvements



United States Department of the Interior
National Park Service
Glacier Bay National Park and Preserve
April 2004

ENVIRONMENTAL ASSESSMENT

DRY BAY FACILITY IMPROVEMENTS
Glacier Bay National Preserve
April 2004

OPEN FOR PUBLIC COMMENT
Until May 23, 2004

Please send your comments,
to arrive by the close of business on May 23, 2004,
preferably by email to: Mary_Kralovec@nps.gov

or by post to: Mary Kralovec, Assistant Chief of Resource Management
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Post Office Box 140
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PURPOSE AND NEED

The National Park Service (NPS) is considering improvements to its visitor facilities and administrative support facilities in the Dry Bay area of Glacier Bay National Preserve (GLBA).

Dry Bay is located near the mouth of the Alsek River as it meets the Gulf of Alaska on the northwestern corner of GLBA (figure 1).

Dry Bay has a ranger station and is the NPS point of contact for river float trips and commercial fishing activities.

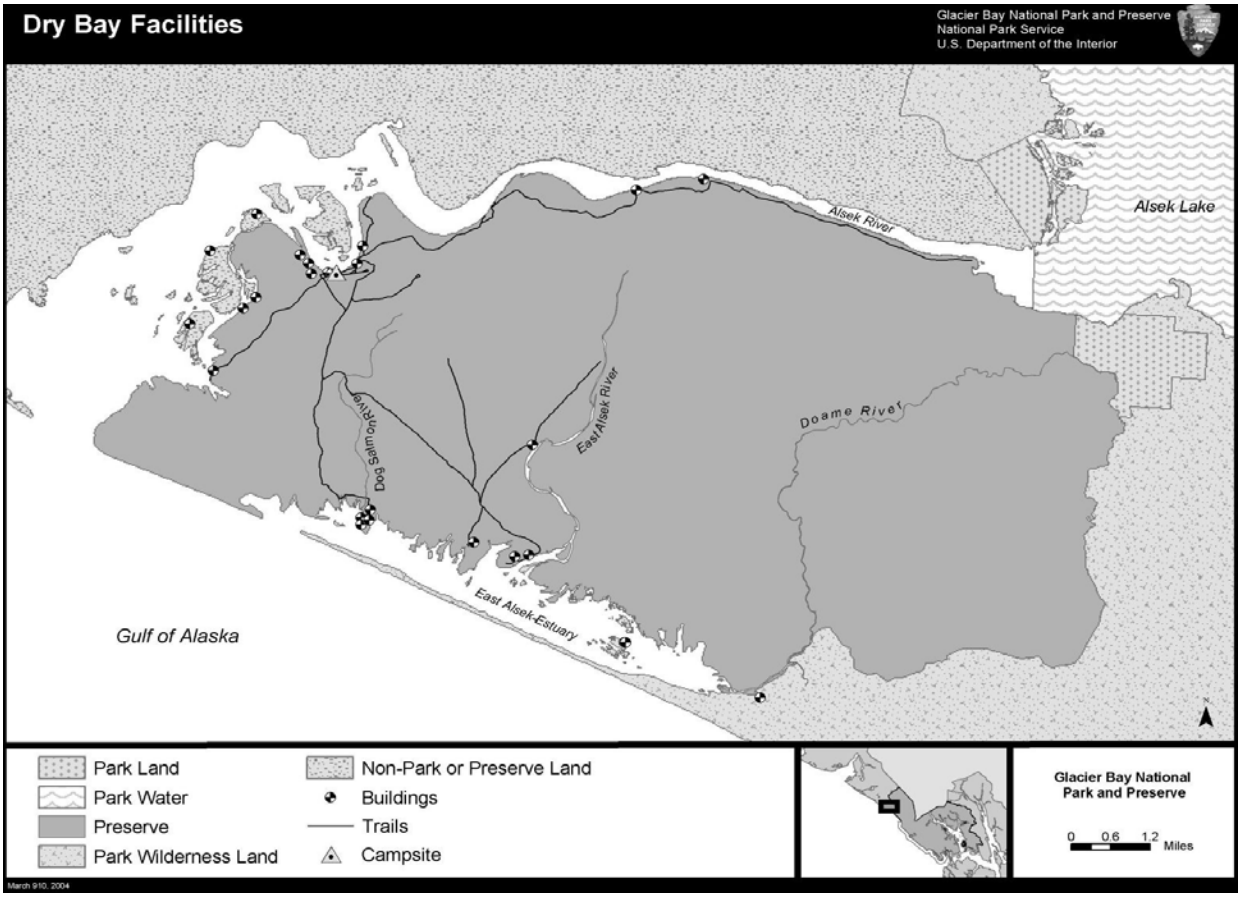


Figure 1. Project Location. The Dry Bay Project Area in Northern Southeast Alaska is part of Glacier Bay National Park and Preserve.

As part of this action, the NPS proposes to demolish, reconstruct, construct or improve several facilities:

Visitor Facilities:

- relocate the raft takeout point
- relocate the rafter camp area
- reconstruct the sewage dump station
- construct an outhouse

Public Use Cabin:

- reconstruct the pit toilet

Ranger Station:

- reconstruct a storage shed and add a workshop
- reconstruct the shower room, add a toilet and remove the workshop
- construct an open three-sided storage shed
- reconstruct the volunteer cabin
- reconstruct the bunkhouse cabin
- construct a fuel storage structure
- construct a wastewater system with an outhouse
- demolish and fill the existing pit toilet

Purpose of the Project

The purpose of this project is to address NPS facility deficiencies in the Dry Bay area (figure 2). The project's purpose would be to:

- improve resource protection and visitor service functions through renovation and expansion of administrative support facilities,
- improve health and safety concerns associated with human waste disposal systems,
- reduce conflicts between river rafters, commercial fishing operations and airplane traffic at the Alsek River takeout site, and
- improve visitor enjoyment of the area.

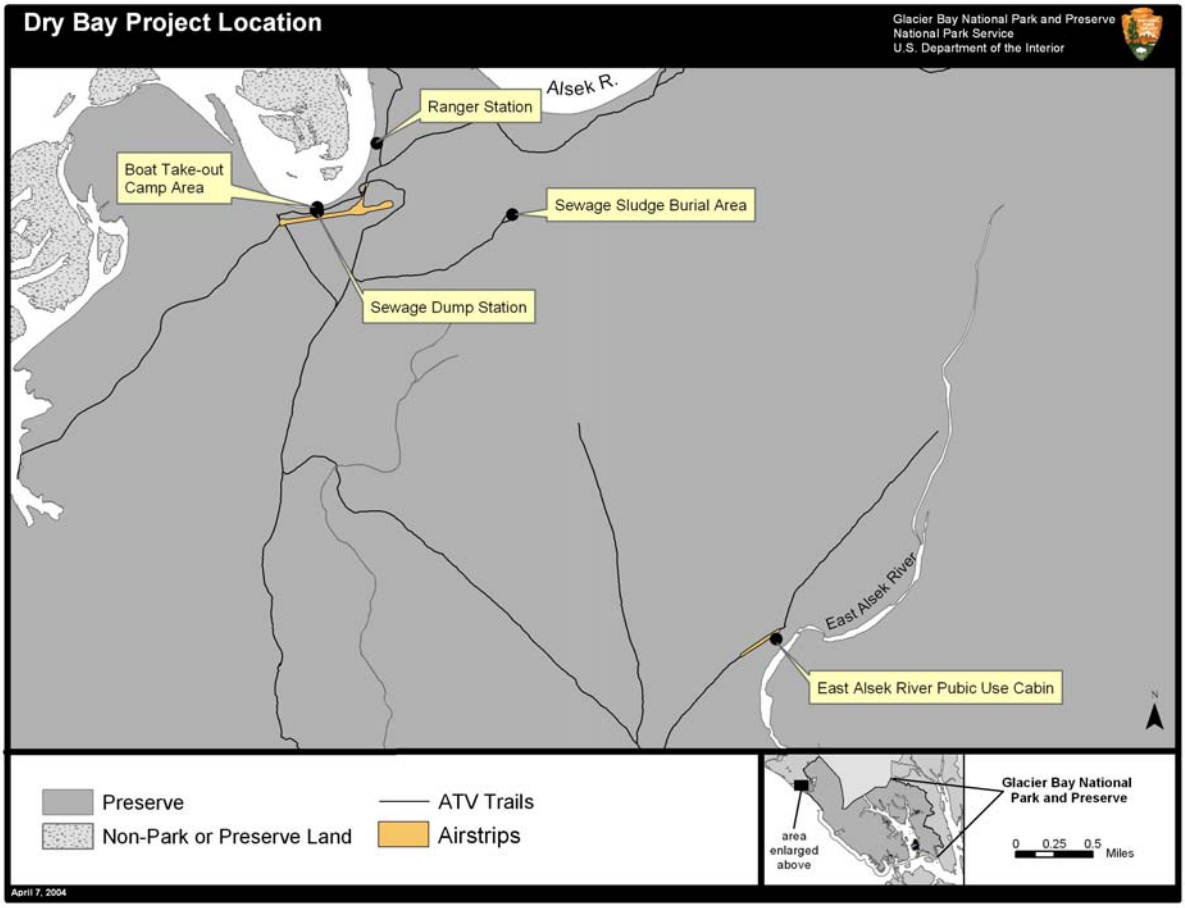


Figure 2. Dry Bay Project Sites. The project locations are included in this figure.

Need for the Project

Needs associated with the NPS facilities at Dry Bay include:

1. The sewage dump station does not meet state Department of Environmental Conservation (DEC) regulations at Title 18, Alaska Administrative Code, Health, Safety and Housing, Chapter 72, Wastewater Disposal, Section 240, Approval to Operate (18 AAC 72.240). The current station (figure 3) could pose a contamination risk to people using the facility, people near the facility, or the environment near the facility. Sewage could splash onto the ground near the facility or onto people. This situation poses a health risk from direct fecal contamination.

Figure 3. Existing Sewage Dump Station. This facility does not meet state DEC regulations.

2. Sewage sludge from the sewage dump station is currently removed annually and buried in a meadow (figure 4) in the preserve. An appropriate wastewater sludge disposal strategy is needed.

Figure 4. Existing Sewage Sludge Burial Area. The current practice is to annually pump out the sludge from the sewage dump station, haul it to this meadow and bury it.

3. The sewage dump station is located near a private commercial fish handling facility. Sanitation conflicts could occur between the existing sewage dump station and commercial fish handling facility nearby since fish must be transported within ten feet of the sewage dump station. The fish are hauled passed the dump station in all-terrain vehicle (ATV) trailers. This situation poses a health risk from indirect fecal contamination of the fish. Fecal matter could splash from the dump station onto the ground nearby, be tracked around the area by foot and ATV wheels.

4. All the buildings at the Dry Bay ranger station are deteriorating to the point of not being useful due to mold and rotting wood, except for the main ranger cabin. These buildings are the A-frame storage shed, the volunteer cabin (housing for NPS seasonal employees and volunteers consisting of a small two-bed building), the bunkhouse cabin (housing for NPS project employees, short-term volunteers and park cooperators such as researchers, consisting of a small two-bed building), and the shower room and workshop attached to the back of the ranger cabin.

5. The septic system (a grey water sump for the shower and sinks) at the ranger station does not meet state DEC regulations at 18 AAC 72.240.

6. The fuel storage area at the ranger station has unprotected containers of liquid and gas fuels and other combustibles. It is open to the environment and needs improved spill containment and security to prevent health and safety hazards as well as risk of environmental contamination.

7. The camp area for river rafters is located adjacent to the airstrip (figure 5). Conflicts occur between rafting parties, commercial fishing activities and airplanes. The congestion makes it difficult for the commercial fishing activities to function smoothly, and the congestion makes airplane safety a concern because visitors are in close proximity to taxiing or waiting aircraft.

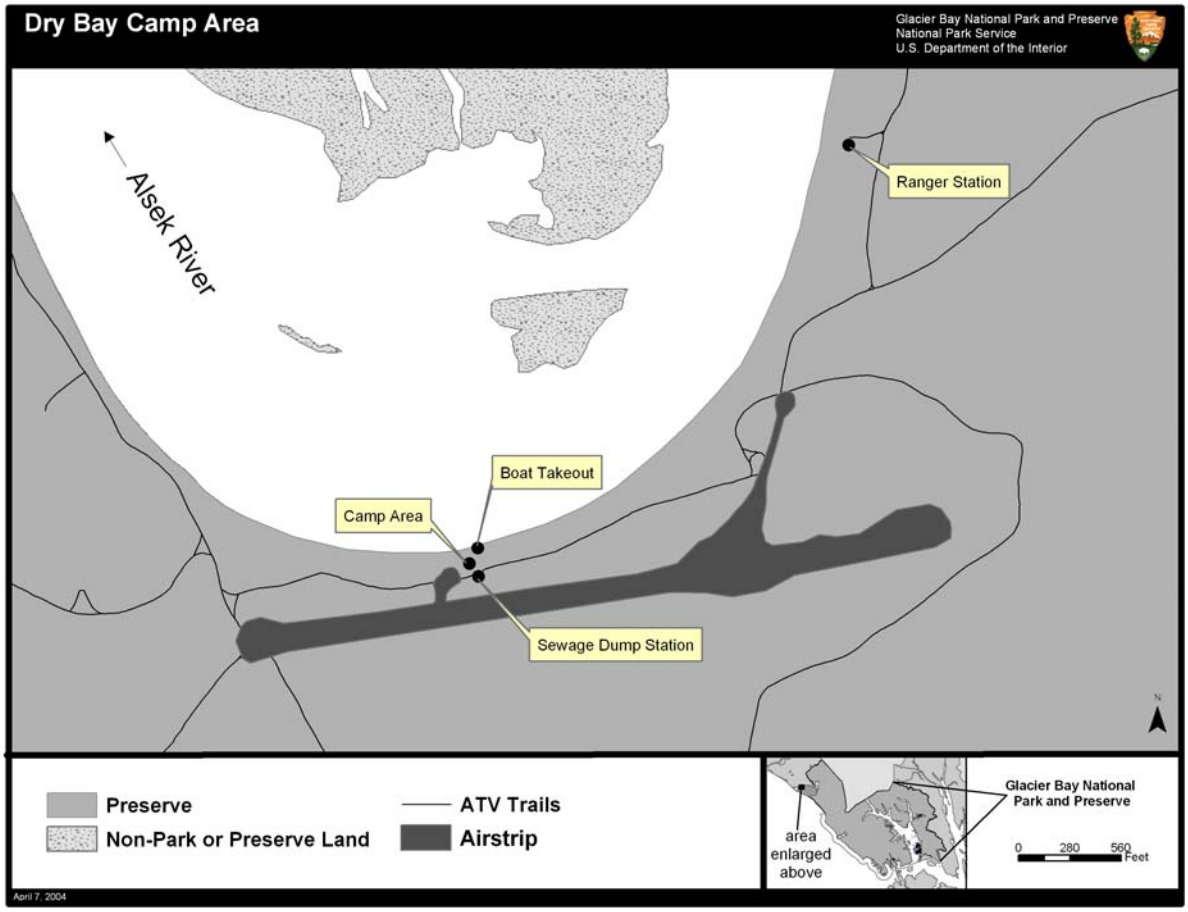


Figure 5. Dry Bay Camp Area. General location of visitor facilities, ranger station and airstrip.

8. The river rafters' takeout site is located in a slough off from the main channel of the Alsek River. During times of low water, this slough does not provide enough water for rafting parties traveling downstream. At these times, rafting parties must travel downstream on the Alsek River main channel to the downstream end of the slough where they then paddle, walk or carry their rafts upstream to the takeout location (figure 6).

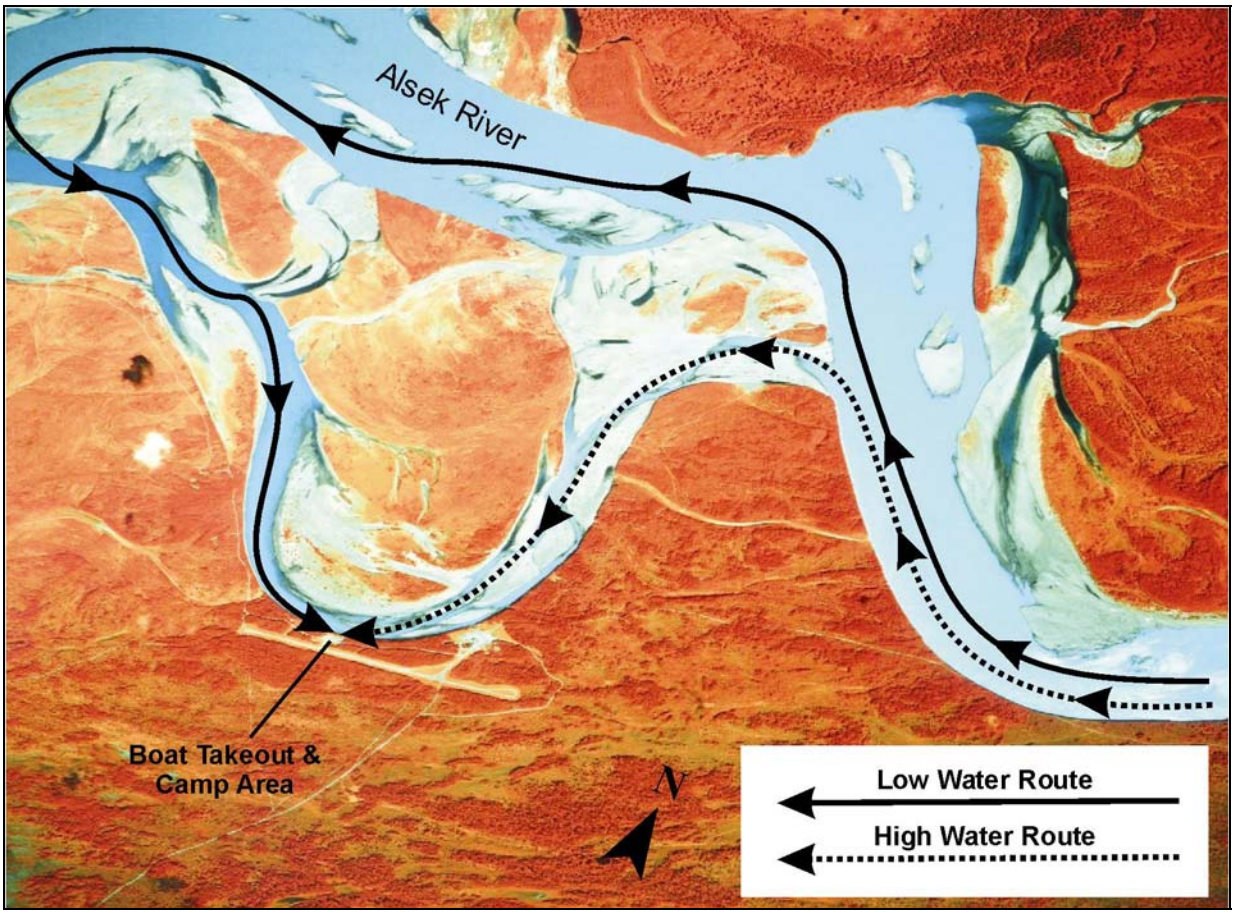


Figure 6. Rafter Routes to Takeout Point. River float trips use different routes on the last day of their trip depending on the available flow through the upper slough.

9. The pit toilet at the East Alsek River public use cabin is nearly full of human waste and is near the end of its useful lifespan.

This Environmental Assessment (EA) presents and analyzes a "no-action alternative," two action alternatives and their associated environmental impacts. This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the regulations of the Council on Environmental Quality (40 CFR 1508.9) and NPS Director's Order #12.

Relationship to Other Park Planning

Glacier Bay National Monument was created by presidential proclamation in 1925 but did not include the Dry Bay area. The monument was expanded and redesignated Glacier Bay National Park and Preserve (GLBA) by the Alaska National Interest Lands Conservation Act (ANILCA) in 1980. It added the Dry Bay area as part of the national preserve.

The Glacier Bay-Admiralty Island Biosphere Reserve was established in 1986 under the United Nations Man and the Biosphere Program. This biosphere reserve designation adds international status to the Dry Bay area but does not obligate NPS to any management actions. Biosphere reserves are lands designated as examples of major ecosystem types, to which areas outside the reserve can be compared.

GLBA became part of an international World Heritage Site in 1992 along with neighboring Wrangell-St. Elias National Park and Canada's Kluane National Park. This additional United Nations designation, under treaty, provides further status to the Dry Bay area and places it in the context of internationally significant and world recognized, as opposed to just nationally recognized as a national park system unit.

The General Management Plan (GMP) and EA for GLBA was completed in 1984. It provides the overall guidance for the entire national park and preserve, including some general direction for Dry Bay, to be followed by more specific planning documents like this EA.

The Alsek River Management Plan of 1989 provides direction for river use, permitting of float trips and condition parameters for recreational float trips. It set the stage for later permit stipulations including the requirement for float trips to carry all their solid human waste with them until they arrived at the Dry Bay sewage dump station. NPS is in the process of updating this plan.

The Backcountry and Wilderness Management Plan and Environmental Impact Statement (EIS) for GLBA is in the early stages of development. It will address a broad suite of backcountry management issues in Dry Bay as well as the rest of the national park and preserve.

Issues Considered for Further Evaluation

To focus the EA, the NPS selected specific issues for further analysis and eliminated others from further evaluation. Subsequent discussions of the affected environment and environmental impacts related to each alternative focus on these issues. A brief rationale for the selection of each topic is given below.

Water Quality. Existing and proposed sewage collection and septic systems could affect water resources in Dry Bay area.

Vegetation and Soils. Vegetation and soils could be disturbed during excavation associated with the construction of new buildings and septic systems. Floods could deposit or erode soils and affect vegetation.

Wildlife. Migratory and nesting birds could be disturbed or displaced from the project area due to the short-term construction activities of this project or the loss of nesting trees in newly cleared areas. Bear behavior could be affected by changes in sewage sludge handling procedures.

Visitor Experience. Improvements to the visitor facilities – rafter takeout location, camp area location, camp area toilet outhouse and rafter sewage dump station – could affect the satisfaction of visitors using the Dry Bay area.

Health and Safety. River rafters using the sewage dump station could be directly affected by sewage. The design and condition of the existing dump station could allow for a spill during the transfer of waste from the portable river toilets to the septic system. The small spill containment area and proximity of the dump station to the ATV trail and campground could allow transfer of the sewage to visitors and other users. Floods or tsunamis could affect safety.

Park Management. The proposed project reconstruction of ranger station facilities could have a direct impact on park management efficiencies. More seasonal and project staff could be housed comfortably and safely, with better equipment storage and maintenance capabilities.

Issues Eliminated from Further Consideration

Wilderness. The proposed action would not occur within designated or proposed wilderness and therefore would not impact wilderness resources, character or values.

Threatened, Endangered and Other Special Status Species. There are no known endangered or threatened species or species of concern in the project area and it does not contain critical habitat for any endangered or threatened species or species of special concern. Therefore there is "no effect" from the project under the Endangered Species Act, Section 7 (Balogh, 2004)

Subsistence. The effects of the proposed action on subsistence uses and needs were dismissed from further analysis because the proposed action would not result in a significant restriction of subsistence uses. An ANILCA Section 810(a) summary evaluation and analysis is contained in Appendix 2.

Local Economy. Labor and some materials for this project may be obtained from the nearby communities. One or two people will be hired locally for the project. However, any related impacts to the local economy would be negligible due to the small size and short duration of the project.

Environmental Justice. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, requires all federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. This project would not be expected to result in significant changes in the socioeconomic environment of the project area, and therefore would not be expected to have any direct or indirect impacts to minority or low-income populations or communities.

Cultural Resources. The effects of the proposed action on cultural resources were dismissed from further analysis because the Dry Bay project area contains no known cultural artifacts or sites that might be disturbed. The area is a recently (less than 50 years) vegetated outwash gravel plain. The standard mitigation language would be added to the project about protecting any archeological sites encountered during the project.

Wetlands. The National Wetlands Inventory maps for the project area show that all of the project activities would occur outside of the wetlands. There would be no impact on wetlands.

Other Permits and Approvals Needed to Complete the Project

Alaska Department of Environmental Conservation. An "Approval to Operate" is needed from DEC for the two wastewater systems at Dry Bay – one for the sewage dump station and outhouse and one for the ranger station – and for the pit toilet at the East Alsek River public use cabin. An "Approval to Construct" has already been received (appendix 3).

Department of Natural Resources, Coastal Zone Management Program. The NPS will submit a negative determination for the Coastal Zone Management Program to the State of Alaska Department of Natural Resources for concurrence (appendix 4).

ALTERNATIVES

Alternative A. – "No-Action" – Do Not Construct any Facilities

Under this alternative, no new structures would be constructed, no structures would be relocated and no existing structures would be reconstructed (figure 7). NPS operations (including flood hazard mitigation) would continue as they have in recent years with the existing facilities.

Rafting Takeout and Camp Area. The rafting boat takeout point and the camp are on the bank of the Alsek River and adjacent to the main airstrip about 1,300 feet downstream (southwest) or the ranger station. There are no visitor facilities in the camp area except an information kiosk, a sewage dump station and a nearby pit toilet outhouse. The sewage dump station and the river rafter takeout point would remain in their existing configuration and location.

The existing camp area is adjacent to the Ivers building, a fish-buying station. The river rafters' airplane pickup location is adjacent to the Ivers commercial fish airplane pickup location and they use the same taxiway.

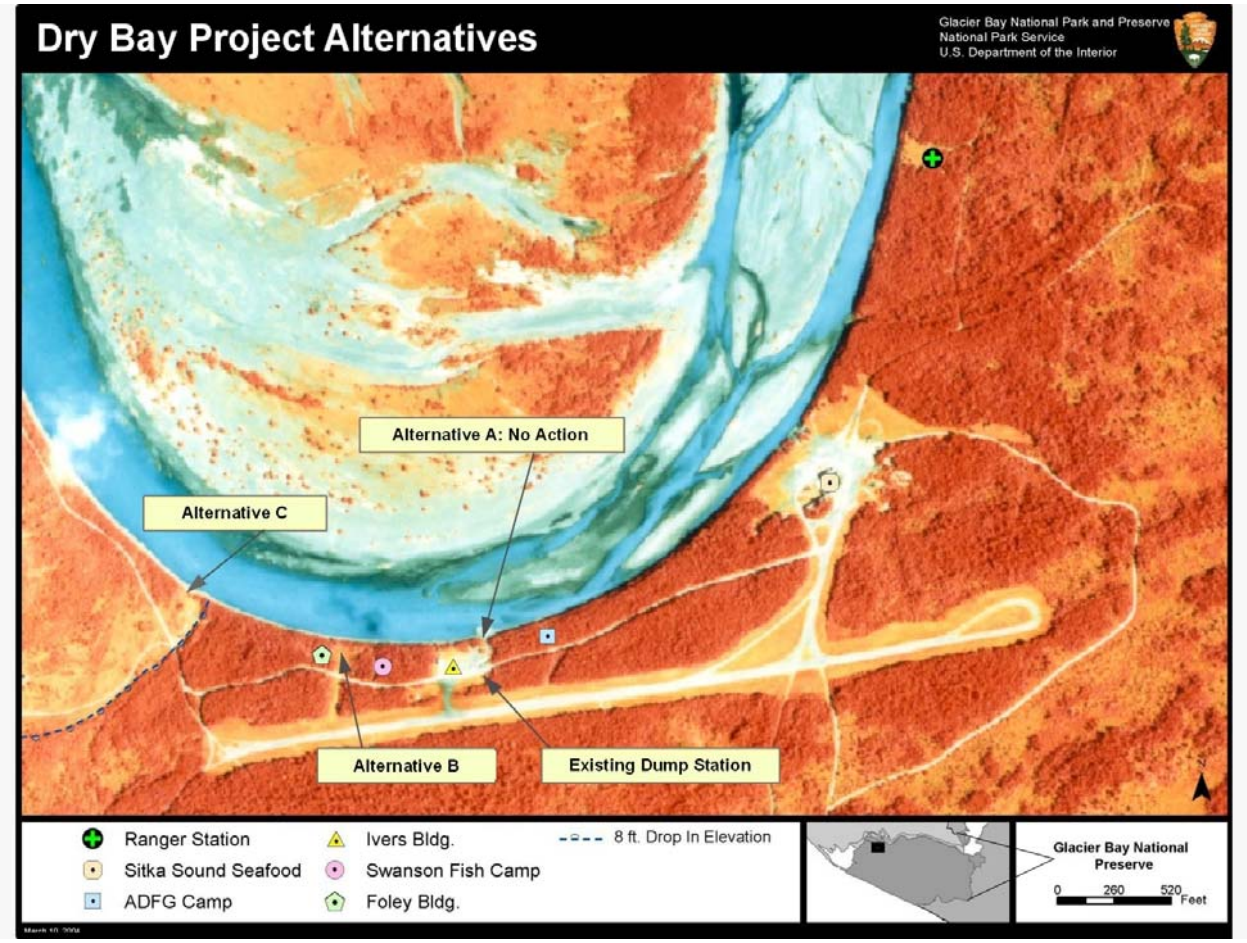


Figure 7. Project Alternatives. There are three alternative locations for the river rafters' takeout point and camp area. Alternatives B and C would also include new taxiway clearing.

Ranger Station. The ranger station consists of a park ranger cabin (24x16 feet) with two beds, a volunteer cabin (12x12 feet) with two beds, a bunkhouse cabin (12x12 feet) with two beds, a pit toilet outhouse (4x4 feet), an A-frame storage shed (12x6 feet) and an open fuel storage area (10x20 feet) with about twelve 55-gallon drums of different fuels (figure 8). All buildings are on skids for easy transport. The ranger station buildings are in poor condition and only marginally usable (figure 9). The ranger cabin is in the best condition.

Figure 8. Fuel Storage Area. Barrels of fuel at the ranger station are not contained or covered.

The ranger station has limited electrical power from batteries and a solar panel and a backup gasoline generator used during periods of low solar gain (November) and for heavy use loads like power tools. Lighting, cooking and refrigeration are from bottled propane. Heat is from fuel oil.

Commercial Fishing and other Facilities. In between the camp area and the ranger station, and adjacent to the airstrip, are the Sitka Sound Seafoods fish processing plant and the Alaska Department of Fish and Game (ADF&G) administrative camp. Downstream from the rafter takeout and camp area are a commercial fishing camp (Swanson Fish Camp), an abandoned fish-buying station (Foley building) and the former (1986-1993) site of the ranger station.

Figure 9. Existing Ranger Station. The facilities support NPS operations in Dry Bay.

Alternative B. – Proposed Action – Relocate Rafter Takeout Point, Reconstruct other Facilities near Existing Locations (*NPS Preferred Alternative*)

Under this alternative, NPS facilities at Dry Bay would be improved and rebuilt, essentially in their present locations. The exceptions would be the river rafter takeout location and camp area which would move about 640 feet downstream. A new taxiway would be cleared. Operational activities would continue, including implementation of the flood mitigation plan.

Sewage Dump Station. The new septic system would include a sewage dump station and public toilet, a 1,000-gallon septic tank, a 500-gallon septic tank, and two 60-foot leach fields (figures 10 and 11). The new station and septic system would be designed to comply with and be certified by the state for health and safety regulations (appendix 3). This new wastewater system would be ten feet from the existing station. It would have a new leach field. The vegetation above the new leach field would be maintained free of woody plants by regular mowing. A new pump would be installed to bring water from the river to a tank to support non-potable wash down at the dump station. The new dump station would be enclosed and screened by vegetation from the ATV trail and taxiway. A 30 foot by 100 foot area would be needed for the facility.

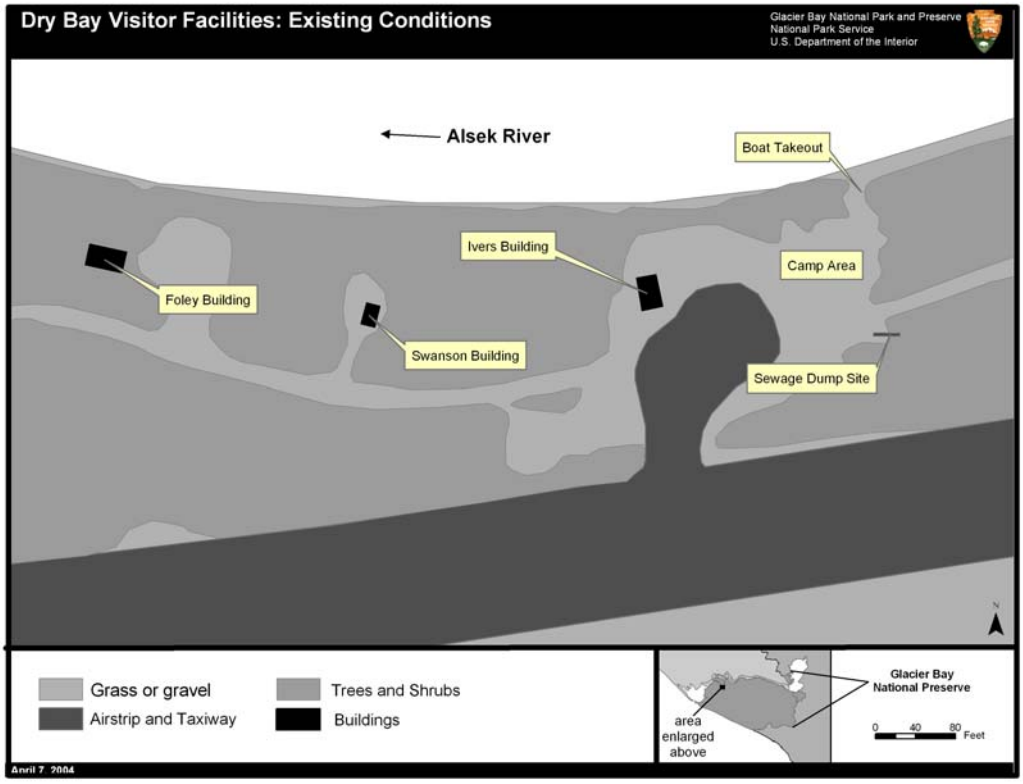
The existing underground septic tank would be filled and abandoned in place. The existing leach field would be connected to the new system and used to dispose of effluent from the new system at the end of the season when the system is decommissioned for the winter. The woody vegetation over the existing leach field would be removed and maintained free of woody plants by regular mowing.

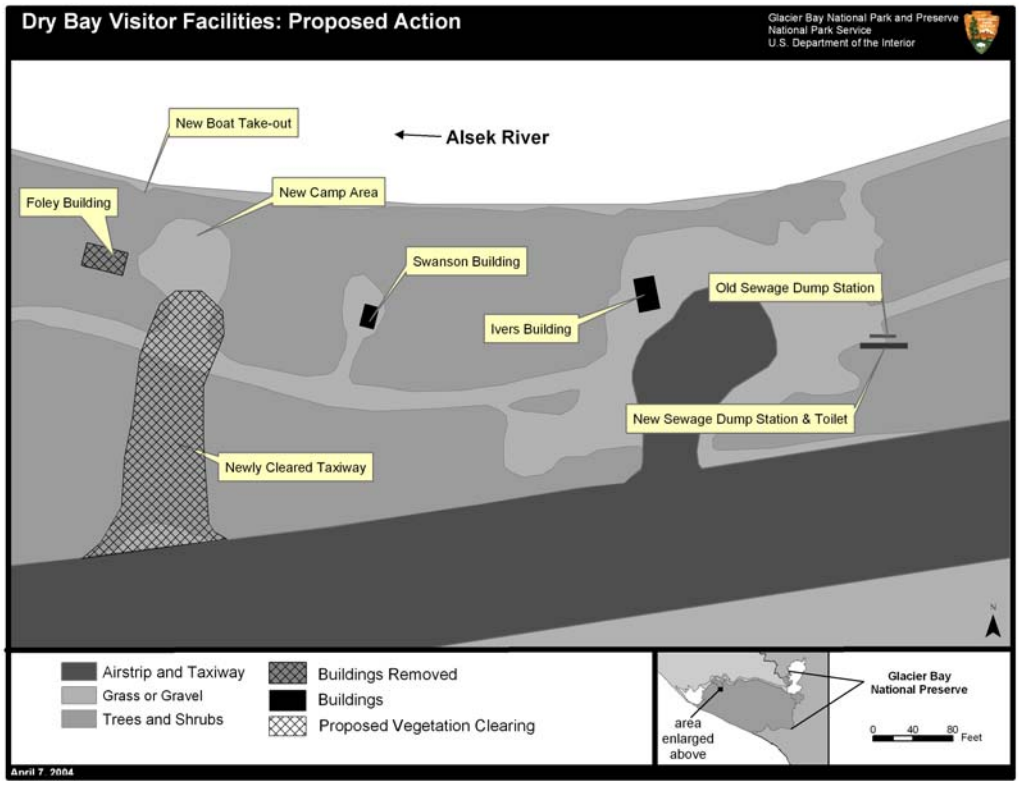
Freeze dried sludge would be bagged and removed from the preserve annually. The new wastewater filter system would allow NPS staff to dry, collect and bag the dried sludge for removal.

An outhouse toilet would be constructed directly above the new septic tank. The existing pit toilet outhouse, about 50 feet east of the existing dump station, would be demolished and the pit would be filled with a mix of lime and local soils, then graded flush with the surrounding ground.

River Takeout and Camp Area. The takeout location for the river rafters would be moved about 650 feet downstream. The camp area for river rafter parties awaiting air transportation would be moved about 650 feet to the existing clearing between the Foley and Swanson buildings. This move of the river takeout and camp area would take place over the next two summers because this action would require removal of the Foley building prior to the move. Camp area facilities would remain primitive without potable water or sleeping structures.

The overgrown airplane taxiway, 175 feet wide, from the airstrip to the new camp area would be partly cleared to allow a medium cargo plane to leave the airstrip and to safely turn around on the taxiway. A separation would be maintained between the taxiway and the camp area.





Figures 10 and 11. Dry Bay Visitor Facilities. Alternatives A (Existing Condition) and B (Proposed Action).

Ranger Station. The existing ranger station would remain in its present location. All structures would be demolished and reconstructed with the exception of the ranger cabin and the pit toilet (figures 12 and 13). The pit toilet would only be used during the freezing shoulder seasons when the septic system has been decommissioned for the winter season.

The back of the ranger cabin, containing the shower room and workshop, would be demolished. A new shower room with a flush toilet would be constructed on skids and attached to the back of the cabin.

A new wastewater system with a drain field would be built to serve the ranger station, volunteer cabin and bunkhouse cabin. Sludge would be pumped and hauled to the river takeout sewage dump station for filter drying and removal as necessary. A 1,000 gallon septic tank and two 30-foot leach lines would be installed.

The 6'x12' A-frame storage shed next to the ranger station would be demolished. A new 12'x20' storage building would be built. It would include a workshop area.

A new 8'x10' ATV storage shelter would be built. It would be a covered, three-sided structure.

The existing 12'x14' volunteer cabin (seasonal housing building) next to the ranger cabin would be demolished. A new 12'x21' three-bed volunteer cabin would be built on the site.

The existing 12'x14' bunkhouse cabin (short-term project staff housing building) near the ranger cabin would be demolished. A new 12'x21' three-bed bunkhouse cabin would be built.

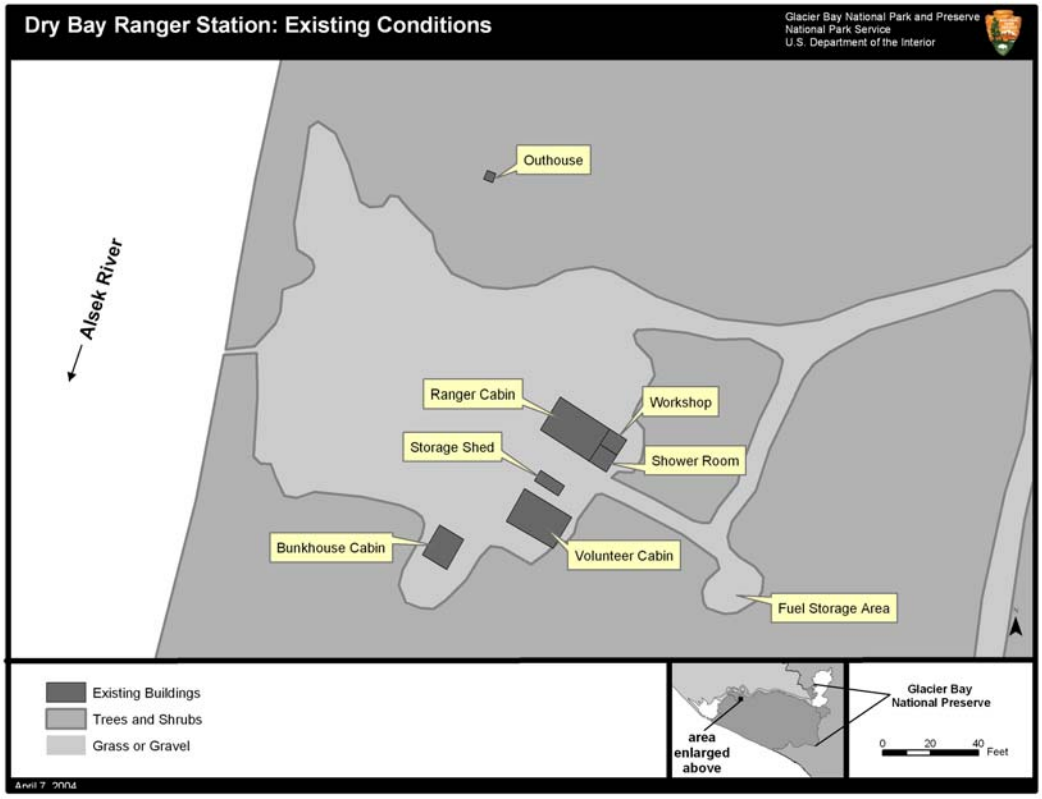
A 4'x8' fuel storage building would be built about 40 feet south of the ranger cabin at the site of the existing fuel storage area.

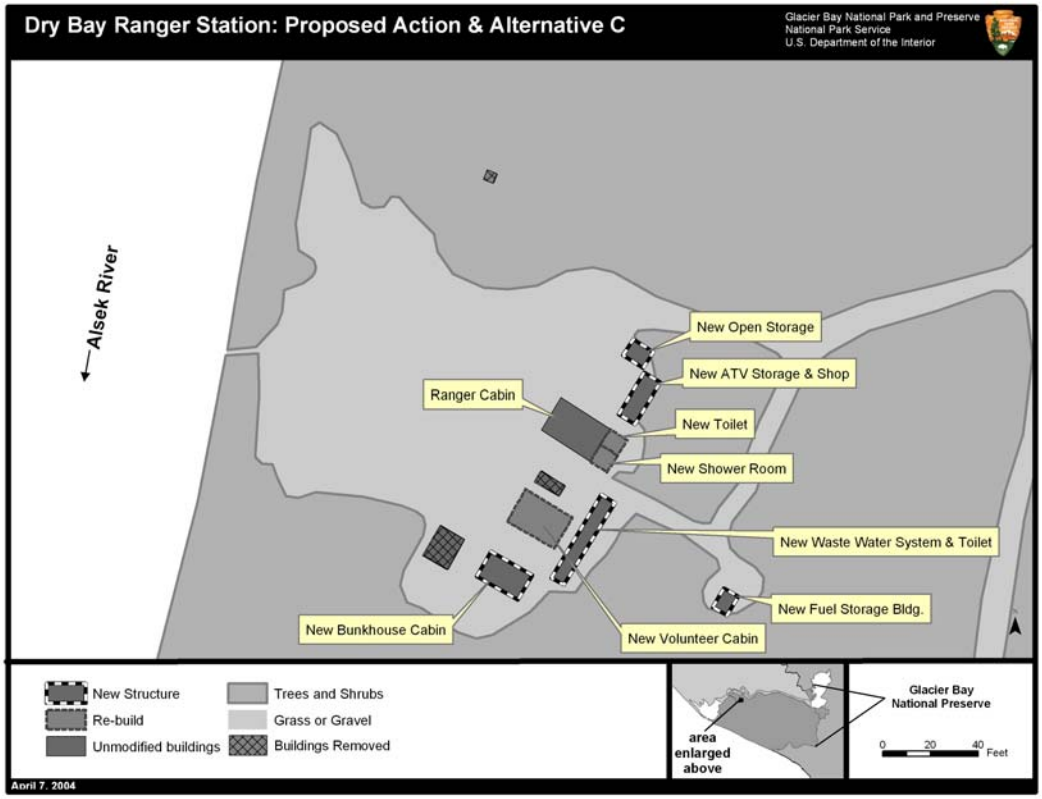
All buildings would be built on skids so that they can be moved.

East Alsek River Public Use Cabin Toilet. The existing pit toilet outhouse would be demolished. The pit would be filled with a mix of lime and local soils, and then graded flush with the surrounding ground. A new pit toilet would be built nearby (figure 14) over a new six-foot deep pit. A three-foot galvanized perforated culvert would be vertically placed in the pit to prevent the sidewalls of the pit from collapsing.

Schedule for Development

- May 12, 2004 – supply barge unloads all materials.
- May/June 2004 – construction of the river rafters' sewage dump station.
- June 10, 2004 – first river rafters arrive.
- June 2004 – construction of the ranger station wastewater system.
- June 2004 – construction of the ranger station buildings.
- June 2004 – construction of the pit toilet at the East Alsek River public use cabin.
- Summer 2005 – removal of the Foley building and delineation of the new river takeout point and camp area.





Figures 12 and 13. Dry Bay Ranger Station. Alternatives A (Existing Condition), B (Proposed Action) and C.

Alternative C. – Move River Takeout, Camp Area and Dump Station to West of Airstrip

Under this alternative, NPS facilities at Dry Bay would be improved and rebuilt, essentially in their present locations. The exceptions would be the river rafter takeout location, camp area and sewage dump station which would move about 1,300 feet downstream. A new taxiway would be cleared. Operational activities would continue, including implementation of the flood mitigation plan.

Sewage Dump Station. A river rafters' sewage dump station would be constructed near the west end of the airstrip (figure 15). The location would be along the existing ATV trail, over 100 feet from the Alsek River, just east of the eight-foot drop in elevation, so the new facility would be on high ground. The design of the new dump station, with outhouse and wastewater system, would be as described in Alternative B above, except it would not be connected to the existing sewage dump station system.

The surface features of the existing dump station and wastewater system would be removed. The sub-surface features would be abandoned in place. The site of the existing dump station would be allowed to naturally revegetate with woody shrubs and trees.

The existing pit toilet outhouse, about 50 feet east of the existing dump station, would be demolished and the pit would be filled with a mix of lime and local soils, then graded flush with the surrounding ground.

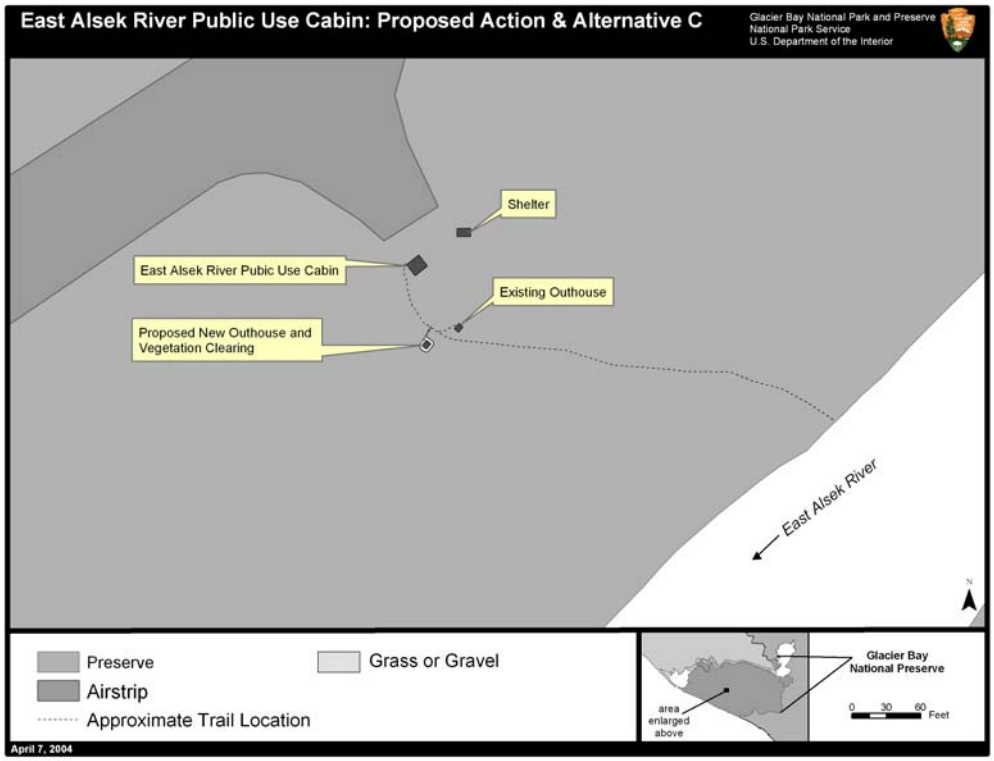


Figure 14. East Alsek River Public Use Cabin. Alternatives B (Proposed Action) and C both include replacement of the cabin's pit toilet.

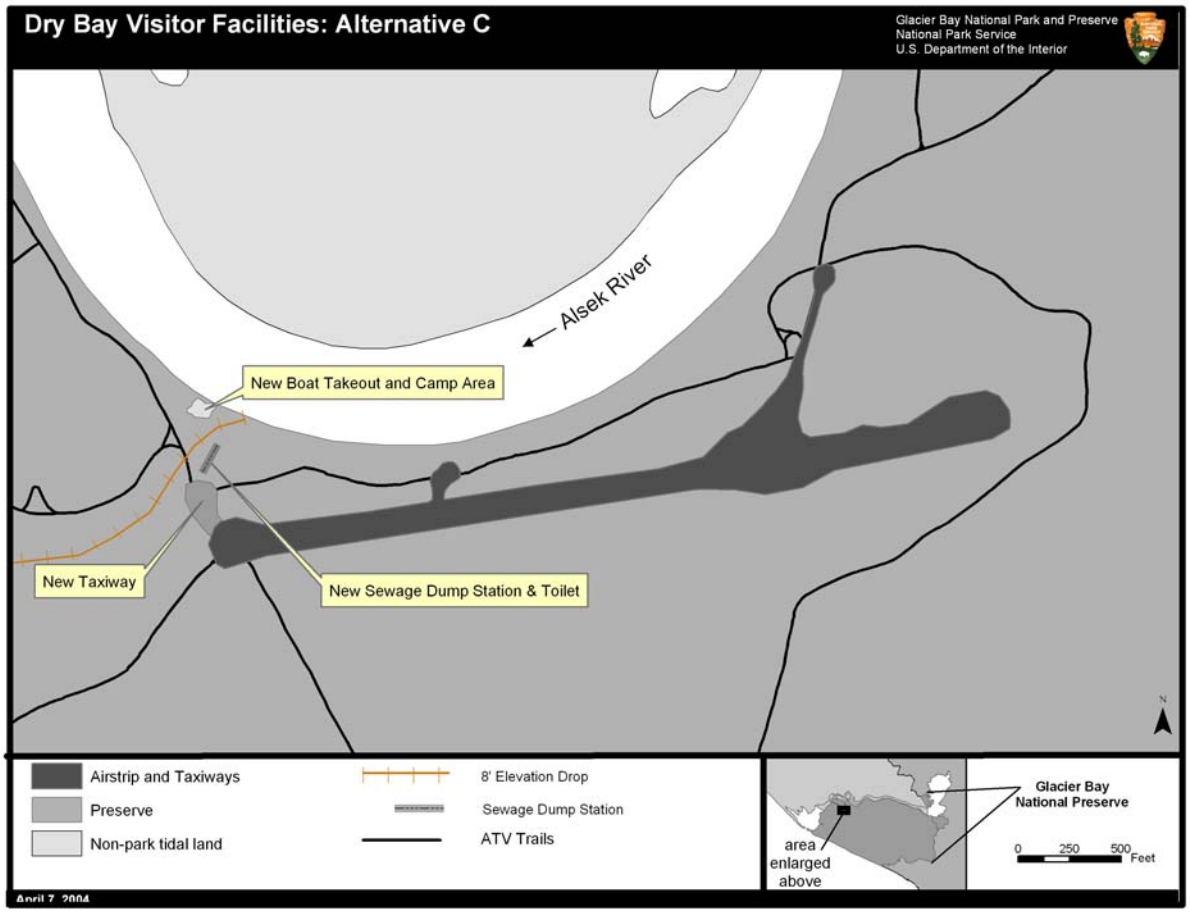


Figure 15. Dry Bay Visitor Facilities. Alternative C would move the dump station and include a new taxiway.

River Takeout and Camp Area. The river rafters' takeout point and camp area would be relocated to a site near the west end of the airstrip. The new takeout point would be about 1,300 feet downstream (west of) the existing takeout point, and about 650 feet downstream from the proposed takeout point in Alternative B. The camp area would be about 30 feet from the Alsek River in an area that is mostly clear of vegetation. In 2003 some river trips used this site as a camp area. It is about 30 feet below (west of) an eight-foot drop in elevation.

Taxiway. A 200-foot long, 175-foot wide taxiway would be constructed, from the west end of the airstrip northwest toward the new camp area. It would be just big enough for aircraft picking up river raft parties to get off the airstrip and turn around. The new taxiway and the west end of the existing airstrip would be hardened using soil cement and tamping in order to eliminate soft areas. River raft groups would use this new taxiway for airplane pickup rather than the existing taxiway near the Ivers building.

Ranger Station. The facilities at the ranger station would be demolished, reconstructed and constructed as described in Alternative B above.

East Alsek River Public Use Cabin Toilet. A new pit toilet would be built at the public use cabin as described in Alternative B above.

Schedule for Development

- May 12, 2004 – supply barge unloads all materials.
- May/June 2004 – construction of the river rafters' sewage dump station.
- June 10, 2004 – first river rafters arrive.
- June 2004 – construction of the ranger station wastewater system.
- June 2004 – construction of the ranger station buildings.
- June 2004 – construction of the pit toilet at the East Alsek River public use cabin.
- June 2004 – delineation of the new rafter camp area and takeout point.
- July 2004 – clearing of the new taxiway and soil cement treatment of soft spots.

Alternatives Considered but Eliminated from Further Consideration

Several additional alternative facility developments or configurations were considered but eliminated from further consideration because they were not feasible or they did not accomplish the purpose or address the need of the project. These issues were not further analyzed in this EA.

1. Move the river takeout point to the existing airstrip eight miles upstream on the Alsek River. This alternative was rejected because the benefits to the river trips were less than the negative aspects of the new site. The benefits would be that about a third of the river trips arriving in Dry Bay during low flow seasons would not need to paddle the last one-half mile upstream to the takeout point. The costs would be loss of the recreational opportunities afforded by the last eight miles of the river trip, and opportunities to visit the coast for recreational beachcombing. This takeout could create a nuisance to the patrons of the Alsek River Lodge, which sits about thirty feet from the airstrip, from several daily flights to pick up river rafting parties, and from rafting parties camping near the Lodge. The nearby airstrip would need to be maintained and eventual reconstruction because it is actively eroding into the Alsek River.

2. Purchase the Alsek River Lodge. This was not included in the EA because of distance to the Dry Bay airstrip and transportation issues associated with this distance.

3. Construct an incinerator for disposal of the sewage from the river trips and the outhouse at the camp area. These types of septic disposal systems cannot incinerate sufficient quantities of wet sludge in a reasonable time to be viable. This type of system at Dry Bay would require extensive maintenance. The costs of infrastructure, expense in operation (man power and fuel) and future maintenance costs would outweigh the benefits.

4. Develop a water system for the camping area for potable water for campers and for flush toilets. This alternative was rejected because of development cost, maintenance and freeze problems and current management direction. Providing potable water would mean that the system would be managed as a "public water system." Such a system would require daily monitoring and regular sampling. A chlorination system and a storage tank to allow for minimal chlorine contact time would be required. If flush toilets were provided but no potable water, the monitoring and chlorination could be avoided, but the cost and maintenance of a flush toilet system are greater than the benefit. The frozen shoulder seasons at the camp area would require an outhouse in addition to the flush toilet. The Dry Bay area is managed as a camping experience, and the park's GMP indicates that potable water is not provided. The recreational river runners would continue to consider Dry Bay as the last part of their camping experience rather than the first part of their return to civilization.

5. Develop a covered sewage sludge drying rack in the meadow about one and one-half miles east of the current dump station. The meadow is currently used as an annual burial site for sewage sludge. Consideration was given during internal scoping to the construction of an above ground, covered sludge drying bed. A sludge drying facility was eliminated because a better technology is available – a sealed system that could be

constructed at the dump station which could allow the drying, collection and bagging of dry sludge for annual removal, reducing the risk of contact with sewage for park personnel, visitors and wildlife.

6. Move the ranger station to the same location as the camp area in order to share one septic system. If the ranger station was in the camp area, the NPS staff could provide 24 hour service to the river rafters. However, considering the quality of living conditions for the staff and the relatively isolated post of Dry Bay, employees may get disturbed frequently on their off-time by campers. Locating the ranger station apart from the camp area, but within easy walking distance (one-third mile), as is the current condition, the staff would be able to offer assistance for the visitors while having some privacy. Also there are concerns about security of NPS equipment, fuel and facilities at a co-located facility.

7. Require river rafting trips carry out their sewage rather then provide a sewage dump station at Dry Bay. This alternative was eliminated for two reasons. First, the availability of a dump station was a major factor in the justification of the permit fee for the river. The operation of the station is wholly funded by the river fees. The fee monies also go to administration, safety equipment and patrols. Second, compliance with the regulation on human waste carry out is much lower on rivers where there is not a convenient way to get rid of the waste. Carrying out waste is the norm on rivers in the lower 48 states. The Alsek River is the first river in Alaska or the Yukon to require carry out of waste.

Mitigation Measures. Common to both the action alternatives would be the following mitigation measures.

1. Vegetation screening would help hide the sewage dump station. River rafters would be able to locate the dump station because trips would get a map to the dump station, there would be a sign and NPS staff would meet about 95% of the river trips.

2. All new and reconstructed public facilities would be ADA accessible.

3. If any cultural resources are discovered during construction activities, the site would be protected and the activities would stop until the park archeologist can be notified and has the opportunity to evaluate the site.

4. The park would provide a wheeled equipment carrier, similar to a game carrier or large garden cart. This would allow the river rafters to more easily haul their portable river toilets to the sewage dump station and haul their rafts and equipment to the airplane pickup point. This measure relates to visitor experience and the ease or difficulty of travel by river rafters to the dump station or to the airplane pickup point.

5. Demolition of structures and facilities would make use of "deconstruction" principles as much as possible to salvage usable materials.

6. Flood mitigation plans are in place; see the statement of findings (SOF) for floodplains in appendix 5. Mitigation measures taken in this project provide the same level of protection as has been present in the Dry Bay developed area in the past. Additional flood mitigation measures may be utilized in the future as knowledge of flood hazard conditions improve.

Environmentally Preferred Alternative. Alternative B, the *Proposed Action*, is the *environmentally preferred alternative*. This is because it would eliminate the health and safety issues of the existing sewage dump station, ranger station wastewater system, ranger station fuel storage hazard and public use cabin outhouse toilet, and it would keep the river rafter takeout, camp area and taxiway in previously disturbed areas.

AFFECTED ENVIRONMENT

This chapter of the EA describes the existing conditions at the project site.

Water Quality

Ranger Station. Water used by the ranger station comes from rain collected from the cabin roof. It is for NPS staff use only. Drinking water is purified by a micropore drip filter. Use averages two to five gallons per day.

Wastewater from the shower and sinks flows into a buried sump and rapidly infiltrates into the rocky substrate. This wastewater system is more than 100 feet from the nearest water source – the Alsek River.

Sewage Dump Station. As described in the GMP, the boat takeout area and camp area have no potable water. The sewage dump station uses about 26 gallons of untreated water per day to flush out the portable waste containers from the river trips. The water is pumped from the river with a small electric pump powered by a solar panel, or by a small gasoline-powered pump, and delivered through a buried garden hose.

The dump station has a septic tank and a buried leach field. This wastewater system is more than 100 feet from the nearest water source – the Alsek River. Sewage sludge from the dump station is annually transported by ATV to a meadow area about one and one-half miles away on the preserve and buried.

East Alsek River Public Use Cabin. The cabin has no potable water. Visitors using the cabin use the nearby river as a water source.

A pit toilet outhouse near the cabin is the only sewage facility. It is more than 100 feet from the nearest water source – the East Alsek River.

Vegetation and Soil

The terrain in the project area was historically river channels and gravel bars that were seasonally inundated (see appendix 5, SOF). The area has uplifted by glacial rebound and the earthquakes of 1937 and 1958. Vegetation has colonized these areas since the uplift, although photos of the area as late as 1973 show no vegetation higher than three feet within a mile of the river (figure 16). Uplift is occurring at about one foot per decade.

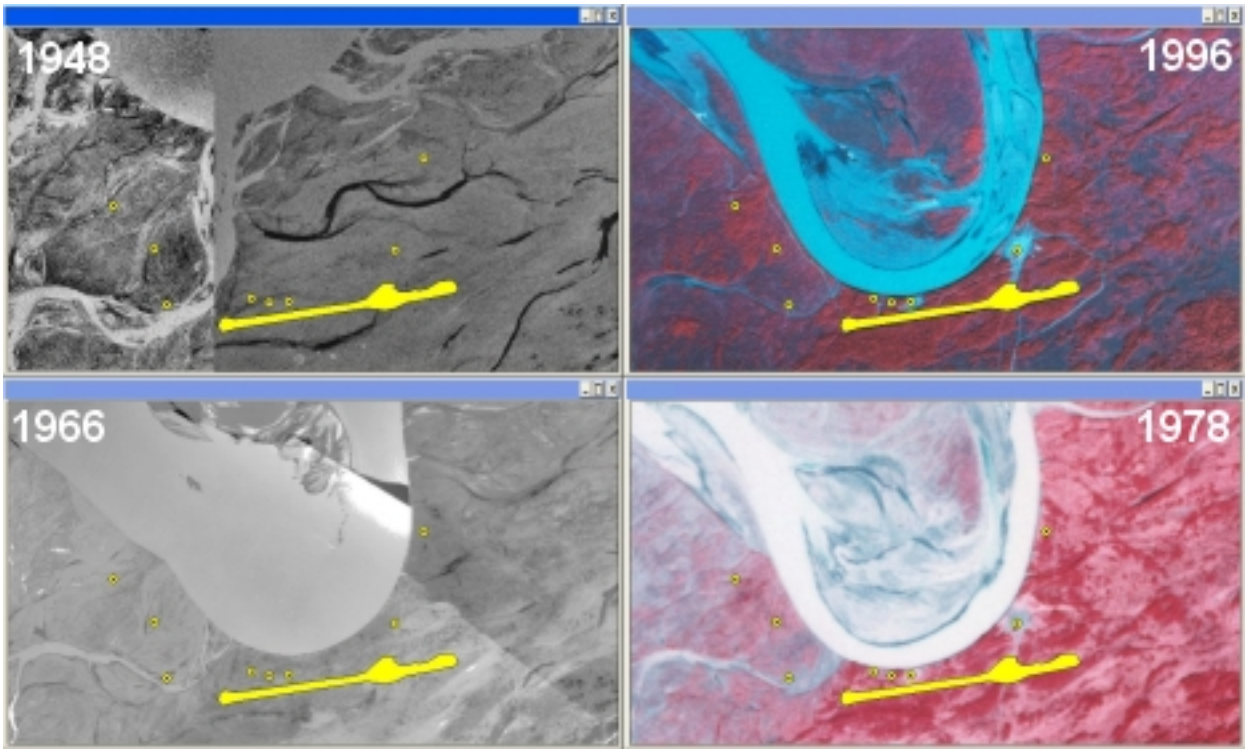


Figure 16. Alsek River Slough Channel Changes. These four aerial images from 1948, 1966, 1978 and 1996 show recent changes in the project area.

Soils consist of river cobble, gravel, sand and silt with a thin layer of organic material deposited in the past 70 years.

Current vegetation is a mixture of grasses, mosses, strawberry plants and willow thickets in the lower, open areas and dense thickets of Sitka alder, black cottonwood, willow and mountain ash with an under story of trillium, ground cone, moss and strawberry in the higher, better drained areas. Salmonberry, blueberry and devil's club are starting to colonize scattered areas and young Sitka spruce is growing in the older stands.

The largest trees in the area are black cottonwoods with a diameter of about 14 inches and a height of 45 feet. They make up a small percentage of the trees (five to eight percent). The dominant species of trees in the area are Sitka alder about five to twenty feet high and a few Sitka spruce and willow.

The areas around facilities – airstrip, buildings, camp area, ranger station, wastewater leach fields – are kept clear of woody vegetation by regular foot, ATV or airplane travel or by regular mowing. Outside these cleared areas, the vegetation quickly becomes wooded with alder and other woody trees and shrubs.

Wildlife

Wildlife present includes black and brown bears, moose, wolves, wolverines, marmots, weasels and rabbits. Porcupine and Sitka black-tailed deer are not found in this area. Sitka black-tail deer are confirmed present about 20 miles away and are increasing from a population introduced on the islands in Yakutat Bay in the 1930s. There was one questionable deer record in the preserve in 1995.

The area is used during the spring and fall migration by many shorebirds and waterfowl, including dunlin, black-bellied plovers, greater and lesser yellowlegs, Canada geese, mallards, teal and trumpeter swans. One of the primary reasons Dry Bay was included in the NPS lands (ANILCA, 1980) was its importance as a migratory bird nesting and resting area. Trumpeter swans winter in the coastal areas of the preserve. Breeding birds include a wide variety of songbirds, waterfowl, and shorebirds that nest and rest along the river channels and inland. Spruce grouse are not found in this area.

Visitor Experience

The Dry Bay area supports a variety of human uses from April through October including:

- a seasonal commercial salmon fishery with support activities occupying NPS lands under special use permits,
- seasonal subsistence activities,
- private lodges providing services for fly-in park visitors,
- private and commercial river rafting groups, and
- sport hunting and fishing activities.

Commercial fishing peaked at over a million pounds per year in the early 1990s but has decreased to 250,000 to 450,000 pounds annually in recent years. Commercial fishing and support activities are authorized by the park's enabling legislation (ANILCA, 1980). The support activities occupying NPS lands (fish processing, buying, air taxi, associated storage and housing structures) are managed under special use permits.

Subsistence activities in the preserve are primarily the harvest of salmon, eulachon, moose and furbearers (appendix 2).

Three private fishing lodges and two private hunting guides operate in the preserve under NPS special use permits. The land is owned by NPS and the buildings and improvements are owned by the private companies.

Dry Bay is the boat takeout point for rafting trips on the Alsek River. Rafting parties leave the river at a point on the river bank near the existing camp area and airstrip. Due to natural shifting of the main channel of the Alsek River, the designated boat takeout point is difficult to reach during periods of low flow (figure 6).

Health and Safety

The NPS provides no potable water at Dry Bay. Visitors to the East Alsek River public use cabin or the rafting camp area use river water and treat it themselves. NPS staff at the ranger station use rain water and treat it themselves.

There are six arrangements for wastewater disposal in the project area:

- a pit toilet outhouse at the ranger station,
- a grey water sump drain at the ranger station,
- a sewage dump station with septic tank and leach field at the rafting camp area,
- a pit toilet outhouse near the rafting camp area,
- a sewage sludge burial area in a meadow for the septic tank solids removed annually and
- a pit toilet outhouse at the East Alsek River public use cabin.

All these waste disposal facilities are more than 100 feet from the nearest water source.

The project area is within the 100-year floodplain. The coastal outwash plain of Dry Bay is subject to glacial outburst floods and tsunamis (see Appendix 5, SOF).

Park Management

Staffing. Glacier Bay National Preserve, and more specifically Dry Bay, is staffed seasonally (April-November) by one NPS protection ranger and one park volunteer. Seasonal NPS maintenance workers, other park employees and cooperating researchers are present at times, usually two to six people for two to fourteen days.

The ranger station was constructed in 1993. From 1986 to 1993 a more limited ranger station was located near the west end of the airstrip, above the eight-foot change in elevation, near the river. It consisted of two 12x12-foot tent frames on skids. The ranger station was moved because there was not room at the old site for the larger structures. From 1982 to 1986 the tent frames were on an airstrip 3 miles upstream on the Alsek River. In 1986 a change in the river channel eroded the airstrip and the tent frames were moved.

Airstrip. Airplane access is the primary source of visitor transportation in and out of Glacier Bay National Preserve for rafting parties leaving the Alsek River; people and supplies associated with commercial, subsistence, sport fishing, commercial lodges, NPS staff and research groups. The gravel airstrip at Dry Bay serves all these needs. The airstrip is 3,600 feet long and 150-180 feet wide. It has two taxiways – one to the Sitka Sound Seafoods buildings (a commercial fish processing facility; the largest facility in the Dry Bay area) and the other to the Ivers building (a commercial fish-buying station).

The airstrip and taxiways are maintained annually by mowing and by clearing the approaches. The mowing is done by Sitka Sound Seafoods under their special use permit. Heavier wood clearing is done by NPS. Windsocks and signage are replaced as needed by NPS.

Cultural History. The project area is in the homeland of the Gunaxoo Kwaan, a northern Tlingit tribal group that now resides primarily in Yakutat. The clans that comprised the Gunaxoo Kwaan traditionally controlled territories from north of the Akwe River south to Lituya Bay. Their main villages were located on the Akwe River and later along Cannery Creek, both to the northwest of the preserve. The archaeological remains of several of these villages have been identified in recent years. Villages also existed within the Glacier Bay National Preserve – as identified in a traditional place names map – but none have been identified archaeologically, and landscape changes during the past century may make such discoveries unlikely. The lone exception might be Bear Island, which has been identified as the traditional location of a fort site.

The Dry Bay landscape is also imbued with mythical qualities by Tlingit peoples as the landscape where Raven conducted many acts at the time of the creation of the world. The birthplace of the sun, and the place where all of the animals and plants that provide food for humans came ashore, lie just north of the preserve. Within the preserve the landform of Bear Island marks the place where Raven turned black (he was originally white). All of these Raven sites are eligible for nomination to the National Register of Historic Places as Traditional Cultural Properties.

Within the immediate project area no historic properties have been identified. The history of flooding has created a relatively recent deposit in the project area (appendix 5), and any cultural materials, if present, would also be of recent origin.

IMPACT ANALYSIS

The impact analysis in this EA looks at each of the three Dry Bay facility project alternatives, examining the direct and indirect effects of the six impact topics: water quality, vegetation and soils, wildlife, visitor experience, health and safety, and park management. Each issue topic for each project alternative includes a *cumulative impacts* section and a *conclusion* section. Cumulative impact sections describe incremental impacts from past, present and reasonably foreseeable future actions. Conclusion sections include a determination on *impairment* of park resources when the impact topic addresses park resources.

Alternative A. – "No-action" – Do Not Construct any Facilities

Water Quality

Under the no-action alternative, at the ranger station, grey water from a shower and two sinks would continue to drain into a ground sump and infiltrate into the gravel soils about 150 feet from the Alsek River. This could affect local groundwater quality.

The continued use of the fuel storage area at the ranger station could affect local groundwater quality. Fuel containers are stored directly on the ground and exposed to the environment, so any container leak or accidental spill could affect the local groundwater.

The continued annual burial of sewage sludge from the dump station in a nearby meadow could affect local groundwater quality.

The continued use of the sewage dump station could affect local groundwater quality because waste being transferred from the portable boat toilets to the wastewater system might spill or splash onto the nearby ground. The DEC is asking the park to rebuild the dump station because the design of the existing dump station does not meet its water quality standards.

Cumulative Impacts: Activities associated with NPS administration, river running, the recreational lodges and commercial fishing occur in the Dry Bay area. The dominant activities have been commercial fishing, fish export and fish processing. The offal from the processed fish has been dumped in the same meadow where the ranger annually buries the sewage sludge from the dump station. Currently, the fish processing facilities, lodges and other facilities in Dry Bay, with the exception of the NPS facilities, have approved septic and disposal systems. The result has been that impacts to groundwater quality locally have been significantly reduced in recent years. The NPS facilities would be the predominant sources of local groundwater quality effects in the Dry Bay area.

Conclusion: The no-action alternative could affect local groundwater quality near the individual sites – the sewage dump station, the ranger station wastewater sump and fuel storage area and the meadow sludge burial area. Impacts to local groundwater quality could persist as long as the

existing uses continue in those areas. Long-term impacts to local groundwater quality would not result in the impairment of park resources or values as described in the NPS Organic Act (1916), the park's enabling legislation (ANILCA, 1980) or the park's GMP (1984).

Vegetation and Soils

Under this alternative, the surface excavation from sewage sludge burial would affect about 20 additional square feet of vegetation and soils annually for the life of the facility. Natural revegetation would ameliorate the effect.

Without an improved fuel storage facility at the ranger station, the outdoor open storage of fuel containers would continue. If any of the containers leak, they could locally affect soils at the site, about 250 feet from the Alsek River.

Cumulative Impacts: Historic development activities in the Dry Bay project area have included the construction of an airstrip, ATV trails and structures for a variety of seasonal human uses. This development has covered about 20 acres of land resulting in minor impacts to vegetation and soils. Of particular importance has been development associated with seasonal commercial fishing. Commercial fish harvest has decreased in recent years, so some fish facilities have been abandoned and have overgrown, reverting to natural vegetation.

The project area is rising in elevation about one foot per decade, due to isostatic rebound and tectonic uplift. As this continues, fewer major flood events take place because the uplands become more isolated from the stabilizing river channel, so soils and vegetation become more established. See appendix 5, SOF.

The project's area of potential effect is the most developed part of the Dry Bay area. It runs along the Alsek River from the ranger station area to just west of the airstrip and includes the airstrip, several commercial fishing facilities and the local ATV trails (figure 2). About 20 acres of natural vegetation have been converted to the footprint of development in this area, mostly for the airstrip and its cleared margins. The no-action alternative would annually add a very small increment (20 square feet in the meadow) of disturbance to the area.

Conclusion: The no-action alternative would have negligible impacts to vegetation and soils of the project area. Impacts to vegetation and soils under this alternative would not result in the impairment of park resources or values as described in the NPS Organic Act (1916), the park's enabling legislation (ANILCA, 1980) or the park's GMP (1984).

Wildlife

Under the no-action alternative bears may be attracted to the burial site of the sewage sludge, altering their behavior and causing them to become habituated to human activity and food. The sewage sludge may be unhealthy for the bears' diet. The use of the nearby meadow to bury sewage sludge could alter bear behavior and diet on a short-term basis while those resources

were available. Bears have been known to frequent this location shortly after the sludge burial and may re-excavate the site and further spread the sludge on the surface. Migratory or nesting birds would not be affected under the no-action alternative because feeding areas and nesting habitats would not be reduced.

Cumulative Impacts: Migratory and nesting birds have been affected over the long-term from the removal of some 20 acres of low forest habitat in the Dry Bay project area. This is a minor habitat loss in context of the local and regionally available habitat. The no-action alternative would annually add a very small increment (20 square feet in the meadow) of disturbance to the area.

Conclusion: Impacts to wildlife resources under the no-action alternative would be minor. Impacts to wildlife under this alternative would not result in the impairment of park resources or values as described in the NPS Organic Act (1916), the park's enabling legislation (ANILCA, 1980) or the park's GMP (1984).

Visitor Experience

Under the no-action alternative river rafters would continue to be impacted during periods of low flow on the Alsek River because they would not be able to float directly to the takeout point. Instead, they would have to paddle up the side channel to the takeout point for about the last one-half mile. Figure 6 shows the Alsek River at low flow with the side channel to the takeout point mostly blocked by exposed gravels.

River rafter parties would continue to use the existing sewage dump station in its existing condition. Due to the un-safe operating condition, their experience of using the existing dump station could reduce their enjoyment of the area.

The pit toilet at the East Alsek River public use cabin would not be replaced, resulting in a negative visitor experience at the existing facility.

Cumulative Impacts: Under the no-action alternative, visitor use of the project site would still be limited by river use permits to one raft party per day and to 20 people per party throughout the rafting season. These numbers would not change. This alternative would not have an impact on visitor use numbers of the project area. This alternative would add a small increment of disturbance to visitor experience.

Conclusion: The no-action alternative would result in inconvenience to the park visitors on rafting trips.

Health and Safety

Under the no-action alternative, the sewage dump station used by the river rafters and the sump used by the ranger station would continue to be in violation of state health regulations at 18 AAC

72.240. The NPS would continue to seek a waiver extension from DEC regulations for use of the existing sewage dump station. Raw sewage at the dump station could continue to splash onto visitors attempting to use the dump station to empty their holding buckets or onto the nearby ground. The ranger station grey water sump drains the shower room and three sinks, not the outhouse; but in Alaska there is no exemption for grey water for a fully compliant septic system.

The fuel storage containers would continue to be susceptible to spillage and possible ignition in their present location.

Rafter groups would continue to mix with commercial fishing and aircraft activity. Safety issues would continue where visitors are proximal to working airplanes and ATVs delivering goods to the airplanes.

There could be an impact to the park ranger's health and safety from transporting raw sewage and sludge by ATV to the meadow and burying the sludge. The ranger could be exposed to direct contamination of untreated human waste.

In the 100-year floodplain, which includes the entire project area, glacial outburst floods or tsunamis could pose a safety risk to people the in Dry Bay at the time of the event (see Appendix 5, SOF).

Cumulative Impacts: Other health and safety issues in Dry Bay are related to aircraft landings and takeoffs, hunting and fishing activities, and ATV use along trails in Dry Bay and the greater preserve. Any increase in the level of human use associated with these activities would add to the overall impact on health and safety in Dry Bay.

Conclusion: The no-action alternative would result in continued problems with the two NPS septic systems of the Dry Bay area – the river rafters' sewage dump station and the ranger station – and continued use conflicts near aircraft. This alternative would result in moderate impact to human health and safety by the continued use of the sewage dump station, the continued inability of the ranger station grey water disposal system to meet DEC regulations and the exposure of NPS staff to untreated human waste.

Park Management

Under the no-action alternative, the condition of the ranger station infrastructure would continue to be poor. The bunkhouse cabin would continue to be unusable for short-term overnight stays by staff, volunteers or researchers. The volunteer cabin, storage shack, workshop and shower room would continue to experience wood rot, mold and moss in a deteriorating condition and would need continuous repair for its failing infrastructure. In addition, the deteriorating condition of the ranger station facilities would result in reduced lodging and administrative efficiencies. Fewer NPS staff would be able to remain overnight in Dry Bay for resource protection, monitoring, and maintenance concerns. Continued NPS facility deterioration would occur under the no-action alternative, resulting in increased makeshift repair to existing facilities and less efficiency of park management.

Cumulative Impacts: Other park management issues such as enforcement of existing state and federal regulations, periodic brush removal along runways and ATV trails and administration of the raft permit system would add to the overall impact of this alternative on park management.

Conclusion: This alternative would continue to negatively impact park management operations, both in the short-term and the long-term as a result of inadequate administrative support facilities.

Alternative B. – Proposed Action – Relocate Rafter Takeout Point, Reconstruct other Facilities near Existing Locations (*NPS Preferred Alternative*)

Water Quality

This alternative would benefit water quality because the new sewage dump station and ranger station septic system would be rebuilt to comply with state standards and would reduce the affect to local groundwater quality. The sludge dumping activity in the meadow would no longer take place and this would benefit local groundwater quality. The proper containment of the fuels stored at the ranger station would protect local groundwater quality.

Cumulative Impacts: Because overall water quality would be improved under this alternative, NPS expects no additional impacts to water quality from future actions including activities associated with NPS administration, river running, the recreational lodges and commercial fishing that currently occur in Dry Bay.

Conclusion: The construction of NPS facilities at Dry Bay would have positive effects on local groundwater quality. Impacts to water quality under this alternative would not result in the impairment of park resources or values as described in the NPS Organic Act (1916), the park's enabling legislation (ANILCA, 1980) or the park's GMP (1984).

Vegetation and Soils

Under this alternative, NPS would build new structures near the current ranger station, but without significantly changing or expanding the development footprint of the area. About one acre of additional land would be disturbed. Alders and spruce up to 30 years old would be removed for the new leach fields at the sewage dump and ranger stations. Less than one acre of vegetation and soils combined would be disturbed from installation of septic tanks, leach fields and pit toilets at the river rafter takeout, ranger station and East Alsek River public use cabin. No further excavation would occur in the meadow where the sludge has been buried in the past.

NPS would reopen the overgrown taxiway to the Foley building. It would be about 200 feet long and 175 feet wide.

Cumulative Impacts: Historic development activities in the Dry Bay project area have included developing land for an airstrip, ATV trails and structures for a variety of seasonal human uses. Existing development has covered about 20 acres of land. The incremental additional impact would be about one acre added to the 20 acres of existing development. Significant future vegetation clearing is not anticipated. In the context of local and regional ground cover, this 21-acre loss of vegetation is a minor impact. Of particular importance has been development associated with seasonal commercial fishing. Commercial fishing harvest has decreased in recent years, resulting in some fishing-related facilities becoming overgrown with vegetation.

The project area is rising in elevation about one foot per decade, due to isostatic rebound and tectonic uplift. As this continues, fewer major flood events take place because the uplands become more isolated from the stabilizing river channel, so soils and vegetation become more established. See appendix 5, SOF.

Conclusion: The construction of NPS facilities at Dry Bay under this alternative would have a minor effect on vegetation and soil resources. This alternative would add a small amount (one acre) of newly cleared land to the project area. Impacts to vegetation and soils under this alternative would not result in the impairment of park resources or values as described in the NPS Organic Act (1916), the park's enabling legislation (ANILCA, 1980) or the park's GMP (1984).

Wildlife

Under this alternative, bears would no longer be attracted to the sludge burial site in the nearby meadow because sewage sludge would be dried at the septic systems, bagged and removed from the preserve.

Migratory and breeding birds would be disturbed from short-term construction activities of the project. Birds would be displaced over the long-term from wooded habitat due to clearing about one acre of land for the project, primarily for the new septic system leach fields which require about 30 feet x 100 feet of clear area, and the re-clearing of the taxiway to the new camp area. The cleared areas would be maintained as cleared grassy areas by periodic mowing.

Cumulative Impacts: Past activities in the project area have removed about 20 acres of potential bird habitat woodland and converted it into runway, taxiways, ATV trails and building sites. The incremental additional impact from this action to current habitat removal would be about one acre. In the context of local and regional available wildlife habitat, this 21-acre loss of habitat is a minor impact. NPS does not anticipate significant future clearing or habitat loss in the Dry Bay area.

The additional noise and activity of the Dry Bay area associated with ATV and airplane use during the rafting and fishing seasons would be localized and result in a minor cumulative impact on wildlife in the area.

Conclusion: The construction of NPS facilities at Dry Bay under this alternative would have a minor effect on wildlife resources from the loss of one additional acre of wooded habitat. Impacts to wildlife under this alternative would not result in the impairment of park resources or values as described in the NPS Organic Act (1916), the park's enabling legislation (ANILCA, 1980) or the park's GMP (1984).

Visitor Experience

Under this alternative, the river rafters' takeout point and camp area would be relocated to a site that would not require them to paddle as far upstream during low water events. The new site would be farther downstream on the side channel. Because of this, the takeout site would remain easily accessible to river trips during high flows, and would be more accessible to trips during low flows (see figure 6).

The new camp area would be next to the new takeout point and would increase the visitor experience because it would be away from the majority of airplane and fishing activities. River rafters would not have to haul their camping gear more than 50 feet from the water to the camp area.

The new sewage dump station and outhouse toilet would add to the visitor experience because it would be more sanitary and easier to use than the previous design.

Rafting parties would be required to transport their portable river toilets about 700 feet to the new sewage dump station, which could negatively affect their overall visitor experience. However, the NPS would provide carts or wheelbarrows for transporting portable river toilets to the dump station.

Rafting parties would be required to transport their equipment only about 50 feet from the camp area to the new airplane pickup point, which could positively affect their overall visitor experience.

The ranger station would be about one-third mile from the camp area so it would be less accessible than the no-action alternatives for visitors seeking help.

Cumulative Impacts: The hydrology of the Alsek River and its side channel is likely to change in the future, and may result in the river takeout location becoming inaccessible in the long-term (see figure 16). If that occurs, a new takeout point would have to be established; and the distance would be greater from the new takeout point to the airplane pickup area, camp area and sewage dump station. These long-term cumulative impacts on visitor experience could result in added inconvenience to rafting parties. However, in the context of the river rafters' whole ten-day trip down the Alsek River, the difficulties associated with the last day's logistics of getting off the river and to the airstrip would be minor.

Conclusion: The impacts of this alternative on visitor use would be minor and would be mostly the inconvenience of traveling 650 feet from the takeout point to the dump station. Rafting parties' visitor experience would be improved by separating the takeout point and camp area from the potential congestion, user conflicts and safety hazards associated with fishing activities. Positive impacts of this alternative on visitor use would be reduced traffic congestion conflicts with commercial fishing operations and easier river raft accessibility to the takeout during times of low river flow.

Health and Safety

Under this alternative, the health problems related to the river rafters' sewage dump station and the ranger station septic system would be resolved. The sewage dump station would be rebuilt to meet DEC regulations at 18 AAC 72.240. A septic system would be built for the ranger station to meet DEC regulations. No adverse health effects would result.

The new toilet at the new sewage dump station would improve public health and safety by replacing the old pit toilet near the existing dump station.

The new dump station would eliminate the need to bury sewage sludge in a nearby meadow. This would reduce the exposure of the park ranger to health concerns associated with handling the sludge and transporting it by ATV.

The safety problems associated with river rafters and commercial fishing activities crowding near moving airplanes and ATVs would be reduced because river rafters would camp at and fly-out from their own area and taxiway.

Safety problems at the ranger station caused by the unprotected fuel storage would be reduced. Hazardous materials would be stored safely.

The new pit toilet at the East Alsek River public use cabin would improve public health and safety by replacing the old pit toilet that is now full.

In the 100-year floodplain, which includes the entire project area, glacial outburst floods or tsunamis could pose a safety risk to people the in Dry Bay at the time of the event (see Appendix 5, SOF).

Cumulative Impacts: Other health and safety issues in Dry Bay are related to aircraft landings, takeoffs, hunting, fishing and ATV use. Any increase in the levels of these activities would add to the overall health and safety consequences.

Conclusion: This alternative would have a positive impact on health and safety, because of reduced use conflicts related to traffic congestion and aircraft safety; improved wastewater systems and pit toilets; elimination of sewage transport and burial; and safer storage of hazardous materials such as fuel drums. No adverse impacts to human health would result from this activity.

Park Management

Under this alternative, park management facilities would improve significantly because deteriorating structures would be rebuilt and additional housing would be available; fuel barrels, tools, and ATV's would be adequately stored; and maintenance and health issues associated with maintaining open pit toilets and an unsafe sewage dumping station would be addressed with the construction of new septic systems. Short-term disruption of park management activities would

occur during construction as park staff and facilities are used for the project rather than for resource protection and visitor services.

The effect on park management would result in an improved infrastructure in Dry Bay due to improved living and working facilities; safer storage of park equipment and hazardous materials; and reduced maintenance needs. Park staff would be able to live and work at the Dry Bay area more efficiently and safely and would be able to provide improved public service and protection of park resources.

Cumulative Impacts: This alternative would add to the long-term ability of the NPS to conduct park operations in the Dry Bay area and to serve the park visitors. Special use permits for commercial fishing activities, air transportation, commercial lodges and guide services would be more effectively administered because NPS staff would have more time for providing services rather than repairing facilities. NPS expects this alternative to result in long-term positive effects on park management.

Conclusion: This alternative would have positive and long-term impacts on park management; however, there would be minor short-term disruption of park management activities during construction periods.

Alternative C. – Move River Takeout, Camp Area and Dump Station to West of Airstrip

Water Quality

This alternative would benefit water quality because the new sewage dump station and ranger station septic system would be rebuilt to comply with state standards and would reduce the affect to local groundwater quality. The sludge dumping activity in the meadow would no longer take place and this would benefit local groundwater quality. The proper containment of the fuels stored at the ranger station would protect local groundwater quality.

Cumulative Impacts: Because of the improvement in water quality from this alternative, NPS expects no additional impacts to water quality from future actions including activities associated with NPS administration, river running, the recreational lodges and commercial fishing that currently occur in Dry Bay.

Conclusion: The construction of NPS facilities at Dry Bay would have a positive effect on local groundwater quality. Impacts to water quality under this alternative would not result in the impairment of park resources or values as described in the NPS Organic Act (1916), the park's enabling legislation (ANILCA, 1980) or the park's GMP (1984).

Vegetation and Soils

Under this alternative, NPS would build new structures near the current ranger station, but without significantly changing or expanding the development footprint of the area. About one acre of additional land would be disturbed. Alders and spruce up to 30 years old would be removed for the new leach fields at the sewage dump and ranger stations. Less than one acre of vegetation and soils combined would be disturbed from installation of septic tanks, leach fields and pit toilets at the river rafter takeout, ranger station and East Alsek River public use cabin. No further excavation would occur in the meadow where the sludge has been buried in the past.

The site of the new camp area is already mostly free of woody vegetation so little additional clearing would be necessary. Vegetation (spruce and alder) would be cleared for a new taxiway from the west end of the airstrip. The new taxiway would be about 200 feet long and 175 feet wide and extend to the existing junction of ATV trails next to the new sewage dump station (figure 15).

Cumulative Impacts: Historic development activities in the Dry Bay project area have included developing land for an airstrip, ATV trails and structures for a variety of seasonal human uses. Existing development has covered about 20 acres of land. The incremental additional impact would be about one acre added to the 20 acres of existing development. Significant future vegetation clearing is not anticipated. In the context of local and regional ground cover, this 21-acre loss of vegetation is a minor impact. Of particular importance has been development associated with seasonal commercial fishing. Commercial fishing harvest has decreased in recent years, resulting in some fishing-related facilities becoming overgrown with vegetation.

The project area is rising in elevation about one foot per decade, due to isostatic rebound and tectonic uplift. As this continues, fewer major flood events take place because the uplands become more isolated from the stabilizing river channel, so soils and vegetation become more established. See appendix 5, SOF.

Conclusion: The construction of NPS facilities at Dry Bay under this alternative would have a minor effect on vegetation and soil resources. This alternative would add a small amount (one acre) of newly cleared land to the project area. Impacts to vegetation and soils under this alternative would not result in the impairment of park resources or values as described in the NPS Organic Act (1916), the park's enabling legislation (ANILCA, 1980) or the park's GMP (1984).

Wildlife

Under this alternative, bears would no longer be attracted to the sludge burial site in the nearby meadow because sewage sludge would be dried at the septic systems, bagged and removed from the preserve.

Migratory and breeding birds would be disturbed from short-term construction activities of the project. Birds would be displaced over the long-term from wooded habitat due to clearing about one acre of land for the project, primarily for the new septic system leach fields which require about 30 feet x 100 feet of clear area, and the clearing for the taxiway to the new camp area. The cleared areas would be maintained as cleared grassy areas by periodic mowing.

Cumulative Impacts: Past activities in the project area have removed about 20 acres of potential bird habitat woodland and converted it into runway, taxiways, ATV trails and building sites. The incremental additional impact from this action to current habitat removal would be about one acre. In the context of local and regional available wildlife habitat, this 21-acre loss of habitat is a minor impact. NPS does not anticipate significant future clearing or habitat loss in the Dry Bay area.

The additional noise and activity of the Dry Bay area associated with ATV and airplane use during the rafting and fishing seasons would be localized and result in a minor cumulative impact on wildlife in the area.

Conclusion: The construction of NPS facilities at Dry Bay under this alternative would have a minor effect on wildlife resources from the loss of one additional acre of wooded habitat. Impacts to wildlife under this alternative would not result in the impairment of park resources or values as described in the NPS Organic Act (1916), the park's enabling legislation (ANILCA, 1980) or the park's GMP (1984).

Visitor Experience

Under this alternative, the river rafters' takeout point and camp area would be relocated to a site that would not require them to paddle as far upstream during low water events. The new site would be farther downstream on the side channel. Because of this, the takeout site would remain easily accessible to river trips during high flows, and would be more accessible to trips during low flows (see figure 6).

The new camp area would be next to the new takeout point and would increase the visitor experience because it would be away from the majority of airplane and fishing activities. River rafters would not have to haul their camping gear more than 50 feet from the water to the camp area.

The new sewage dump station and outhouse toilet would add to the visitor experience because it would be more sanitary and easier to use than the previous design.

Rafting parties would be required to transport their portable river toilets only about 150 feet to the new sewage dump station, which could affect their overall visitor experience. However, the NPS would provide carts or wheelbarrows for transporting portable river toilets to the dump station.

Rafting parties would be required to transport their equipment approximately 200 feet from the camp area to the new airplane pickup point, which could affect their overall visitor experience.

The ranger station would be about one-half mile from the camp area so it would be less accessible than other alternatives for visitors seeking help.

Cumulative Impacts: The hydrology of the Alsek River and its side channel is likely to change in the future, and may result in the river takeout location becoming inaccessible in the long-term (see figure 16). If that occurs, a new takeout point would have to be established; and the distance would be greater from the new takeout point to the airplane pickup area, camp area and sewage dump station. These long-term cumulative impacts on visitor experience could result in added inconvenience to rafting parties. However, in the context of the river rafters' whole ten-day trip down the Alsek River, the difficulties associated with the last day's logistics of getting off the river and to the airstrip would be minor.

Conclusion: The impacts of this alternative on visitor use would be minor and would be mostly the inconvenience of traveling 200 feet from the camp area to the airplane pickup point. Rafting parties' visitor experience would be improved by separating the takeout point and camp area from the potential congestion, user conflicts and safety hazards associated with fishing activities. Positive impacts of this alternative on visitor use would be reduced traffic congestion conflicts with commercial fishing operations and easier river raft accessibility to the takeout during times of low river flow.

Health and Safety

Under this alternative, the health problems related to the river rafters' sewage dump station and the ranger station septic system would be resolved. The sewage dump station would be rebuilt to meet DEC regulations at 18 AAC 72.240. A septic system would be built for the ranger station to meet DEC regulations. No adverse health effects would result.

The new toilet at the new sewage dump station would improve public health and safety by replacing the old pit toilet near the existing dump station.

The new dump station would eliminate the need to bury sewage sludge in a nearby meadow. This would reduce the exposure of the park ranger to health concerns associated with handling the sludge and transporting it by ATV.

The safety problems associated with river rafters and commercial fishing activities crowding near moving airplanes and ATVs would be reduced because river rafters would camp at and fly-out from their own area and taxiway.

Safety problems at the ranger station caused by the unprotected fuel storage would be reduced. Hazardous materials would be stored safely.

The new pit toilet at the East Alsek River public use cabin would improve public health and safety by replacing the old pit toilet that is now full.

In the 100-year floodplain, which includes the entire project area, glacial outburst floods or tsunamis could pose a safety risk to people the in Dry Bay at the time of the event (see Appendix 5, SOF).

Cumulative Impacts: Other health and safety issues in Dry Bay are related to aircraft landings and takeoffs, hunting and fishing activities, and ATV use along trails in Dry Bay and the greater preserve. Any increase in the level of human use associated with these activities could add to the overall impact on health and safety from this alternative.

Conclusion: This alternative would have a positive impact on health and safety, because of reduced use conflicts related to traffic congestion and aircraft safety; improved wastewater systems and pit toilets; elimination of sewage transport and burial; and safer storage of hazardous materials such as fuel drums. No adverse impacts to human health would result from this activity.

Park Management

Under this alternative, park management facilities would improve significantly because deteriorating structures would be rebuilt and additional housing would be available; fuel barrels, tools, and ATV's would be adequately stored; and maintenance and health issues associated with maintaining open pit toilets and an unsafe sewage dumping station would be addressed with the

construction of new septic systems. Short-term disruption of park management activities would occur during construction as park staff and facilities are used for the project rather than for resource protection and visitor services.

The effect on park management would result in an improved infrastructure in Dry Bay due to improved living and working facilities; safer storage of park equipment and hazardous materials; and reduced maintenance needs. Park staff would be able to live and work at the Dry Bay area more efficiently and safely and would be able to provide improved public service and protection of park resources.

Cumulative Impacts: This alternative would add to the long-term ability of the NPS to conduct park operations in the Dry Bay area and to serve the park visitors. Special use permits for commercial fishing activities, air transportation, commercial lodges and guide services would be more effectively administered because NPS staff would have more time for providing services rather than repairing facilities. NPS expects this alternative to result in long-term positive effects on park management.

Conclusion: This alternative would have positive and long-term impacts on park management; however, there would be minor short-term disruption of park management activities during construction periods.

CONSULTATION AND COORDINATION

The following NPS staff served on the interdisciplinary scoping team for the project or on the EA development team.

Richard Anderson, Environmental Protection Specialist, AKSO, lead EA writer
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James Capra, Dry Bay Area Park Ranger
Robin Dalton, Engineer, Public Health Service
Bill Eichenlaub, Data Manager
Mike Foster, Chief of Maintenance
Wayne Howell, Management Assistant
Mary Kralovec, Assistant Chief of Resource Management, park NEPA coordinator
Andrew McCarthy, Environmental Protection Technician, AKSO
David Nemeth, Chief of Concessions
Gary Smillie, Hydrologist, Water Resources Division, WASO (Fort Collins)
Glen Yankus, Environmental Protection Specialist, AKSO
Chuck Young, Chief Ranger

A telephone consultation was made on March 22, 2004 with Greg Balogh of U.S. Fish and Wildlife Service, Anchorage, to confirm the "no effect" determination under the Endangered Species Act, Section 7.

A site meeting was held at Dry Bay September 29 through October 1, 2003.

An internal scoping meeting was held at GLBA park headquarters on January 8, 2004.

A public scoping letter was sent out to the public on January 20, 2004. The public scoping period was announced as open for 30 days. A press release was issued about the public scoping period. Three letters were received from the public.

This EA is being circulated for public review for a minimum of 30 days.

REFERENCES

ANILCA, 1980. The enabling legislation of Glacier Bay National Park and Preserve.

NPS, 1984. General Management Plan, Environmental Assessment and Finding of No Significant Impact, Glacier Bay National Park and Preserve.

NPS Management Policies, 2001.

NPS Organic Act, 1916. The enabling legislation of the National Park Service.

USFWS, 2004. Greg Balogh, Anchorage, personal communication, March 22, 2004, confirmation of "no effect" determination