

National Park Service
U.S. Department of the Interior

Glacier Bay National Park and Preserve
Alaska



Backcountry and Wilderness Management Plan

A RENEWED VISION FOR WILDERNESS STEWARDSHIP, A DIVERSITY OF BACKCOUNTRY
VISITOR EXPERIENCES, AND AN ENDURING COMMITMENT TO TLINGIT HOMELAND VALUES

ENVIRONMENTAL ASSESSMENT

February 2023



NPS photo by Heidi Davis

Haa Aani

Aagáa áwé k'idéin gaxtulatéen haa tl'átgi ka haa kusteeiyi haa itx yaa has na.ádi aa has du jeeyis

So that too, we may protect our land and our culture for those yet to come

~ Traditional Tlingit Prayer

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Letter from the Superintendent

Dear Friends,

The National Park Service is pleased to share this milestone document with refined management frameworks for designated Wilderness lands and waters in Glacier Bay National Park. Few places across the national wilderness preservation system can match the wilderness character of the Glacier Bay Wilderness today



This document builds from past successful strategies in the Glacier Bay National Park and Preserve General Management Plan (1984). It provides new adaptive tools for current and future park managers to continue to preserve its exceptional backcountry and wilderness visitor experiences, resources, and values into the future. It also incorporates what we heard during:

- Glacier Bay backcountry visitor social science gathered in 2017 and 2018 (Furr et. al. 2021)
- Public and stakeholder input gathered over two 60-day outreach periods in 2020 and 2021 and a 30-day draft plan review in 2022 public and stakeholder input gathered over two 60-day outreach periods in 2020 and 2021, and a 30-day draft plan review in 2022.
- Government-to-government consultation with the Hoonah Indian Association and the Yakutat Tlingit Tribe representing the original people and stewards of Glacier Bay

Between **February 15** and **March 17, 2023**, we invite your feedback on this two-part document:

- **Part I is a Revised Backcountry and Wilderness Management Plan (revised plan)** that provides refined guidance, strategies, and zoning to help future managers achieve desired future conditions aligned with current law and policy.
- **Part II is an Environmental Assessment (EA)** that analyzes the environmental impacts associated with management actions subject to National Environmental Policy Act (NEPA) compliance.

Your feedback will help park managers refine their proposals. There are a variety of ways you can comment:

- Electronically:
go.nps.gov/GBwild (short link URL) or <https://parkplanning.nps.gov/GBwild>
- Mail or e-mail:
Glacier Bay National Park and Preserve P.O. Box 140, Gustavus, AK 99826
GLBA_public_comments@nps.gov

We rely on your feedback to help guide our stewardship, so please take an active role, and offer your unique perspective on the vision and changes being proposed at this time.

Thank you for your interest in wilderness management in Glacier Bay National Park.

Philip Hooge, Superintendent
Glacier Bay National Park and Preserve

Comment online using the NPS Planning, Environment, and Public Comment (PEPC) portal:
<https://parkplanning.nps.gov/GBwild>



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Glacier Bay



Figure 1. Glacier Bay National Park covers 3.2 million acres of rugged mountains, dynamic glaciers, temperate rainforest, wild coastlines and deep sheltered fjords. It is a Biosphere Reserve and part of a 25-million-acre World Heritage Site—one of the world’s largest international protected areas. From sea to summit, Glacier Bay offers limitless opportunities for adventure and inspiration.



Figure 2. The park backcountry encompasses 2.6 million acres with the highest conservation protection our country affords: designated Wilderness. In a remote Alaskan setting, backcountry access is by water and air, except a few road-accessible land connections proximate to Gustavus and Bartlett Cove, the only developed area in Glacier Bay National Park where visitor services are available. This wilderness encompasses a Tlingit Homeland originally peopled with the ancestors of tribal members now largely living nearby in Hoonah and Yakutat. Other communities with gateway connections to the backcountry include Elfin Cove, Excursion Inlet, Haines, Skagway, and Juneau as a regional hub where visitors can make connections to the rest of Alaska, the lower 48 US states, and beyond.

Haa Aaní: Our Land

Recognizing and honoring the rich cultural tapestry of Indigenous use and occupation in designated Wilderness, and supporting the enduring connection between the Tlingit and their Homeland, this plan highlights Indigenous Homeland values embraced by Glacier Bay's original people and advances agency-wide conversations about diverse cultural perspectives and values. Toward this end, we collaborated with Tlingit elders and speakers to incorporate, as appropriate, Tlingit language to encourage readers to consider the concepts presented here through the world view of those who consider Glacier Bay National Park Homeland.



Top left:
Satellite of
Glacier Bay, Icy
Strait, and the
Gulf of Alaska

Bottom: Huna
Tlingit, past
and present, in
Homeland

Bottom left:
Seal hunting
encampment;
Middle: Youth
drumming;
Right:
Mountain goat
fur gathering
for Tlingit
traditional robe
weaving



Figure 3. The traditional territory of the Huna Tlingit encompasses all the lands and waters of Glacier Bay National Park, and the Yakutat Tlingit clans have strong ties to the Dry Bay Preserve and much of the northern Outer Coast. The images above show some of the ways the Tlingit evolved with and adapted to the dynamic and changing Glacier Bay landscape—just as they, in turn, shaped the natural resources and ecosystems. Today, Glacier Bay National Park designated Wilderness encompasses *Tlingit Aaní* (Homeland) and protects traditional lifeways and a living cultural landscape that physically and spiritually sustains past, present, and future generations.

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ELEMENTS OF THE BACKCOUNTRY AND WILDERNESS MANAGEMENT PLAN

2023 PUBLIC REVIEW DOCUMENT

Part I – The Revised Backcountry and Wilderness Management Plan (revised plan)

This revised plan outlines the long-term vision for the Glacier Bay Wilderness within the park backcountry. It describes backcountry contexts, future general management direction and zoning for designated Wilderness areas of the park, and specific actions to achieve desired future conditions.

The park shared a draft of the plan with the public in the summer of 2022 as part of a collaborative and transparent planning process. The revised backcountry and wilderness management plan has incorporated public feedback and is organized into four chapters:

- **Chapter 1: Introduction.** This chapter describes the need for the plan, the plan organization, and the relationships to other plans and relevant policies.
- **Chapter 2: General Management Direction.** This chapter outlines the general management direction for the wilderness, including a long-term management vision, goals and objectives, zoning, and desired conditions for wilderness lands and waters.
- **Chapter 3: Management Strategies and Actions.** This chapter identifies management strategies and actions to achieve and maintain goals and objectives for wilderness management.
- **Chapter 4: Wilderness Character Monitoring.** This chapter describes wilderness character monitoring that will support the implementation of the plan and the protection of wilderness character.

Part II – Environmental Assessment

The environmental assessment (EA) analyzes the environmental impacts associated with management actions subject to National Environmental Policy Act (NEPA) compliance. NEPA documents can be combined with other agency documents, such as management plans, to reduce duplication and paperwork. The EA identifies the National Park Service preliminary proposed action (alternative B) crafted to incorporate public input received between July and August 2022. The revised plan and alternative B together comprise the proposed backcountry and wilderness management plan that refines some elements of the 1984 General Management Plan, and the two parts are appropriately cross-referenced.

The EA provides (1) programmatic NEPA analysis for broad management direction, zoning, corrective management actions, new communications sites, and trail development on Excursion Ridge and (2) site-specific NEPA analysis for required year-round backcountry permits, applying group sizes year-round, and permitting commercial mountaineering within the park.

This EA is organized into the following four chapters:

- **Chapter 1.** This chapter articulates a purpose and need for action and outlines key environmental issues carried forward for detailed analysis
- **Chapter 2.** This chapter presents programmatic actions in addition to site-specific actions in two alternatives. These actions are based on internal and agency discussions and public input on the draft plan submitted during a 30-day review period (July 20, 2022, to August 20, 2022):
 - Alternative A (no action) would continue current wilderness management direction.
 - Alternative B (preliminary proposed action) proposed new wilderness management direction.
- **Chapter 3.** This chapter discusses current and future conditions of the environment and analyzes impacts to key park resources resulting from the management approaches under consideration.
- **Chapter 4.** This chapter lists agencies and persons consulted during the NEPA process.

The appendixes provide supporting information, analyses, and management resources for the revised plan and EA as follows:

- **Appendix A: Related Planning and Legislative Context.** This appendix summarizes related plans and foundational legal management guidance.
- **Appendix B: Extent Necessary Determination for Commercial Services in the Glacier Bay Wilderness.** This appendix examines to what extent commercial services are necessary in the Glacier Bay Wilderness to meet its intended purposes.
- **Appendix C: Cultural Resource Studies.** This appendix summarizes supporting cultural resource studies and Tlingit Homeland planning references.
- **Appendix D: Best Management Practices and Mitigation Measures.** This appendix lists the mitigation measures and best management practices that would be implemented under all action alternatives.
- **Appendix E: Impacts Considered but Not Carried Forward for Detailed Analysis.** This appendix includes a discussion and rationale for each impact topic that was considered but not carried forward for detailed analysis in the EA.
- **Appendix F: Actions and Strategies Considered but Dismissed from Inclusion in This Plan.** This appendix describes the five actions that were considered but dismissed from further consideration and provides a rationale for the dismissal.
- **Appendix G: Alaska National Interest Lands Conservation Act Section 810 Analysis**
- **Appendix H: References.** This appendix includes references to information cited in the revised plan and EA.

FUTURE DOCUMENTS

Part III – Decision Document

After considering public comments and completing consultation, as required with tribes and agencies, the National Park Service will finalize the revised plan and EA. A signed decision document, based on analysis in the EA, is anticipated to be a Finding of No Significant Impact. The signed Finding of No Significant Impact delineates the selected alternative and concludes the NEPA process. At this point, the park will formalize the backcountry and wilderness management plan as an update to the 1984 General Management Plan.

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Glacier Bay National Park

Part I – Revised Backcountry and Wilderness Management Plan

February 2023

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CHAPTER 1: INTRODUCTION

WHAT IS IN THIS DOCUMENT – DAA SÁYÁ YÁ ATÓOWU YÁ X'ÚX'? (*WHAT IS IN THIS BOOK/PLAN?*)

This backcountry and wilderness management plan (the plan) sets the framework for the National Park Service to manage the 2.6 million acres of designated Wilderness lands and waters in Glacier Bay National Park (the park). For the purposes of this plan, the term “backcountry” refers to the designated Wilderness lands and waters within Glacier Bay National Park. The park consists of other nonwilderness waters that some consider part of the park’s backcountry; however, those waters are addressed in a marine management plan. This plan supplements the 1984 General Management Plan with refinements that largely focus on the following goals:

- Meet all requirements of the 1964 Wilderness Act, as implemented by the Alaska National Interest Lands Conservation Act of 1980 (ANILCA) and current law and policy, balanced with the park’s enabling proclamation objectives of science and tidewater glacier access. Together, these mandates preserve the Glacier Bay Wilderness relatively unaffected by modern impacts for people to experience its remote wildness, serving as a place of hope, discovery, and connection to America’s natural and cultural heritage—even for those who never set foot in the wilderness.
- Serve as a collaborative vision for providing visitor opportunities and managing visitor use in the wilderness, applying the updated Interagency Visitor Use Management Framework to protect resources and connect visitors to fundamental park experiences and values consistent with the NPS mission, the 1916 NPS Organic Act, and ANILCA. The vision also clarifies where business partners have an important role in enabling wilderness-dependent experiences and conversely, where self-guided opportunities are more appropriate based on Wilderness Act extent necessary determinations.
- Recognize and honor the rich cultural tapestry of indigenous use and occupation in the wilderness and support the enduring connection between the Tlingit and their Homeland. The plan highlights indigenous Homeland values embraced by Glacier Bay’s original people and advances agencywide conversations about diverse cultural perspectives and values. Toward this end, park staff collaborated with Tlingit elders and speakers to incorporate, as appropriate, Tlingit language to encourage readers to consider concepts presented here through the world view of those who consider Glacier Bay National Park Homeland.

The plan is organized into four chapters:

- **Chapter 1: Introduction.** This chapter describes the need for the plan, the plan organization, and the relationships to other plans and relevant policies.
- **Chapter 2: General Management Direction.** This chapter outlines the general management direction for the wilderness, including a long-term management vision, goals and objectives, zoning, and desired conditions for wilderness lands and waters.
- **Chapter 3: Management Strategies and Actions.** This chapter identifies management strategies and actions to achieve and maintain goals and objectives for wilderness management.
- **Chapter 4: Wilderness Character Monitoring.** This chapter describes wilderness character monitoring that will support the implementation of the plan and the protection of wilderness character.

PLANNING FOR THE GLACIER BAY BACKCOUNTRY AND WILDERNESS – DAAT YOO TUWATÁN ÁT HAA L'ÉELK'W HÁS AANÍ (*PLANNING FOR OUR GRANDPARENTS' LAND*)

This plan provides long-term, comprehensive management guidance for protecting wilderness character, stewarding natural and cultural resources, and managing visitor use within park areas designated as wilderness. The plan applies guidance from the Interagency Visitor Use Management Council (www.visitorusemanagement.nps.gov), the Keeping It Wild 2 framework (https://www.fs.fed.us/rm/pubs/rmrs_gtr340.pdf) for protecting wilderness character consistently across the national wilderness preservation system, and the NPS dynamic portfolio of tiering management plans that serve as internal agency tools to accomplish the following:

- Articulate strategies for the public enjoyment of national parks to ensure resources are protected and unimpaired for future generations.
- Set desired visitor experiences based on a unit's unique qualities and the values that merited its national designation.
- Guide agency decision-making, activities, and investment priorities with transparency and accountability to the American public.

This plan will guide management for the approximately 2.6 million acres of designated Wilderness (see map, figure 2) included within Glacier Bay National Park. The National Park Service is charged with managing these wilderness lands and waters to preserve, maintain, and restore their wilderness character as samples of a truly wild America, preserved for people and specific public purposes (see the following text boxes).

Few places across the national wilderness preservation system can match the wilderness character of the Glacier Bay Wilderness today, as described in a recent wilderness character assessment (NPS 2023a). Glacier Bay Wilderness is also exceptional within the national park system for having the highest ratio of terrestrial area as wilderness (99%). This wilderness

also includes 53,000 acres of marine wilderness waters that are managed under proprietary NPS jurisdiction as an ecologically and globally important sanctuary for many species, including threatened species, such as a Mexican distinct population segment of humpback whales and Western Steller sea lions.

What is Wilderness Character?

Wilderness character is defined as the combination of biophysical, experiential, and symbolic ideals that distinguishes wilderness from other lands.

- **NATURAL QUALITY:** Ecological systems that are substantially free from the effects of modern civilization.
- **UNTRAMMELED QUALITY:** Essentially unhindered and free from the intentional actions of modern human control or manipulation.
- **UNDEVELOPED QUALITY:** Retaining its primeval character and influence and is essentially without permanent improvement or modern human occupation.
- **SOLITUDE OR PRIMITIVE AND UNCONFINED RECREATION:** The state of being alone or remote from habitations or the sights and sounds of other people; the experience of being in an unfrequented or secluded place.
- **OTHER FEATURES OF VALUE:** This attribute reflects the wilderness character of a specific wilderness area and captures important elements not covered in the other four qualities of wilderness character, such as cultural or paleontological resources. These attributes are not required of or found in every wilderness and are based on the last clause of section 2(c) of the Wilderness Act, which states that a wilderness “may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.”
- Glacier Bay also protects a unique type of wilderness, **MARINE WILDERNESS**. This quality of wilderness character recognizes protected waters as a globally important sanctuary for many marine species, including humpback whales.
- Glacier Bay wilderness also serves as a **LIVING LABORATORY**, where natural forces and processes predominate and applied research contributes to global scientific knowledge and effective resource management.



Figure 4. The Tangible Qualities of Wilderness Character in Glacier Bay National Park

The Public Purposes of Wilderness

Pursuant to the Wilderness Act, Section 4(b), wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, education, conservation, and historical use.

- The **RECREATION** purpose of wilderness encourages us to get out and explore on our own to find solitude or with others to enjoy shared experiences.
- The **SCENIC** purpose of wilderness invites us to enjoy the spectacular views showcased in wilderness.
- The **SCIENTIFIC** purpose reinforces the role of science in wilderness stewardship. For over a century, Glacier Bay has been considered a living laboratory, contributing to global scientific knowledge and effective resource management through applied research.
- The **EDUCATIONAL** purpose affirms that wilderness can be a place of learning and exploration for people of all ages.
- The **CONSERVATION** purpose promotes the continued protection of wilderness as places of significant ecological and cultural importance for “the earth and its community of life.”
- The **HISTORICAL** purpose of wilderness connects us with the people, communities, and Indigenous cultures that have historical and current relationships with places we now know as NPS wilderness. For the Tlingit, Glacier Bay is Homeland, a place that physically and spiritually sustains past, present, and future generations.



Figure 5. The Public Purposes of Wilderness

Other characteristics unique to this wilderness are described in a Glacier Bay Wilderness character narrative (NPS 2015b), including notably as a living laboratory for ongoing scientific inquiry. The Glacier Bay Wilderness is also Homeland for Tlingit clans, principally living today in nearby Hoonah and Yakutat. By managing the backcountry to preserve wilderness character and what is unique and special about the wilderness, the National Park Service sustains values and opportunities that are rapidly disappearing elsewhere in today's world, offering a place of hope and inspiration.

WHAT WE HEARD – ÁT WUTUWA.ÁX (WE HEARD THIS)

Input from the public and tribes helped to shape this plan since its initiation in 2019. Public and stakeholder input was gathered during two 60-day outreach periods in 2020 and 2021, and a 30-day public comment period in 2022. Key issues brought forward during this input included a desire to retain Glacier Bay's exceptional wilderness and backcountry visitor experiences, resources, and values for the future; the significance of the place for different people; and the importance of the National Park Service evolving and optimizing future management, including to recognize and honor the rich cultural tapestry of indigenous use and occupation in the backcountry and support the enduring connection between the Tlingit and their Homeland. We also heard varied perspectives that highlight the significance and deeper meaning of the Glacier Bay Wilderness for people, including the following:

- For those seeking an immersive wilderness experience, the Glacier Bay Wilderness is one of the most undeveloped natural places on the planet.
- For those seeking adventure, its remoteness and the requirement for self-reliance are valued parts of the experience—as are escaping crowds and public land overuse.
- For those seeking a range of outdoor experiences, the wilderness supports public use and enjoyment.
- For those seeking hope in a changing world, Glacier Bay's wilderness is a place where humans exercise humility and restraint and, by doing so, preserve a precious portal to American's wild past for generations yet unborn.
- For the Tlingit, it is Homeland—Tlingit Aaní—a place that physically and spiritually sustains past, present, and future generations.
- For those conducting research, wilderness is an unfragmented living laboratory where natural forces and processes predominate to inspire discovery and support deeper human understandings.

PURPOSE FOR THE PLAN – DAAT GÁA SÁ X'ÚX' (WHAT IS THE BOOK/PLAN FOR?)

The need for the plan is to outline strategies that respond to increasing and changing visitor demands and provide broad guidance for terrestrial and marine wilderness areas. The purpose of the plan is to provide for the protection of natural and cultural resources and values, wilderness character, and high-quality visitor experiences within wilderness.

Through the refinement of desired conditions, zoning, and the development of management strategies, the plan provides further guidance on cultural and natural resource issues as well as visitor use management challenges. The plan also provides a shared vision for the wilderness that is responsive to evolving visitor interests, recreational use patterns, collaboration with tribes, and a growing understanding of issues because of research, inventory, and monitoring.

The plan will provide management guidance for the following planning needs:

- **Preserve wilderness character.** Glacier Bay National Park's wilderness management guidelines are outdated and are inadequate for the park to monitor and manage impacts to wilderness character. Although backcountry camping permits are required for Glacier Bay, the park does not require backcountry camping permits in locations such as Dundas Bay, which has experienced increasing use. The park does not conduct routine backcountry and wilderness patrols or regular monitoring of backcountry and wilderness locations for visitor impact; rather, current patrols and monitoring assess regulation violations, which may have an impact on the park's resources. As a result, each new wilderness activity is managed reactively on a case-by-case basis without holistic guidance or the ability to analyze cumulative impacts to wilderness character. Guidance is needed to proactively preserve wilderness character considering the potential for increasing and changing visitor uses.
- **Provide visitor access to tidewater glaciers.** Core to Glacier Bay's enabling proclamation is visitor access to tidewater glaciers. Tidewater glaciers, although not unique to Glacier Bay, are a defining feature of the landscape and a significant draw for park visitors. Increasing visitation to tidewater glacial areas creates challenges for maintaining and improving visitor experience and resource conditions in these popular areas. The dynamic nature of the glacial environment also provides challenges as the accessibility of tidewater glaciers changes with the tides, the weather, and other longer-term factors like glacial retreat. Specific guidance on preserving wilderness character, in addition to providing high-quality visitor experience, is needed for tidewater glacier areas.
- **Provide guidance for commercial service providers to collaboratively achieve park desired conditions and goals.** As current contracts are written, commercial tour operators lack clear boundaries and expectations for use, lack guidelines specific to the wilderness, and do not consistently address wilderness character, homeland values, or resource protection in business practices. The park does not have a standardized format for reviewing commercial use of the backcountry and wilderness lands. Opportunities exist for commercial tour operators to offer additional customized tour options that would change the timing, duration, and location of day use activities. Some of these practices could decrease the commercial tour operator's ability to schedule tours to minimize encounters with other groups, impacting visitor opportunities for solitude. This issue could present challenges to customers of the service providers and other visitors through potential increased crowding at key locations. Guidance is needed to provide clarity for commercial service providers.

- **Address conflicting use and expectations in heavily used areas.** In the dynamic Glacier Bay landscape, there are a shrinking number of high demand visitor attractions as tidewater glaciers melt and glacial recession and vegetation succession limits opportunities for wildlife viewing and hiking in certain areas. Visitation is further limited to a narrow band of marine shoreline by geography and physical conditions including steep terrain, dense vegetation, and few beaches. Visitors ranging from backcountry campers to tour vessel passengers are increasingly recreating in the same areas, and multiple user groups in heavily used areas may result in conflicts of expectations, experiences, and impacts to wilderness character. Scheduling limitations and changes in visitor use patterns have resulted in increasingly concentrated use at popular destinations, whereas historically, these groups would have spread their use over a larger area in a longer time frame. Visitors are more prone to be within sight and sound of other visitors, affecting soundscapes and viewsapes and reducing opportunities to experience natural sounds and solitude. Guidance is needed to provide high-quality visitor experiences while preserving wilderness character in these high-use areas.
- **Incorporate Tlingit Homeland values in wilderness management.** The wilderness character of Glacier Bay National Park is defined, in part, by the sustained connection between past, present, and future generations of Tlingit and the lands and waters they call *Homeland*. Tlingit interactions with Homeland have shaped the ecology of the area for countless generations through simple acts such as harvesting berries, salmon, and gull eggs and through more complex metaphysical and spiritual processes as well. In the distant past, a young girl called down a faraway glacier, forever altering the Glacier Bay landscape, and even today, glaciers calve, icebergs slide gently away, and turbulent waters settle when the Huna Tlingit proffer food and tobacco to the spirits of living and nonliving beings. While Wilderness Act language has sometimes been interpreted to preclude Homeland concepts, the original intent of the act was not to deny indigenous inhabitation and use of wilderness areas, or the ecological role indigenous people played in landscapes. Management strategies for park wilderness must incorporate Tlingit perceptions of a landscape that has supported humans since time immemorial. The park has collected archeological data and considerable ethnographic information in partnership with tribal entities, but the park must continue to increase its understanding of Tlingit relationships to Homeland and incorporate that understanding in managing Homeland. Importantly, the park must also clearly articulate Homeland values for backcountry visitors. Facilitating access to, and meaningful engagement with, Homeland in partnership with Hoonah Indian Association and Yakutat Tlingit Tribe is essential to ensuring that the park's wilderness remains a living, whole community.
- **Define desired conditions for resources and visitor experiences within and on areas adjacent to marine wilderness areas.** Glacier Bay protects 53,000 acres of designated marine wilderness. Protecting marine wilderness presents unique challenges and opportunities given the considerable connectedness of marine ecosystems, the importance of the ocean's most productive and biologically diverse areas to commercial interests, and climate change. With increasing visitation, changes

to visitation patterns and activities and the desire to access those designated marine wilderness areas and adjacent areas, there is a need to address and define desired conditions for resources and visitor experiences within and adjacent to marine wilderness.

- **Protect wildlife and sensitive shoreline areas.** In addition to camping, Glacier Bay's shoreline is an increasingly popular destination for day use activities, such as hiking. Commercial use in these shoreline areas has more than tripled in the past few years (from 2016 to 2021, excluding 2020 due to the COVID-19 pandemic). Increasing visitor use may result in impacts to resources (wildlife, habitat, and cultural) in areas sensitive to disturbance. For example, along biologically rich shoreline areas that are essential to animals' foraging and nesting, the sights and sounds of human activity can both displace wildlife and reduce wildlife viewing opportunities for visitors (Sytsma et al. 2022). Social trails have been created in heavily used areas, causing impacts to park resources and the visitor experience. Higher levels of visitor use may also increase vandalism and looting of sensitive cultural sites. For example, cultural resources have been affected by looting in Dundas Bay and clearing to access artifacts in Excursion Inlet. Cultural resources newly discovered and accessible to visitors because of isostatic rebound need to be evaluated for protection. This plan will provide management guidance to address these impacts.
- **Understand intact, complex terrestrial and marine ecosystems.** Glacier Bay National Park and Preserve's enabling proclamation identifies "scientific inquiry" as a primary park purpose. As climate change and other stressors impact wilderness resources, Glacier Bay's legacy of research (with records dating to 1891) and contiguous wilderness lands make it an ideal living laboratory to study natural processes and the human potential to affect them, including impacts from anthropogenic climate change. At the same time, it is important to ensure that the benefit of research investigations outweigh negative impacts to other wilderness values. The park provides a place where dynamic glacial systems, successional landscapes, and the interplay between the terrestrial and marine systems can be studied. Guidance is needed to continue research and other administrative access in a manner that does not impact resources.

This plan accomplishes the following primary planning needs:

- Prepares refined management guidance, including the development of management strategies, to preserve and enhance wilderness character in designated Wilderness areas.
- Establishes desired conditions for visitor use that are consistent with resource protection. Desired conditions provide visitors with the opportunity to inform expectations related to access, availability of services, and potential for crowding at heavily used locations.
- Identifies best practices for managing visitor use to protect resources and promote high-quality visitor experiences while meeting legal requirements.

- Identifies appropriate commercial services through an extent necessary determination process.
- Establishes guidance on how to integrate indigenous world views in managing Glacier Bay Wilderness lands and waters.
- Reevaluates the general management plan benign neglect management strategy for historic structures with a direct association to Tlingit Homeland values in light of updates to cultural resource management guidance and practices that encourage their consideration as ethnographic resources.

A series of studies were conducted between 2004 and 2018 on myriad relevant topics, including wilderness, wildlife, visitor use, cultural landscapes, acoustic resources, and vessels. These studies and subsequent reports provide insights into visitor experiences of the park and park resource conditions. These studies shall continue to inform strategies the park can implement to address the emerging issues in the wilderness. Please see the references section for these studies, which can be viewed through the NPS DataStore, associated hyperlinks, or upon request to the park.

The management strategies identified in this plan will be accomplished over time. They will be adjusted as needed during the implementation phase. Individual actions directed by this plan will be evaluated for compliance with federal regulations when projects are ready for implementation.

Planning History and Context – Wáa Sá Woonei? (*How Did We Do It?*), Adax̱ Yéi Jiwtuwanéi Át (*Things We Worked on Before*)

This document is part of the park's planning portfolio and fulfills a park planning priority for resource preservation and visitor use management in the backcountry and wilderness of the park. A park planning portfolio is the collection of planning documents that guides decision making and satisfies law and policy. Glacier Bay's planning portfolio creates a logical, trackable guide for park management actions.

The National Parks and Recreation Act of 1978 (54 USC 100502) requires the preparation and timely revision of general management plans for each unit of the national park system. At a minimum, each park must have a plan or series of plans that address the four following statutory requirements identified in 54 USC 100502:

1. measures for the preservation of the area's resources;
2. indications of types and general intensities of development (including visitor circulation and transportation patterns, systems, and modes) associated with public enjoyment and use of the area, including general locations, timing of implementation, and anticipated costs;
3. identification of an implementation commitment for visitor carrying capacities for all areas of the unit; and

4. indications of potential modifications to the external boundaries of the unit and the reasons, therefore.

The park's 1984 General Management Plan also incorporated plan requirements and consideration factors listed at section 1301(b) and (c) of ANILCA.

Glacier Bay's existing general management planning documents continue to provide relevant guidance and are listed below. These plans may be supplemented through the development of additional planning documents.

Associated park plans:

- General management plan (1984)
- Vessel quotas and operating requirements environmental impact statement (2003)
- Harvest of Glaucous-Winged Gull Eggs by Huna Tlingit in Glacier Bay National Park: Final Legislative Environment Impact Statement (2010)
- Foundation statement (2010)
- Marine management plan (2023)
- Frontcountry management plan (2019)

This plan is consistent with the general guidance of the existing documents listed above and described in more detail in appendix A. The proposed visitor use guidance and extent necessary determination for commercial services in wilderness further refines the overall management objectives and zoning for the park as outlined in the 1984 General Management Plan. When completed, this backcountry and wilderness management plan will be the definitive guide for day-to-day park wilderness management in the portfolio. This document will also be supplemented by the Keeping It Wild 2 framework "Building Blocks for Integrating Wilderness Character," which describe the fundamental information needed to effectively integrate wilderness character into park planning, management, and monitoring.

Together, these plans are components of the park's planning portfolio and help the park to meet the general management plan statutory requirements of 54 USC 100502. The following section describes some of the legislative actions related to this planning effort. Additional related studies and administrative commitments are found in appendix A.

Legislative Context

Management in Glacier Bay National Park and Preserve is directed by federal mandates, including the Organic Act of 1916, the enabling proclamation (1925), the Wilderness Act (1964), ANILCA (1980), NPS Management Policies (2006), and other legislative actions listed on the following page, with a summary of the legislative commitments tied to management of the wilderness detailed in appendix A.

Associated legislation:

- National Park Service Organic Act (1916)
- Presidential Proclamation 1733 (1925)
- Presidential Proclamation 2330 (1939)
- Presidential Proclamation 3089 (1955)
- Presidential Proclamation 4618 (1978)
- Wilderness Act (1964)
- National Historic Protection Act (1966)
- National Environmental Policy Act (1970)
- American Indian Religious Freedom Act (1978)
- Archaeological Resource Protection Act (1979)
- Alaska National Interest Lands Conservation Act (1980)
- Native American Graves Protection and Repatriation Act (1990)
- Huna Tlingit Traditional Gull Egg Use Act Public Law (PL) 113-142 (2014)

Associated policy:

- *NPS Management Policies*, 6.3
- NPS Director's Order 41: *Wilderness Stewardship*

Management Context

Access to wilderness. The wilderness areas in Glacier Bay National Park and Preserve are unique in that the nearly 1,200 miles of shoreline and associated waterways along the wilderness boundary provide a high level of access to wilderness areas along the coast. The goal of the zoning and actions in this plan is to provide a range of experiences across the wilderness areas of the park.

Commercial services and concessions. Commercial services available in the park are managed under two types of authorities: commercial use authorizations and concession contracts. Currently, 15 to 20 operators use commercial use authorizations, providing 12 different service types (e.g., air taxi, hiking, mountaineering), and 41 concessioners operate under concession contracts, providing 10 different service types (e.g., lodging, tour vessels, charter vessels, cruise ships). While most of these users operate in the wilderness, some provide commercial visitor services in the Frontcountry Zone. Most visitors experience Glacier Bay using one or more of these commercial operators.

The park facilitates a backcountry kayak drop-off service through a contract with a concessioner. The concessioner operates lodging services in the frontcountry zone, food and beverage services, operates the day boat that provides visitors the opportunity to access tidewater glaciers, and provides camper and/or kayaker drop-off services. By managing the drop-off locations and schedules, the park disperses campers to reduce impacts and enhance wilderness experiences. A balance in management of day boat uses for kayak drop offs versus wilderness viewing is an ongoing challenge (NPS 2017).

Guided fishing in Glacier Bay National Park has been limited primarily to marine waters, with few authorized exceptions for freshwater fishing. Seclusion River in Dundas Bay and the Excursion River in Gustavus are two places where guiding for freshwater fishing is permitted.

The park also has commercial use authorizations for air taxi services.

In addition, the park manages tour and charter vessel use through concessioner contracts. Depending on the service type, these operators may be authorized to provide different types of activities.

For more information on the extent to which these commercial services may be allowed, refer to the extent necessary determination (appendix B).

Collaborative fish and wildlife management. The NPS has the authority to protect fish and wildlife populations from impairment, has statutory direction to ensure the conservation of natural and healthy populations of fish and wildlife, and to address threats to park resources or values (under the Organic Act, ANILCA, and certain federal jurisdiction authorities over lands and waters secured pre-Alaska statehood and pre-ANILCA). The joint master memorandum of understanding with the State of Alaska recognizes that the National Park Service has a responsibility to conserve fish and wildlife resources, and the State of Alaska has the management authority to protect healthy, unimpaired populations to provide for the sustained yield of fish and wildlife populations across all Alaskan lands for the benefit of all Alaskans (ADFG and USFWS 1982). At the same time, many federal and state agencies are cooperative partners with complementary responsibilities and management roles applicable to conservation, human safety, or visitor experience concerns related to fish and wildlife.

The State of Alaska has the primary responsibility to manage fish and resident wildlife within the state. If park staff or outside agencies notice a change in fish and wildlife populations, which may be the result of human pressures that can be managed at the park level (e.g., overfishing in certain areas of the park, fishing gear impact concerns, reported wildlife incidents), the park will consult with our cooperative partnerships, including the State of Alaska, on this issue to determine needed corrective actions through a science-informed and regulatory decision-making approach to take corrective action. Park actions will generally follow the management action progressions listed below using transparent processes (public press releases, proposals to the State of Alaska, park compendium, Code of Federal Regulations, and public comment opportunities). The National Park Service is also committed to fostering cooperative relationships to manage fish and wildlife populations, including data sharing, research, incident management, protective measures or emergency closure protocols (such as through the State of Alaska Board of Fisheries process to change sport fishing regulations), memorandum of understanding, and a joint fisheries management

plan. The memorandum of understanding with the State of Alaska, signed in 1982, recognizes that the state and the National Park Service share a mutual concern for fish and wildlife resources and their habitats and a desire to develop a cooperative relationship (ADFG and USFWS 1982). The park will also strengthen the role of federally recognized tribal governments representing the Huna and Yakutat clans. In collaborating on indigenous stewardship approaches to fish and wildlife management, these actions will be for the benefit of all fish and wildlife populations.

Government-to-government consultation. The park has identified the groups traditionally associated with park locations and has developed strong relationships with most traditionally associated groups, including three federally recognized tribal governments, one non-federally recognized tribe, and three Alaska Native Claims Settlement Act of 1971 regional and village corporations. The park formally consults with federally recognized tribal governments at least once annually but informally consults with these entities much more frequently. Park staff located in indigenous communities assist in enhancing communication and building relationships with tribal governments.

In 1995, the park signed a memorandum of understanding with Hoonah Indian Association, the federally recognized tribal government representing the Huna clans. This agreement has been reauthorized every five years. Additionally, the park and Hoonah Indian Association have collaborated for many years through cooperative agreements focused on Journey to Homeland events and the development and operation of the Huna Tribal House.

In 2002, the park along with Wrangell-St. Elias National Park and Preserve, signed a memorandum of understanding with Yakutat Tlingit Tribe, the federally recognized tribal government of the Yakutat clans. This document outlines NPS's commitment to partner with Yakutat Tlingit Tribe on matters associated with Yakutat Tlingit Homeland in the Dry Bay Preserve and sections of the Outer Coast as well as lands within Wrangell-St. Elias. The park has also partnered with Yakutat Tlingit Tribe through cooperative agreements for many years to implement Journey to Gunaaxoo Kwáan Homeland programs.

In 2015, the park signed a general agreement between the National Park Service, the Hoonah Indian Association, and the Alaska Native Voices Educational Institute to formalize roles and responsibilities in an ongoing program whereby native guides provide interpretation aboard cruise ships in Glacier Bay.

Research permitting. Opportunities to study unique natural phenomena in the park are defined by the enabling legislation, fundamental to which is research on glacial behavior and the newly uncovered landscape and subsequent biological communities that develop in the wake of glacial recession. Research projects continue to be supported by the park. Research activities follow Wilderness Act and subsequent policy. Since 2010, the park's science-in-wilderness interdisciplinary team has evaluated all research proposals (internal and external) using the science in wilderness framework (USFS 2010) to consider and mitigate impacts to wilderness character and conduct necessary minimum requirement analyses procedures.

Aviation. Much of the wilderness that is not accessible by watercraft is almost exclusively accessed by aircraft. Under federal law, the Alaska National Interest Land Conservation Act authorizes fixed-wing aircraft landings and takeoffs in Alaskan designated Wilderness areas.

Forms of access prohibited under section (4)c of the Wilderness Act include helicopter and rotary-wing aircraft landings, takeoffs, and dropping off or picking up material and supplies. Under park-specific restrictions, floatplane landings and transiting in Glacier Bay (including designated Wilderness) is managed seasonally to offer a range of visitor experiences, including recreational opportunities in nonmotorized settings. The park further requires that fixed-wing aircraft fly above a minimum altitude of at least 500 feet to protect wildlife and visitor experiences.

Also, while the National Park Service does not manage airspace, the Federal Aviation Authority guidance for “Noise-Sensitive Areas” (USDOT 2004) applies to overflights, requiring pilots to stay 2,000 feet above ground level. Further, recognizing that aircraft noise is a concern for terrestrial and marine wildlife, migratory birds, and the preservation of the wilderness character, the National Park Service will also work with the Federal Aviation Authority to address overflight management concerns, including any impacts to resources as well as wilderness experience. Section 1110(a) of ANILCA specifically authorizes the secretary of the interior to issue “reasonable regulations” to protect the “natural and other values” of the affected area. This section also authorizes the secretary to close an area otherwise open to these types of motorized vehicles for such “special access” if, after notice and a hearing in the vicinity of the affected area, the secretary finds that such use would be “detrimental to the resource values of the unit or area.”

SCOPE OF THE PLAN – HAA LÉELK’W HÁS AANÍ JEEYÍS ÁYÁ YÁ X’ÚX’ (THIS PLAN IS ABOUT OUR GRANDPARENTS’ LAND)

This plan will guide wilderness management specific to the approximately 2.6 million acres of designated Wilderness lands and waters in Glacier Bay National Park (see map, figure 2).

Glacier Bay designated Wilderness boundaries and acreages reflect congressional intent as specified in the original maps and language. Thus, while shoreline mean high tide boundaries are subject to isostatic rebound and require periodic cartographic boundary adjustments, internal boundaries subject to glacial retreat or surges and wilderness waters with point-to-point boundaries retain fidelity to the original maps, recognizing that advances and retreat are part of the Glacier Bay history.

Areas Outside the Scope of This Plan

- Inholdings
- The Glacier Bay Preserve (this area is addressed under another plan)
- Alsek River visitor activities (this activity is addressed under another plan, acknowledging that rafting management decisions require an international treaty). At the same time, this plan offers broad designated Wilderness stewardship guidance, and where possible, addresses the relationships between wilderness and nonwilderness areas of the park, acknowledging their interconnected relationship.
- Park lands and waters previously described as eligible wilderness designation that are managed by the National Park Service to preserve their eligibility status by avoiding

nonconforming or incompatible uses until formal designations are considered by Congress. At the same time, this plan acknowledges the interconnected relationship of the park's designated Wilderness and eligible wilderness areas and offers a stewardship model that could be applied following any status change. This and future planning documents will not transition any lands or waters from eligible to designated wilderness, as that requires an act of Congress.

- Vessel activities in park waters (these activities are addressed in park regulations, vessel quotas and operating requirements, commercial contracts and permits, and the marine management plan). At the same time, this plan acknowledges the interconnected relationship of the park's designated Wilderness areas and the importance of holistic park management with respect to
 - vessel use in nonwilderness waters that adversely affects wilderness character in designated Wilderness
 - Glacier Bay social science indicators that visitor experiences of “wildness” do not require setting foot in designated Wilderness (NPS 2021a; Swanson 2011)
- Nonwilderness park lands acquired after ANILCA that either do not fall within designated Wilderness boundary envelopes (as specified in section 5(a) of the Wilderness Act and section 701 of ANILCA) or that were acquired with covenants or characteristics incompatible with wilderness designation. This includes Chookanhéení /Berg Bay lands (previously allotment 03-110, A-001770, acquired in 2020 through a cooperative effort), managed by the National Park Service, with rights held by the Hoonah Indian Association through a deeded easement for cultural uses.
- Terrestrial sites near sea level with a marine nexus (addressed in the 2023 marine management plan) where installations predate the designation of park wilderness and have a 1980 ANILCA allowance for “reasonable access to and operation and maintenance” under section 1310, “Navigation Aids and Other Facilities.” These sites include US Coast Guard permitted installations and activities that support maritime aids to navigation and provide a national distress and response system.
- The frontcountry portion of the park surrounding Bartlett Cove (this area is addressed in the 2019 frontcountry management plan)

PLAN BACKGROUND AND CONTEXT – SHKALNEEK (*THE STORY*)

The Park – Haa Léelk'w Hás Aaní (*Our Grandparents' Land*)

Glacier Bay National Park encompasses more than 3.2 million acres of rugged mountains, dynamic glaciers, temperate rainforests, coastlines, and fjords in remote southeast Alaska. Originally established as a national monument by presidential proclamation in 1925, the land became a national park with new land additions and designated Wilderness, in 1980 under the Alaska National Interest Land Conservation Act. The park has always been a place of dynamic change. Since 1986, Glacier Bay National Park and Preserve has been part of the Glacier Bay-Admiralty Island Biosphere region, one of the largest biosphere regions in the

world representing an outstanding example of the marine and terrestrial ecosystems of the Sitkan Biogeographic Province of North America. In 1992, Glacier Bay National Park and Preserve joined with Wrangell-St. Elias National Park and Preserve in the United States and the Tatshenshini-Alsek Provincial Park and Kluane National Park in Canada to form a 25-million-acre United Nations Educational, Scientific and Cultural Organization world heritage site, one of the largest protected wilderness areas on the planet outside Greenland and the Antarctic.

The total terrestrial area of Glacier Bay National Park is approximately 2.6 million acres and consists primarily of mountains carved by glaciers with narrow beaches along the coast. The six distinct mountain ranges in Glacier Bay National Park include the Fairweather Range, the Saint Elias Mountains, the Takhinsha Mountains, the Beartrack Mountains, and portions of the Alsek Range and Chilkat Range. Glacier Bay National Park and Preserve is considered to have significant glacial coverage, and according to Loso et al. (2014), satellite imagery showed that glacial ice covered 2,055 square miles (5,323 square kilometers) of Glacier Bay National Park and Preserve in 2010, an estimated 40% of the total park area.

The marine areas of Glacier Bay National Park are composed of Glacier Bay in the center of the park, Icy Strait, Cross Sound, and Excursion Inlet along the southern border of the park and the Gulf of Alaska along the western boundary (see maps, figures 1 and 2). Glacier Bay is approximately 62 miles (100 kilometers) in length, with widths varying from 9 miles (15 kilometers) at mid-bay to 2.5–5 miles (4–8 kilometers) in the lower and upper portions.

The park lies within the ancestral Homelands of two Tlingit tribes, the Huna and Yakutat Tlingit, who sustained themselves for many generations from the area's abundant resources. Although exact settlement dates are difficult to determine, archeological evidence and oral history document a long-term, sustained relationship between the Tlingit and both the marine and terrestrial systems of Glacier Bay, Icy Strait, and the park's Outer Coast. According to the Tlingit, the park has been peopled from time immemorial; this human presence has shaped, and been shaped by, the landscape and ecological systems of the area. In particular, the marine and terrestrial ecosystems that developed in Glacier Bay following glacial retreat in the late 1700s evolved with ongoing human interaction until the late 20th century. The relationship between the park's land and waters and the ancestral and living Tlingit is integral to the park's intact ecosystem.

The Glacier Bay Wilderness – Kawayéil' Aan (*Quiet, Peaceful Land*)

Glacier Bay's backcountry encompasses approximately 2.6 million acres of designated Wilderness. Unique in the national wilderness system, Glacier Bay's backcountry includes marine wilderness and has the highest percentage of terrestrial land of any unit designated as wilderness (99%). These wilderness areas include most of the land in the park above the mean high tide line and around 53,000 acres of marine wilderness. The National Park Service has jurisdiction over all marine waters (both water column and submerged land) within Glacier Bay National Park, as confirmed in 2005 by a Supreme Court ruling (*Alaska v. United States*, 545 US 75, 125 S. Ct. at 2153). These wild waters and lands provide premium opportunities for recreation, exploration, and adventure in glacially influenced marine, terrestrial, and freshwater ecosystems.

You can read more about the wilderness character qualities of the Glacier Bay Wilderness on the park website (www.nps.gov/glba).

Parkwide Visitor Demographics and Experiences – Aadóo Sáwé Hás Wé Sh Tuwáa Kasyéiyi? (*Who Are the Visitors/Tourists?*)

America's national parks are among our nation's greatest treasures, managed for the enduring benefit and legacy of present and future generations. A gem among these national treasures, Glacier Bay National Park offers a sample of truly wild America, an awe-inspiring place to experience nature on its own terms in a dynamic landscape, where ancient Tlingit heritage blends with living cultural traditions.

Glacier Bay delivers powerful natural and cultural experiences every day. Annual park visitation is about 672,000 visitors (NPS 2019a). Most of these visitors are cruise ship passengers aboard vessels who do not disembark in Glacier Bay (626,000 passengers) (NPS 2019a). Around 30,000 visitors visit Bartlett Cove annually, or the park frontcountry, where services and developed facilities in 7,120 acres of terrestrial nonwilderness support higher concentrations of visitors and serve as an entry point for exploration of wilderness areas. (NPS visitor use data, 2017).

On average, park visitors travel more than 3,000 miles from home to visit the park from around the world (20%), across the country (80%), within the state (>5%), or nearby areas (2%) (RSG 2016). Overall park visitor expenditures and contributions total \$168 million in economic output, benefit 400 different companies, support an estimated 2,090 jobs, provide \$58.8 million in labor income, and add \$94.5 million in total contributions to the national gross domestic product (NPS 2019b).

The Backcountry and Wilderness Visitor

Annually, an average of 6,000 backcountry visitors (2009–2019 average) (NPS 2009–2019) participate in some form of camping or are aboard small vessels (private and charter) that may offer shore landings. These visitor numbers have been stable for many decades, due in part to a variety of limiting conditions (e.g., remoteness, expense, required equipment and skill, limited prime season transportation, guiding, rental options, and NPS-regulated marine vessel quotas to protect park wildlife and other resources while providing a range of recreational opportunities to park visitors). At the same time, notable fluctuations do occur—for example, 1991 saw a high of 9,657 campers and boaters, while 2021 saw a low of 989 due to COVID-19 visitor travel disruptions (NPS 1991–2021).

Approximately 16,500 annual tour vessel passengers (NPS 2019a) experience the park primarily on sleep-aboard tour vessels holding between 100 and 150 passengers. Since 2010, tour vessels engaging in off-vessel activities, including shore excursions and small boat tours, have significantly increased, intensifying and creating new on-shore impacts, both to the natural environment and to the experience of overnight backcountry visitors or visitors arriving by private or charter boat. The number of tour vessel passengers visiting park wilderness increased from 1,246 people in 2016 to 3,634 people in 2021 (NPS 2021b).

Visitor survey data was collected in 2017 and 2018 to characterize the park backcountry experience for this planning effort. Sampling primarily targeted visitors engaged in independent recreation (often in designated Wilderness) but also captured data from visitors on targeted classes of motorized marine vessels outside of wilderness (NPS 2021a).

Overall, visitors surveyed in 2017–2018 had a median age of between 50 and 59 years old and were 91.5% white. More than 85% of visitors had at least a four-year college degree, and more than 50% of visitors had an annual household income of more than \$100,000 (NPS 2021b). Additional visitation characteristics are as follows:

- Independent backcountry users include nonmotorized use (primarily sea kayaking, few backpacking) and motorized use (private vessels).
- Independent kayakers and private boaters reported doing substantial planning for their trips, and 75% reported knowing where they planned to camp or anchor (NPS 2021a).
- Some visitors use commercial services to access the wilderness, including 36% of visitors who reported using a guide while visiting Glacier Bay, and 26% said they rented equipment on their trip to Glacier Bay (NPS 2021a).
- Visitors reported viewing wildlife, experiencing wilderness, solitude, having an adventure, and experiencing glaciers as their top purposes for visiting (NPS 2021a).

Specific to the wilderness visitor experience (excluding the Alsek River, covered in a separate plan), social science characterizes the range of Glacier Bay Wilderness experiences as a once-in-a-lifetime trip by people seeking Alaska wilderness experiences of solitude, natural sound, and renewal through connection to nature, along with adventure, learning, and experiencing glaciers. Whether as day visitors, who spend on average 10 hours, or overnight visitors, who spend an average of five days in the park, research shows that most visitors rapidly develop a strong place attachment, meaning the “place” provides the best opportunities for a certain activity or experience (Manning 2011), to Glacier Bay, and few leave disappointed. In open-response questions, wilderness visitors commented that wildlife, learning, and experiencing glaciers added the most to the experience. “Poor weather” rated as the top negative experience (14%) and 43% of visitors responded that “nothing” detracted from their experience (NPS 2021a).

Most park visitors experience the wilderness from the outside looking in, viewing designated Wilderness from the deck of a boat within approximately 537,000 acres of park nonwilderness waters. These visitors experience the park seasonally via cruise ships, tour and charter vessels, and day boat tours between Bartlett Cove and upper Glacier Bay. Surrounded by the wilderness landscape, many people develop a deep connection to the wilderness’s scenic, cultural, and natural resources and conservation values, even without setting foot on shore.

Some visitors enjoy the more intimate wilderness experience of traveling Glacier Bay’s scenic shorelines. Unlike much of the vast wilderness where natural barriers make access difficult, this wilderness boundary is uniquely accessible by water for Glacier Bay’s customary mix of

motorized and nonmotorized users (tour and charter vessel, private motorboat/sailboat, floatplane, day boat camper drop-off service, and sea kayak). This accessibility supports a range of wilderness experiences, including opportunities for engaging in wildlife viewing, sightseeing, natural and cultural interpretation, sea kayaking, angling, camping, beach walking, and hiking. This accessibility also enables experiences of tidewater glaciers and hiking to accessible glaciers, that, while increasingly limited due to glacial recession, is an opportunity central to the formation of Glacier Bay as a national monument in 1925.

Some visitors get a taste of wilderness, entering terrestrial wilderness from originating trails or shorelines in Bartlett Cove. These frontcountry-proximate wilderness experiences are more readily available to Bartlett Cove visitors who may choose to stay closer to the frontcountry or may not otherwise be able to access a more extended or immersive experience because of physical conditions or the lack of time, equipment, or backcountry skill. Wilderness access originating from the community of nearby Gustavus (including Bartlett Lake/Towers Trail and Falls Creek) affords both visitors with ground transportation and residents more rugged hiking and routes into untracked wilderness.

Other visitors travel farther into the wilderness to be fully immersed in wilderness lands and waters, a trip that requires serious preparation, skill, equipment, and place-specific knowledge, given Glacier Bay's dynamic and remote environment. These visitors often look to the National Park Service and commercial partners for last supplies and trip support as they launch their trip through the Beardslee Islands tidal cut at the northeast end of Bartlett Cove, less than a mile from the most fully developed area of the frontcountry. Water access through the tidal cut opens and closes with the tides (getting shallower each year due to isostatic rebound), creating a natural gateway to marine wilderness and the largest area of the park with seasonal nonmotorized restrictions.

Wilderness Day Use and Access – Aadéi Áwé Yaa Ntookoox Haa Léelk'w Hás Aaní (*Traveling by Foot in Our Grandparents' Land*) and Yaakw Yík Yaadéi Yaa Has Nakoox Haa Léelk'w Hás Aaní (*Traveling by Boat in Our Grandparents' Land*)

Wilderness day use and access at Glacier Bay typically occur either through viewing the wilderness from a cruise ship traveling on nonwilderness waters, hiking into wilderness from the frontcountry near Gustavus and Bartlett Cove, or with the aid of private or commercial vessels.

Day users aboard cruise ships and other vessels experience the wilderness from a distance. Although this experience aboard a cruise ship often involves thousands of other passengers, many individuals confirm that a profound experience of its "wildness" without ever setting foot in Glacier Bay's designated Wilderness.

The marine wilderness surrounding the Beardslee Islands is also accessible by marine vessel for both day and overnight use. Many visitors venture deeper into the Glacier Bay Wilderness for day use, but this is typically done using commercial or private vessels that drop off visitors at designated locations. Most day use beyond areas proximal to the frontcountry occurs near tidewater glaciers or other glaciers and glacial features that tend to be easier to hike to within a couple of hours. This type of day use access is facilitated by commercial or private vessels.

In addition to tour, charter, and private vessels, cruise ships also provide day use access to nonwilderness waters adjacent to the wilderness of Glacier Bay.

Day use at Glacier Bay occurs in or proximal to the frontcountry of the park or is aided by commercial services through vessel drop offs near the Glacier Bay Wilderness. Although visitors do access the backcountry and wilderness by aircraft, these tend to be longer, overnight excursions. For those visitors who access wilderness contiguous to the frontcountry for the day, access occurs from the Bartlett Cove area, typically along the Bartlett River Trail or the route to Point Gustavus. Visitors also access the wilderness from Gustavus through the Towers Trail to Bartlett Lake.

Scientific Research in the Park – Yaa Ntusakwéin Yá Haa Léelk’w Hás Aaní (*We Are Beginning to Learn about Our Grandparents’ Land*)

In its 1925 enabling proclamation, a fundamental purpose for protecting Glacier Bay was its value to future generations as a living laboratory for humanity to gain scientific knowledge based on the area’s “unique opportunities for the scientific study of glacial behavior and of resulting movements and development of flora and fauna and relics of ancient interglacial forests.”

Today, having hosted more than a century of research resulting in countless important contributions to science, Glacier Bay is considered a globally important reserve for learning about nature and helping the National Park Service and other management agencies wisely manage protected areas the world over. Moreover, Glacier Bay’s terrestrial and marine wilderness ecosystems offer unique scientific perspectives on intact natural systems and planetary trends, including those that may change due to human influences (e.g., accelerated glacier recession, ocean acidification, wildlife abundance and health).

Access to Tidewater Glaciers and Hiking Accessible Glaciers – Sít’ Niyaadéi (*Traveling to the Glacier*)

Also central to the formation of Glacier Bay as a national monument in 1925 was the presence and ability to access and enjoy “Tidewater glaciers of the first rank in a magnificent setting of lofty peaks, and more accessible to ordinary travel.” The desire by visitors to see and enjoy tidewater glaciers remains just as relevant today—even though their extent has dramatically changed over the past century.

Because of this fundamental park purpose, access to tidewater glaciers and hiking-accessible glaciers in designated Wilderness justifies greater allowances for visitor experiences within sight and sound of other parties. Specifically, this access includes areas where safe marine vessel approaches and anchorages enable easy shore visitor access comparable to 1890s steam cruiser beach landings. For the purposes of this plan, this access is interpreted more broadly to include Glacier Bay’s customary mix of motorized and nonmotorized marine visitor access modes (tour and charter vessels, private motorboats, sailboats, sea kayaks and other human powered vessels).

Tlingit Homeland – Haa Aaní (*Our Homeland*)

Tribal members travel to Homeland independently and in large groups for ceremonies or other activities or events. Independent tribal visitation typically involves small groups traveling by small vessel to harvest resources, primarily sockeye salmon (gaat), black chitons (shaaw, marine mollusks), and various berries (tléik'w). In recent years, most large tribal group gatherings in the park are those cooperatively sponsored by the National Park Service, the Hoonah Indian Association, or Hoonah City Schools. These “Journey to Homeland” events have included catamaran trips to the glacier face to perform ceremonies, group harvesting trips to Dundas Bay or Bartlett Cove, educational trips to selected sites, youth kayak or backpacking trips throughout the park, and gull egg (k'wát) harvesting trips.

Importantly, tribal visitation to Homeland is not limited to physical visitation. In Tlingit culture, an individual or group of individuals are symbolically transported to a sacred place when a place name is uttered or when a story, song, or dance related to a place is performed. When clan-owned regalia (at.óowu) depicting sacred places or events that occurred in a sacred place are brought out at ceremonies, they also evoke visitation. Thus, virtual visitation to Homeland is frequent. These intangible visits are frequent and of great spiritual significance.

Tlingit ancestors (haa shagóon), whose spirits remain in Homeland, are not visitors but rather residents of the Glacier Bay Wilderness. Their presence in Homeland is recognized and honored on every trip to Homeland. For the Tlingit, a return to Homeland is an opportunity to be in the presence of those who have gone before and to engage with the landscape in the same way that ancestors engaged. Disrespectful behavior (ligaas) in Homeland by both tribal members and other visitors offends those ancestral spirits whose role is to maintain Tlingit presence in and to steward Homeland.

The Wilderness Act and Indigenous Concepts of Homeland – Has Tu Áani Áwé Ka Uhan Tsú (*The Land Belongs to Them [All the Sentient Beings] and We Belong to It Also*)

Wilderness as defined in the Wilderness Act of 1964 is an area “where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain” and which “generally appears to have been affected primarily by the forces of nature, with the imprint of man’s work substantially unnoticeable.” The act’s language has often been narrowly interpreted, leading to criticism that it fails to recognize indigenous use and occupation of many wilderness areas and the valuable ecological role that traditional indigenous communities played through ongoing interactions with lands and waters. However, this narrow interpretation was not the original intent of the act. Subsequent legislation, ANILCA, and agency-specific policy and regulations have clarified the act’s intention and the necessity of acknowledging past human habitation and use, as well as current indigenous use, of wilderness areas throughout the nation.

Importantly, indigenous perspectives about traditional Homeland have much in common with the aspirations of the Wilderness Act. Both embrace the interrelatedness of humans and the larger community of life; the need for humility, respect, and restraint in relating to the

natural world; the need to think forward to future generations (Haa yatx'í jeeyis áyá; for our children); and the value of meaningful personal connection to place.

At Glacier Bay National Park, park managers recognize that the continued relationship of the Tlingit with their Homeland is as much a part of its wilderness character as the glaciers, the bears, and the opportunity for an unconstrained experience. Management strategies for Glacier Bay's wilderness will consider that the landscape has supported humans since time immemorial and will facilitate ongoing physical and spiritual connections between traditional people, their ancestors, and their Homeland to ensure that the Glacier Bay Wilderness remains a living community. This plan advances the park's commitment to honoring Tlingit Homeland concepts, as presented in the following text, enhancing relationships between the agency and traditional people and collaborating on cultural and natural stewardship of the Glacier Bay Wilderness.

Haa Léelk'w Hás Xus.eetí Aadéi Yaa Ntoo.át **Walking in the Footsteps of Our Grandparents**



Carved and painted footprints traverse the length of the ***Yaa Naa Néx Kootéeyaa*** (the Healing Totem Pole) in Bartlett Cove. They travel symbolically through time, past carved images of abundant resources and traditional long houses, across the advancing glacier's face, and cling to the edges of elder's tears. Reaching the carefully crafted depiction of ***Xunaa Shuká Hít***, Huna Ancestors' House, at the very top of the 20-foot pole, the footprints metaphorically circle back and around, just as the Tlingit themselves continue to retrace ancestral paths in Glacier Bay Homeland.



Since time immemorial—time before memory—Tlingit clans have embraced and been embraced by Glacier Bay Homeland. They did not simply occupy or settle or inhabit the land, they shaped and, in turn, were shaped by the dynamic forces of an environment that surged and retreated, evolved and adapted, grew and senesced. Their ancestors effected ecological change in myriad ways—through the simple acts of harvesting berries and seal, crafting clan houses from nearby trees, and excavating rocky shorelines to facilitate canoe landings. But even the very substance of Glacier Bay Homeland—its shape and depth—was sculpted by acts of human courage—and human frailty. In the ancestral past, a young Tlingit girl called down a far distant glacier, forever erasing the braided river channels of ***L'éiwshaa Shakee Aan*** (Sand Hill Mountain Land, near Bartlett Cove). A clans' human sacrifice halted the glacier's advance at ***Sdakweix Lutú*** (Point Adolphus) just before the advancing ice choked off the clans' sole connection to the productive waters of the Outer Coast. In a far distant village, young men's disrespect manifested an avalanche and a subsequent tsunami in ***Ltu.áa*** (Lituya Bay), and shamanic powers caused the greatest of mountains, ***Tsalxaan*** (Mount Fairweather), to tremble and split. Even today, glaciers calve, icebergs slide gently away, and turbulent waters settle when the Huna Tlingit proffer food and tobacco to the spirits of living and non-living beings. The Tlingit relationship to land and sea is such that a single intentional act—or a moment of disrespect—can direct geological events and the resulting cascade of forever-altered ecological processes. ***Tlingit Aaní***, Homeland, is not free from human control, but rather in an intimate and balanced relationship with it.

Maintaining this delicate balance requires ongoing, respectful interaction. Elders say, ***"a káx yan tudél wé tl'átgi ka at wudikeen áani aat ka éil"***—we are stewards of the land, the air, and the sea. As vital components of the web of life, humans must fully participate in the seasonal rounds of gathering and harvesting to maintain balance. Failure to do so creates instability in the natural order, trammeling the earth, the air, and the sea. Community members, especially clan and house leaders, are caretakers, ***adél kuyawdzitaak***, of the resources within their territory.

Figure 6. Haa Léelk'w Has Xus.eetí Aadéi Yaa Ntoo.át – Walking in the Footsteps of Our Grandparents

Just as the host of any gathering must properly honor his guest through respectful interaction if he wishes them to return, so must a caretaker host and honor the salmon, the seal, the deer upon which the community depends. Tlingit caretakers are unsettled and shamed when the gifts of the land and sea are not accepted and shared. Repercussions are sure to ensue; salmon left unharvested may refuse to return in future years and sea otters left unchecked may deplete the foods necessary to feed families. Tlingit protocol demands that proffered gifts be received and reciprocated in an unending cycle of giving and receiving. To receive from the land is to nurture it.

And to walk on the land is to connect with all those who have walked before you. Young people say, *"Haa léek'w hás x'us.eetí aadéi yaa ntoo.át,"* we are walking—stepping again—in the footsteps of our ancestors. Figuratively, each Tlingit does so by embracing long-held traditions and protocols, but literally, living Tlingit walk in their grandparents' footsteps through repeated reenactments of the same journey, the same carefully ordered round of harvesting and celebrating in the same familial places. It is honorable to hold, and be guided by, deep ancestral knowledge of the land and sea. For the Tlingit, connection with the land is not focused on self-fulfillment or acquisition of new knowledge but rather on paying homage in a carefully proscribed manner to those who guided you there. The land is alive with ancestors. Their presence is longed for, sought after, and deeply experienced on every journey home. They are ritually fed—offered dry fish, seaweed, salmon, and seal oil—whenever one ventures in Homeland. Open to their presence, a fisherman is guided—and rewarded—by his father's wisdom, a woman harvesting spruce roots at *Tléikw Aaní* (Berry Land, Dundas Bay) sings with her recently departed auntie, and a young girl is imperceptibly drawn to her ancestral village site on the shores of Lituya Bay. Accompanied by ancestors who speak and sing and respond, the Tlingit travel the same paths over and over again, warmed by the presence of unseen others.

Ancestral footsteps traverse much of *Tlingit Aaní*, including rocky shorelines, river valleys, mountaintops, and the vast expanses of ice covering the majority of the Huna territory. While Tlingit life now largely centers around productive shoreline habitats, it wasn't always so. Many clans recount "Under the Ice" stories, which document intrepid ancestral migrations across and under sheets of glacial ice to find—and settle—richer stretches of coastal shoreline. Rock cairns dotting the highest peaks in Homeland attest to explorations far above tree line, perhaps undertaken during the dangerous flood times that elders speak quietly of. Storytellers remember and share the epic journeys of *Kaakeix'wtí*, a *Xákwnoowúkeidi* man who travelled the Outer Coast alone, eventually crossing the Brady Icefield carrying newly discovered copper treasures to his kin at *L'éiwshaa Shakee Aan*. And clans fleeing the rapidly advancing glacier in *S'é Shuyee* (Area at the End of the Glacial Silt, pre-little Ice Age Glacier Bay) dispersed throughout Icy Strait, finding solace in new settlement sites in *Kuyeik' Le'aan* (Peaceful Village Excursion Inlet), *Káax'noowú* (Grouse Fort, Homeshore), and *Xóots Geiyí* (Brown Bear Village; Port Frederick). These wanderings attest to the Tlingit's ability and willingness to explore new territory in search of safer village sites and more plentiful resources. They journeyed not in pursuit of personal enlightenment or recreation but rather out of necessity—to sustain their clan.



The Tlingit were able to explore new places not because distant shorelines or thickly wooded hillsides were untouched but rather because they were filled with kin. Fully inhabited, *Tlingit Aaní* is alive with the spirits of animate and inanimate beings—plants and animals, rocks and ice. *Has tu áani áwé ka uhan tsú*, the land belongs to them [all the sentient beings] and we, as humans, belong to it also. Place names reflect this status; geographical locations are claimed by the resources, the sentient beings, that populate the area: *K'aach' X'aayí*, is "the point that belongs to the seaweed," *K'wát' Aaní*, is "the land that belongs to the gull eggs," and *Yáxwch'i Aaní*, is the "stretch of Outer Coast ruled by the sea otters."

Figure 6. Haa Léelk'w Has Xus.eetí Aadéi Yaa Ntoo.át – Walking in the Footsteps of Our Grandparents

Even the farthest reaches of the Fairweather Range are inhabited and claimed as *Yéik Yi Aaní*, “land belonging to the spirits.” One never experiences solitude in *Tlingit Aaní* but rather is surrounded by the presence of familial others. Berry pickers speak to their kin, the bears, asking for protection and mercy. Killer whales receive songs from clan brethren and in return, shepherd a vessel safely home. Black-legged kittiwakes are regaled by their sisters, the *T’akdeintaan* Clan women, and reciprocate by crying out the names of those passing *Gaanaxaa* (Boussole Head). Icebergs near Margerie Glacier respectfully addressed as *Chookanshaa* (*Chookaneidí* Clan women) change course to safely slip around approaching vessels. Animate and inanimate beings are sibs—as familial to a Tlingit as a human brother or sister.

To say that a place is “claimed” by a Tlingit clan as territory belies the essence of the relationship between people and place. True, the borders of clan territories are limned on maps of Glacier Bay today, but the myriad place names that cover the land may better represent the Tlingit bond with Homeland. They describe more than just location—they convey the rich tapestry of harvesting areas, sacred places, and the scenes of geological and historic events that comprises the Tlingit world. Clan owned crests depicting these



named places, and the stories and songs associated with them, document tragic and triumphant events in a particular clan’s history. The connection to Homeland and the beings it holds is so powerful that simply evoking a place name, singing a traditional song, or displaying clan regalia transports those present to Homeland. The *Wooshkeetan* Clan travel symbolically to Fort of the Young Woman in Seclusion, in Excursion Inlet when the *Wéitadi Noow* button robe is held aloft at a clan gathering in Hoonah. The treasured Mt. Fairweather Woman’s Hat, *Shaatukwáan Shaawu Shakee.át* draws the *T’akdeintaan* to *Tsalxaan* at a clan leader’s *ku.éex’* (memorial service). Though physically distant, they are ritually emplaced in sacred ancestral locations in Homeland, through words and songs and treasured regalia.

The Tlingit language, rich in metaphor and deep in meaning holds no words that embody western concepts of wilderness, a place largely free of modern human influence, a place substantially unchanged by human works, a place where solitude reigns. The Tlingit know that every human action has the power to mold the land and affect the spirits of animate and inanimate beings. For them, the land has meaning only as a place of intricate, balanced, and ongoing connection between those long past, those alive today, and those yet to come. The Glacier Bay wilderness—the land, and air and sea—is ordered and sustained by those who co-created it.



Toowú sigóo áyá
Has du een yéi haa teeyí
T’akdeintaaní yátx’i
A kaanáx wutu.aadí

We are happy
 When we are with our ancestors
 Children of the T’akdeintaan
 As we walk through the land

Yeisú a xoox’ áyá
Haa shagóon aaní
Aadéi satoo áx ji
Haa dachxáni yání

They are still there
 On our ancestors’ land
 We can hear
 Our grandchildren’s voices there

Glacier Bay Song, Written in Homeland by Journey to Homeland students and culture bearers, 2016

Figure 6. Haa Léelk’w Has Xus.eetí Aadéi Yaa Ntoo.át – Walking in the Footsteps of Our Grandparents

Tsal̕xaan

Mount Fairweather



Guide and sentinel, sacred and sentient, *Tsal̕xaan* and all the crags and slopes we call *Yéik Yi Aaní*, Land of the Spirits, are treasures for the *T'ak̓deintaan* Clan, and indeed, for all Tlingit. She guides our canoes, foretells coastal weather, shelters our ancestors, transforms our shaman, and holds sacred space for living spirits. *Tsal̕xaan* demands and is granted respect; we do not climb her slopes or point in her direction; as “a high caste being” we visit her only symbolically through ceremony and song.



In the ancestral past, the great mountain protected those who sought refuge in rock nests atop her peak - *kées' kanadaayi* (“high tide all around”) - when the Great Flood forced our ancestors to ascend her slopes. For centuries since, she has safely guided our seafaring hunters and fishermen to the productive waters we now call the Fairweather Grounds, a place alive with fish and sea otters. Our canoe captains triangulate directions using her crags as guideposts and differentiate calm from storm by reading her ever-changing emotions. So important to our survival, we capture both her anger and her peace in face paintings we wear to ceremony. We give thanks to the mountain when our catch is plentiful and feed her soul with snuff as our vessels pass in her shadow.

Tsal̕xaan cradles spirits and spirit helpers who guide the *T'ak̓deintaan* even today; the Mountain Tribe Women, the Mountain Tribe Dog, the One-Horned Mountain Goat, the drifting feather.... They inhabit the great mountain, welcoming us to join them during ceremony as we bring out our treasured *at.óowu*; *Tsal̕xaantu Kwáan Shaawú S'áaxw* - the Mount Tribe Woman's Hat, *Shaatukwáan Keitli S'áaxw* - the Mountain Tribe Dog Hat, and the Mountain Dog Shirt. We recount our history in songs: Trembling Mountain, a tale of *Tsal̕xaan* cracking open to reveal the *T'ak̓deintaan's* spiritual clan house and the women who live there; *Wánde Nána Shú*, an ode to the feather that guided our shaman, *Gooxk'wsakw* up the mountain in search of spirit helpers; and the Mountain Dog Song, recounting the travels of the spirit dog who led *X'eichaak'w* down following his initiation. Our women dance the sway dance, *yu hás kuwanáak*, taught to them by the Mountain Tribe Women, and our orators call us back to her flanks with their poetry and metaphors. Always we are drawn back by our songs, our dances, our exquisite regalia.



Her English name, Mount Fairweather, reminds visitors that she reveals herself only on rare occasions. But for the *T'ak̓deintaan* and the Tlingit Nation, she is always within reach.

Figure 7. Cultural View of Mount Fairweather

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CHAPTER 2: GENERAL MANAGEMENT DIRECTION

INTRODUCTION – SHUX'ÁA AAYÍ (*THE BEGINNING*)

The park's general management plan provides high-level guidance on how the park will be managed. This chapter supplements the general management plan and lays out a vision and broad direction for backcountry and wilderness management and specific descriptions of wilderness management zones and associated desired conditions.

Vision Statement – Daa Sáwé Tuwatéen Haa Léelk'w Hás Aaní? (*What Do We See in the Future for Our Grandparents' Land?*)

The backcountry of Glacier Bay National Park is an intact, dynamic wilderness where people immerse in, investigate, connect with, and preserve an ecologically and culturally significant landscape for current and future generations.

BACKCOUNTRY AND WILDERNESS MANAGEMENT OBJECTIVES – DAAT SÁWÉ HAA TUWÁA SIGÓO AKÁATX? (*WHAT DO WE WANT FROM IT?*) AND DAA SÁYÁ ÁT GAXTOODLÁAK AKAADÁX (*WHAT WILL WE GAIN FROM IT?*)

The objectives of the plan are the specific outcomes that the National Park Service is seeking to achieve through consistent management action over time. Objectives can also be considered performance measures to guide decision-making as conditions change. The following objectives will guide future management of Glacier Bay National Park's wilderness lands and waters:

- Preserve wilderness character and mitigate impacts from visitors and other sources.
- Provide for the public use and enjoyment of the wilderness as intended by the Wilderness Act as modified under ANILCA, including essential services to the extent necessary to support wilderness experiences.
- As stewards of one of only a few marine wilderness areas in the world, apply to the marine environment the Wilderness Act statutory mandate to preserve wilderness character.
- Encourage research and scientific discovery that allow Glacier Bay National Park and Preserve to continue serving as a living laboratory. Use research findings that acknowledge climate change and other anthropogenic factors to inform management decisions.
- Allow ecological processes to continue and consider restoring natural processes and conditions that have been disrupted by human-induced change whenever possible, recognizing that anthropogenic influences on climate are likely to continue.

- Foster understanding of indigenous Tlingit perceptions of Homeland and protect the enduring spiritual connection between future, living, and ancestral Tlingit in Glacier Bay Homeland in the backcountry.
- Provide a range of premium wilderness experiences where visitors spend time out of sight and sound of other people and have the freedom to experience risk, challenge, self-reliance, and spiritual connection with place.
- Concurrently balance such high-quality wilderness experiences with allowances for concentrated use at tidewater glaciers and hiking accessible glaciers.
- Sustain the premium national park experience of being surrounded by and deeply experiencing a wilderness landscape—even for park visitors who never set foot in the wilderness.
- Provide on-site and virtual visitors opportunities to learn about the natural, cultural, and wilderness resources of Glacier Bay National Park, including the connection between generations of Tlingit and Homeland, the opportunity for scientific discovery, and the dynamic glacial landscape.
- Support wilderness stewardship by embracing Leave No Trace outdoor ethics.

WILDERNESS MANAGEMENT DIRECTION

Nonhistoric Structures and Shelters – Yéés Híti (*New Houses*)

National Park Service *Management Policies 2006* (section 8.1.2) provides guidance to parks on determining appropriate uses that emphasize suitable recreation consistent with the protection of the park. That guidance considers laws, executive orders, regulations and policy, existing planning guidance, impacts on park resources and values, cost to the National Park Service, and whether the public interest will be served. Based on that guidance, the National Park Service has determined that structures and shelters in the Glacier Bay Wilderness are not appropriate at this time (though they may be considered outside designated Wilderness areas). The Glacier Bay Wilderness has been intentionally managed to have exceptional wilderness character within the special provisions of ANILCA. Given the ever-developing world, experiencing shorelines without visible human structures is part of what makes the Glacier Bay experience feel extraordinary for many park users.

Similar facilities in comparable locations in Alaska (Kenai Fjords National Park and Tongass National Forest) have seen an occupancy rate of 20–60%, suggesting that construction of such structures may have a disproportionate impact to the visitor experience of viewing undeveloped shorelines, relative to the value of being able to stay in a cabin. Additionally, constructing a cabin on wilderness land may restrict visitor use of the cabin to that location. By not having cabins, Glacier Bay has been able to keep a more fluid response toward visitor use, considering retreating glaciers, shifting stream channels, and vegetation changes and preserve the wilderness character of primitive and unconfined recreation. Visitors who do not wish to camp can choose from a range of private and commercial vessels that provide a

variety of opportunities to experience the backcountry, some providing overnight experiences.

Maintenance of any backcountry structures or shelters would require vessel access, making regular service difficult. In addition, while these facilities would be consistent with law and policy (ANILCA 1315[d]), because of the remote location and environmental conditions in the Glacier Bay Wilderness, service and maintenance of these facilities would be operationally challenging and expensive. Last, backcountry users in a 2018 survey did not generally support the National Park Service providing amenities such as floating cabins/rafts, outhouses, designated campsites, designated facilities, and developed trails (NPS 2021a).

The National Park Service determined that backcountry cabins are not needed for public health and safety reasons under ANILCA 1315(d) at this time. Generally, most recreational users follow frequented coastal shorelines. In these locations, emergent health and safety situations (e.g., injury, hypothermia, gear failure, wildlife incidents) are best dealt with using modern emergency communication tools. Recreational users may also employ mayday calls, request for mutual aid from passing boats or other recreationalists, or rescue from NPS or Coast Guard vessels.

Eligible Drop-off Locations for Day Tour Boat – Yaakw Yán Has Akooxu Yé (*Where the Boat Comes to Shore*)

The day tour boat uses designated drop-off locations to provide visitors access to wilderness in Glacier Bay. These drop-off/pick-up points would continue to be reviewed annually and listed in the annual wilderness operating plan. Access points are set to support visitor experiences in both arms of Glacier Bay and would be rotated as much as possible to reduce impacts from off-vessel activities, such as camping and informal trail creation at specific sites. The park currently uses established criteria for systematically evaluating the potential of day tour boat drop-off sites.

In the future, the National Park Service will also explore and consider implementing other operationally feasible drop-off service models to try to disperse visitors, reduce concentrated use and site damage, and enhance wilderness experiences by offering more flexible visitor access.

In the past, the drop-off/pick-up sites have been marked with stone cairns, a modern practice that is problematic because historically, the Huna Tlingit used similar cairns in their traditional Homeland. To replace these cairns, portable or moveable totems will be carved as a collaborative project with the Hoonah Indian Association to acknowledge Homeland values and serve as guidance for backcountry users that they are about to enter designated Wilderness. These totems are easily moved and replaced and will fit on uneven ground. The park will carefully site the totems to ensure the location is culturally and biologically appropriate. The cairns may be placed in wilderness if they are determined to meet the minimum requirements for the administration of the area as wilderness. A minimum requirements analysis will be completed before a final decision is made regarding location.

Regulations and Closures – A Káa Kuwdudziteeyí Yoo X'atánk (*The Things [Protocols] We Live By*)

Glacier Bay's environment is undergoing rapid natural change. Much of Glacier Bay's visitation takes place at sites where continual geologic changes occur, such as glacier outwash formation, slope wasting, ocean scouring, and high rates of isostatic rebound. These processes tend to obscure or mitigate long-term, localized recreational use impacts—for example, intensively used shorelines may become covered with alder within a decade so use and subsequent vegetation impacts shift to the new shoreline. Similar use levels could not be sustained in more fragile areas such as in critical wildlife breeding, feeding, and resting habitat. While varying degrees of protection continue to be needed to ensure that natural life processes prevail, years of resource data and management experience point to the importance of flexible, science-informed approaches given the park's dynamic post-glacial environment and even more dynamic species distributions. In most areas, instruction in minimum-impact camping practices and low-level dispersed visitor use should be sufficient, given typical campsite conditions and current visitation levels. For example, periodic campsite monitoring (NPS 2015a) and recent backcountry visitor social science (NPS 2021a) indicate limited evidence of human impacts in most wilderness settings. Shoreline camping can take advantage of the nature of the marine ecosystem and make use of the intertidal zone to dispose of human waste. At the same time, some minimum impact camping practices, such as those currently pertaining to the preservation of natural and cultural resources, food storage, fires, sanitation and refuse, and pets, are mandatory and legally enforceable by inclusion in the Code of Federal Regulations or the park's annual compendium.

Long-term and temporary restrictions and closures also have been proven to protect sensitive wildlife from disturbance and/or minimize human-wildlife conflicts in Glacier Bay. In some areas, regulatory closures to restrict human use may be needed, particularly when sensitive species, such as concentrations of ground-nesting birds, harbor seals, or sea lions, are present. Recent research results have shown that certain levels of human use cause decreases in shoreline activity of bears, wolves, and moose, so limiting human use in important wildlife habitat may be warranted (Sytsma et al. 2022). Additionally, areas may be temporarily closed after human-wildlife conflicts to minimize safety risks to the public and/or wildlife. The option to close areas and restrict visitor use will be exercised using regulations and closures procedures when necessary to ensure that the activity or area is being managed in a manner compatible with the purposes for which the park was established. Closures will occur under existing park service authorities (annual Superintendent's Compendium and under the requirements of 36 CFR section 13.50).

Diversity of Park Experiences – Woosh Gunayáade Át (*Different Activities*)

In concert with the statutory requirements of the Wilderness Act, the National Park Service will use a variety of tools to connect diverse visitors to a range of high-quality wilderness opportunities and settings and to reduce conflicts between user types and groups in the wilderness. This includes continuing seasonal restrictions on the use of motorized boats and seaplanes within certain waters in response to visitor requests for nonmotorized wilderness settings (unlike wilderness in the contiguous United States, access by airplane and motorboat is allowed under ANILCA because Alaskan wilderness parks are so vast and remote, and

access to and within them can be difficult). As a result, under 36 CFR 13.1180, “Closed waters, motor vessels and seaplanes,” visitors enjoy enhanced opportunities for human-powered recreation in immersive marine settings that emphasize human-powered recreation and the natural soundscapes of Glacier Bay.

Guide Activity – Yaa Shandagoot Aa Hás (*Guide*)

Commercial guide services for sea kayaking, fishing, backpacking/hiking, mountaineering/ski touring, air taxi services, and vessel services for visitor drop off and pick up in the backcountry have been authorized by the park to provide necessary and appropriate visitor services in wilderness. Charter and tour vessels operate under concession contracts to navigate within the park; in addition, commercial operators may offer off-vessel activities including nonmotorized water-based and land-based activities. Recommendations and requirements in this plan apply to commercial operators as well as the public. Additional information on these services is covered in the extent necessary determination section (see appendix B), which provides direction on commercial services that are proper for realizing the recreational or other purposes of wilderness.

Research – Sh too At Wudlitóow (*S/he Studied It*)

The Antiquities Act under which Glacier Bay National Monument was originally designated, the monument’s enabling proclamation, ANILCA, and the biosphere reserve designation all recognize the importance of science in Glacier Bay National Park. Basic and applied research would be allowed to occur in all zones, subject to permitting review to determine whether the proposed research is consistent with the park’s enabling purposes and to minimize adverse impacts to wilderness character through mitigations. Additionally, research in wilderness often requires exceptions for Wilderness Act, section 4c prohibited uses. These impacts are evaluated through a minimum requirements analysis (including as a living laboratory for research) to determine if they are necessary for the administration of designated Wilderness and to analyze and select the minimum tool necessary.

Resource Management – A Káx Yan Tudél Wé Tl’átgi Ka At Wudikeen Áani Aat Ka Éil (*We Are Stewards of the Land, the Air, and the Sea*)

The park has several documents that outline the resource management direction for the park. These documents stipulate the management priorities for natural and cultural resources parkwide and identify priority stewardship goals and projects. For additional information on resource management guidance, see:

- Resource stewardship strategy (2018)
- State of the parks (2018)
- Natural resource condition assessment (2017)
- Bear management plan (2013)
- Alaska Region Invasive Plant Management Plan (2009)

Tlingit Homeland – Haa Aaní (*Our Homeland*)

The 1984 General Management Plan (NPS 1984) identified the need to collect archeological and ethnographic information for use by researchers and interpreters and spoke to the need to strengthen relationships in “neighboring communities with a significant population of native Americans.” This plan provides more specific strategies to expand on the general management plan’s limited direction for data collection and relationship building.

Management direction for protecting Tlingit Homeland values focuses on strengthening government-to-government communication; continued efforts to document, protect, and share, as appropriate, ethnographic and archeological resources, including resources previously classified as historic structures that more appropriately would be reclassified as ethnographic resources; facilitating and encouraging ongoing connections with Homeland; and commemorating villages or other sacred sites in appropriate ways. Homeland concepts, including land acknowledgments, and tribal protocols for hosting and behaving respectfully in Homeland are embedded in all literature and orientation materials for backcountry users. Commercial service providers operating in the backcountry are notified annually of available tribally approved Homeland materials and authentic cultural guides as an added benefit for guests, and future contracts and permits require that all commercial advertisement and activity that address Tlingit history, tradition, practices, or Homeland values must be reviewed and approved by the associated tribe.

Tlingit Homeland connections are encouraged and supported in all management zones. Traditional activities occur in all zones. Evidence of both ancestral and current cultural practices within the wilderness, such as culturally modified trees, stone cairns, burial sites, pictographs, or house pits, may be visible or recognizable to visitors. Visitors may see modern cultural practices such as vegetation gathering, gull egg harvest, goat hair collection, or berry picking or evidence of these practices. These modern cultural practices are typically of short duration and do not leave an observable long-term impact on the wilderness landscape. Other Tlingit spiritual practices continue to occur in the wilderness without the practitioners’ physical presence; these practices are outside the scope of park management.

The integrity of Homeland values is honored by enhancing relationships between the National Park Service and traditional people, collaborating on cultural and natural stewardship of wilderness lands and waters, facilitating tribal access to the park, and enhancing tribal members spiritual connections to traditional foods in the park.

Management of Structures, Cemeteries, Ethnographic, and Archeological Resources – Haa Shagóonx’i Yáa Wtuwané (*Respecting Our Ancestors*)

The management objectives for cultural resources in the park’s 1984 General Management Plan included locating, identifying, and cataloging significant cultural and ethnographic resources in the park to ensure compliance; preserving knowledge and/or physical remains of the area’s cultural history to aid historians, archeologists, and interpretation; and managing the known sites as “discovery sites” for visitor education and enjoyment while the sites are slowly claimed by the landscape. Management objectives for individual cultural resource types described below. Additional information on management strategies and actions related to these topics are in chapter 3.

Ethnographic resources/traditional cultural properties. Many potential traditional cultural properties and ethnographic resources exist in the Glacier Bay wilderness. Glacier Bay's current management policy is to record and nominate these places in the National Register of Historic Places in cooperation with the associated traditional populations.

Historic structures. Structures that are analyzed as having high association with Homeland and a high historical significance would be reclassified as ethnographic resources associated with the Tlingit Homeland and managed according to the ethnographic resource section above.

Cemeteries. Although cemeteries within Glacier Bay are currently recorded in the List of Classified Structures and fall under the 1984 General Management Plan direction, the National Park Service is legally obligated to inventory and maintain cemeteries and burial sites through the American Indian Religious Freedom Act and the Native American Graves Protection and Repatriation Act.

Cultural landscapes. Cultural landscapes in Glacier Bay are managed according to the management policies of the individual sites contained in the general landscape document; for example, an archeological cultural landscape would be subject to the Archaeological Resources Protection Act and the National Historic Preservation Act.

Visitor Orientation and Education – Áa Ashukajéis' Yé (*Teaching Others*) Has Du At Wuskú Ayís Áyá (*For Their Knowledge*)

As part of the backcountry camping permit process, visitors would be required to participate in an annual backcountry orientation. These orientations support visitor safety, mitigate risks, and share park-specific Leave No Trace outdoor ethics. Moving forward, orientations would also touch on key park values and concepts, including Tlingit Homeland, wilderness character, and Glacier Bay's active research and role as a living laboratory. Note that visitor education specific to acknowledging Homeland and protecting archeological sites is addressed previously.

Social science confirms that park orientations add to the wilderness experience (especially related to bears, food storage, and human waste), but also highlight the issue of visitors' disparate knowledge and experience levels relative to standardized content. For example, while 81% of visitors will visit Glacier Bay only once (the trip of a lifetime), others have a depth of local knowledge and experience. Also, while most visitors report extensive Leave No Trace experience, some are novices (NPS 2021a).

The park is committed to providing basic orientations and authoritative maps that respect this diversity of experience, supplemented by resources on targeted topics of interest to backcountry visitors new to Glacier Bay (such as tides), backcountry skills (Leave No Trace, and approved guide services. Importantly, this orientation would not be prescriptive or outline a specific itinerary for visitors for the following reasons:

- Wilderness visits are opportunities for discovery and exploration in undeveloped and remote places.

- Backcountry camper dispersal has an important role in preserving wilderness character (especially the qualities of solitude, unconfined recreation, and naturalness).
- The freedom to travel and camp at will enhances safety in such a dynamic and unforgiving physical environment and is a valued part of the Glacier Bay Wilderness experience.
- Backcountry visitors are ultimately responsible for accepting unknowns, determining their own course, using situational awareness to adapt as conditions change, and learning in advance what they need to know to be legal and safe.

Group Size Limits – X’ooninax Sá (*How Many in the Group?*)

The group size for all use types (overnight and day visits) within wilderness would be limited to no more than 12 people (including guides), common to all zones year-round. Groups are considered separate when out of sight and sound of each other. Drop-off and pick-up locations may have more than 12 people if multiple groups arrive or depart simultaneously; however, these groups would then disperse.

Group size exceptions may be granted for educational, research, safety, traditional Tlingit Homeland activities, or administrative purposes. The waiver for groups of more than 12 people must be authorized by the superintendent. Guidelines for minimizing impacts from groups of more than 12 people are listed on the group size waiver.

Group size limits of 12 people are relatively standard across the national wilderness preservation system to preserve the characteristic qualities of wilderness, including across southeastern Alaska public lands proximate to Glacier Bay. The following social science data further suggests a group size of 12 is justifiable in the Glacier Bay Wilderness when accounting for these variables (NPS 2021a):

- Perceptions of crowding and coastal resource conditions in overnight settings indicate that group sizes of less than six people are preferred on beaches where kayaks and tents are visible.
- Smaller group sizes are currently the norm in Glacier Bay, with only 24% of visitors traveling in a group with more than five people (2017 visitor demographics).

MANAGEMENT DIRECTION FOR BACKCOUNTRY AND WILDERNESS ZONES

This section describes the desired conditions for the wilderness lands and waters within the park. Desired conditions are defined as statements of aspiration that describe resource conditions, visitor experiences and opportunities, and facilities and services that an agency strives to achieve and maintain in a particular area. They help park managers answer the question, “What are we trying to achieve?” Desired conditions focus on fundamental resources and values; the visitor experience opportunities associated with them; and the types and levels of management, development, and access that would be appropriate in a

particular location. The desired conditions for this plan were based on guidance from previous planning efforts and other NPS policies and guidance.

This plan carries forward the park management zones outlined in the 1984 General Management Plan, which include Nonwilderness Waters, Wilderness Lands, Wilderness Waters, Development, and Special Use Zones (see the general management plan, pages 59–61, for zone descriptions). The general management plan states that “any zone may be subdivided to meet management needs or to further delineate future resource areas” (page 61). To achieve desired conditions and acknowledge that visitor use type and frequency of use varies across the Wilderness Lands Zone and Wilderness Waters Zone, this plan has subdivided the vast Wilderness Lands and Waters Zones into five subcategories. The plan includes management direction for wilderness lands and waters within the park. The five zones would achieve the following:

- Effectively manage visitor use and experience.
- Ensure that the statutory mandates of the Wilderness Act as implemented by ANILCA, the park-enabling legislation, and other related mandates are aligned.
- Provide guidance inclusive of the connection to Tlingit Homeland.
- Provide guidance inclusive of research.
- Develop and achieve desired conditions for specific areas within the wilderness.

Compared with previous management approaches, this plan outlines a zoning concept that better reflects current park needs, including the dynamic landscapes of Glacier Bay and the likelihood of ecological and geological change over time; however, the park may designate smaller units for the purposes of monitoring and other administrative needs.

Although the zones are presented as exact distances and locations, those are based on the ecological knowledge at the time of publication of the plan. As successional landscapes change, the viewshed and experience would also change. Over time, the five zone boundaries may need to be modified due to climate change or other natural forces to meet the park’s purpose and intent. Specifically, these adjustments would ensure the park is providing opportunities to access tidewater glaciers, per the park’s enabling legislation and protecting resources and visitor experiences in alignment with the intent of the zoning descriptions below.

Within the zone descriptions, several terms are used to describe the level of development for trails and facilities. Within the context of this plan, the term “informal” is used to describe visitor-created trails and/or campsites. “Formal” is used to describe any planned trail or campsite. The term “primitive” or “semi-primitive” is used to describe the character of those planned trails or campsites.

The term primitive, as applied to a hiking trail, would be Trail Class 1 (minimally developed) trail. These trails may have indistinct tread, may require some route finding, and are constructed of predominantly native materials. Class 1 trails tend to be narrow, have

frequent obstacles, and have minimal structures for drainage or water crossings. These trails are minimally signed but may include route markers when trail is not evident (USFS 2016).

The term semi-primitive, as applied to a hiking trail, would be a Trail Class 2 (moderately developed) trail. These trails may consist of tread that is narrow, rough, and only lightly discernable where route markers may be needed but may also incorporate constructed tread that is continuous and discernible. Class 2 trail tread and clearing widths tend to support single lane traffic with allowances for widened sections that enable passing. Class 2 trails are also constructed principally of native materials where feasible. Other trails may fall under different trail classes, as described in the US Forest Service publication, “Trail Fundamentals and Trail Management Objectives.”

The term primitive, as applied to a campsite, describes a minimally developed site that may be delineated using natural materials (rocks, logs, some vegetation clearing). The site continues to blend with the natural environment and tends not to contain any structures, such as supporting/retaining walls or other hard delineation, beyond natural materials.

Zoning maps are shown below. Additional detail on the zoning maps can be found in the NPS StoryMap: <https://storymaps.arcgis.com/stories/2047e748d233424d8789b54edd78cda1>.

Parkwide Management Zones

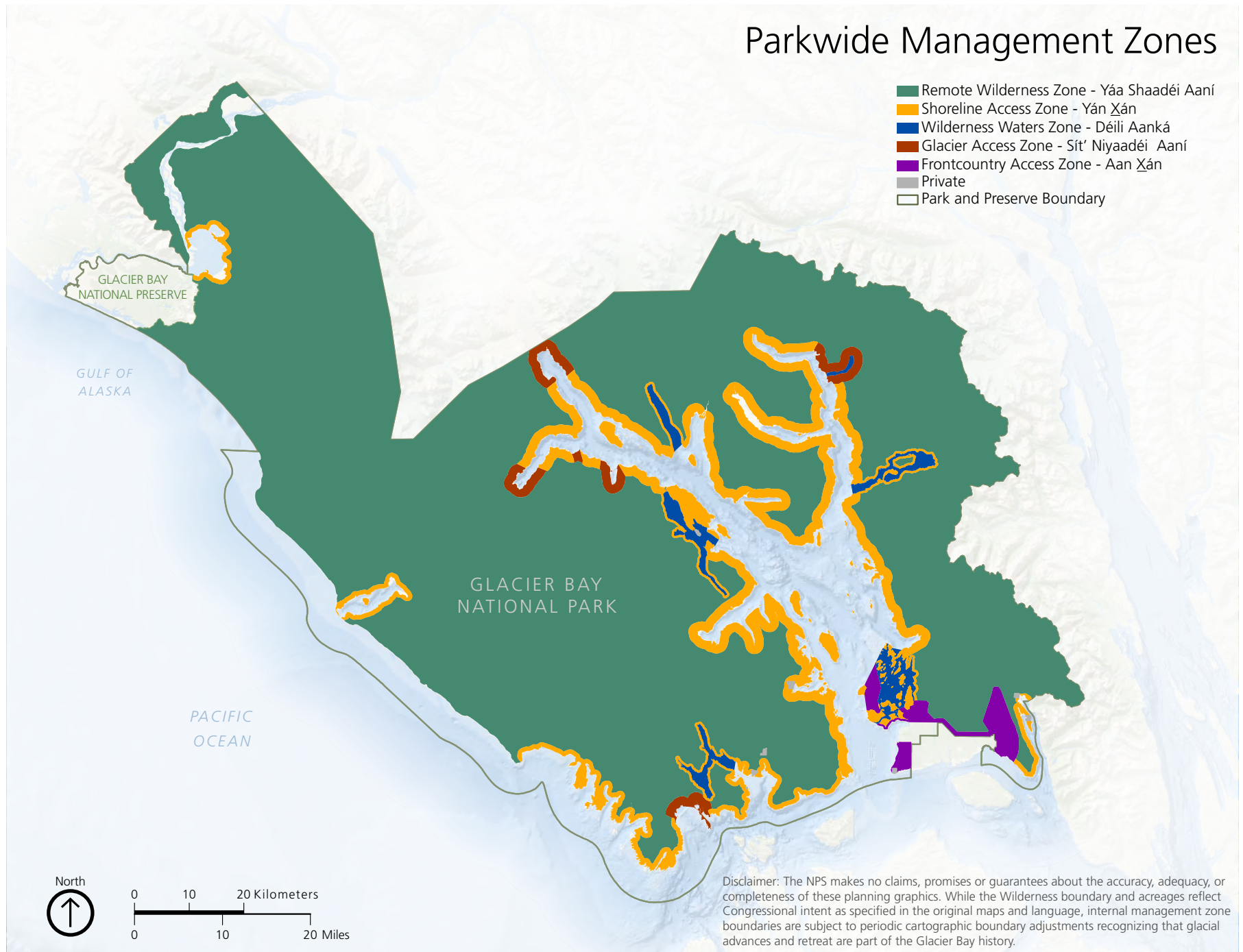


Figure 8. Parkwide Zoning Map of the Glacier Bay Wilderness

Remote Wilderness Zone – Yáa Shaadéi Aaní (*The Land Up by the Mountains*)

The Remote Wilderness Zone consists of the following:

- primarily interior wilderness lands that are generally buffered from visitor use impacts
- coastal lands only on the Outer Coast (Icy Point to Cape Spencer) between the preserve and Icy Point
- lands over 0.25 mile inland from wilderness waters (may vary slightly if needed to ensure zoning consistency on islands and peninsulas to protect resources and provide for high-quality visitor experiences)
- lands over 0.5 mile inland from the shores of Lituya Bay, Icy Point to Cape Spencer, continuing along the shores of Cross Sound and Icy Strait, and Excursion Inlet. The zone also consists of lands over 1 mile inland from the nonwilderness waters of Glacier Bay (may vary slightly if needed to ensure zoning consistency on islands and peninsulas to protect resources and provide for high-quality visitor experiences).



Lands excluded from the Remote Wilderness Zone include lands designated as Glacier Access Zone (see zone description below) and areas near the frontcountry designated as Frontcountry Access Zone.

Remote Wilderness Zone - Yáa Shaadéi Aaní *(the land up by the mountains)*

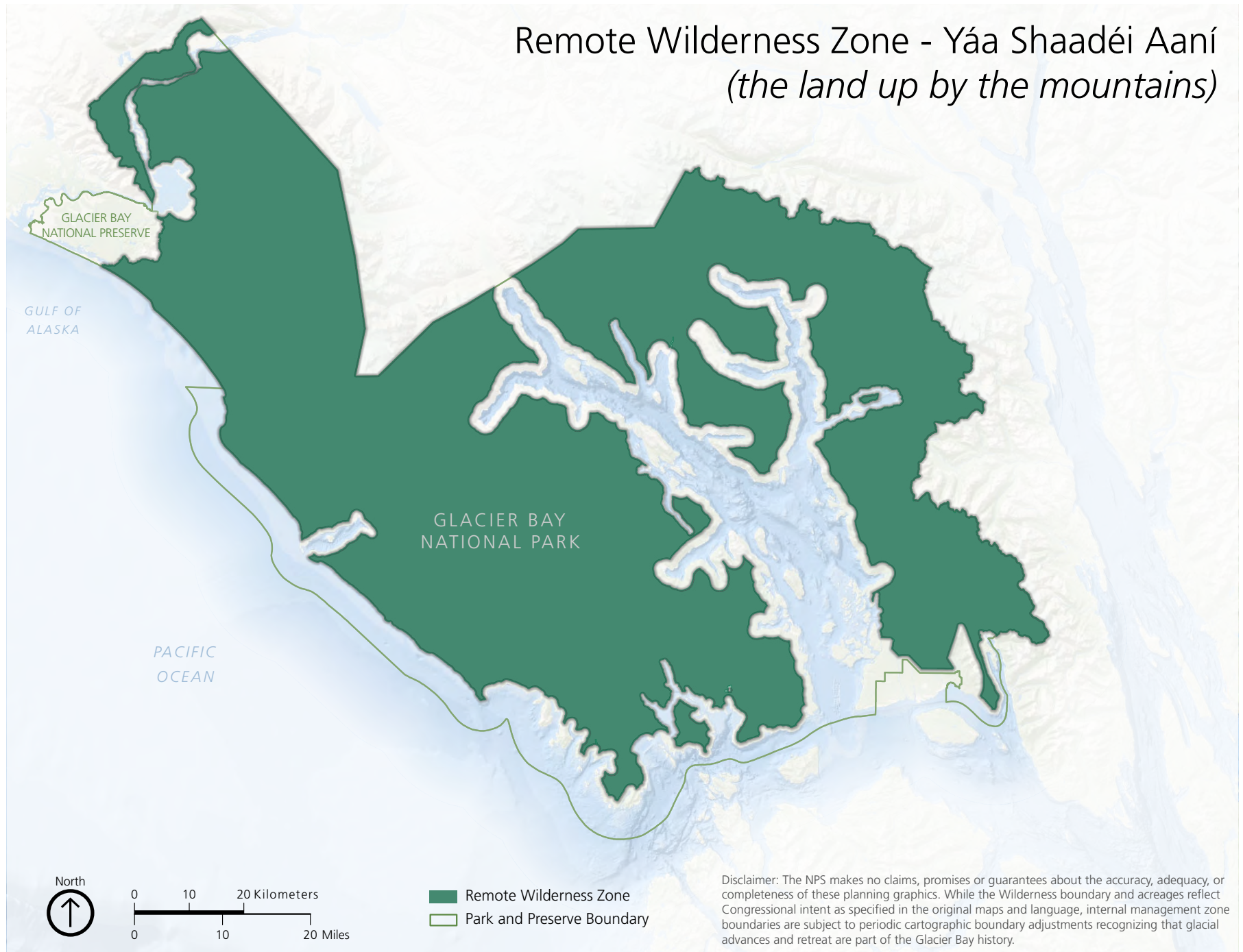


Figure 9. Remote Wilderness Zone

The zone is managed to promote intact ecosystems and high levels of self-reliance among visitors. The zone is essentially void of development, trails, or other facilities, except for the occasional research or communications installation. Visitors should expect a high degree of solitude and challenge within the zone.

Desired conditions for this zone are as follows:

Natural and cultural resources. The Remote Wilderness Zone provides for intact ecosystem processes. Natural light and sounds would predominate. Although wildlife may experience short-term, localized displacement because of small amounts of visitor or administrative uses, natural processes and patterns continue without intervention or alteration. Visitor use impacts to natural and cultural resources are unlikely to occur or to be visible.

The Tlingit are actively engaged in collaborative stewardship of natural and cultural resources through consultation, informal two-way communication, and partnership programs. They continue to engage in traditional activities, including permitted harvest activities, to connect with ancestral spirits, maintain and pass down intergenerational knowledge, and hold ceremony. Tlingit presence and interaction with Homeland are integral to an intact ecosystem, just as pristine ecosystems support the integrity of Homeland and a traditional sense of place.

Visitor experience. The Remote Wilderness Zone provides visitors with primitive experiences where a high degree of skill is required, and the potential exists for a significant amount of risk. Self-reliance is a key component of the visitor experience, as trip planning and safety information are only accessible before the experience. Visitors would experience a vast and wild landscape where natural sounds and natural light conditions prevail most of the time. Signs of other visitor use such as campsites and informal trails are unlikely to be visible, and the likelihood of encountering other visitors is low. Visitors may also encounter temporary infrastructure to support research and communications, as well as evidence of research activities or cultural practices. Visitor encounters with park staff would also be low because patrols would be infrequent, as would closures and restrictions. Low-impact recreational uses, such as mountaineering, climbing, ski-touring, hiking, and camping, are primary uses within the zone. To facilitate certain visitor experiences, very limited commercial services may occur in this zone.

Facilities and development. Development of hiking trails or campsites for visitor use would not be considered in the foreseeable future while park visitors are able to experience tidewater glaciers outside of this zone to meet enabling park purposes. As glaciers recede and marine access to tidewater glaciers becomes limited, the park will explore opportunities for visitors to hike to experience glaciers in a wilderness setting in this zone to meet enabling park purposes. There would be a focus on loop experiences with multiple glacier views rather than out-and-back trips to a dynamic glacier face. The park would use the minimum requirement concept to evaluate necessity and apply a minimum requirements analysis to any proposed or potential actions, such as defining routes, constructing sustainable trails, designating campsites, or the development of public use cabins or shelters, to support

multiday trips in more fragile alpine environments while minimizing physical impacts from concentrated human use.

Installations would be limited to those needed for communication and research purposes, and many may be temporary. Approved communication and research infrastructure would be carefully sited to minimize impacts to the resource and visitor experience. Motorized and mechanized use would be limited to only those allowed by the ANILCA, including private, administrative, park-permitted, commercial, charter fixed-wing aircraft landings, and other methods as approved by a minimum requirements analysis as required by the Wilderness Act. All installations and structures in wilderness would be subject to a minimum requirements analysis.

Shoreline Access Zone – Yán Xán (*The Land Near the Shoreline*)

The Shoreline Access Zone is where most wilderness visits occur. The zone consists of the following (may vary slightly if needed to ensure zoning consistency on islands and peninsulas to protect resources and provide for high-quality visitor experiences):



- coastal lands within 1 mile from the mean high tide line adjoining nonwilderness waters within Glacier Baylands within 0.5 mile from the shore of Alsek Lake
- coastal lands within 0.5 mile from the mean high tide line along the coasts of Lituya Bay and Cenotaph Island, Excursion Inlet, Icy Strait and Cross Sound, and along the Outer Coast from Cape Spencer to Icy Point
- lands within 0.25 mile of wilderness waters and the entirety of islands that are surrounded by wilderness waters
- lands within 0.25 mile of the wilderness waters shoreline for islands where only a portion of the land is adjacent to wilderness waters

Areas excluded from the Shoreline Access Zone include lands designated as Glacier Access Zone (see zone description below) and portions of the Beardslee Islands designated as Frontcountry Access Zone.

The Shoreline Access Zone is largely managed to encourage self-reliance and connection to wilderness character. Formal trails and/or campsites would only be considered in this zone to protect resources. Otherwise, this zone would be devoid of development except for communication and research installations.

Shoreline Access Zone – Yán Xán *(the land near the shoreline)*



Figure 10. Shoreline Access Zone

Desired conditions for this zone are as follows:

Natural and cultural resources. Within the Shoreline Access Zone, natural processes prevail. Occasional light and noise from vessels and campers may affect dark night skies and the natural soundscape, but impacts would be occasional and temporary. Because of the possibility of camping in this zone and a higher amount of visitor use than in the Remote Wilderness Zone, short-term displacement or temporary impacts to wildlife may occur. Also, because of more frequent visitor use, limited impacts may occur because of informal campsites and/or visitor created trails.

The Tlingit are actively engaged in the collaborative stewardship of natural and cultural resources through consultation, informal two-way communication, and partnership programs. They continue to engage in traditional activities, including permitted harvest activities, connecting with ancestral spirits, maintaining and passing down intergenerational knowledge, and holding ceremony. Tlingit presence and interaction with Homeland are integral to an intact ecosystem, just as pristine ecosystems support the integrity of Homeland and a traditional sense of place.

Visitor experience. Within this zone, a significant amount of self-reliance is expected. Visitor information is available before the experience or, if part of a guided experience, may be available during the activity. Visitors may encounter other visitors; however, encounter rates are likely to be low to moderate outside of drop-off points. Altered vegetation, presence of rock rings, and some visitor-created trails may be observable. Primary recreational activities include hiking along the shore, kayaker and park-permitted backcountry drop-off, wildlife watching, and dispersed camping. To facilitate some of these visitor experiences, limited commercial services would be likely to occur. Due to the proximity of this zone to nonwilderness waters, Park managers acknowledge the adjacent nonwilderness areas and will consider holistic approaches to mitigate adverse impacts to wilderness character in future marine management planning and vessel operating requirement updates.

Facilities and development. This zone would be largely devoid of development. Development of hiking trails or campsites is unlikely. Development of primitive trails and campsites or designation of camping areas would be considered when needed for resource protection purposes or as glaciers recede and marine access to tidewater glaciers becomes limited, the park will explore opportunities for visitors to hike to experience glaciers in a wilderness setting in this zone to meet enabling park purposes. Other installations would be limited to those needed for communication and/or research purposes or moveable totems carved as a collaborative project with the Hoonah Indian Association to mark dayboat drop-off sites that acknowledge Homeland values and serve as guidance for backcountry users that they are entering designated Wilderness. All installations and structures in wilderness would be subject to a minimum requirements analysis.

Wilderness Waters Zone – Déili Aanká (*Land of the Sheltered Area*)

The Wilderness Waters Zone currently¹ consists of around 53,000 acres of designated Wilderness marine waters, including the following:

- waters of McBride Inlet
- the majority of the wilderness waters surrounding the Beardslee Islands, including Secret Bay and Hutchins Bay
- waters of Adams Inlet, Rendu Inlet, Hugh Miller Inlet, Scidmore Bay, Charpentier Inlet, and Upper Dundas Bay



The Wilderness Waters Zone is managed to provide opportunities for solitude and primitive and unconfined recreation and to maintain its undeveloped character. Visitors to this zone would have the opportunity to experience natural marine ecosystems. Human influence on the ecosystem is extremely rare compared to other marine areas, and special management considerations to protect wilderness character exist within these waters.

Waters not included in the Wilderness Waters Zone include wilderness waters that are proximate to the Frontcountry Zone (2019 frontcountry management plan) and waters between Strawberry and Young Islands and Sitakaday Narrows, which are included in the Frontcountry Access Zone.

1. While the wilderness boundary and acreages reflect congressional intent, as specified in the original maps and language, internal management zone boundaries are subject to periodic cartographic boundary adjustments, recognizing that glacial advances and retreat are part of Glacier Bay history.

Wilderness Waters Zone - Déili Aanká (*land of the sheltered area*)

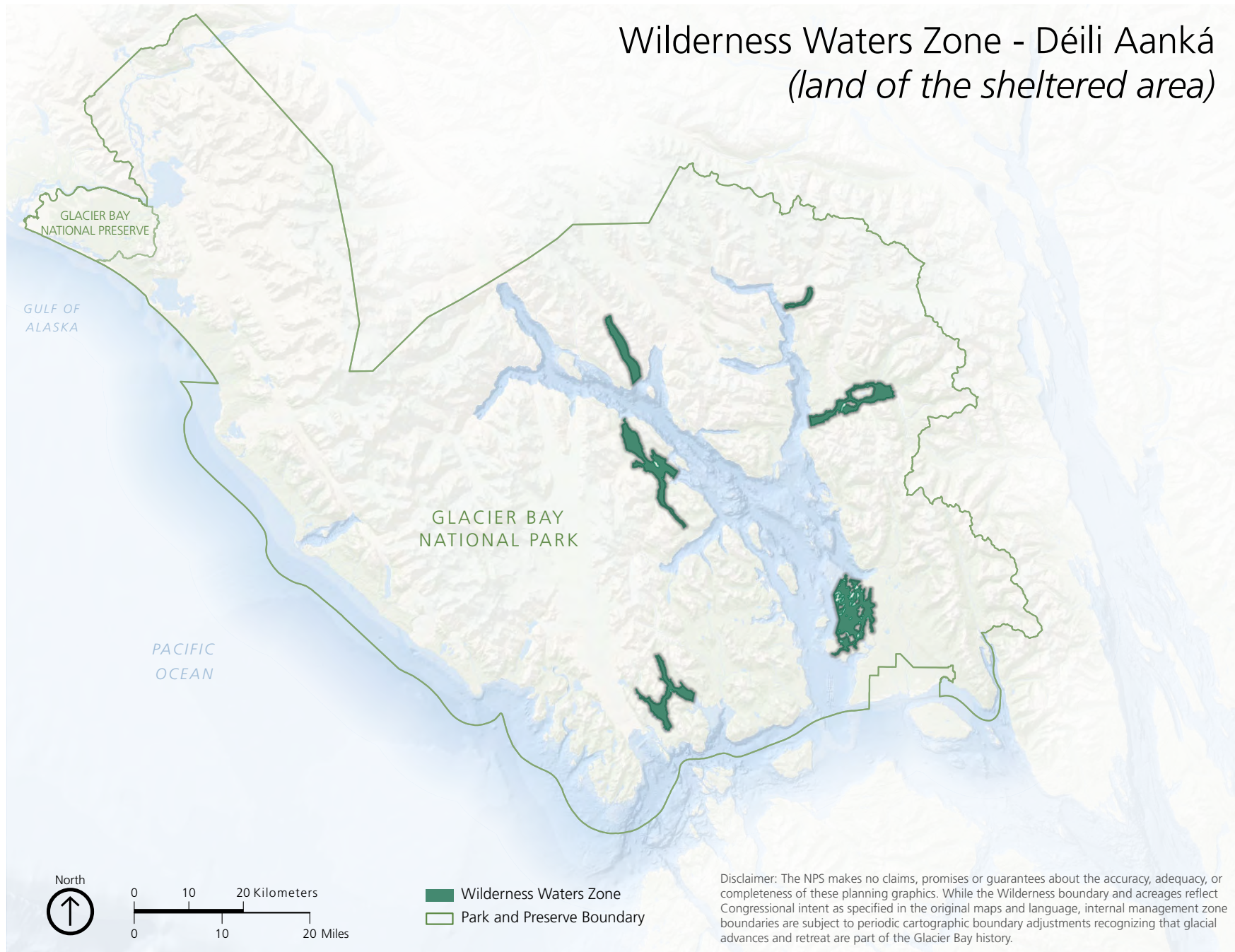


Figure 11. Wilderness Waters Zone

Desired conditions for this zone are as follows:

Natural and cultural resources. Occasional light and noise from vessels outside this zone and shore-based camping may affect dark night skies and the natural soundscape, but impacts would be occasional and temporary. Maintaining the quality of the underwater soundscape is prioritized. Natural processes within the marine ecosystem continue with minimal human influence. Impacts to natural resources from visitor use are temporary, and short-term displacement or temporary impacts to wildlife would be minimized to the extent possible.

The Tlingit are actively engaged in collaborative stewardship of natural and cultural resources through consultation, informal two-way communication, and partnership programs. They continue to engage in traditional activities, including permitted harvest activities, to connect with ancestral spirits, maintain and pass down intergenerational knowledge, and hold ceremony. Tlingit presence and interaction with Homeland are integral to an intact ecosystem, just as pristine ecosystems support the integrity of Homeland and a traditional sense of place.

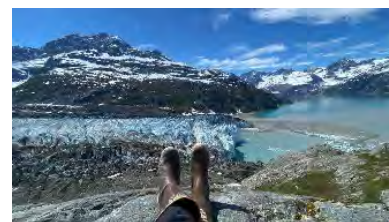
Visitor experience. Visitors have the opportunity to experience solitude, challenge, and self-reliance in this zone. Although visitors may see or hear other vessels within this zone, close contact with other vessels would be rare. During certain times of year for specific locations, close contact with motorized craft would be absent because of periods regulated for nonmotorized use. Encounters with other visitors and groups are infrequent, and evidence of visitor-caused impacts is minimal. This zone allows visitors to experience remote wilderness waters in areas that are less impacted by visitor use than many of the main travel routes. Access is provided by small craft (kayaks and other small boats). To facilitate remote and wild experiences, commercial services are limited.

Facilities development. This zone is largely devoid of development. Floating structures or permanent structures (e.g., docks, signs, navigational aids) are not present in this zone. Other facilities or installations are limited to those needed for communication and research purposes. All installations and structures in wilderness would be subject to a minimum requirements analysis.

Glacier Access Zone– Sít' Niyaadéi Aaní (*Land Traveling to the Glacier*)

The Glacier Access Zone includes areas where glaciers are more accessible by ordinary means of travel, including by foot, vessel, plane, or other methods. This includes areas in the vicinity of tidewater glaciers that are easily accessible for vessels to offload visitors and have the terrain suitable for hiking experiences. The Glacier Access Zone consists of the following:

- lands within 1 mile of the mean high tide line surrounding Reid, Tarr, McBride, and Johns Hopkins Inlets, Lamplugh and Riggs Glaciers, Taylor Bay, and the high tide line on the north side of the Brady Icefield



Glacial areas excluded from this list (such as La Perouse and Grand Plateau) are not considered “more accessible to ordinary travel,” even though float plane access is allowed under ANILCA. The Glacier Access Zone experiences some of the most concentrated use in the park, with visitors arriving primarily by boat at specific drop-off locations close to tidewater glaciers. Areas within the Glacier Access Zone would have safe marine vessel approaches and provide access to glacial features. The zone provides for overnight use and access to glaciers with greater allowances for commercially guided group excursions within sight and sound of other parties. Visitors should expect to encounter others within this zone. The Glacier Access Zone is managed to support a range of high-quality immersion experiences in a dynamic landscape, and to protect wilderness character while also providing access to the glacial environment, as specified in the park’s enabling proclamation.

Glacier Access Zone – Sít' Niyaadéi Aaní (*land traveling to the glacier*)

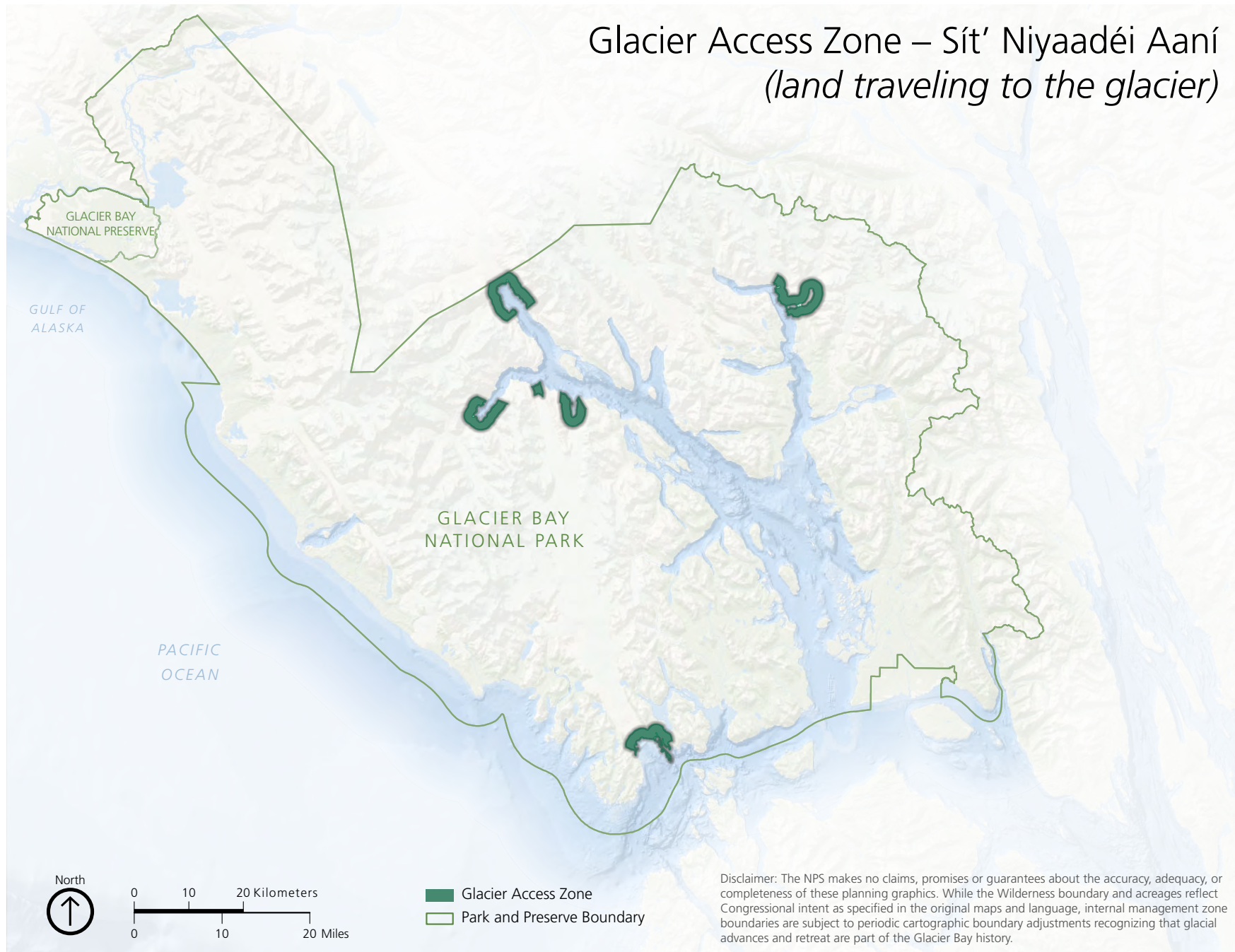


Figure 12. Glacier Access Zone

Desired conditions for this zone are as follows:

Natural and cultural resources. Light and soundscapes may be occasionally impacted by visitor use, including vessels and campers. Resource impacts from trails and campsites are likely; however, these impacts would remain proximal to areas of high use. Impacts to natural resources from visitor use are temporary, and short-term displacement or temporary impacts to wildlife would be minimized to the extent possible.

The Tlingit are actively engaged in collaborative stewardship of natural and cultural resources through consultation, informal two-way communication, and partnership programs. They continue to engage in traditional activities, including permitted harvest activities, to connect with ancestral spirits, maintain and pass down intergenerational knowledge, and hold ceremony. Tlingit presence and interaction with Homeland are integral to an intact ecosystem, just as pristine ecosystems support the integrity of Homeland and a traditional sense of place.

Visitor experience. Visitors should expect to find some elements that indicate a higher-use area, such as social trails. Areas in this zone are remote. To facilitate access to glaciers, commercial services are accommodated at greater levels so that visitors can experience the shoreline on guided excursions. Visitors should expect to see the implementation of a variety of management tools to ensure high-quality visitor experiences and resource protection. Kayaker or backpacker drop off could occur in this zone if conditions were favorable. Encounter rates with other visitors would likely be high, especially during drop off and pick-up times. Visitors may also see and hear more boats than in the other zones in addition to the presence of more formal and informal trails and campsites. Visitor information could be available both before and during the visitor experience (e.g., experiencing the park with a guide or having information provided on board a vessel). Management actions that concentrate people to reduce resource impacts will be considered. Park staff actively manages impacts from visitors in this zone and issues guidance as needed to protect critical resources. Primary activities in this zone include hiking, camping, and kayaker or backpacker drop off.

Facilities and development. Because of relatively high visitor use levels, the development of primitive campsites and hiking trails or designation of camping areas could be considered for resource protection purposes, should informal campsites and trails begin to cause resource damage or begin to negatively impact desired conditions. Trails could also be considered to facilitate access to glaciers to meet the park's purpose and intent if access is constrained due to climate change or other events like a glacial surge. Other facilities would be limited to those needed for communication and research purposes. All installations and structures in wilderness would be subject to a minimum requirements analysis.

Frontcountry Access Zone– Aan Xán (Near Town)

The Frontcountry Access Zone includes lands and waters that are proximate to the Frontcountry Zone (NPS 2019b) and originating from road-accessible trailheads in the Bartlett Cove and Gustavus area. The Frontcountry Access Zone consists of the following:



- waters east of Strawberry Island and North of Young Island and the waters of the Beardslee cut that connect Bartlett Cove with the southeastern portion of the Beardslee Islands. These waters have been zoned as part of the backcountry and wilderness management plan's Frontcountry Access Zone to acknowledge and manage for higher levels of use and a different type of wilderness experience in areas near the frontcountry.
- lands from the frontcountry boundary into the Bartlett Lake area and the Bartlett River corridor
- the Point Gustavus area outside the frontcountry area within the park
- an approximately 2.5-mile-wide area along the park boundary north of the frontcountry area east to the Towers Trail area
- an approximately 0.5-mile-wide area along the park boundary that extends east from the frontcountry area to the Falls Creek and Excursion Ridge area
- the Falls Creek and Excursion Ridge area

Commercial services are limited in this zone because of frontcountry proximity. Informal, visitor-created trails and/or campsites may be visible because of higher levels of use within this zone. Intentionally developed trails or routes would be considered to facilitate wilderness access.

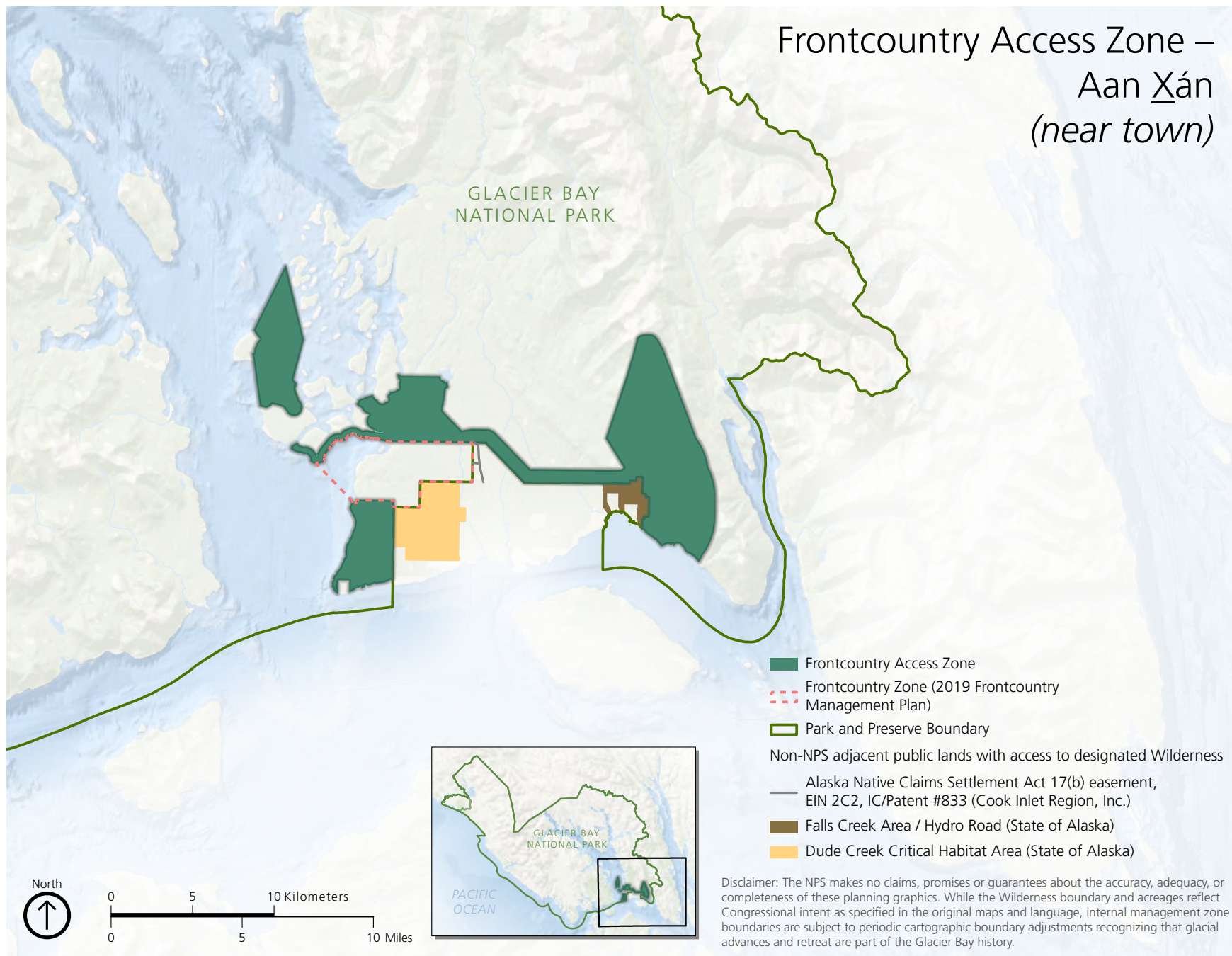


Figure 13. Frontcountry Access

Desired conditions for this zone are as follows:

Natural and cultural resources. Desired conditions for natural and cultural resources would largely be the same as the Shoreline Access Zone. Limited resource impacts from informal or visitor-created campsites and both informal (visitor created) and formal trails may occur due to higher levels of visitor use. Portions of this area may have developed Class 2 and Class 3 trails. Impacts to natural resources from visitor use are temporary, and short-term displacement or temporary impacts to wildlife would be minimized to the extent possible.

The Tlingit are actively engaged in collaborative stewardship of natural and cultural resources through consultation, informal two-way communication, and partnership programs. They continue to engage in traditional activities, including permitted harvest activities, to connect with ancestral spirits, maintain and pass down intergenerational knowledge, and hold ceremony. Tlingit presence and interaction with Homeland are integral to an intact ecosystem, just as pristine ecosystems support the integrity of Homeland and a traditional sense of place.

Visitor experience. This zone would be managed as a gateway to wilderness experiences and may include formal and informal trails that provide access to wilderness and hike-in camping opportunities. The zone would be available to both day use and overnight park visitors who may not have wilderness experience opportunities through commercial means. Because of the proximity to the Frontcountry Zone (NPS 2019b), commercial services would be infrequent. Encounters with other visitors are likely. While trail development could fall into one of several trail classes, any constructed features are designed to provide an authentic place-based experience at the lower intensity end of the recreational opportunity spectrum. As such, trail design emphasizes nature “as it is,” with the least modification to support use, and user self-sufficiency due to the lack of amenities.

Facilities and development. Within this zone, recreational experiences would be supported by routes and intentionally developed trails that provide access to the wilderness while protecting critical resources. These facilities provide high-quality wilderness experiences for visitors originating from the Frontcountry Zone (as defined in the frontcountry management plan) and from road-accessible trailheads and reserved public rights-of-way in the Gustavus area.

Trail development could fall into one of several trail classes; however, semi-primitive and primitive trails or routes would be used where the terrain can accommodate use levels without resource damage and while requiring minimal annual and cyclic maintenance. Overnight use through dispersed camping is permitted; designated campsites would only be considered for the protection of natural and cultural resources.

Route markers or other navigational aids may support recreational uses; however, the park would seek to locate signage and any user amenities outside of designated Wilderness. Other installations would be limited to those needed for communication and research purposes. All installations and structures in wilderness would be subject to a minimum requirements analysis.

CHAPTER 3: MANAGEMENT STRATEGIES AND ACTIONS

INTRODUCTION

This chapter identifies management strategies and actions that will be used to achieve and maintain the desired conditions related to the preservation of wilderness character and the associated visitor uses in wilderness. A strategy is a general direction or course, and the actions are the specific steps that may be taken to move the strategy forward. This chapter will also suggest management strategies that resolve issues described in chapter 1. The strategies and actions are organized by topic area. The strategies and actions in this section apply to the Wilderness Lands and Wilderness Waters Zones from the general management plan (see the general management plan for zone descriptions). This plan further refines those two zones into smaller management zones within the wilderness lands and waters zones as described in chapter 2. These strategies and actions will provide for the protection of vast wilderness lands and waters while placing an emphasis on exploration, challenge, and self-reliance. All the strategies and actions in this section will be used to achieve and maintain desired conditions related to wilderness, natural and cultural resource conditions, facilities and communication infrastructure, and the visitor experience.

In some cases, “corrective actions” have been identified. These actions are included to provide management guidance for what actions could be taken if desired conditions and wilderness values are not being maintained.

DESCRIPTION OF MANAGEMENT ACTIONS BY ZONE

Management Actions Common to All Zones

Focused messaging. Visitor information and education (including as part of the visitor orientation described in chapter 2) would emphasize wilderness, natural and cultural resource protection, themes associated with Tlingit Homeland, the harmful effects of rock cairns, Leave No Trace, bear safety, backcountry human waste management (including intertidal strategies that effectively flush waste), and the significance of interstadial wood and avoiding its burning.

Backcountry permitting system. A backcountry camping permit would be required on a year-round basis for all commercial and noncommercial camping in the wilderness and backcountry. Permits are a means of conveying information about park rules, conditions, and safety information. Over time, the permit system would provide the park with better information on the types, amounts, and locations of backcountry camping use.

To reduce the burden of this requirement on visitors, the park would take the following administrative approach:

- Permits would be issued per party rather than to each individual visitor.
- Permits would be available in person or online and could be acquired in advance of the trip or the day of departure.

- Permits would collect information, including group size, an emergency contact, length of stay, type of recreational use, mode of transportation, and a general itinerary (general camp locations and entry/exit points).
- If a group needed to adjust their itinerary while in the backcountry, the group would report any changes to the park upon return from the backcountry. This permit system would be free of charge and not involve a lottery or quota unless otherwise established in commercial operating contracts.

Commercial services in designated Wilderness. Continue to apply law and policy to analyze the appropriate role of specific guided commercial services in Glacier Bay National Park designated Wilderness, recognizing that the 1964 Wilderness Act, section 4(c) prohibits commercial services in designated Wilderness, except commercial services under section 4(d)(6) that:

- are proper for realizing the recreational or wilderness purposes of the area
- are compatible with the designated Wilderness (including unit purposes, law, and policy)
- necessitate commercial support (but only to the degree required)

This analysis (known as an extent necessary determination and provided in appendix B) specifies

- where commercial service providers have an important role in enabling wilderness-dependent experiences, and
- conversely, where self-guided opportunities preserve the characteristic qualities of the wilderness visitor experience that emphasize solitude, challenge, self-reliance, and opportunities for discovery and exploration in untracked and remote places.

Commercially guided mountaineering. An allocation of six commercial groups per year in the Fairweather Range will be allowed and administered as part of the park's commercial management program, reversing its prohibition in the 1984 General Management Plan (but aligning with its objective to encourage commercial services for the least-accessible areas of the park). For all commercial mountaineering in the park, including outside the Fairweather Range, simultaneous trips within the same area would be prohibited to preserve opportunities for solitude and a remote experience in wilderness (private groups, however, would continue to have the freedom to go where they want and when they want, with the trade-off being that there may be other parties in their vicinity). Additional operating conditions and mitigations associated with commercially guided mountaineering will be applied to ensure that wilderness character is maintained and resources are preserved, including the protection of the living ethnographic resources associated with Tlingit sacred sites Tsalxaan (Mount Fairweather, figure 7) and Yéik Yi Aaní (Mount Fairweather Range, figure 7).

Evolve national wilderness stewardship conversations. The park collaborates with tribes to develop appropriate tribal welcome and land acknowledgment materials specific to

designated Wilderness, as well as other educational materials/orientations outlining indigenous concepts of Homeland, hosting, and culturally appropriate and respectful visitor behavior. Park managers acknowledge the ecological role of traditional indigenous communities in designated Wilderness and work with tribes to evolve broader wilderness stewardship conversations about role and how cultural values align and contrast with the Wilderness Act. Traditional ecological knowledge informs key wilderness stewardship and management decisions, remains vital to a wide range of park research, and supports ongoing relationships between tribal scientists, culture bearers, and park researchers.

Tlingit Homeland, Haa Aani. Tlingit Homeland connections will be encouraged and supported in all management zones. Traditional activities occur in all zones and are valued as adding to wilderness character. Other Tlingit spiritual practices continue to occur in designated Wilderness without the practitioners' physical presence; these practices are outside the scope of park management. Further management direction for protecting Tlingit Homeland values specific to designated Wilderness focuses on strengthening government-to-government communication, commemorating village or other sacred sites in appropriate ways, and a collaborative project of portable or moveable totems in partnership with the Hoonah Indian Association to acknowledge Homeland values and serve as guidance for backcountry users that they are about to enter designated Wilderness.

Traditional cultural fishery. The park will collaborate with the Hoonah Indian Association to explore options for noncommercial cultural fisheries in park waters following the shared NPS-tribal stewardship model of the glaucous-winged gull egg harvest (see Huna Tlingit Traditional Gull Egg Use Act, Public Law 113–142), including specific to tribal uses associated with Chookanhéeni/Berg Bay reserved rights. This action will require further NEPA compliance and may require regulatory or legislative changes to implement.

Traditional tribal ceremonial Mountain Goat Hunt. The park and tribes will explore options for implementing a tribal ceremonial Mountain Goat Hunt, combining it with research projects that enhance understandings of the species and populations. This action will require further NEPA compliance and may require regulatory or legislative changes to implement.

Historic structures. Previous planning documents applied National Register of Historic Places criteria, which prioritize location, design, setting, materials, and workmanship for the integrity of historic structures. A high percentage of cultural resources recorded as distinct historic structures in Glacier Bay National Park were built and or used by Tlingit, and these structures continue to have inherent value by retaining connections to Homeland and ancestors, despite the misconceptions that these historic structures were European American settler cabins due to the style of their construction. As a result of this misconception, historic structures associated with the Tlingit, which are relatively common as a subcategory of historic structures within Glacier Bay, were previously determined as having “low historical significance” and were not identified as having significant feeling and association with descendant communities and Tlingit populations. To correct these misconceptions and previous determinations, historic structures associated with the Tlingit in the park should be included in a cultural landscape inventory because they are eligible for the national register under criterion A and criterion D. The park would review currently recorded historic structures for intact and significant value to Tlingit Homeland. The structures not associated

with Homeland values and having a low historical significance would remain managed by benign neglect. Structures found to have a high association with Homeland and a high historical significance would be reclassified as ethnographic resources associated with Tlingit Homeland and managed according to the ethnographic resource section.

Several structures associated with Tlingit Homeland values were inadequately evaluated for historical significance during the general management plan process and require reassessment in light of updates to cultural resource management guidance and practice. Following reevaluation, these structures may not be appropriate for benign neglect (as described in the general management plan) and may qualify as ethnographic resources. Structures not associated with Tlingit Homeland values and included in the List of Classified Structures for management under a benign neglect policy are noted as not having a formal determination of eligibility for the national register. Therefore, to define “low historic significance,” the park would define historic significance in consultation with the state historic preservation officer before continuing to manage historic structures through a benign neglect policy. Structures that are assessed as having high association with Homeland and a high historical significance would be reclassified as ethnographic resources associated with Tlingit Homeland and managed according to the ethnographic resource section.

Ethnographic resources and traditional cultural properties. In addition to recording and nominating the traditional cultural properties and other ethnographic resources within the park, ethnographic resources would be entered into the Cultural Resource Inventory System – Ethnographic Resources (CRIS-ER) database or equivalent future database. Further, structures, archeological sites, non-altered geographic features, commemorative sites (non-cemetery), and other features that are part of traditional cultural properties or themselves eligible as ethnographic resources would be managed as ethnographic resources, even if they are previously recorded in the List of Classified Structures. Existing cultural landscape inventories that extend into designated Wilderness, such as those for Dundas Bay and Bartlett Cove, will be updated. Site-level management recommendations, including types of potential actions and priorities of the action alternatives, would be determined and entered into the CRIS-ER database for future management decisions at the time the resource is entered.

Cemeteries. The park would develop a cemetery management plan to meet the legal obligations as stated in the American Indian Religious Freedom Act and the Native American Graves Protection and Repatriation Act. This legal obligation can be met through the cooperative development of management guidance for cemeteries within Glacier Bay. This action would allow consultation on the proper path forward for these cemeteries, which was not undertaken in 1984, and propose specific management strategies most suited to each individual cemetery considering its location and significance.

Conservation buy-out. The National Park Service explores a conservation easement or buyout of the mineral interests associated with the Brady Icefield copper-nickel deposit. If mine development is proposed, the National Park Service protects park resources and visitor experiences by managing the scale and intensity of marine transportation-related access and facilities consistent with ANILCA section 1110, special access and access to inholdings.

Communications upgrades to include very high frequency radio and automatic identification site transponder sites. As described and analyzed in the marine management plan, the National Park Service will upgrade existing and deploy new communications infrastructure within the next one to three years. New installations in designated Wilderness will be considered only when co-location with existing infrastructure is not feasible and it is determined to be the minimum tool necessary to support park goals, including associated with safety, emergency and oil spill response, and marine concessions contract oversight. This may include up to one park very high frequency (VHF) installation, and up to nine automatic identification system (AIS) installations, subject to a future minimum requirements analysis, further cultural resource and wetland site compliance as appropriate and applying the mitigation measures and best management practices in appendix D.

Corrective Management Actions Common to All Zones

Management Action Progressions

The National Park Service is committed to providing visitors to the park with reasonable access for wilderness recreational activities and for other purposes, as described in previous chapters. The National Park Service would generally allow independent travel by any legal means and would encourage access to the park and preserve by means of facilities (e.g., trails and marked routes) and services (e.g., commercial air taxi and guide services) as described in desired conditions for zones (chapter 2), the actions below, and in “Appendix B: Extent Necessary Determination.”

If it becomes necessary to proactively manage travel in any area to achieve desired future resource and social conditions for an area, to reduce visitor conflict, or to protect visitor safety, the National Park Service would generally start with the least restrictive mechanism or “tool” necessary to accomplish the goal. The National Park Service need not wait for conditions to match or exceed standards before taking management action; an expectation that conditions would exceed standards is sufficient to mandate a response. Restrictions and closures would be accomplished consistent with the process outlined in 36 CFR 13.50 and/or other relevant regulations. Below is a list of tools that may be used to manage access, when necessary, arranged in rough order from the least restrictive to the most restrictive. The park superintendent is free to pick whichever tool is required, generally applying the “least restrictive” approach. There is no implication that the tools must be tried in the listed order and a failure elicited before trying the next one. Some tools are included in other actions outlined in more detail further in this chapter.

Education. The National Park Service would provide printed material, public presentations, targeted presentations to user groups, and Internet-based programs with the goal of actively involving visitors in helping the park achieve the standards for all management areas. Tribes will provide similar educational materials specific to protecting cultural resources and values and educating visitors about traditional protocols for visiting Homeland.

Increased enforcement of existing regulations. The National Park Service would prioritize resources to increase enforcement efforts for existing regulations to assist in achieving standards for management areas.

Voluntary measures. The National Park Service will ask visitors to restrict their use voluntarily in areas where limits are not already in place. Examples of such measures could include voluntary registration, use of low-impact equipment, and avoidance of certain areas of the park or avoidance of areas during particular seasons or times of day. Voluntary registration could be accomplished by phone or radio call-in, a digitally based system, or a trailhead/parking area logbook.

Required registration. Registration is a means to gather information about visitor use levels and to ensure visitors receive necessary resource protection and safety information. The National Park Service may require visitors to register in areas where permits are not already required. Upon registration, visitors will be provided with information about park rules and conditions for use necessary to protect park resources. Registration conditions could include minimum-impact travel, recreational use, and resource protection requirements; however, a registration process will not limit the type or amount of access.

Requirements governing means of access. To achieve management area standards, the National Park Service would place requirements on the means of access, potentially including designated routes to concentrate use impacts, the use of specific technologies or access modes to mitigate impacts, and strategies to stagger or disperse access to help achieve desired conditions and complete compliance as needed.

Management of commercial activity. If use levels approach the identified visitor capacity or when conditions are trending away from desired conditions, the National Park Service would adjust commercial authorizations, as necessary, to achieve management area standards and complete compliance as needed. This strategy may include a change in the level of authorized commercial activity or set limitations on specific locations, seasons, or times of day within commercial services permits, operating conditions, business opportunities, and contracts.

Regulate numbers of visitors. The National Park Service would establish quotas for visitor numbers in areas of the park when the volume of use is high enough that other mechanisms are unlikely to achieve desired conditions and complete compliance as needed. Visitors would be required to obtain a permit, and the number of available permits may be limited.

Temporal restrictions. Using the appropriate authorities, the National Park Service may restrict access to times of day, days of the week, or other unit of time, or the duration of access could be limited.

Temporary and long-term closures. Using the appropriate authorities, the National Park Service may implement temporary or long-term closures for areas of the park to all types of visitor use or to specific modes of access. Restrictions and closures will be accomplished consistent with the process outlined in 36 CFR section 13.50 and/or other relevant regulations.

In addition, the following specific actions would be considered if monitoring indicates that desired conditions are not being achieved or maintained. These actions would also be implemented in descending order if determined to be necessary:

- Concessioners would be given more stringent requirements regarding where, when, and how they manage activities in the park. These requirements may include prescriptive approaches to managing human waste, food, site, and vegetation impacts from camping and mitigating impacts to other visitors by concentrating access to one route and establishing camps.
- Employ additional camper drop-off locations to protect resources. To achieve desired resource protection, the park would move towards a dedicated camper boat that can access additional drop-off locations.
- Group size could be reduced from the current limit of 12. This requirement would be in effect as needed and only when monitoring indicates that it is necessary for resource protection with compliance completed as needed.
- Consider designating day use-only areas. If desired conditions are not being met, day use areas may be designated with compliance completed as needed. Alternately, if day use is negatively affecting desired conditions, locations, and intensities of commercial day use may be adjusted. Both strategies would be considered as part of a management progression to achieve and maintain desired conditions.

Additional corrective actions may be required to address specific situations and conditions not previously addressed.

Management Actions by Zone

Remote Wilderness Zone – Yáa Shaadéi Aani

This zone primarily includes the most remote interior of the park. No actions are being proposed in this zone beyond those common to all zones.

Shoreline Access Zone – Yán XNáxn

This zone includes shoreline access within most of Glacier Bay, as well as along the shores of Icy Strait, Cross Sound, lower Dundas Bay, the southern outer coast to Palma Bay, and the shores of Lituya Bay. Only a corrective management action is proposed within this zone.

Corrective Management Action

New trail and campsite development. Within this zone, the park would consider the development of primitive trails and designated primitive campsites or areas if needed for resource protection purposes.

Wilderness Waters Zone – Déili Aanká

This zone includes most wilderness waters within the park. The following action would continue to maintain solitude.

Management Action

Application of nonmotorized waters. ANILCA authorizes the use of certain motorized transportation modes in Alaska designated Wilderness. The park would continue the

management practice of seasonal designations of periods of nonmotorized use within certain waters in this zone (as outlined in park regulations) to provide for a diversity of high-quality visitor experiences. See the park marine management plan for further details and for additional provisions specific to motorized and nonmotorized vessels and marine stewardship that apply in this zone.

Glacier Access – Sít' Niyaadéi Aani

The Glacier Access Zone includes areas that accommodate intense pulses of visitor use and, at times, high-use levels. The following management strategies have been identified to maintain desired conditions.

Management Action

Focused use areas. The park would identify and manage two or three locations proximal to glaciers as focused use areas (formerly referred to as heavy use areas).

Corrective Management Actions

The following actions would be considered if monitoring indicates that desired conditions are not being achieved or maintained. These actions would be implemented in descending order if determined to be necessary:

- **New trail and campsite development.** Because of relatively high visitor use levels, the development of primitive campsites and trails or designation of camping areas could be considered for resource protection purposes, should informal campsites and social trails begin to cause resource damage or begin to negatively impact desired conditions. Trails could also be considered to facilitate access to glaciers to meet the park's purpose and intent if access is constrained due to foreseeable climate change or other unforeseeable events like a glacial surge.
- **Access to proglacial areas.** Routes or trails would be designated on proglacial areas. These areas include transitory and temporary sites that present visitors with the opportunity to access tidewater glaciers, per the park's enabling legislation. These are early successional areas and are very dynamic.

Frontcountry Access Zone – Aan Xán

The Frontcountry Access Zone is managed to provide for a range of wilderness visitor experiences proximal to the park's 7,120-acre Frontcountry Zone and originating from road-accessible trailheads in the Bartlett Cove and Gustavus area. The following management strategies have been identified to provide high-quality wilderness experiences and preserve wilderness character within this zone.

Management Actions

Application of nonmotorized waters. ANILCA authorizes the use of certain motorized transportation modes in Alaska designated Wilderness. The park would continue the management practice of seasonal designations of periods of nonmotorized use within certain waters in this zone (as outlined in park regulations) to provide for a diversity of high-quality

visitor experiences. See the park marine management plan for further details and for additional provisions specific to motorized and nonmotorized vessels and marine stewardship that apply in this zone.

Bartlett Lake/Towers Trail. The park would address the transportation and parking issues associated with public use of this trail, which provides access to the wilderness and Bartlett Lake from the edge of the community of Gustavus. Options being considered include trailhead parking on NPS land through a wilderness boundary adjustment, trailhead parking on NPS land acquired through purchase or gift, or trailhead parking within the road right of way. The Towers Trail portion of the facility would be maintained as a Class 4 trail with physical reminders of its development history (e.g., wide tread, obvious ditching, and remnant cement foundations). These aspects of the trail character visibly tell the story from a period of significance (1941 to 1958) about Civilian Aeronautics Administration decisions and actions that today enable visitors to arrive at the Gustavus Airport to visit Glacier Bay National Park. While maintenance of this historic road will support ongoing trail use (e.g., maintaining clearing widths, allowing successional vegetation changes (from alder to spruce), and tread repair using gravel), the park will avoid reconstruction actions that detract from its character as a contributing feature of the Gustavus Airport Historic District or alter its eligibility as a National Historic Landmark (ADOT PF 2011). Beyond the historic district, the trail connection to Bartlett Lake would be maintained as a Class 3 trail, where maintenance to support use will apply park-specific trails best practices to reduce life-cycle maintenance costs in a dynamic successional landscape.

Bartlett Lake Trail. The trail from Bartlett Cove to Bartlett Lake would be maintained to provide for more primitive experiences as a less-developed travel route in lieu of the maintained Class 1/2 trail described in the frontcountry management plan. Routes are minimally maintained and involve some navigation. The route would be marked with small blazing markers in keeping with a wilderness experience and enabling use of the route throughout the year even with tree fall or snow. The forest successional processes at this time with even-aged dense trees and muskeg formation will result in a constantly changing landscape, which is more conducive to a route rather than developed trail. In the medium or longer term, explore extending the Bartlett River trail upstream with a connection to Bartlett Lake, if this is feasible, as a sustainable trail in the succession landscape and given trail management capacity (funding and in-house expertise).

Trails from the frontcountry management plan. The development of the Point Gustavus Route and the reroute of the Bartlett River Trail were included in the selected action of the 2019 frontcountry management plan to achieve a premium and sustainable trail network that connects frontcountry visitors with fundamental park resources and values, including designated Wilderness. This action will result in approximately 4.4 miles of new trail, trail improvements, and installations within the Frontcountry Access Zone. The Point Gustavus hike along the shoreline will maintain its rugged feel, only being marked by a few well-placed stones or small modifications to aid stream crossing. The Bartlett River Trail will include 1 mile of new route built on the shoreline and along the tidal cut (some portions in designated Wilderness) as a class 3 Architectural Barriers Act Accessibility Standards and narrower rustic boardwalk (up to 36 inches wide) on helical piers or other elevated structures that can be periodically shifted toward the water to maintain the shoreline experience as isostatic rebound occurs. A full discussion and analysis of this decision can be found in the frontcountry management plan.

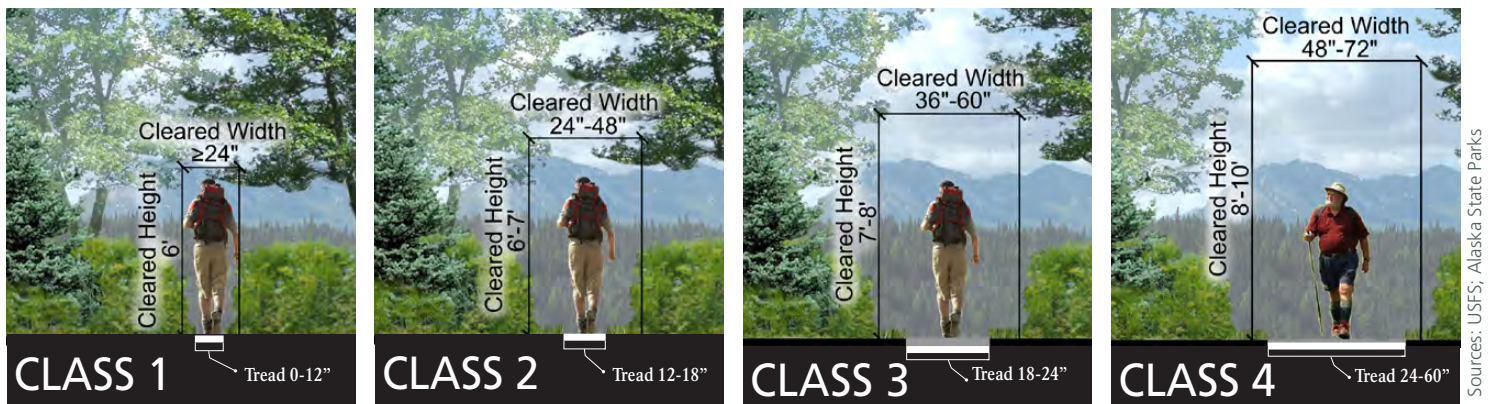
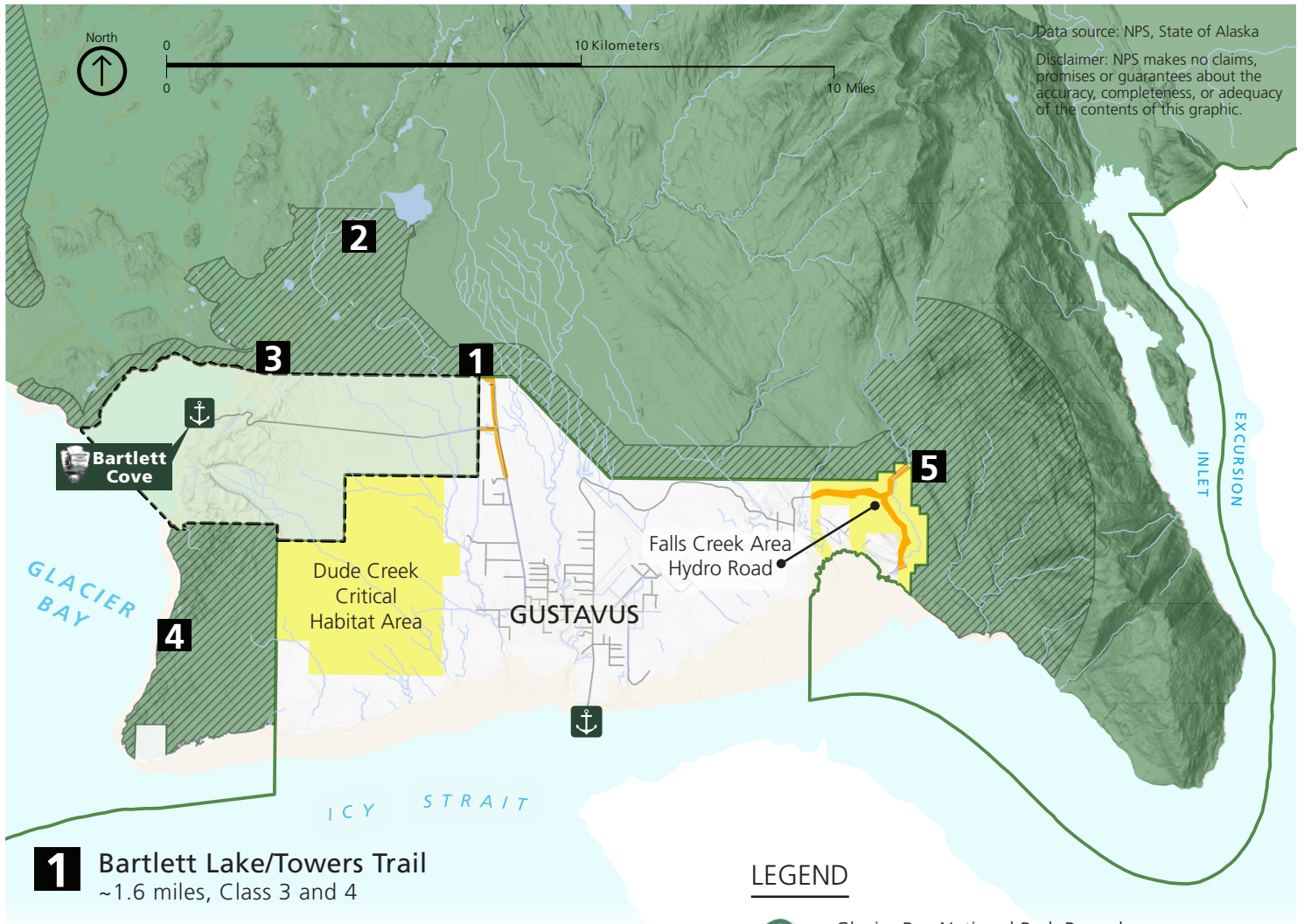


Figure 14. Frontcountry Access Zone, Backcountry Trail Network

Hiker-Pedestrian Trail Class Standards

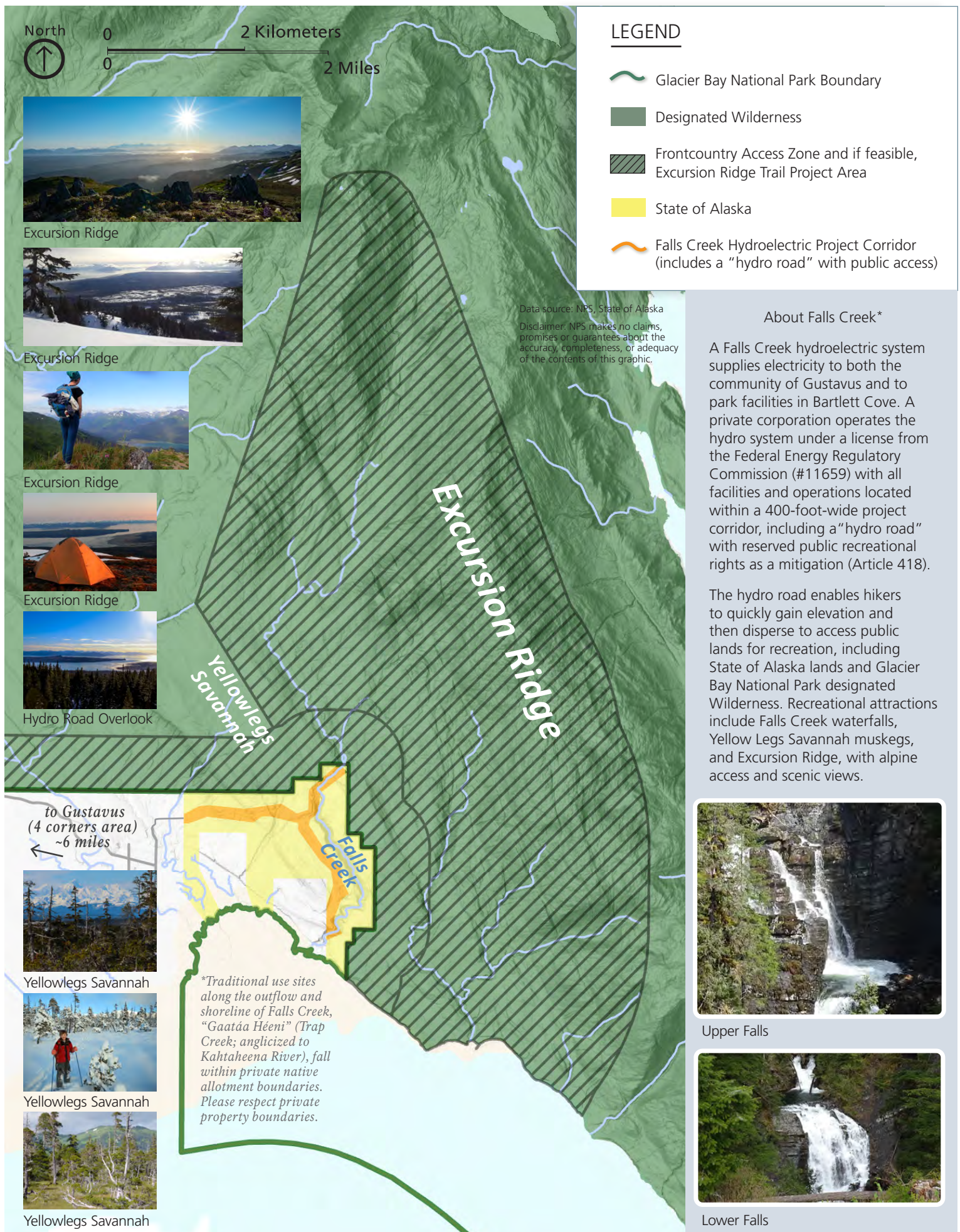


Figure 15. Frontcountry Access Zone, Falls Creek, and Excursion Ridge Trail Project Area

Sustainable trails. Applicable frontcountry management plan trail best practices that consider the dynamic successional landscape, and apply park-specific guidance on sustainable trail methods that integrate drainage features into trail alignments and design for localized slope and soil conditions to optimize tread durability and reduce soil erosion will be used (NPS 2019; Shields 2022a, 2022b, 2022c).

Development of new trails. The development of trails to provide access to the wilderness through the frontcountry access zone is being considered. Trails may fall into one of several trail classes; however, primitive trails will be prioritized wherever possible. Specifically, the park is proposing to develop a maintained hiking trail from the Falls Creek area of Gustavus up Excursion Ridge if feasible. The trail would be up to 10 miles long and provide access to the park's designated Wilderness. The trail would start on state-owned land by the Falls Creek area near the town of Gustavus and extend approximately 0.5 miles before entering the park and ascending to Excursion Ridge. The trail would provide access through dense forested slopes to the ridge above tree line. The trail would likely be used for day trips and provide access to wilderness for cross-country, multiday excursions in the alpine tundra. Visitors would experience distinct ecological communities within the park, including wetlands, forests, and alpine, as well as exceptional scenic views once on Excursion Ridge. Development is subject to a future minimum requirements analysis, further cultural resource and wetland site compliance as appropriate, and applying the mitigation measures and best management practices in appendix D.

Trail connectors and parking. The park would collaborate with landowners, the City of Gustavus, and stakeholders to establish trail connectors and parking that support appropriate public access to NPS backcountry trails, using clearly defined trail class and management objectives, screening for impacts to sensitive resources, and applying sustainable trails development methods.

Day and overnight use. Through the development of trails and routes described previously, the park will provide additional hiking and overnight opportunities for visitors.

Corrective Management Action

Consider designating day use-only areas if desired conditions are not being met.

Actions and Strategies Considered but Dismissed from Inclusion in This Plan

Strategic stream crossings to facilitate beach hiking. Maintained stream crossings would require significant construction and maintenance. That level of maintenance would be difficult to commit to except for the crossings on the Point Gustavus route, which would have primitive, natural aids to crossing, as described in the frontcountry management plan.

Beach biking routes. Designating beach biking routes could impact the wilderness quality of unconfined recreation and would not contribute to the desired condition of maintaining a sense of self-reliance and challenge.

Designating water routes. Designating water routes could impact the wilderness quality of unconfined recreation and would not contribute to the desired condition of maintaining a sense of self-reliance and challenge.

Cabins and shelters. While ANILCA allows public use cabins and shelters in designated Wilderness, Glacier Bay has no history of them. Recent social science indicates that visitors prefer no developed amenities in park wilderness (NPS 2021a). Data also show low utilization rates for many southeast public cabins and shelters (USFS 2020). Vessel use provides opportunities for visitors to stay overnight in many of the protected bays and inlets within Glacier Bay and along its outer coast. Because primary travel in Glacier Bay is via vessel within the bay, these vessels provide opportunities for overnight stays, either through private vessel or commercial or chartered vessels. Other considerations involved in not pursuing cabins and shelters in the backcountry include the dynamic marine setting (i.e., steep costs and operational demands relative to public benefit) and the Glacier Bay-specific marine conditions where emergency assistance is typically offered by passing boats, US Coast Guard helicopters, or park vessels. Further explanation is in chapter 2 in the nonhistoric structures and shelters section. The National Park Service will reevaluate if or when there is a substantial glacial retreat in areas that would require significant overland travel or other means necessary to access glaciers and glacial features.

Banning campfires along shoreline. Banning campfires would limit personal freedom in wilderness (primitive and unconfined recreation). The park would provide education on the ecological importance of interstadial wood, the impacts of burning it, and other regulations regarding campfires as part of camping orientation.

CHAPTER 4: WILDERNESS CHARACTER MONITORING

Monitoring changes and trends in wilderness character is important for several reasons:

- to comply with the statutory mandate of the Wilderness Act to preserve wilderness character,
- to fulfill agency policy (NPS *Management Policies 2006*; Director's Order 41: *Wilderness Stewardship*, section 6.2), and
- to improve wilderness stewardship.

The Wilderness Act states that wilderness areas “shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character . . .” NPS *Management Policies 2006* states, “Management will include the protection of these (wilderness) areas, for the preservation of their wilderness character . . .” (NPS 2006a). Because the majority of the park is federally designated Wilderness, monitoring wilderness character is essential to protect the properties that make Glacier Bay National Park unique.

Wilderness character is defined as the combination of biophysical, experiential, and symbolic ideals that distinguishes wilderness from other lands. The five qualities of wilderness character include untrammeled, undeveloped, natural, solitude or a primitive and unconfined type of recreation, and other features of value. Together, the five qualities compose an integrated ecological and social system of wilderness at Glacier Bay National Park (see “Wilderness Character Narratives for Glacier Bay Wilderness” for a description of the five tangible and measurable qualities of wilderness character in the Glacier Bay Wilderness).

The five qualities of wilderness character capture the intent Congress put forth in the Wilderness Act as well as the guidance in NPS *Management Policies 2006*. Both point to monitoring conditions and long-term trends in wilderness character. *Keeping It Wild 2: An Updated Interagency Strategy to Monitor Trends in Wilderness Character Across the National Wilderness Preservation System* (USFS 2015) was used as a guide in this process. The purpose of the Keeping It Wild 2 framework is to improve wilderness stewardship by providing managers with a tool to assess how wilderness character is changing over time. Monitoring wilderness character through this framework is integral to meeting the goals and objectives of this plan.

The overall approach of this monitoring framework is to

1. choose a set of measures that are relevant, cost-effective, and tied to preserving wilderness character;
2. periodically collect data to assess trends in these measures; and
3. use these trends to assess and report on the overall trend in wilderness character.

This national monitoring framework offers a consistent means for documenting the status and trends in wilderness character and guiding wilderness management within a wilderness area. Under this monitoring strategy, trends in wilderness character are classified as upward (positive), downward (negative), or stable. These trends are both nationally consistent and independent of the unique aspects specific to any given wilderness; therefore, trends in wilderness character can be compared between wilderness areas or across regions.

At the time of this publication, Glacier Bay National Park started developing a park-specific monitoring strategy that staff will refine and test as this plan is implemented. Initial monitoring would determine if the measures accurately measure the conditions of concern. Park staff may decide to modify the measures and revise the monitoring program if better ways are found to measure changes in wilderness character. Most of these types of changes should be made within the first several years of initiating monitoring. After this initial testing period, adjustments would be less likely to occur. Finally, if conditions change appreciably, park staff may need to identify new measures to ensure that wilderness character desired conditions are achieved and maintained. Once the strategy is fully refined, it will be incorporated as a supporting appendix of this document and shared with the public.

Glacier Bay National Park

Part II – Environmental Assessment

February 2023



Part II - EA

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CHAPTER 1: PURPOSE AND NEED

INTRODUCTION

The revised Backcountry and Wilderness Management Plan (revised plan), once finalized, will set the framework for the National Park Service (NPS) to manage the 2.6 million acres of designated Wilderness lands and waters within Glacier Bay National Park (the park). The draft plan will supplement the 1984 General Management Plan (GMP) by focusing on preserving resources, including designated Wilderness character within the park; providing visitor opportunities and managing visitor use in wilderness; clarifying where commercial opportunities exist; and honoring the rich cultural tapestry of indigenous use and occupation in the wilderness while supporting the enduring connecting between Tlingit and their Homeland.

This environmental assessment (EA) provides (1) programmatic National Environmental Policy Act (NEPA) analysis for broad management direction, zoning, corrective management actions, new communications sites, and potential trail development on Excursion Ridge; and (2) site-specific NEPA analysis for required year-round backcountry permits, applying group sizes year-round, and permitting commercial mountaineering within the park.

This EA discloses potential impacts on the human environment resulting from the implementation of the revised plan once finalized. It fulfills National Environmental Policy Act (NEPA) requirements for an EA.

PURPOSE AND NEED FOR ACTION

The purpose of the EA is to enhance preservation and protection of the park's fundamental resources and values, address new NPS planning and wilderness management requirements, and support the park in incorporating wilderness character into management decisions. The need for the EA is to provide broad guidance, primarily for 2.6 million acres of terrestrial wilderness areas and a small number of wilderness waters areas, and to establish a framework for responding to current and future changes in visitor use in park wilderness. There is a need for the park to

- preserve wilderness character,
- provide visitor access to tidewater glaciers,
- incorporate Tlingit Homeland values into wilderness management,
- provide guidance for commercial service providers to collaboratively achieve park desired conditions and goals,
- address conflicting use and expectations in popular areas,
- address and define desired conditions for resources and visitor experiences within and on areas adjacent to wilderness waters,

- protect wildlife and sensitive shoreline areas, and
- understand intact complex terrestrial and marine ecosystems.

PROJECT AREA

The project area for the revised plan and EA includes approximately 2.6 million acres of designated Wilderness. The project area encompasses most of the land in the park above the mean high tide line and around 53,000 acres within marine wilderness waterways. The project area does not include areas designated as a part of the “preserve” or park lands not designated as wilderness (e.g., the frontcountry portion of the park surrounding Bartlett Cove and inholdings) and does not apply to visitor use activities associated with the Alsek River (these are addressed in another plan). However, some actions within the plan apply to wilderness lands only, wilderness waters only, or both; therefore, the project area varies depending on the resource as specified in the EA.



FIGURE 1. BACKCOUNTRY CONTEXT

SCOPE OF THE ANALYSIS

The EA analyzes programmatic and site-specific actions, consistent with guidance in the December 18, 2014, Memorandum from the Council on Environmental Quality on the Effective Use of Programmatic NEPA Reviews (CEQ 2014). The Council on Environmental Quality notes that agencies may prepare a single NEPA document to support both programmatic and project-specific proposals. Such an approach may be appropriate when an agency plans to make a broad program decision or, as this EA does, implements timely decisions on one or more specific projects under the program. The guidance states that when doing so, agencies “should clearly communicate the purpose and need for the programmatic and subsequent decisions, clearly state the decisions the agency proposes to make based directly on the [programmatic document] and distinguish the analysis of impacts and alternatives of the broad programmatic proposals from project- or site-specific proposals.” Therefore, this EA discloses programmatic decisions that are supported by this NEPA document, including several programmatic actions that may require additional NEPA compliance once the scope and design for these actions are sufficiently developed, and

separately, actions that are site-specific and fully covered by this NEPA review. These actions are addressed generally in table 1 and are described in detail in chapter 2.

Table 1. NEPA Compliance Status for Programmatic Actions and Site-Specific Actions Covered in This EA

Type of Action	Specific Action	NEPA Compliance
Alternative B: Proposed Programmatic Actions	Broad backcountry and designated Wilderness management framework, including zoning	Compliance covered in this NEPA review.
	Communication upgrades	Compliance covered in this NEPA review except further cultural resource and wetland site-specific compliance that will be required and will be completed as appropriate. Subject to a future minimum requirements analysis.
	Trail development	Compliance covered in this NEPA review assumes that the final design for the trail falls within the assumptions for this analysis, except for further cultural resource and wetland site-specific compliance that will be required and will be completed as appropriate. If the final design for this trail falls outside the assumptions for this analysis, additional analysis, compliance, and permitting would be completed before construction. Subject to a future minimum requirements analysis.
Alternative B: Proposed Site-Specific Actions	Required backcountry camping permits year-round	Compliance covered in this NEPA review.
	Group size year-round and including day use	Compliance covered in this NEPA review.
	Permitting commercial mountaineering	Compliance covered in this NEPA review.

IMPACT TOPICS RETAINED FOR DETAILED ANALYSIS

Impact topics identify resources that could be affected, either beneficially or adversely, by implementing any of the proposed alternatives. The National Park Service used an interdisciplinary review process, existing studies and data, and public comments to determine which resources would likely be affected by this project. Issues were retained for detailed analysis in this EA if they met one or more of the following criteria:

- the environmental impacts associated with the issue are central to the proposal or of critical importance;
- a detailed analysis of environmental impacts related to the issue is necessary to make a reasoned choice between alternatives;
- the environmental impacts associated with the issue are a big point of contention among the public or other agencies; or
- there are potentially significant impacts on resources associated with the issue.

The following topics are carried forward for further analysis in this EA:

Visitor Use and Experience – Changes to the backcountry camping permit requirements and group size limits could affect how visitors experience the wilderness. Similarly, changes to commercial mountaineering and on-trail hiking opportunities could affect visitor use of the park’s wilderness. Therefore, this impact topic is retained for detailed analysis.

Wetlands – Construction of a new trail would result in the removal and/or disturbance of wetland vegetation and the potential filling of wetland areas. Therefore, this impact topic is retained for detailed analysis.

Vegetation – Construction of a new trail and installation of communications infrastructure would result in new ground disturbance and removal and/or disturbance of vegetation. Therefore, this impact topic is retained for detailed analysis.

Solitude or Primitive and Unconfined Recreation Quality of Wilderness Character – Changes to the backcountry camping permit requirements and group size limits could affect opportunities for unconfined recreation in wilderness. Construction of a new trail could affect opportunities for primitive recreation in wilderness. Installation of communications infrastructure and construction of the trail could affect opportunities for solitude in wilderness through the potential use of helicopters. Therefore, this impact topic is retained for detailed analysis.

Undeveloped Quality of Wilderness Character – Construction of a new trail in wilderness and installations of communications infrastructure could affect the undeveloped quality of wilderness character through increasing development in wilderness. Therefore, this impact topic is retained for detailed analysis.

Fairweather Range Ethnographic Resources/Traditional Cultural Properties – An increase in human presence in the Fairweather Range would have adverse impacts on the eligible Traditional Cultural Property, Tsal̓xaan/Yéik Yi Aaní, Mount Fairweather sacred to the T’ak̓deintaan Clan of the Huna Tlingit. Therefore, this impact topic is retained for detailed analysis.

Impact topics that were considered but not carried forward for detailed analysis are listed below. A discussion and rationale are provided in appendix C.

- Economics
- Archeological Resources
- Historic Structures
- Cemeteries
- Soils
- Special Status Species
- Wildlife

CHAPTER 2: ALTERNATIVES

INTRODUCTION

NEPA requires federal agencies to explore a range of reasonable alternatives aimed at addressing the purpose of and need for a proposed action. Reasonable alternatives include alternatives that are “technically and economically practical or feasible and meet the purpose and need of the proposed action” (43 CFR § 46.420[b]). The alternatives under consideration must include a no action alternative as prescribed by Council on Environmental Quality regulations for implementing NEPA (40 CFR Part 1501.5). This chapter describes two alternatives, consistent with the purpose of and need for action: Alternative A: No Action and Alternative B: Action Alternative – NPS Preliminary Proposed Action. Alternative B was developed by the National Park Service interdisciplinary team and includes feedback received during the agency and public scoping process. Alternative B meets the overall purpose and need for taking action; is consistent with laws, regulations, policies, and guidance that guide the park; and is technically and economically feasible.

The National Park Service explores and objectively evaluates two action alternatives in this EA:

- Alternative A: No Action
- Alternative B: NPS Preliminary Proposed Action

Each alternative is described in detail in the following sections.

ALTERNATIVE A: NO ACTION

Under Alternative A, the National Park Service would continue current wilderness management direction provided by the 1984 General Management Plan. Zones, as defined in the 1984 General Management Plan (NPS 1984), would remain the same under Alternative A. No new communications infrastructure sites would be developed. No new trails would be developed beyond what were already described in the decision document for the selected action of the Glacier Bay National Park and Preserve Frontcountry Management Plan (2019). Registration for backcountry camping on land accessed via the Glacier Bay Zone (defined as waters contiguous with Glacier Bay lying north of an imaginary line between Point Gustavus and Point Carolus) would remain voluntary except during the park’s peak season. An overnight group size of 12 or fewer would remain in place between March 1 and October 31. Current practices of concession contracts and commercial use authorizations would continue, including case-by-case approval of commercial mountaineering in the Fairweather Range.

ALTERNATIVE B: ACTION ALTERNATIVE – NPS PRELIMINARY PROPOSED ACTION

Under Alternative B, the National Park Service would adopt the general management direction and strategies described in the revised plan. The proposed management strategies and actions from the revised plan described and analyzed below are those that have the

potential to affect the human environment, that are likely to be implemented in the next five years, and are sufficiently developed to allow a meaningful analysis under NEPA.

GMP Zone Refinement

The 1984 General Management Plan states that “any zone may be subdivided to meet management needs or to further delineate future resource areas” (page 61). Under the revised plan, the Wilderness Lands and Wilderness Waters Zones would be further subdivided into five zones: Remote Wilderness Zone, Shoreline Access Zone, Frontcountry Access Zone, Glacier Access Zone, and Wilderness Waters Zone. A portion of the 1984 Wilderness Waters Zone has been zoned as Frontcountry Access Zone to acknowledge and manage for higher levels of use and a different type of wilderness experience in areas near the frontcountry. This action refines and details desired conditions and potential management strategies within the broader zones as a means of improving wilderness character, natural and cultural resources, and visitor experiences. The action does not remove or replace the Wilderness Lands and Wilderness Waters Zones.

The parkwide zoning map is shown below. Additional detail on the zoning maps can be found in the revised Backcountry and Wilderness Management Plan (chapter 2) and the NPS StoryMap at <https://storymaps.arcgis.com/stories/2047e748d233424d8789b54edd78cda1>.

Parkwide Management Zones

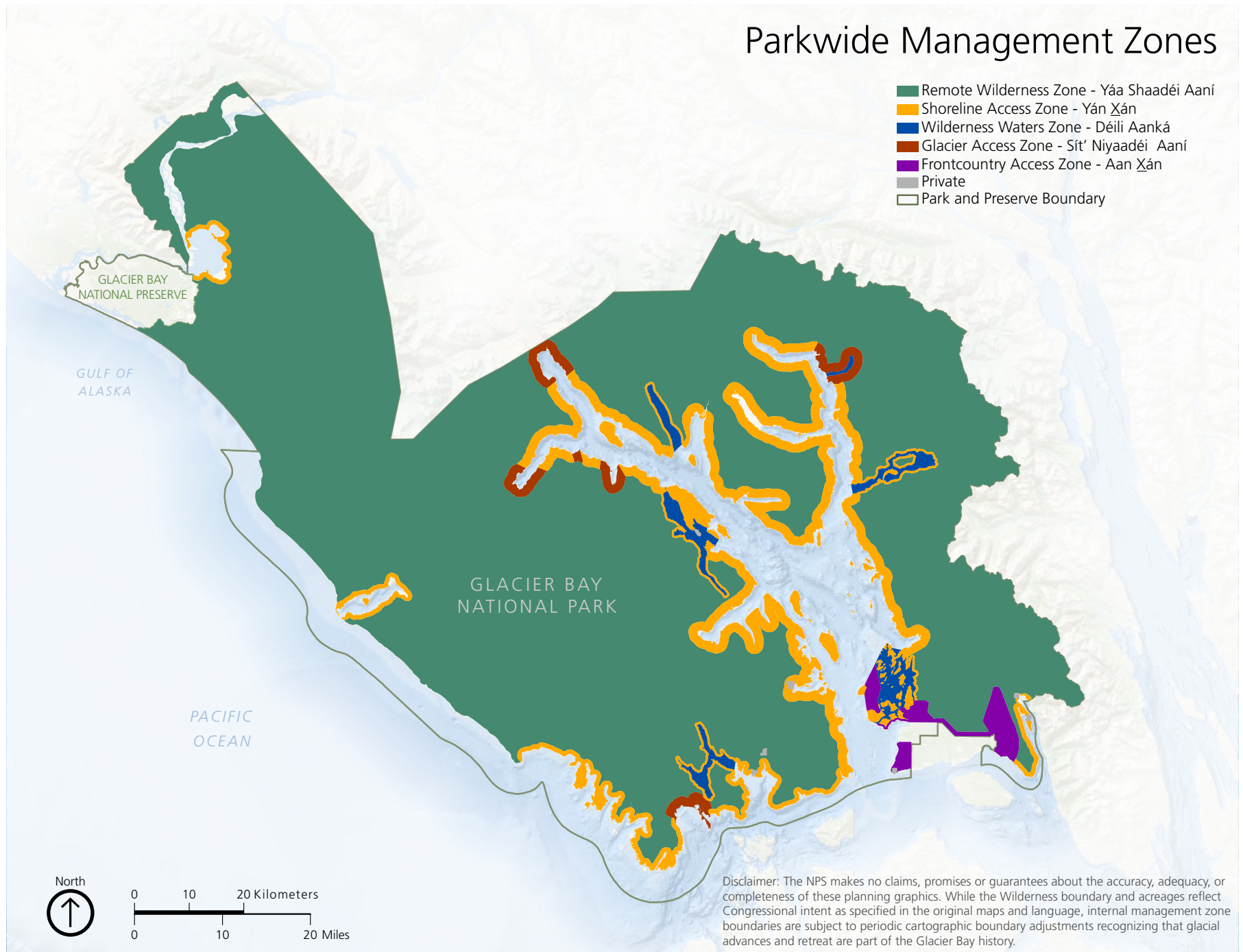


Figure 2. Parkwide Zoning Map of the Glacier Bay Wilderness

Communications Upgrades

Alternative B proposes deploying new communications infrastructure within the next one to three years at new locations in designated Wilderness if co-location with existing infrastructure is not feasible (as described and analyzed in the marine management plan). The communications infrastructure would support the automatic identification system (AIS), an automatic vessel tracking system that uses transceivers on vessels and land-based receiver stations, with the goal of complete coverage of park waters. Automatic identification system information supplements marine radar, which is the primary method of collision avoidance for marine vessels. The AIS infrastructure would also enhance safety and search and rescue capabilities in the park. Currently, only one AIS transponder site is in the park at a US Coast Guard installation that historically has provided aids to navigation on a headland at Cape Spencer.

If some or all AIS stations cannot be co-located at existing locations and new sites are needed at each new location, a mast or tower and antenna with mounted hardware would be installed and would include a weatherproof battery, small equipment shed, and a concrete pad. The total footprint for each installation would be up to 100 square feet, and the tower/antenna combination may be up to 40 feet tall. Shorter towers would be employed if they provided similar coverage. As feasible locations are defined, the park would complete minimum requirement analyses to address wilderness impacts, address the Wilderness Act section 4(c) prohibitions associated with permanent installations, and apply best management practices and mitigations that preserve wilderness character. Potential new installation areas include Glacier Bay (West Arm, East Arm, Beartrack Mountain), Icy Strait (Excursion Inlet), Cross Sound (Dundas, Fern, or Taylor Bays), and the Outer Coast (Cape Spencer to Icy Point and Icy Point to Cape Fairweather). Access to the sites for installation and maintenance would occur by foot, boat, float/ski plane, or kayak. Where areas are too dangerous or remote for access by these means, a helicopter may be used. It is assumed that up to 10 helicopter landings per site may be required for installation and up to two annual landings for maintenance purposes per site. Helicopter use would be subject to minimum requirements analysis and limited to the fewest possible days each summer.

In addition, one new site in the West Arm of Glacier Bay may be needed for greater very high frequency (VHF) radio coverage within the bay. The total footprint for this installation would be up to 100 square feet and the tower/antenna combination may be up to 40 feet tall. Shorter towers would be employed if they provided similar coverage. It is assumed that up to 10 helicopter landings may be required for the new installation and up to two annual landings for maintenance purposes per site. Installations and maintenance for both VHF radio and AIS transponders would be scheduled simultaneously whenever possible. Helicopter use would be subject to minimum requirements analysis and limited to the fewest possible days each summer.

Trail Development

Alternative B proposes developing up to 10 miles of new trail that access the park's designated Wilderness if development of a trail is feasible. Excursion Ridge's west-facing slopes and the Falls Creek area largely comprises unstable sedimentary deposits, which may

not support maintainable trails and regular foot traffic. Further surveying and investigation are needed, but if feasible to construct and maintain, the trail would start on state-owned land by the Falls Creek area near the town of Gustavus and extend approximately 0.5 miles before entering the park and ascending to Excursion Ridge. This trail is referred to as the Excursion Ridge trail in this analysis. The trail would provide access through dense forested slopes to the ridge above tree line. The trail would likely be used for day trips and provide access to untracked wilderness for cross-country, multiday excursions in the alpine tundra. Visitors would experience distinct ecological communities within the park, including wetlands, forests, and alpine, as well as exceptional scenic views once on Excursion Ridge.

Additional trail design would be required before construction. This EA assumes the trail would be a maintained trail, where sections of the trail could be built and maintained to different trail class standards to ensure maintainability and to limit resource damage. Additional information on mitigation measures to protect park resources during and after trail construction can be found in appendix E. Design goals for this trail include the following:

- Use of Trail Class 2 (USFS 2016) design parameters would be prioritized where the terrain can accommodate use levels without resource damage and requiring only minimized annual and cyclic maintenance. As described in “Trail Fundamentals and Trail Management Objectives,” these trails have a tread that is continuous and discernable but narrow and rough and are constructed of typically native materials. Design tread width would be 12–18 inches. Some sections of Trail Class 3 may be needed for trail sections with challenging soil, slope or other environmental conditions that require more substantial design elements to accommodate use. Trail Class 3 has continuous and obvious tread and a tread width of 12–24 inches, except along steep side slopes where the tread width needs to be higher for slope stability. Trail sections through the steepest slopes may require considerable engineering and a wider native ground footprint.
- The trail is designed for the anticipated level and intensity of use.
- The trail would have 10% grade or less (90% of the time) with integrated grade reversals (drainage features incorporated into the trail alignment). Stacking switchbacks would be avoided to protect slope stability.
- Approximately 10 miles of trail may be needed to meet grade goals between the road and the alpine environment. As feasible, the trail would be routed by scenic points of interest that could also function as rest areas and turn-around points.
- Where necessary, boardwalks, small crossing features, or raised tread would be used to protect wetland function.
- The trail would have the lowest-impact bridge possible to safely move humans across Falls Creek.

If the final design for this trail falls outside the assumptions for this analysis, additional analysis, compliance, and permitting would be completed before construction. The National

Park Service would partner with the State of Alaska and Alaska Power and Telephone, and as appropriate, the City of Gustavus and adjacent private property interests, to refine final routes, design, easement, permits, parking, and management responsibilities before development. This may also require an amendment to the Federal Energy Regulatory Commission License (Project No. 11659-002) Article 418, Falls Creek Public Access and Recreation Plan.

For safety reasons, the area encompassing the new trail will be closed to the public during construction and improvement. Details on area closure times and durations will be posted for the public at the trailhead and other town locations and on the park website and social media outlets.

Required Backcountry Camping Permits Year-Round

Under Alternative B, a backcountry camping permit would be required on a year-round basis instead of only between May 1 and September 30 for all commercial and noncommercial camping in the wilderness and backcountry. This permit would apply within all the park's wilderness and backcountry, not just the land accessed via the Glacier Bay Zone as is currently the case. Permits are a means of conveying information about park rules, conditions, and safety information. Over time, the permit system would provide the park with better information on the types, amounts, and locations of backcountry camping use.

Permits would be issued per party rather than to each individual visitor. Permits would be available in-person or online and could be acquired in advance of the trip or the day of departure. Permits would collect information, including group size, an emergency contact, length of stay, type of recreational use, mode of transportation, and a general itinerary (general camp locations and entry/exit points). If a group needed to adjust their itinerary while in the backcountry, the group would report any changes to the park upon return from the backcountry. This permit system would be free of charge and would not involve a lottery or quota, unless otherwise established in commercial operating contracts.

Group Size

Under Alternative B, the group size for the park's wilderness would remain at 12 or fewer people but would apply to both overnight and day visitors. Group size would also apply year-round instead of only between March 1 and October 31.

Groups are considered separate when out of sight and sound of each other. Drop-off and pick-up locations may have more than 12 people if multiple groups arrive or depart simultaneously; however, these groups would then disperse.

Group size exceptions may be granted for educational purposes, research, safety, traditional Tlingit Homeland activities, or administrative purposes. The waiver for groups of more than 12 people must be authorized by the superintendent. Guidelines for minimizing impacts from groups of more than 12 people are listed on the group size waiver.

Commercial Mountaineering

Alternative B proposes allowing commercially guided mountaineering and associated activities in the Fairweather Range. This change would officially codify a recreational use that has been occurring on a temporary basis and allow the park to continue to regulate use to protect resources. The provision of this use aligns with objectives of the 1984 General Management Plan to encourage commercial services for the least-accessible areas of the park. An allocation of six commercial groups per year in the Fairweather Range has been identified to ensure wilderness character is maintained and resources are preserved. For all commercial mountaineering in the park, including outside the Fairweather Range, simultaneous trips within the same area would be prohibited. For more information on the determination concerning commercial mountaineering and applicable regulations, please see the extent necessary determination (appendix B).

Actions Considered but Dismissed

Five actions were considered but dismissed from further consideration. These actions included developing cabins and shelters in wilderness, maintaining stream crossings to facilitate beach hiking, designating beach biking routes, designating water routes, and banning campfires along the shoreline. Detailed explanations of these actions and rationale for dismissal can be found in appendix D.

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CHAPTER 3: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This section describes the resources that could be affected as well as the potential environmental consequences of implementing either alternative being considered. The topics presented are those related to the key issues that could inform the NPS decision on how to manage the park's wilderness. The descriptions of the resources provided in this chapter serve as an account of the baseline conditions against which the potential effects of the alternatives considered in this plan are compared.

GENERAL METHODOLOGY

This section is organized by resource topic and provides a comparison of the alternatives based on issues. In accordance with the NPS Council on Environmental Quality regulations, direct, indirect, and cumulative impacts are described, and the impacts are assessed in terms of context, intensity, and duration (40 CFR 1502.16).

VISITOR USE AND EXPERIENCE

Affected Environment

The revised plan provides a detailed overview of visitor use characteristics and levels, particularly as they pertain to the park's wilderness. Relevant background information exists under the following sections:

- Parkwide Visitor Demographics and Experiences
- The Backcountry and Wilderness Visitor
- Wilderness Day Use and Access
- Access to Tidewater Glaciers and Hiking Accessible Glaciers
- Eligible Drop-off Locations for Day Tour Boat
- Regulations and Closures
- Commercial Services and Concessions

For more information on the determination concerning commercial mountaineering and applicable regulations, please see appendix B.

The sections below describe the existing condition of the elements of visitor use and experience that may be affected by the alternatives analyzed in this EA:

- Required Backcountry Camping Permits
- Group Size
- Trail Development
- Commercial Mountaineering
- Communications Infrastructure

Required Backcountry Camping Permits

Under existing regulations, from May 1 to September 30, all backcountry campers must obtain a permit for each trip and attend an annual camping orientation if staying on the shoreline of the Glacier Bay Zone. The park has in-person and online options for fulfilling these requirements. Although requiring visitors to obtain a permit may have adverse impacts on some visitors' desire for a spontaneous, unplanned trip into the wilderness, the orientation offers visitors a chance to ask questions and provides the park with the opportunity to inform campers of special wildlife and safety closures, regulations, safety information, and to assist in trip planning. Information currently collected through the permit includes group size, emergency contact, length of stay, type of recreational use, mode of transportation, and itinerary (general camp locations and entry and exit points). This helps park staff understand visitor use patterns and preferences and could facilitate more efficient search and rescue operations, if needed. This permit is free and available to anyone, with no lottery or quotas.

Group Size

Group sizes for overnight and commercial use are limited to 12 or fewer between March 1 and October 31 to minimize impacts on resources and other park visitors. The superintendent may approve group size exemptions for educational, research, safety, or administrative purposes or for traditional Tlingit Homeland activities. Limiting group size numbers affects some visitors' ability to experience the wilderness in larger groups; however, most visitors travel in groups of less than five (NPS 2021a), and group size limits enhance visitor opportunities to experience wilderness with limited crowding and congestion.

Trail Development

Most hiking in the park's wilderness occurs along the shoreline, on visitor-created trails, on game trails, or off-trail. Wilderness shorelines surrounding wilderness waters are, or, for most of the park, along the edge of designated Wilderness (the boundary is mean high tide) and are popular areas for hiking. People generally seek to hike in areas devoid of tall vegetation that allows free movement and clear lines of sight for bears and other wildlife and in areas that provide access up to vantage points, especially around tidewater glacial environments, scenic viewpoints, and wildlife viewing hot spots. Day hiking is popular along the shorelines and upland areas near Gloomy Knob, Lamplugh Glacier, Reid Inlet, McBride Inlet, Fern Harbor forelands, and Dundas Bay. Hiking or backpacking also occurs as a component of overnight trips in the wilderness. Hiking was a more popular activity in the 1980s, as successional advances in vegetation, especially dense alders (*Alnus viridis ssp. Sinuata*), have made formerly accessible terrain challenging to travel through. Few visitors to the park choose to travel or navigate through dense brush over steep or wet terrain due to the arduous physical nature of this type of travel. For those that choose to hike in remote areas, or in areas only accessible by water, they are often aided by a commercial outfitter or concessioner, who provides access via boat or plane.

The park has 7.2 miles of designated trails within wilderness: the Bartlett River Trail, the Bartlett Lake Trail, and the Bartlett Lake/Towers Trail. These trails provide access to coastal and low elevation habitat types within the park. Visitors on these trails are primarily day

hiking and accessing these trails from the park's frontcountry or via nonpark land. These trails provide opportunities to access the wilderness for visitors that may not have the time, financial resources, equipment, skill, or desire to venture into more remote areas of the park or areas only accessible by water. The Bartlett River Trail goes through dense spruce-hemlock rainforest and ends at an estuary near the mouth of the river. The trail connects the Bartlett River (in designated Wilderness) to the Inner Lagoon Dock (with the NPS headquarters area as a multimodal hub with other trail connections). The National Park Service documented between 1,460 and 2,100 hikers using the Bartlett River Trail seasonally (June to September) in 2013, 2014, and 2015 (NPS 2018b). The Bartlett Lake Trail is less developed and offers visitors opportunities to see the dense understory of the temperate rainforest before reaching the shores of Bartlett Lake. This primitive trail is a rugged day-hike, with rewards of solitude and a tranquil lake. The Bartlett Lake/Towers Trail provides access to the wilderness and Bartlett Lake from the edge of the community of Gustavus. It affords both visitors with ground transportation and residents more rugged hiking and access to routes into untracked wilderness.

Commercial Mountaineering

Mountaineering has occurred in the park on an infrequent basis throughout the park's history. The coastal mountains of the park, topped by the 15,300-foot Mt. Fairweather, are among the least-visited mountains in North America, with limited information available on most routes. In addition to the Fairweather Range, mountaineering occurs in other locations throughout the park, including Rendu Glacier, Brady Icefield, and the Chilkat Range. The skills and resources required of visitors, the limited season of access, and rapid changes in the weather make mountaineering a limited pursuit within the park. Many climbs take as long as one month to accomplish.

Commercially guided mountaineering is currently managed differently within the Fairweather Range compared to other areas of the park. The park's 1989 visitor use management plan did not authorize commercially guided mountaineering on the west side of the park (i.e., the Fairweather Range). However, beginning in 2003, two guided mountaineering trips were permitted each year as part of a trial so the park could evaluate potential impacts from guided mountaineering to inform wilderness planning. The trial period also deferred a final decision on concerns expressed by the Huna Tlingit, particularly the T'akdeintaan Clan, about disrespectful uses of the mountain. Since 2012, commercially guided mountaineering has been authorized on a case-by-case basis in the Fairweather Range, and the park has been able to accommodate all requests.

Because private parties are not required to report their climbs, the data on the number and location of mountaineering trips is limited to what is voluntarily reported to the park. Between 2003 and 2015, the Fairweather Range had 11 commercially guided trips that attempted to summit Mt. Fairweather, three of which succeeded. During that same time span, private groups made at least 23 attempts, with 14 of those groups completing the climb. Though encounters with other groups is rare, in May 2010 and May 2011, data indicates that commercially guided and private mountaineering groups were on the summit of Mt. Fairweather at the same time. In other areas of the park outside the Fairweather Range, commercially guided mountaineering trips are currently authorized for three companies. In

these areas as well as in the Fairweather Range, there is no prohibition on groups operating in the same area and at the same time.

Communications Infrastructure

The park currently has two radio transmitter sites at Beartrack Mountains and Idaho Ridge that are available to park staff, not the public, to facilitate radio communication in limited areas of the park. Most of the park's wilderness and backcountry does not have reliable radio coverage for park staff or the public. Full radio coverage of all terrestrial wilderness is not realistic and is not a park goal.

Trends

Reasonably foreseeable future actions in the project area that will impact visitor use and experience include the construction of an additional 4.4 miles of new trail (i.e., the Point Gustavus Route and the Bartlett River Trail) in wilderness adjacent to the frontcountry as part of implementation of the frontcountry management plan (2019). The Point Gustavus Route will go 3.4 miles along the shoreline of Bartlett Cove and include minimalist, fully naturalized modifications (i.e., rock placement) to help users navigate tides, water crossings, and sensitive habitat. The Bartlett River Trail will include 1 mile of new Class 3 trail built on the shoreline and along the tidal cut (some portions in designated Wilderness). The trail will be built to meet Architectural Barriers Act Accessibility Standards (ABAAS) and will be constructed as a rustic boardwalk (up to 36 inches wide) on helical piers or other elevated structures. The trails will provide additional on-trail or on-route hiking opportunities into the park's wilderness from the frontcountry; a full discussion and analysis of this decision can be found in the frontcountry management plan (2019). The addition of 4.4 miles of trail would contribute beneficial impacts on overall trends in visitor use and experience. The park completed a marine management plan and EA in 2023, which includes updated private vessel management conditions and operating requirements. The plan, once implemented would establish new vessel definitions, update vessel operating requirements, and establish indicators, thresholds, and corrective management actions to meet desired conditions. The selected alternative provides long-term benefits to visitor use and experience, primarily for private boaters, by implementing changes to the permitting system that help ensure permits are more fully utilized. The selected alternative includes changes (e.g., length of permit, ways to obtain a permit, conditional transit permit) to the private vessel permitting system affecting about 2,400 annual visitors to the park. The new ways permits are issued allows all private boaters an equal opportunity to obtain a permit and to plan further in advance. This could benefit visitors who are coming to the park from further away or who have had less opportunity to obtain a permit in the past. Other changes, such as operating requirements for cruise ships, tour vessels, private vessels longer than 79 feet, and nonmotorized access in Muir and Wachusett Inlet, are not expected to impact the overall use of the park or the visitor experience for most visitors to Glacier Bay National Park because these changes impact only a small proportion of visitors, only apply during the permit season, and other experiences are available close to these locations. A full analysis of these actions is found in the marine management plan (2023) at <https://parkplanning.nps.gov/gbwaters>.

Environmental Consequences

Alternative A: No Action

Alternative A would be the continuation of current management, as described above in the affected environment section. The current impacts on and trends in visitor use and experience would continue to occur.

Alternative B: Action Alternative – NPS Preliminary Proposed Action

The refined zoning of the 1984 GMP Wilderness Lands Zone and Wilderness Waters Zone is not expected to affect visitor use and experience, and specific actions within the zoning subcategories are analyzed below.

Required Backcountry Camping Permits

Alternative B would broaden the scope of the current backcountry camping permit requirement. The permit would be required year-round instead of May 1 to September 30. The permit would also be required for any backcountry camping within the entire Glacier Bay Wilderness instead of just the land accessed via the Glacier Bay Zone. Most backcountry campers would not be affected by the change since most visit the park between May 1 and September 30. The impact of this change would be felt by visitors who camp in the backcountry outside the lands accessed via the Glacier Bay Zone or who camp anywhere in the park's backcountry between October 1 and April 30. Because a permit is currently voluntary for this subset of visitors, it is difficult to quantify how many people Alternative B would affect. Private mountaineering groups would also be required to obtain a backcountry camping permit.

For some visitors, the permit requirement could diminish a sense of spontaneity because to provide details about their trip, such as general itinerary and expected trip duration, they would need to have their trip fully planned out ahead of time. However, if a group needed to adjust their itinerary while in the wilderness and backcountry, they would simply report this change to the park at the conclusion of their backcountry camping trip. Visitors would be allowed to register up to the day of their departure and therefore retain much of their pre-trip autonomy. These flexible approaches would minimize the impact on a visitor's experience while ensuring the park is able to obtain valuable wilderness use data. Over time, the registration requirement would provide the park with better information on the types, amounts, and locations of backcountry camping use. Gathering this information would help the park determine if desired conditions are being met for a given area and allow future park managers to make informed decisions accordingly, thus improving visitor experience.

Some people desire and value the ability to access the park without needing to engage with park personnel or systems. Requiring visitors to acquire a permit may limit this ability. To provide maximum flexibility when obtaining the permits (while ensuring sufficient information is collected), the permit would be available online or in person, would be designed to take a short amount of time to obtain, and involve minimal engagement with park staff.

The permit would also help improve visitor safety, as the park would have details about visitor trips and could perform more efficient search and rescue operations. The proposed permit would not limit visitor access to the wilderness and backcountry, as there would be no quotas or lotteries. The permits would also remain free of charge. Ultimately, the slight expansion of the permit requirements would have a minimal adverse effect on visitor spontaneity and independent trip planning because the expansion would occur during six months of the least-visited time of year.

Group Size

Under Alternative B, the wilderness group size limit would not change, though the group size limit would be expanded to apply to day visitors and year-round. The expansion of group size limits to include November through February would occur during a time of year in which the park sees the least visitation, and therefore, this change would lead to a minimal adverse effect on few visitors.

The expansion of group size limits to include day visitors would mean that there would be no way (other than seeking a group size exception) to experience the Glacier Bay Wilderness with a group larger than 12 people. This could have a slight adverse effect on a small portion of day visitors, though 76% of visitors travel in groups of five or fewer (NPS 2021a). It could also have a beneficial impact on other visitors because limiting group size could improve their ability to experience key elements of wilderness with minimal crowding and congestion in both a day and an overnight setting.

Group size exceptions would continue to be reviewed by the superintendent and granted for educational, research, safety, or administrative purposes or traditional Tlingit Homeland activities, as appropriate. Guidelines for minimizing impacts from groups of more than 12 people would be listed on the group size waiver.

Trail Development

The Excursion Ridge trail proposed in Alternative B would have a beneficial impact on visitor use and experience by providing multiday access to the alpine tundra, where expansive, scenic views of the park and easier off-route travel exist.

Visitors do currently have opportunities to hike on trail using the existing wilderness trails proximate to the frontcountry; however, these trails primarily provide day-hiking opportunities in low-elevation and coastal habitat types. The proposed trail would also originate in the frontcountry but would be better suited to overnight trips than current trails. The trail would provide visitors the opportunity to hike into higher elevation areas of the park with more expansive views and experience the alpine tundra along with other ecological communities found within the park (e.g., wetlands, forest, muskeg). The Excursion Ridge trail would provide access through dense vegetation and muskeg, which without a trail are often too challenging for visitors to hike through. Ultimately, visitors would have a wider spectrum of hiking opportunities and park experiences in terms of trail location, length, habitat type, and scenery under Alternative B. Given the proximity to the frontcountry, the proposed trail could also offer additional access to the Glacier Bay Wilderness for visitors who may not have the time, financial resources (i.e., hiring a commercial boat or plane),

equipment, skill, or desire to venture into more remote areas of the park or areas only accessible by water. Importantly, the existence of this trail would not limit the opportunity for visitors to enjoy untrailed wilderness, as millions of acres would continue to be available for this experience.

Commercial Mountaineering

Under Alternative B, commercial mountaineering in the Fairweather Range would be allowed and administered as part of the park's commercial management program instead of on a limited, case-by-case basis. Under this management approach, guide companies would know how many climbing and guiding permits would be available to potential clients each year, and visitors would know with certainty what commercial climbing and guiding services are available to them, which would have a beneficial impact on visitor use and experience.

For all commercial mountaineering in the park, including outside Fairweather Range, simultaneous trips within the same area would be prohibited to preserve opportunities for solitude and a remote experience in wilderness. This requirement would not apply to private trips, which are allowed to mountaineer at the same time and in the same area as other private and commercial groups. Private groups would continue to have the freedom to go where they want, when they want, provided they first obtain a free camping permit, with the trade-off being that there may be other parties in their vicinity.

Communications Infrastructure

The proposed communication systems would improve radio communication between NPS staff throughout the park. This would contribute to greater connectivity during a park-supported search and rescue mission—especially in those areas that are less traveled and currently lack good communication—thereby enhancing visitor safety. Additional communication towers would affect the scenic value of the park, especially for visitors hiking in untracked wilderness within sight of these installations. However, communication towers placed on high ridges several thousand feet up and several miles from boat-based visitors would not be readily visible to most park visitors without binoculars.

Cumulative Impacts

As previously described, there would be no new impacts under Alternative A, and therefore there would be no cumulative impacts.

When the likely effects of Alternative B are combined with other past, present, and reasonably foreseeable future actions, the cumulative impacts on visitor use and experience would continue to be beneficial. There would be an incremental beneficial cumulative impact for hikers whose wilderness and backcountry access would improve and mountaineers whose wilderness and backcountry experience would improve. A minimal adverse effect may occur on a small subset of visitors due to the expansion of permit and group size requirements, and the potential to see park communication towers while in wilderness. The incremental impacts of Alternative B would contribute to, but not substantially change, the impacts that are already occurring.

Comparative Conclusion of Alternatives

Under Alternative A, visitors would continue to have the same opportunities and access described in the affected environment section.

Mountaineering and hiking opportunities and experiences would improve under Alternative B. Changes to the backcountry camping permit and group size requirements would be minimally disruptive, both in terms of extent and intensity of impact, as most wilderness and backcountry visitors' experiences would not diverge from current conditions under Alternative B.

VEGETATION

Affected Environment

Glacier Bay National Park contains a complex and dynamic geological landscape that supports a diversity of vegetation characteristic of the northern Pacific coastal biome (NPS 2004b). Dynamic glacial activity and natural disturbances has resulted in a wide variety of plant successional communities, ranging from sparsely vegetated barrens to mature spruce-hemlock forests and peat bogs (NPS 2004b). The lowlands tend to have nutrient-poor, sandy soils and support sparse forests of shore pine (*Pinus contorta*), cottonwood (*Populus balsamifera*), and Sitka spruce (*Picea sitchensis*). In the lowland areas, fens supporting peatlands are abundant. The hillsides have denser spruce and hemlock forests as well as subalpine habitats. The higher elevations along Excursion Ridge have barrens, scree slopes, and alpine meadows.

Within the Falls Creek watershed, where the Excursion Ridge trail is proposed, the primary habitat types encountered include halophytic sedge and marsh communities, pine woodlands, forb-sedge meadows, and saturated peatlands at low elevations. Above 500 feet in elevation, forb graminoid meadows and open mountain hemlock forests are present (NPS 2004b).

Sedge and Marsh Communities, Grasslands, and Pine Woodlands

At the beginning of the proposed Excursion Ridge trail location at lower elevations, sedge and marsh communities and open pine woodlands are abundant. This habitat type exists from near sea level to mid-elevations (800 feet). Dominant species include shore pine, sedges (*Carex spp.*), tufted bulrush (*Trichophorum caespitosum*), bog blueberry (*Vaccinium uliginosum*), crowberry (*Empetrum nigrum*), and variegated horsetail (*Equisetum variegatum*).

Portions of the proposed trail route include saturated forb grassland areas. Within these areas, common species include bog bean (*Menyanthes trifoliata*), water hemlock (*Cicuta douglasii*), marsh horsetail (*Equisetum palustre*), and many-flowered sedge (*Carex pluriflora*) (NPS 2004b).

Sitka Spruce/Western Hemlock Forests (above 500 feet in elevation)

Sitka spruce and western hemlock (*Tsuga heterophylla*) forests are widespread in both the proposed trail area and throughout the park, covering over 300,000 acres of the park's vegetated land (NPS 2008). Much of the proposed Excursion Ridge trail area lies in a mature Sitka spruce/western hemlock forest. Two types of spruce/hemlock forest have been identified along Excursion Ridge: rich and poor.

Rich spruce/hemlock forest is found primarily on well-drained soils on steep slopes along the Kahtaheena River. Much of this cover type is old-growth forest with trees greater than 200 years, a canopy closure of more than 60%, and an abundance of snags, stumps, and fallen trees. The overstory forest is dominated by western hemlock and Sitka spruce. Dominant understory shrubs consist of Alaska blueberry (*Vaccinium ovalifolium*), rusty menziesia (*Menziesia ferruginea*), various species of mosses, liverworts and lichens, and occasional devil's club (*Oplopanax horridus*) (NPS 2004b). Common understory herbs and forbs include bunchberry dogwood (*Cornus canadensis*), five leaf bramble (*Rubus pedatus*), twisted stalk (*Streptopus amplexifolius*), and shield fern (*Dryopteris dilatata*).

The poor hemlock/spruce forest is found primarily on the poorly drained soils that are productive enough to support overstory tree growth. These sites are generally found on the hillslope terraces, flat topographic sites, and as a transition between well-drained forest stands and bog and fen plant communities. These less-productive forest sites generally contain a more diverse composition of species than the well-drained forested sites. The overstory forest may be dominated by western hemlock with substantial composition of Sitka spruce, mountain hemlock (*Tsuga mertensiana*), or shore pine, and occasional Alaska yellow-cedar (*Callitropsis nootkatensis*). Understory shrubs may consist of Alaska blueberry (*Vaccinium ovalifolium*), rusty menziesia (*Menziesia ferruginea*), labrador tea (*Ledum groenlandicum*), and crowberry (*Empetrum nigrum*). Common understory herbs and forbs include skunk cabbage (*Lysichiton americanum*), bunchberry dogwood, wintergreen (*Gaultheria procumbens*), and deer cabbage (*Nephrophyllidium crista-galli*).

In addition, young spruce forest areas are within the proposed Excursion Ridge trail area. This cover type occurs in areas that were harvested in the past and have naturally regenerated to produce a young forest dominated by Sitka spruce with a substantial component of western hemlock.

Spruce/Pine/Cottonwood Regeneration Forests

Another plant community within the proposed Excursion Ridge trail area is the spruce/pine/cottonwood complex. This is a rich, open community, typically comprising relatively fast-growing trees and shrubs. This community is dominated by Sitka spruce, shore pine, and cottonwood and is a result of natural colonization on sites that have been subjected to human disturbance.

Trends

Temperatures in the park are expected to increase, with the most dramatic change occurring in the winter. These increased temperatures are likely to lengthen the growing season, impact plant phenology, and influence soil water availability (Nadeau et al. 2017). While

precipitation is projected to increase, evapotranspiration will also likely increase due to warmer temperatures and a longer growing season. This means water will be used by plants or will evaporate back into the atmosphere faster and will not be stored in the soil or on its surface as long. As a result, the area will seem drier, particularly in summer and fall.

Invasive plants are a threat to native vegetation communities because of their potential to displace native species and to alter ecological processes (Nadeau et al. 2017). The park has been largely protected from nonnative plant invasions, with a few exceptions, due to its isolation from typical human-related vectors such as roads, trails, and development. However, the number of nonnative plant species documented within the park has increased over time. By 2013, 49 different nonnative plant taxa had been found, and an additional 13 species were found in Gustavus, which is just outside park boundaries and near the proposed Excursion Ridge trail (Nadeau et al. 2017). The most widely documented invasive species in the park is the common dandelion (*Taraxacum officinale*). Common plantain (*Plantago major*) and several invasive grasses (*Phleum pratense*, *Triticum aestivum*, and *Phalaris arundinacea*) are also frequently observed around the Gustavus area west of the proposed Excursion Ridge trail area (NPS 2013).

Climate also influences the diseases and insect pests that impact many tree species in southeastern Alaska. For example, weather plays a key role in bark beetle (*Dendroctonus rufipennis*, primarily) population dynamics, which favor warm, dry weather, particularly in spring (Nadeau et al. 2017). The life cycle of the spruce beetle is typically two years, but warmer and longer seasons can allow the beetles to complete their life cycles in one year (Nadeau et al. 2017). Many dominant spruce trees have been severely affected or killed by spruce beetle, and there are some standing dead trees within the proposed Excursion Ridge trail area. Sitka alder occupy many openings and recently disturbed areas. Patches of devil's club often grow in wet areas of the forest. Current spruce forests are projected to trend increasingly toward hemlock-dominated hemlock-spruce stands in the coming decades and will ultimately include areas of patchy bogs on poorly drained sites in a few centuries (Nadeau et al. 2017).

Projected increased temperature or other changes that prolong needle wetness during the growing season could also favor pathogens that affect shore pine such as western gall rust (*Endocronartium harknessii*) and Dothistroma needle blight (*Dothistroma pini*). Successive years of severe foliage disease, as have recently been observed within localized areas within the park, can directly kill trees (Nadeau et al. 2017). This stress can also increase a tree's vulnerability to the secondary bark beetle (*Pseudips mexicanus*), which only successfully attacks trees weakened by other factors (Nadeau et al. 2017).

A social route currently connects from the road by the Falls Creek Hydroelectric Project intake to Excursion Ridge. The route goes through several wetland areas and directly up the fall line, with steep gradients and no switchbacks. Depending on the number of users that summer, 10–30% of the route shows a visible, easy to follow, path. While the trail is not heavily used, the trail's intersection with sensitive wetland areas and steep alignment contribute to minimal trampling of vegetation and erosion along the route corridor. Over time, trampling of vegetation increases because each group picks their own slightly different route. Cycles of glacier advance and recession in the area below Excursion Ridge resulted in a

layering of clay and saturated soil types that are known for their productivity for vegetation but also their instability. Landslides that can remove swaths of vegetation are not uncommon along the western slopes of the ridge.

Environmental Consequences

Alternative A: No Action

Alternative A would be the continuation of current management. No new actions would occur, and thus there would be no new effect to vegetation under this alternative.

Alternative B: Action Alternative – NPS Preliminary Proposed Action

Alternative B calls for two actions that would involve vegetation clearing and ground disturbance: constructing a new trail and installation of one very high frequency (VHF) radio and up to 10 automatic information system (AIS) stations. Estimated areas of impact for construction of the Excursion Ridge trail are presented below; these numbers are approximate because the alternative alignment is not yet in the design stage of development and could change. Because of rounding, numbers presented may not add up precisely to the totals provided.

Constructing approximately 10 miles of trail from the Falls Creek area to Excursion Ridge would require clearing 24–60 inches of vegetation along the path (up to 6.1 acres). Negative effects from constructing new trails would include the loss of ground cover and understory species, as well as the removal of some trees. Implementation of best practices for trail development and mitigation measures to reduce impacts on soils and vegetation, such as demarcating the construction area, minimizing new soil disturbance, and returning staging areas to preconstruction conditions, would reduce adverse impacts on vegetation. Furthermore, trail design would seek to minimize the need for tree removal, although some tree removal would likely be unavoidable. Removal of trees greater than 18 inches in diameter would be avoided to the greatest extent possible. Elevation, and therefore habitat, varies within the first few miles from the Falls Creek area, but the initial few miles at lower elevation have the potential to intermittently impact sedge and marsh communities, grasslands, muskeg, and pine woodlands that are known to occur below 800 feet in elevation. The first few miles of trail would also wind through spruce/pine/cottonwood vegetation before entering Sitka spruce/hemlock forest. Trail design would make all efforts to minimize and avoid impacts on wetland vegetation as directed by *NPS Procedural Manual #77-1: Wetland Protection* and reduce the need for tree removal (see the wetlands section). The remaining miles of trail would gain elevation, continuing through mixed spruce/pine/cottonwood forest and moving into Sitka spruce/western hemlock forest (above 500 feet in elevation) before entering the subalpine/alpine areas above tree line.

Once the trail reaches the more gently sloping ridgeline, route-finding and overland travel would be less obstructed from a visual and navigational perspective. While a “route” might be established along the ridgeline, a formal trail would not be delineated unless impacts on vegetation from social trailing warranted. In total, up to 6.1 acres of vegetation would be cleared for the trail, which includes acreage of spruce/pine/cottonwood and Sitka spruce/hemlock at lower elevations, plus impacts on groundcover, shrubs, and trees in the

subalpine/alpine above treeline. However, Sitka spruce and hemlock forests are widespread in the park, covering more than 300,000 acres of the park's vegetated land. Common landcover classes found within the subalpine and alpine habitat, such as mesic herbaceous, wet herbaceous, Ericaceous dwarf shrub, and dwarf shrub-herbaceous, together cover more than 140,000 acres of the park's vegetated lands (Boggs et al. 2007). Alternative B represents an incremental addition to the existing development footprint within these vegetation habitats and therefore is not expected to impact native plant species at a population level through habitat loss because the disturbance would be localized to the trail corridor, and the species affected are common throughout the area.

This ground disturbance, as well as the clearing of up to approximately 6.1 acres of varying forest and understory vegetation (discussed previously), increases the potential for establishment of invasive exotic plants, which could then be transported into sedge and marsh communities, grasslands, and varying forests by people and wind. In addition, newly built trails could serve as pathways for the spread of invasive plants into currently lesser disturbed areas of the park. The implementation of mitigation measures (appendix E of this EA) during and after construction activities—such as minimizing soil disturbance, cleaning clothing and equipment whenever moving between locations in the park, and pressure washing equipment off-site—would help reduce the establishment and spread of invasive species, thus reducing adverse impacts on native plant species from Alternative B.

A short portion of the proposed trail would be constructed outside of the park boundary on state lands, while the remainder would be constructed within the park boundary on NPS lands. Upon further design of the trail, all appropriate state and federal compliance and permitting requirements would be completed prior to construction.

Installation of one VHF radio and up to 10 AIS stations would each require site clearing and disturbance of up to 100 square feet and potentially additional site clearing for helicopters landings depending on the location. Some sites being considered are devoid of vegetation. These locations would range from sea level to high altitude locations. Direct impacts on vegetation would result from foot traffic, anchoring of equipment, and maintaining clearances over time. Vegetation impacts would be highly localized, limited to the area immediately surrounding the station. To minimize the possibility of introducing invasive plants, mud and dirt and plant material would be removed from project equipment, footwear, and clothing prior to travelling to any station sites. Stations would be monitored for the presence of invasive species during annual maintenance visits. The potential installation of one VHF radio and up to 10 AIS stations is unlikely to have any impacts on vegetation outside of the immediate 100-square-foot area of each of the sites, up to 1,100 square feet total.

Refining park zoning is not anticipated to affect vegetation.

Cumulative Impacts

Past and present actions that impact vegetation include continued erosion and the spread of invasives from the use of social trails within the proposed trail area.

As previously described, no new impacts would occur under the no action alternative, and therefore no cumulative impacts would occur on vegetation.

The proposed alternative would cause ground disturbance and vegetation clearing of approximately 6.1 acres. When these effects are combined with other past, present, and reasonably foreseeable future impacts, the total cumulative impact on vegetation would continue to be adverse. The incremental impacts of the alternatives described in this plan would contribute slightly to, but would not substantially change, the impacts that are already occurring.

Comparative Conclusion of Alternatives

Under Alternative A, vegetation would incur no notable changes.

Under Alternative B, development of up to approximately 10 miles of trail from the Falls Creek area to Excursion Ridge would result in greater levels of ground disturbance and vegetation clearing. This development could subsequently increase the establishment and expansion of invasive plants in the affected vegetative communities along the proposed trail corridor. In addition, development of the trail in this area, known for its unstable soils, could increase the potential for slide events that remove swaths of vegetation. Mitigation measures (appendix E of this EA) would be used to limit the encroachment of invasive plant species. Research, trail design and routing would minimize the occurrence of slope failures. Installation of one VHF radio and up to 10 AIS stations is unlikely to have any impacts on vegetation outside of the immediate 100-square-foot area of each of the sites, up to 1,100 square feet total.

WETLANDS

Affected Environment

Detailed wetland mapping of the proposed project area is currently limited. National Wetlands Inventory mapping is available for the entire project area (USFWS 1996). Additionally, the most recent park land cover type classification (NPS 2008), which includes locations of vegetative cover types typical of wetlands in the project area, was used to complete a preliminary assessment of wetland impacts.

Wetlands within the park provide important resting habitat for migratory waterfowl and ground-nesting birds. Wetlands also support various plant species. Two freshwater wetland types are present within the project area in addition to open low shrub peatland, riverine wetland, and freshwater ponds:

- **Freshwater forested/shrub wetland.** These wetlands are characterized by woody vegetation that is 20 feet or taller, including true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions. In *Landcover Classes and Plant Associations of Glacier Bay National Park and Preserve* (NPS 2008), this vegetation is commonly mapped as Sitka spruce woodland/wet herbaceous land cover. Plant species that dominate forested/shrub wetland in the park include sedges and forbs such as Sitka sedge (*Carex aquatilis* var. *dives*), Lyngbye's sedge (*Carex*

lyngbyei), and water horsetail (*Equisetum fluviatile*). Some portions of these wetlands are only seasonally saturated and experience unsaturated conditions by the end of the season in most years.

- 2008 *Landcover Classes and Plant Associations of Glacier Bay National Park and Preserve* noted that open low shrub peatland is common on Excursion Ridge and in the area of the proposed trail (NPS 2008). Peatlands are a specific type of wetland ecosystem that forms from the accumulation of decaying organic matter. This low shrub peatland is typically found interspersed with other vegetation types and occurs on outer coast piedmonts, uplifted marine deposits, old outwash plains, mountain benches, and within forest openings. Small ponds and pools are common, and this wetland type can be found up to approximately 1,640 feet in elevation. These wetlands occur in small-to-moderate-size patches and support a diversity of species, including Sitka alder, bluejoint grass (*Calamagrostis canadensis*), Lyngbye's sedge (*Carex lyngbyei*), and small-flowered sedge (*C. pauciflora*). Different moss species can cover up to 70% of this wetland type.
- **Freshwater emergent wetland.** These palustrine wetlands include nontidal wetlands that are dominated by trees, shrubs, and persistent emergent, mosses. Vegetation is characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. These wetlands are usually dominated by perennial plants but also include shrubs and young trees that are small or stunted due to environmental conditions. These wetlands are seasonally flooded with water that is present for extended periods. Several types of freshwater emergent wetlands are known to occur within the area of the proposed Excursion Ridge trail including bogs, fens, and willow shrubland:
 - Bogs are peat-forming communities that are influenced solely by water falling or infiltrating directly from above the site (e.g., rain or snowfall and melt) and generally containing a dominant sphagnum moss layer. Bogs in the project area occur in the relatively flat, poorly drained terraces. Bog communities are characterized by the presence of stunted shore pine and mountain hemlock, labrador tea, bog cranberry, dwarf blueberry, and sphagnum mosses (FERC and DOI 2004).
 - Fens rely on nutrient- and mineral-rich surface or subsurface water from outside the boundary of the plant community. The hydrological connection provides these sites with greater nutrients and minerals and results in a more diverse composition of species and greater productivity than found in a bog community. Fens are often found on flat terraces immediately adjacent to well-drained upland sites or alongside estuarine and palustrine streams. Because of the hydrological connection providing mineral-rich water, these sites are sensitive to disturbances that disrupt the subsurface hydrology. Fen communities are characterized by the presence of sedges and grasses; shrubs such as nootka rose (*Rosa nutkana*); and forbs such as deer cabbage, alpine meadowrue (*Thalictrum alpinum*), and twinflower (*Linnaea borealis*) (FERC and DOI 2004).

- Willow shrubland is dominated by Sitka willow (*Salix sitchensis*) or Barclay willow (*Salix barclayi*) and may often include a substantial component of Sitka alder. Other shrubs that are commonly present in this plant community include devil's club and elderberry (*Sambucus nigra*). This plant community often occurs on disturbed sites or in marginal bands along watercourses (FERC and DOI 2004).
- **Riverine wetland.** The riverine system includes all wetlands and deepwater habitats contained within a channel. Within the project area, a channel is an open conduit that periodically or continuously contains moving water or that forms a connecting link between two bodies of standing water. The riverine system has no tidal influence, and some water flows year-round, except during extreme drought. The bottom of the channel consists of rock, cobbles, or gravel with some sand. The gradient in riverine areas is high, and there is little floodplain development.
- **Freshwater ponds.** Freshwater ponds within the proposed trail area are permanently flooded and have unconsolidated bottoms, with 25% cover of particles smaller than stones (less than 2–3 inches), and a vegetative cover of less than 30% (USFWS 1996).

Trends

Temperatures in Glacier Bay are expected to increase, with the most dramatic change occurring in the winter. These increased temperatures are likely influence soil water availability, including wetlands, and impact plant phenology (Nadeau et al. 2017). While precipitation is projected to increase, evapotranspiration will also likely increase due to warmer temperatures and a longer growing season. This means water will be used by plants or will evaporate back into the atmosphere faster and will not be stored in the soil or on its surface as long. As a result, the area will seem drier, particularly in summer and fall.

Social trails/routes that take a direct, but steep, path up to Excursion Ridge create erosion in certain sections. Where the routes cross wetlands, wetland functions are negligibly reduced. Invasive plant species are an ongoing threat to wetland vegetation within the park as they outcompete native wetland vegetation and reduce species diversity. Visitor use in and around wetland areas increases the potential spread of invasive species. Cycles of glacier advance and recession in the area below Excursion Ridge resulted in a layering of clay and saturated soil types that are known for their productivity for vegetation and wetland characteristics but also their instability. Landslides that remove swaths of vegetation and deposit increased sediment loads into wetlands are not uncommon along the western slopes of the ridge. Disturbance is known to increase the potential for slides and instability.

Environmental Consequences

Alternative A: No Action

Alternative A would be the continuation of current management. No new actions would occur, and thus wetlands would have no new effects under this alternative.

Alternative B: Action Alternative – NPS Preliminary Proposed Action

To comply with Executive Order 11990, “Protection of Wetlands,” any facilities or construction would be designed to avoid adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. Mitigation measures (appendix E of this EA) would be used to minimize both direct and indirect impacts on wetlands, such as maintaining appropriate erosion and siltation controls during construction, removing temporary stockpiles as soon as possible, and properly maintaining structures and fill. A wetland delineation would be performed to identify the types and specific locations of wetlands along the proposed trail route and to quantify the anticipated impacts upon further design development of the trail. The construction of trail would involve vegetation clearing and ground disturbance in some areas. The proposed trail route would likely cross wetlands in numerous locations and have some unavoidable impacts on wetlands from fill, vegetation removal, and/or shading. Long-term adverse impacts on wetland vegetation could result from shading caused by the boardwalks. Where plausible, trail design would consider the use of bridges or elevated boardwalks to span wetland areas. In these locations, elevating the trail over wetlands would minimize direct impacts by allowing for some vegetation, sunlight, and hydrology to extend under the raised trail, and limiting direct impacts on sensitive wetland soils to the footprints of support posts. In addition, some continual adverse impacts on wetland vegetation could result from shading caused by the boardwalks. Given the remote nature of the area, the frequent maintenance needs of an elevated boardwalk, and the steep slopes of the anticipated trail corridor, it is likely boardwalk would not be practicable for all portions of the trail and the trail could not be routed to avoid wetlands. Where wetlands are unavoidable and boardwalk is impractical, the park would consider using fill or other elevated trail methods. The use of fill in some wetland areas would cover wetland vegetation and alter wetland function, resulting in an adverse effect. The use of design elements, such as culverts, to maintain hydrologic connectivity on either side of the trail, would help to minimize impacts on overall wetland function. During design, efforts would be made to minimize concentrated (channelized) hydrologic flow and mimic natural sheetflow conditions where possible. Remaining adjacent wetlands would continue to filter and convey precipitation and provide an important complex of habitats. Upon further design of the trail, a wetland delineation would be needed to further quantify impacts on wetlands. Construction of the trail would result in some unavoidable impacts on wetlands; however, the park contains over 22,000 acres of wetland habitat and therefore, these impacts are not anticipated to alter habitat availability and/or overall wetland function within the park setting.

Removal of trees greater than 18 inches in diameter would be avoided to the extent possible to avoid impacts on natural resources. Following construction of the trail, disturbed areas would be allowed to recover naturally or revegetated with native plant species. Wetlands would continue to filter and convey precipitation and provide an important complex of habitats. Where plausible, the installation of elevated trail and boardwalks would provide visitor access to areas without trampling wetlands and wetland vegetation and would reduce further development of social trails in these areas.

Upon further design of the trail, a wetland delineation would be needed to further quantify impacts on wetlands. It is anticipated that impacts on wetlands would likely exceed 0.1 acres thereby requiring compensation and a wetlands statement of findings in accordance with Executive Order 11990 (NPS 2016).

Refining park zoning is not anticipated to affect wetlands.

Cumulative Impacts

Past and present actions that impact wetlands include the creation and use of social trails, development, and construction and recreational activities that have led to the spread and establishment of invasive species.

As previously described, no new impacts would occur under the no action alternative, and therefore, no cumulative impacts would occur to wetlands.

The proposed alternative would affect wetlands through fill, vegetation removal, and/or shading. When these effects are combined with other past, present, and reasonably foreseeable future impacts, the total cumulative impact on wetlands would continue to be adverse. The incremental impacts of the alternatives described in this plan would contribute slightly to, but would not substantially change, the impacts on wetlands that are already occurring.

Comparative Conclusion of Alternatives

Under Alternative A, no changes would occur to wetlands.

Under Alternative B, development of approximately 10 miles of trail from the Falls Creek area to Excursion Ridge would result in the placement of support posts and/or fill and vegetation clearing in some wetland locations, with a subsequent increase in the potential for establishment and expansion of invasive plants in the affected wetland communities along the proposed trail corridor. Mitigation measures (appendix E of this EA) would be used to minimize both direct and indirect impacts on wetlands. Upon further design of the trail, a wetland delineation would allow for further quantification of impacts on wetlands. It is anticipated that impacts would likely exceed 0.1 acres thereby requiring compensation and a wetlands statement of findings prior to trail development (NPS 2016).

SOLITUDE OR PRIMITIVE AND UNCONFINED RECREATION QUALITY OF WILDERNESS CHARACTER

Affected Environment

The park has one of the largest wilderness areas in the country, containing 2.6 million acres of marine and terrestrial designated Wilderness environments. The area is managed to protect the natural, untrammeled, undeveloped, scientific, and cultural characteristics of wilderness and preserve its specific qualities, as described in the *Glacier Bay Wilderness Character Narrative* (NPS 2015b).

Wilderness character is a holistic concept, and managers have identified five distinct yet interrelated qualities of wilderness character that are derived from the language in the

Wilderness Act. This section focuses on the quality of solitude or a primitive and unconfined type of recreation. Solitude is defined as “the state of being alone or remote from habitation or the sights and sounds of other people; the experience of being in an unfrequented or secluded place” (NPS *Wilderness Stewardship Reference Manual* 41). Primitive and unconfined recreation in eligible wilderness means the area is “relatively free from the encumbrances of modern society [for] the experience of the benefits and inspiration derived from self-reliance, self-discovery, physical and mental challenge, and freedom from societal obligations” (Landres et al. 2015). This wilderness quality is degraded by settings that reduce these opportunities such as encounters with other wilderness visitors, signs of modern civilization in or adjacent to the wilderness area, facilities provided by the agency or created by users that reduce the self-reliance of people, and management restrictions on visitor behavior.

Most visitors to the park (approximately 93%) experience the park from the deck of a cruise ship or vessel. Still, Glacier Bay social science research results indicate that visitor experience of “wildness” does not require setting foot in designated Wilderness (Furr et al. 2021; Swanson and Vande Kamp 2011), and experiencing the park from the water provides a window into the vast terrestrial designated Wilderness. For visitors who disembark from a vessel or aircraft, the vast and remote wilderness provides ample opportunities to find solitude from groups and other visitors. While drop-off and pick-up locations from tour and/or charter vessels to the wilderness and backcountry may result in concentrated use and diminished opportunities for solitude in those areas, visitors are able to hike or paddle to more remote areas. Aside from other people, the sights and sounds of administrative, commercial, and private vessels and aircraft collectively comprise the most perceptible and recurrent impact on a visitor’s opportunity for solitude. However, there are many times when only natural sounds are audible, particularly further away from areas of high motorized watercraft use (NPS 2012). Most of the wilderness cannot be seen from the Glacier Bay waters, and here is where remoteness from the sights and sounds of motorized vessels on the waterways provides tremendous opportunities for solitude.

The primitive aspect of this quality of wilderness character considers any facilities that might decrease self-reliant recreation. The park has 7.2 miles of trails within designated Wilderness: the Bartlett River Trail, the Bartlett Lake Trail, and the Bartlett Lake/Towers Trail. Aside from trails, other recreational facilities in wilderness include wayfinding and navigational markers on land.

The unconfined aspect of this quality of wilderness character considers the impact of any regulations or restrictions on visitors’ ability to freely explore. The park currently requires a free permit for backcountry camping in Glacier Bay during the peak season. The permit system is used for data collection efforts to help park staff better understand trends in backcountry and wilderness use and to inform long-term decision-making. Still, in Glacier Bay Wilderness, there are no requirements to reserve a specific campsite and camp in a certain area. The rough and rugged terrain, paired with changing tides, storms, and wildlife, often dictates where backcountry and wilderness users can find and set up camp. To preserve solitude, group size limits are established at 12 people per group, including commercial guides. Although backcountry and wilderness visitors typically need to reserve

transportation to their destination, once they disembark from an aircraft, step foot on the shoreline, or begin their paddle in a kayak, they can kayak or hike wherever they choose. Some regulations exist, such as campfire location, human waste disposal, closures to human-use to protect resources, and seasonal closures of wilderness waters to motorized vessel use.

Trends

Past and ongoing actions that impact opportunities for solitude and primitive or unconfined recreation include visitor use management restrictions (e.g., stay limits), use of boats, planes, and helicopters for administrative purposes, and the construction of trails in wilderness areas near the frontcountry. Reasonably foreseeable future actions from the 2019 frontcountry management plan that will impact opportunities for solitude and primitive or unconfined recreation include an additional 4.4 miles of new trail along the Bartlett River and to Point Gustavus that will be built in wilderness (NPS 2019b). The Point Gustavus Route will include minimalist, fully naturalized modifications (i.e., rock placement and spot planking) to help users navigate tides, water crossings, and sensitive habitat (NPS 2019b). Reasonably foreseeable future actions that may affect opportunities for solitude include actions in the marine management plan (2023) that create sound. The marine management plan is anticipated to result in short-term, adverse impacts on the airborne acoustic environment resulting from the installation of floating cabins/seasonally moored vessels, communication upgrades, and oceanographic monitoring stations, lasting only as long as construction occurs over the course of approximately 7–14 days for each site. The installation of these floating cabins, communication upgrades, and monitoring stations will involve the use of motorized vessels and possibly float planes and will affect the airborne acoustic environment through increased noise, although impacts will be temporary, limited in nature, and occurring only during installation or maintenance activities. Given the ambient noise from the ocean environment and the intermittent and spatially localized nature of these actions, impacts on the airborne acoustic environment are unlikely to impact opportunities for solitude in a meaningful way.

Helicopter flights associated with communication upgrades in the marine management plan will introduce noise into remote areas of the park, which could affect opportunities for solitude, although most of the helicopter noise will be of short duration and occur intermittently (up to 10 landings per site for installation and two annual landings per site for maintenance). Helicopter noise will be most audible and disruptive as the helicopter flies over or hovers at low elevation near project sites. Highest-intensity impacts from helicopters would be temporary, ceasing once operations have concluded, likely after an estimated one day for each site with intermittent intensity of sound lasting minutes, followed by similar but infrequent noise impacts from any subsequent flights that may be necessary for maintenance of equipment. Generally, project noise will not dramatically change current conditions, and it will be intermittent and temporary in remote areas of the park, ending once project activities are complete. The marine management plan also extends the nonmotorized waters season for Muir Inlet and Wachusett Inlet to align with designated Wilderness water nonmotorized dates and prohibits tour vessels and cruise ships from entering East Arm, thus preserving opportunities for solitude in this location of the park. These reasonably

foreseeable future actions will contribute both beneficial and adverse impacts on an overall adverse trend in wilderness character.

Environmental Consequences

Alternative A: No Action

Alternative A would be the continuation of current management, as described in the affected environment section. No new actions would occur, and thus opportunities for solitude or primitive and unconfined recreation in wilderness would have no new effects under this alternative.

Alternative B: Action Alternative – NPS Preliminary Proposed Action

The proposed and refined zoning of the 1984 GMP Wilderness Lands Zone and Wilderness Waters Zone is not expected to impact this wilderness quality; however, specific actions within the zones are analyzed in this section.

The development of the proposed Excursion Ridge trail would result in approximately 10 miles of new trail within designated Wilderness. Trails adversely impact the opportunity for unconfined recreation by changing both the required skill level of the visitor and how the visitor interacts with wilderness. Having a formalized trail would have an adverse impact on the visitors who prefer untrailed access to Excursion Ridge. In addition, the proposed Excursion Ridge trail would impact a very small fraction of the greater Glacier Bay Wilderness, and visitors could continue to hike off-trail across the 1.6 million acres of wilderness not covered by glaciers. Therefore, the proposed action would not meaningfully impact the opportunities for primitive recreation found within this wilderness area overall.

Under Alternative B, a backcountry camping permit would be required on a year-round basis instead of only between May 1 and September 30 for all commercial and noncommercial camping. This permit would also apply within all the park's backcountry, not just shorelines accessed by the Glacier Bay Zone as is currently the case. These changes would have adverse impacts on visitors' opportunities for unconfined recreation, as the geographic and temporal scope of the requirement would be expanded. Still, impacts on unconfined recreation would not be significant because a permit is already required to camp in the backcountry accessed from the Glacier Bay Zone during the peak season of use, which encapsulates over 95% of people camping in the backcountry. Additionally, the system would not require visitors to make an advanced reservation to camp in the backcountry but simply require that visitors register their anticipated route and trip duration (for data collection purposes) and attend the visitor orientation. Once a permit is acquired, wilderness campers would still have the freedom to choose their own campsites and allow their trip to unfold as weather, whim, and tides dictate.

Constructing a new trail in wilderness would likely lead to an increase in the number of visitors recreating on Excursion Ridge. This increased use would likely lead to increased visitor encounters along the trail and increased sounds of human activity, reducing opportunities for solitude in this area of wilderness. However, visitors could still find solitude by choosing alternate, off-trail routes to access Excursion Ridge. In addition, visitors could

continue to disperse across the 1.6 million acres of untrailed terrestrial wilderness not covered by glaciers. Most trail work in wilderness would be conducted with hand tools. However, some trail construction in wilderness would likely require use of helicopters for material delivery and may involve some use of motorized equipment such as small hand tools, chainsaws, rock drills, and generators. Use of this equipment would result in adverse impacts on opportunities for solitude and quiet for the duration of the use of those tools. The trail construction would likely take place over the course of two or three summer seasons. However, use of this equipment would be subject to minimum requirements analysis and used in compliance with the park's wilderness requirements.

The installation and maintenance of one VHF radio and up to 10 AIS stations at new sites in designated Wilderness would have adverse impacts on opportunities for solitude due to the presence of human installations and the use of helicopters to deliver materials, as up to 10 helicopter landings per site may be required for installation and up to two annual landings for maintenance purposes per site. However, due to the remote location and inaccessibility of most of the VHF radio or AIS sites, the silent operation of most of the equipment and the limited time during which personnel would be actively working at each site, it is expected that a small percentage of park visitors would be aware of them, as the towers would only be visible to visitors that are within the viewshed and in proximity. Use of helicopters would be subject to minimum requirements analysis and used in compliance with the park's wilderness requirements.

Further data collection through wilderness character monitoring and the year-round backcountry camping permit would inform park management of when opportunities for solitude are being threatened due to congested use at key destinations and inform future implementation of management progressions.

Cumulative Impacts

As previously described, no new impacts would occur under Alternative A, and thus no cumulative impacts on opportunities for solitude or primitive and unconfined recreation would occur.

Past, present, and future actions that impact opportunities for solitude and primitive or unconfined recreation include visitor use management restrictions (e.g., regulations on food storage, stay limits), use of helicopters for administrative purposes, and the construction of trails in wilderness areas near the frontcountry.

Alternative B would cause adverse impacts on opportunities for solitude or primitive and unconfined recreation through the construction of a new trail, installation and maintenance of VHF radio and AIS sites, and the implementation of a year-round permit requirement for all people camping in the park's backcountry. When these effects are combined with other past, present, and reasonably foreseeable future actions, the cumulative impacts on wilderness character would continue to be adverse. The incremental impacts of the action alternative would contribute to, but not substantially change, the impacts that are already occurring.

Comparative Conclusion of the Alternatives

Under Alternative A, no notable changes to the solitude or primitive and unconfined recreation quality of wilderness character would occur.

Under Alternative B, the installation of one VHF radio and up to 10 AIS stations and development of approximately 10 miles of trail from the Falls Creek area to Excursion Ridge would decrease opportunities for solitude or primitive and unconfined recreation in the vicinity of the trail and new communications infrastructure, and requiring backcountry camping permits year-round would decrease opportunities for primitive recreation. Still, wilderness users could disperse across the other 2.6 million acres of wilderness and would still have the freedom to choose their own campsites and allow their trip to unfold as weather, whim, and tides dictate.

UNDEVELOPED QUALITY OF WILDERNESS CHARACTER

Affected Environment

This section focuses on the undeveloped quality of wilderness character. When the undeveloped quality is preserved, wilderness retains its primeval character and influence and is essentially without permanent improvements or the sights and sounds of modern human occupation (Landres et al. 2015). This wilderness character quality is degraded by temporary roads; use of motor vehicles, motorized equipment, mechanical transport, or motorized vessels; landing of aircraft; and installations or structures. Use of aircraft, snowmachines, and motorboats in Alaskan wilderness areas is allowed under the Alaska National Interest Lands Conservation Act of 1980. Still, these uses affect the undeveloped quality of wilderness character when they occur in wilderness.

Unlike many wilderness areas that are islands of wilderness surrounded by development, Glacier Bay Wilderness is a wild place within the context of equally wild and sometimes wilder surroundings. Human developments here are minimal, and views of the vast expanse of ocean or snowcapped mountain ranges are suitably humbling. Some developments do detract from the primeval influence of the wilderness. Communications installations, navigation aids and markers, and research installations, are scattered throughout wilderness. Limited numbers of historic structures created by explorers, homesteaders, prospectors, fox farmers, and hunters are present in designated Wilderness. While these historic structures do represent developments that impact the undeveloped quality, they also contribute to the overall wilderness character.

Administrative use of motor vessels, motorized equipment, mechanical transport, and landing of aircraft in wilderness occurs when those tools are the minimum necessary to administer the area as wilderness. In Glacier Bay, most designated Wilderness waters have seasonal restrictions on motorized boat use.

Trends

Past and ongoing actions that impact the undeveloped quality of wilderness character include the placement of installations and structures in wilderness for research, communications, or

other purposes, as well as the ongoing use of aircraft landings, motor vehicles, motorized equipment, mechanical transport and/or motorized vessels in wilderness for administrative purposes and the use of aircraft and motorboats in wilderness for traditional activities. Reasonably foreseeable future actions from the 2019 frontcountry management plan that will impact the undeveloped quality of wilderness character include an additional 4.4 miles of new trail along the Bartlett River and to Point Gustavus that will be built in wilderness. The Point Gustavus Route will include minimalist, fully naturalized modifications (i.e., rock placement and spot planking) to help users navigate tides, water crossings, and sensitive habitat (NPS 2019b). Reasonably foreseeable future actions from the marine management plan include the co-location of communication infrastructure within wilderness. Installation and maintenance would occur by foot, boat, float plane, or kayak; however, in areas that are too dangerous or remote, a helicopter may be used. Helicopter use would adversely impact the undeveloped quality. These reasonably foreseeable future actions will contribute to an overall adverse trend in wilderness character.

Environmental Consequences

Alternative A: No Action

Alternative A would be the continuation of current management, as described in the affected environment section. No new actions would occur, and thus there would be no new effects to the undeveloped quality of wilderness character under this alternative.

Alternative B: Action Alternative – NPS Preliminary Proposed Action

The proposed and refined zoning of the 1984 GMP Wilderness Lands Zone and Wilderness Waters Zone is not expected to impact the undeveloped quality of wilderness character; however, specific actions within the zones are analyzed below.

This plan includes proposals for approximately 10 miles of new trail construction in designated Wilderness that may include sections of boardwalk or natural planking. The construction of new trail in the 5,000 acres of wilderness where the Excursion Ridge trail is proposed would represent a noticeable change to the undeveloped quality of that area; however, the scale of this change to the undeveloped quality of wilderness is small compared to the context of the 2.6 million-acre Glacier Bay Wilderness. All boardwalks would be designed to be movable or removable, which means these impacts on this quality of wilderness may not be permanent (and could be removed at any time). Most trail work in wilderness would be conducted with hand tools. Trail construction would require the intensive use of helicopters for material delivery over short durations and may involve some use of motorized equipment such as small hand tools, chainsaws, rock drills, and generators. Use of this equipment would result in adverse impacts on the undeveloped quality of wilderness character for the duration of the use of those tools. However, use of this equipment would be subject to minimum requirements analysis and is expected to be infrequent, limited to short durations, and used in compliance with the park's wilderness requirements.

Proposed communication upgrades include the installation and maintenance of one VHF radio repeater and up to 10 AIS stations at new sites in designated Wilderness for AIS receiver

stations and VHF radio infrastructure, which would have adverse impacts on wilderness. Eleven new sites is an upper limit over the life of the backcountry and wilderness management plan; fewer than 5 installations in the next decade is a more likely scenario. At each new location, a mast or tower and antenna with mounted hardware would be installed and would include a weatherproof battery, small equipment shed, and a concrete pad. The total footprint for the installation would be up to 100 square feet at a height of up to 40 feet. The 11 installations proposed under Alternative B would directly impact a small fraction of the greater Glacier Bay Wilderness. Helicopter deliveries to transport equipment to VHF radio and AIS transponder sites for installation and annual maintenance would also have adverse impacts on the undeveloped quality of wilderness as up to 10 helicopter landings per site may be required for installation and up to two annual landings for maintenance purposes per site. Use of helicopters would be subject to a future minimum requirements analysis and is expected to be infrequent, limited to short durations, and used in compliance with the park's wilderness requirements.

Administrative use of installations and landing of helicopter are prohibited under section 4c of the Wilderness Act unless they are determined to meet the minimum requirements for the administration of the area as wilderness or reflect an excepted use under the Alaska National Interest Lands Conservation Act of 1980. The first steps of the minimum requirement analysis conclude that these actions are necessary to meet the requirements of other legislations and to protect some elements of wilderness character. The second stage of the minimum requirements analysis (to identify the minimum activity needed) would be completed when final sites are identified and before the action is implemented.

Cumulative Impacts

As previously described, no new impacts would occur under Alternative A, and thus no cumulative impacts on opportunities for solitude or primitive and unconfined recreation would occur.

Past, present, and future actions that impact the undeveloped quality of wilderness character include the placement of installations and structures in wilderness for research, communications, or other purposes, as well as the ongoing use of aircraft landings, motor vehicles, motorized equipment, mechanical transport and/or motorized vessels in wilderness for administrative purposes and the use of aircraft and motorboats in wilderness for traditional activities.

Alternative B would cause a permanent adverse impact to the undeveloped quality through the construction of a new trail and installation of one VHF radio and up to 10 AIS stations, as well as temporary adverse impacts by using helicopters for material delivery and other motorized equipment for trail construction. When these effects are combined with other past, present, and reasonably foreseeable future actions, the cumulative impacts on wilderness character would continue to be adverse. The incremental impacts of the action alternative would contribute to, but not substantially change, the impacts that are already occurring to the undeveloped quality in the 2.6 million-acre Glacier Bay Wilderness.

Comparative Conclusion of the Alternatives

Under Alternative A, no notable changes to the undeveloped quality of wilderness character would occur. Under Alternative B, the construction of approximately 10 miles of trail from the Falls Creek area to Excursion Ridge and the installation of one VHF radio and up to 10 AIS stations would represent a new development in wilderness. In addition, use of helicopters for material delivery and motorized equipment for trail construction and installations and maintenance of VHF radio and AIS stations would result in adverse impacts on undeveloped quality of wilderness character for the duration of the use of those tools. Use of this equipment would be subject to a future minimum requirements analysis and is expected to be infrequent, limited to short durations, and used in compliance with the park's wilderness requirements. Alternative B would have an adverse impact on the undeveloped quality of wilderness character because installations are happening in a wilderness where no installations currently exist. Additionally, Alternative B would have adverse impacts on the undeveloped character of the areas where the trail, VHF radio, and AIS stations are proposed. However, the vast majority of wilderness would remain free from permanent developments.

FAIRWEATHER RANGE ETHNOGRAPHIC RESOURCES/TRADITIONAL CULTURAL PROPERTIES/CULTURAL LANDSCAPE

Affected Environment

Tsalxaan, Mt. Fairweather, and Yéik Yi Aaní, the Fairweather Range is eligible for listing as a Traditional Cultural Property. Mt. Fairweather, and the entire Fairweather Range, holds specific cultural significance to the Huna Tlingit, particularly the T'akdeintaan Clan, as the place of origin of many events that shaped Huna Tlingit history. The mountain is recognized as a sacred place that sheltered Tlingit ancestors during the Great Flood, guides vessels traversing the rough Outer Coast waters, served as the site of numerous shamanic initiations into the 20th century, is populated with living spiritual beings, and is spiritually visited by living Tlingit through ceremony. Living Huna Tlingit do not travel to or within the mountain range in person. The condition of this ethnographic resource contributes to the "Other Features of Value" quality of wilderness character.

Hoonah Indian Association and Yakutat Tlingit Tribe tribal members have expressed concern about mountaineering within the Fairweather Range. In response to these concerns, the National Park Service deferred a final decision regarding the authorization of commercial mountaineering until further conversations could be held with tribal governments. The National Park Service has not received a formal request from either the Hoonah Indian Association or Yakutat Tlingit Tribe to prohibit mountaineering, either private or commercial, within the Fairweather Range during this planning process, and there is no precedent department-wide in which sacred sites have been closed to mountaineering.

Trends

Ongoing actions that impact the ethnographic resources of the Fairweather Range include the presence of mountaineers and the use of aircraft to support mountaineering. Some Huna

Tlingit would view permitting commercial mountaineering as allowing profane action at a sacred site. The sound intrusions from aircraft have adverse impacts on the feeling and setting of the Fairweather Range and its sacred uses. There are no reasonably foreseeable future actions with the potential to impact the ethnographic resources of the Fairweather Range.

Environmental Consequences

Alternative A: No Action

Alternative A would continue current management, as described in the affected environment section. No new actions would occur, and thus there would be no new effects to the ethnographic resources and traditional cultural properties. Some impacts from permitted mountaineering would continue to affect an eligible Traditional Cultural Property and Cultural Landscape.

Alternative B: Action Alternative – NPS Preliminary Proposed Action

Actions under Alternative B that would impact the ethnographic resources of the Fairweather Range include the change from a case-by-case permitting of commercial mountaineering, to a maximum of six permitted commercial mountaineering trips per season. The increase in human presence in the Fairweather Range would have adverse impacts on the feeling and association of the sacredness of the range to the Tlingit. Tlingit do not access the mountain or the range except during shamanic initiations, the last of which occurred in the 1930s (although the mountain is visited spiritually during ceremony held elsewhere). By increasing the maximum number of permitted commercial mountaineering trips, there would be a corollary cumulative increase of adverse impacts on the ethnographic resources within the Fairweather Range. In addition to commercial mountaineering having adverse impacts on the ethnographic connection between the Fairweather Range and the Tlingit people, there is potential for additional impacts on the ethnographic resource by introducing more visitors to the range who may not be aware of the ethnographic importance of the range. While their presence itself may be considered profane, mountaineers may engage in other actions that could be considered disrespectful.

Cumulative Impacts

As previously described, no new impacts would occur under Alternative A, and thus no cumulative impacts on ethnographic resources within the Fairweather Range would occur.

Past, present, and future actions include the use of aircraft to support mountaineering that cause sound intrusions and have adverse impacts on the feeling and setting of the Fairweather Range and its sacred uses. Alternative B would cause adverse impacts on the feeling and sacredness of the Fairweather Range to the Tlingit through an increase in the number of permitted commercial mountaineering trips per season. When these impacts are combined with other past, present, and reasonably foreseeable future actions, the cumulative impacts on ethnographic resources within the Fairweather Range would continue to be adverse. The incremental impacts of the action alternative would contribute to, but not

substantially change, the impacts that are already occurring to ethnographic resources within the Fairweather Range.

Comparative Conclusion of the Alternatives

Under Alternative A, no notable changes would occur to the ethnographic resources of the Fairweather Range; small impacts on the ethnographic resource would continue. Under Alternative B, the change from a case-by-case permitting of commercial mountaineering to a maximum of six permitted commercial mountaineering trips per season would have adverse impacts on the feeling and sacredness of the Fairweather Range to the Tlingit.

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CHAPTER 4: COORDINATION AND CONSULTATION

The National Park Service consulted with various agencies, tribes, organizations, and interested persons in preparing this document. The process of consultation and coordination is an important component of this plan. This chapter summarizes the consultations related to this plan with federal and state agencies and tribes.

STATE HISTORIC PRESERVATION OFFICER

The park provided the Alaska State Historic Preservation Officer with a copy of the backcountry and wilderness management plan in July 2022 and invited participation in the planning process pursuant to section 106, as well as a broader consultation of the National Historic Preservation Act. The Alaska State Historic Preservation Office was provided with copies of the documents and has been invited to attend public meetings or to meet with park staff regarding the plan. Based on consultation with the Advisory Council on Historic Preservation and the Alaska State Historic Preservation Office per the National Historic Preservation Act, and with recommendations by the state historic preservation officer, this backcountry and wilderness management plan, including the planning vision and environmental, are currently not considered an undertaking under section 106. As specific actions or locations are refined, the National Park Service will conduct section 106 reviews to identify and evaluate the potential effects to historic properties and consult with the State Historic Preservation Officer, tribes, and other interested parties to avoid, minimize, or mitigate adverse effects before authorizing any final decisions. The park will keep the Alaska State Historic Preservation Office informed as the backcountry and wilderness plan progress and will provide copies of the document during a 30-day public review for comment.

STATE LANDS OFFICE

The proposed trail to Excursion Ridge would cross state lands (about 0.5 miles) and include a river crossing. The trail and associated bridge would be funded through federal allocations. Once final designs and crossing locations are identified, the park would apply for an easement for the trail between the road and the park boundary.

ASSOCIATED TRIBES

The planning effort has been informed by ongoing, informal, and formal government-to-government consultation with the Hoonah Indian Association and the Yakutat Tlingit Tribe, representing the original people and stewards of Glacier Bay. The draft plan was scoped with both tribes to ensure that it addressed longstanding tribal priorities and advanced challenging conversation and established a clear pathway for collaboratively resolving challenging issues. Aspects of the process included:

- Regular ongoing conversations with tribes, NPS tribal coordinator, and the park superintendent

- Advance copies of draft newsletters prior to 60-day public input periods in 2020 and 2021, and prior to a 30-day draft plan review in 2022, with an invitation for input.
- Pre-release tribal review of all language related to Homeland and other cultural issues.
- A planned in-person government to government meeting overlapping with a 30-day public review of the revised draft plan and EA (February 2023).
- The plan also features tribal ethnographic and Homeland content and incorporates Tlingit language to encourage readers to consider the concepts presented here through the world view of those who consider Glacier Bay National Park designated Wilderness as Homeland.

FUTURE CONSULTATION AND COMPLIANCE

The National Park Service will continue to consult with agencies, tribes, partners, stakeholders, and the public as actions identified in the backcountry and wilderness management plan advance toward more detailed design development and implementation stages. The park will complete any additional compliance and permitting requirements, including compliance with section 106 of the National Historic Preservation Act for project specific undertakings.

PUBLIC COMMENT

The park initiated public comment in February 2020 and held a public meeting in April 2020. That fall, the park provided a planning update newsletter summarizing the public comments received earlier in the spring. Another period of public comment was opened and lasted from November 2020 until January 2021. Another public comment period on a draft of the backcountry and wilderness management plan was anticipated to begin in January 2022, but this was delayed allowing for more robust tribal involvement. Public review of the draft plan began in July 2022 and ended in August 2022.

LIST OF TRIBES AND EXTERNAL CONSULTATION DURING PLAN DEVELOPMENT

During preparation of this backcountry and wilderness management plan, members of the planning team met and/or consulted with various entities.

Tribal Consultation

Hoonah Indian Association

Yakutat Tlingit Tribe

Alaska Native Land Claims Act Corporation Consultation for Actions Substantially Affecting Their Land, Water Areas, Resources, and Programs

Cook Inlet Region Inc. (Gustavus landowner)

Huna Totem Corporation

Sealaska Corporation

Gateway Community Interests

City of Gustavus

City of Hoonah

Gustavus Visitors Association

Travel Juneau

Advocacy Interests

Alaska Travel Industry Association

Friends of Glacier Bay

National Parks Conservation Association

The Wilderness Society

Commercial Partners

Park contract holders (various)

Agencies

Alaska Department of Fish and Game

Alaska Department of Natural Resources

Alaska National Interest Lands Conservation Act program

Alaska State Historic Preservation Office

National Oceanic and Atmospheric Administration – National Marine Fisheries Service

US Army Corps of Engineers

US Fish and Wildlife Service

Elected Officials

Lisa Murkowski, United States Senator

Dan Sullivan, United States Senator

Mary Peltola, United States Representative

Jesse Kiehl, Alaska State Representative

Sara Hannan, Alaska State Representative

Andi Story, Alaska State Representative



Glacier Bay National Park

Appendixes

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Appendix B: Extent Necessary Determination for Commercial Services
in the Glacier Bay Wilderness

Appendix C: Impact Topics Considered but Not Carried Forward for
Detailed Analysis

Appendix D: Actions and Strategies Considered but Dismissed

Appendix E: Best Management Practices and Mitigation Measures

Appendix F: Alaska National Interest Lands Conservation Act Section
810 Analysis Summary Evaluation and Findings

Appendix G: Related Planning and Legislative Context

Appendix H: Cultural Resource Studies

Appendix I: Planning Team

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APPENDIX B: EXTENT NECESSARY DETERMINATION FOR COMMERCIAL SERVICES IN THE GLACIER BAY WILDERNESS

INTRODUCTION

The purpose of this appendix is to apply law and policy to analyze the appropriate role of specific guided commercial services in Glacier Bay National Park designated Wilderness. This analysis, known as an extent necessary determination (determination), specifies:

- where commercial service providers have an important role in enabling wilderness-dependent experiences, and
- conversely, where self-guided opportunities preserve the characteristic qualities of the wilderness visitor experience that emphasize solitude, challenge, self-reliance, and opportunities for discovery and exploration in untracked and remote places.

The 1964 Wilderness Act, section 4(c), prohibits commercial services in designated Wilderness, except commercial services under section 4(d)(6) that:

- are proper for realizing the recreational or wilderness purposes of the area
- are compatible with the designated Wilderness (including unit purposes, law, and policy)
- necessitate commercial support (but only to the degree required)

This appendix is a determination to analyze Wilderness Act 4(d)(6) appropriate guided opportunities for the public use and enjoyment of Glacier Bay designated Wilderness. Following this introduction and key background, the determination is presented using a four-part format prescribed by policy and law.

In its application, this appendix will provide analyses that inform management decisions about commercial services consistent with backcountry and wilderness management plan objectives and prescribed zoning, while recognizing the following limitations and caveats:

- As conditions change and new information becomes available, the National Park Service reserves the right to reevaluate any aspect of these analyses, and on that basis, to adjust commercial services.
- A determination of need does not imply that a commercial activity will be authorized for all locations.

- This document does not fully address the effects (e.g., social, physical) of existing and proposed commercial uses, and decisions regarding the appropriate types and levels of commercial use in particular locations will be accomplished in compliance, or is already covered under existing compliance, with the National Environmental Policy Act.
- Guided activities will only be authorized to the extent consistent with the Wilderness Act's direction to preserve wilderness character.

BACKGROUND ESSENTIAL TO THE ANALYSIS

The Wilderness Act of 1964 (16 USC 1131-1136; PL 88-577) secured for our nation an enduring resource of wilderness. Wilderness areas included in the national wilderness preservation system are to be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness and to ensure that the wilderness character of these areas is preserved.

To achieve these goals, the Wilderness Act (the act) includes a series of prohibitions related to particular activities in its prohibition of certain uses section (section 4 [c]). The act has absolute prohibitions on commercial enterprise and permanent roads, and also general prohibitions, with qualified exceptions on temporary roads, use of motor vehicles, motorized equipment and motorboats, landing of aircraft, mechanical transport, and structures and installations. With regard to commercial services in wilderness, section 4(d)(5) states that "Commercial services may be performed within the wilderness areas designated by this Act to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas." The "purposes" referred to in section 4(d)(5) are those enumerated in section 4(b), which states that "... wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use." These purposes are rarely, if ever, discrete; that is, a recreational activity would commonly involve scenic or educational pursuits or even both.

In addition to the Wilderness Act, the National Park Service's management of wilderness areas is guided by NPS *Management Policies 2006* (section 6.4.4) and Director's Order 41: *Wilderness Stewardship*, section 7.3. The management policies state that commercial services, such as guiding, "... contribute to public education and visitor enjoyment of wilderness values or provide opportunities for primitive and unconfined types of recreation may be authorized if they meet the 'necessary and appropriate' tests of the National Park Service Concessions Management Improvement Act of 1998 and section 4(d)(5) of the Wilderness Act..., and if they are consistent with the wilderness management objectives contained in the park's wilderness management plan, including the application of the minimum requirement concept." The application of the "minimum requirement" concept to commercial services is reemphasized in Director's Order 41, which also provides that allocations between commercial and noncommercial uses should be subject to public comment through a public planning process.

Necessary and Appropriate Criteria for Commercial Services help parks determine which commercial visitor services will enhance the visitor experience without negatively

impacting the park's resources or its ability to carry out its mission. They allow a park to identify which services may be considered for a commercial use authorization (CUA) or a concession contract. The determination that a service is necessary and appropriate may change over time. An operation, once considered necessary for visitor enjoyment, can become redundant because of the availability of similar out-of-park services. Likewise, an operation once considered appropriate might have unintended impacts on park resources and/or achieving desired conditions. Evaluating commercial services through the lens of necessary and appropriate criteria is the first step in the extent necessary determination process, which is an additional filter for evaluating commercial services per the Wilderness Act of 1964.

Appropriate Criteria

Appropriate criteria help to answer the question, “Can the park authorize this service without compromising the reason it is a unit of the national park system?” These criteria provide insight into the critical components of the park and visitor service, while also describing the potential negative impacts of commercial services the park must prevent. All commercial services—whether a commercial use authorization or concession contract—must meet *all* appropriate criteria to operate in the park. Conversely, a park unit is not required to add a commercial visitor service if that service meets the appropriate criteria.

Appropriate criteria

- are consistent with the park purpose and significance
- are consistent with laws, regulations, and policies
- do not compromise public health and safety
- do not cause unacceptable impacts on park resources or values
- meet the desired conditions of the backcountry and wilderness management plan and other relevant park planning documents, and do not create unacceptable impacts on the fundamental resources and values of the park that are unable to be mitigated.
- do not unduly conflict with other park uses and activities
- do not exclude the public from participating in limited recreational opportunities

Necessary Criteria

Necessary criteria help to answer the question, “Why is this service important for the park?” These criteria describe how a commercial service could enhance the visitor experience and further the goals and mission of the park. Necessary criteria are unique to NPS concession contracts: while commercial use authorizations do not need to meet any necessary criteria, concession contracts must meet *at least one* necessary criterion to operate in the park.

Necessary criteria:

- contribute to visitor understanding and appreciation of a park's purpose and significance
- enhance visitor experiences consistent with park purpose, significance, and the desired conditions of the park's fundamental resources and values
- assist the National Park Service in managing visitor use and educating park visitors
- provide an essential service or facility not available within a reasonable distance from the park

Relationship to the 1984 General Management Plan

The 1984 General Management Plan states that for backcountry use by individual visitors, “commercially guided trips would be needed for only about 20 percent of total use” and that “the use of commercial guides [would be] encouraged for less accessible areas” (page 70). The backcountry wilderness management plan, through the extent necessary determination process, does not change this allocation but rather refines and defines by use type and identifies the extent to which each of the commercial activities are necessary to achieve the purposes of Glacier Bay Wilderness.

Relationship to the Backcountry and Wilderness Management Plan

The extent necessary determination was prepared in conjunction with the backcountry and wilderness management plan (the plan) using an interdisciplinary approach that included wilderness managers, commercial services staff, and resource and visitor use specialists. The scope of this determination aligns with the scope of the backcountry and wilderness management plan, meaning it focuses only on backcountry and designated Wilderness lands and waters within Glacier Bay National Park and does not include Glacier Bay Preserve or Alsek River rafting activities. Through the process of preparing this determination, the National Park Service considered both the potential short-term and long-term effects of commercial services activities within the park's wilderness.

The determination is an integral component of the backcountry and wilderness management plan, as commercial services provide various opportunities for visitors to the park to navigate to and explore wilderness and backcountry areas of the park. The extent necessary determination for commercial services in the Glacier Bay Wilderness is a process that used key elements of wilderness character, desired conditions for these elements, and analyzed impacts on determine the overall amount of use that is appropriate in wilderness. Finally, this analysis determined the proportion of this use that may be supported by commercial visitor services, while ensuring the preservation of wilderness character.

As with other aspects of visitor use management planning, the strategies for the backcountry and wilderness management plan for Glacier Bay National Park preserve wilderness character, as required by the Wilderness Act, while offering a reasonable range of choices about the future of the wilderness and will be analyzed in a subsequent document as required by the National Environmental Policy Act.

Relationship to the Marine Management Plan

The marine management plan outlines strategies and provides broad guidance for the management of specific marine areas in the park. The plan defines desired conditions, zoning, and adaptive management strategies that provide for the protection of natural and cultural resources and values to support high-quality visitor experiences aligned with park purposes and values. The plan sets a vision for all motorized and nonmotorized vessels (e.g., cruise ships, tour vessels, charter vessels, private vessels, administrative use vessels) that may enter or travel through the park. In addition, the National Park Service is updating some elements of the vessel quota and operating requirements framework from 2003. The marine management plan is accompanied by an environmental assessment (EA) that analyzes four alternatives for the management of most marine areas at the park. The EA includes an analysis of impacts resulting from the range of alternatives on key park resources.

PURPOSES FOR WHICH THE GLACIER BAY WILDERNESS WAS ESTABLISHED

Presidential Proclamation 1733

Glacier Bay National Monument (now included in the national park) was established in 1925 by presidential proclamation. The purpose of the monument was to preserve an area significant for:

- "... a number of tidewater glaciers of the first rank in a magnificent setting of lofty peaks... and more accessible to ordinary travel than other similar regions of Alaska."
- "... a great variety of forest covering consisting of mature areas, bodies of youthful trees which have become established since the retreat of the ice which should be preserved in absolutely natural condition. . . "
- "... a unique opportunity for the scientific study of glacier behavior and of resulting movements and developments of flora and fauna. . . "
- "... historic interest having been visited by explorers and scientists since the early voyages of Vancouver in 1794, who have left valuable records of such visits and explorations."

Alaska National Interest Lands Conservation Act (ANILCA)

The Glacier Bay Wilderness was established for recreational and other purposes by the passage of the Alaska National Interest Lands Conservation Act of 1980. The Alaska National Interest Lands Conservation Act provides special provisions, such as motorized access, which is not allowed in wilderness areas elsewhere in the wilderness preservation system; however, the overarching mandate of the 1964 Wilderness Act—to preserve wilderness character—remains. Section 101 of ANILCA describes the primary purposes for Alaska conservation areas, and section 202 describes the expansion and redesignation of Glacier Bay National Monument. ANILCA section 203 provides for lands, waters, and interests therein withdrawn or reserved for the former Glacier Bay National Monument to be incorporated within and made a part of Glacier Bay National Park subject to valid existing rights:

Section 101:

- (a) *“In order to preserve for the benefit, use, education, and inspiration of present and future generations certain lands and waters in the State of Alaska that contain nationally significant natural, scenic, historic, archeological, geological, scientific, wilderness, cultural, recreational, and wildlife values, and units described in the following titles are hereby established.*
- (b) *It is the intent of Congress in this Act to preserve unrivaled scenic and geological values associated with natural landscapes; to provide for the maintenance of sound populations of, and habitat for, wildlife species of inestimable value to the citizens of Alaska and the Nation, including those species dependent on vast relatively undeveloped areas; to preserve in their natural state extensive unaltered arctic tundra, boreal forest, and coastal rainforest ecosystems; to protect the resources related to subsistence needs; to protect and preserve historic and archeological sites, rivers, and lands, and to preserve wilderness resource values and related recreational opportunities including but not limited to hiking, canoeing, fishing, and sport hunting, within large arctic and subarctic wildlands and on free flowing rivers; and to maintain opportunities for scientific research and undisturbed ecosystems.”*

Section 202:

“Glacier Bay National Monument, by the addition of an area containing approximately five hundred and twenty-three thousand acres of Federal land. Approximately fifty-seven thousand acres of additional public land is hereby established as Glacier Bay National Preserve, both as generically depicted on map numbered GLBA-90,004, and dated October 1978; furthermore, the monument is hereby redesignated as “Glacier Bay National Park.” The monument addition and preserve shall be managed for the following purposes, among others: To protect a segment of the Alsek River, fish and wildlife habitats and migration routes, and a portion of the Fairweather Range including the northwest slope of Mount Fairweather. Lands, waters, and interests therein within the boundary of the park and preserve which were within the boundary of any national forest are hereby excluded from such national forest and the boundary of such national forest is hereby revised accordingly.”

In addition to terrestrial areas, ANILCA also designated some of the marine waters of the park as wilderness. An internal NPS planning process also identified eligible wilderness in the waters of the East Arm of Glacier Bay and Alsek Lake. In accordance with NPS *Management Policies 2006*, these eligible areas are to be managed in a manner that will not “diminish the wilderness eligibility of an area possessing wilderness characteristics,” and “management decisions will be made in expectation of eventual wilderness designation” (6.3.1). Title 11 of ANILCA provides for public use of motor vessels in some of these waters but does not guarantee motorized access for commercial or other administrative uses; the National Park Service has discretion in regulating commercial and administrative activities to ensure their use complies with the Wilderness Act. Furthermore, ANILCA provisions for participation in

recreational activities within the park does not guarantee that the activity may also be offered through a commercial operator.

EXTENT NECESSARY DETERMINATION FOR COMMERCIAL SERVICES IN WILDERNESS

Part I: Activities That Are Proper for Realizing the Recreational or Other Purposes of Wilderness

For a commercial service to meet the extent necessary test to occur in designated Wilderness, the service or activity must be determined as proper for realizing designated Wilderness purposes based on the Wilderness Act of 1964. Any activity that occurs in designated Wilderness must first be of a type that does not violate the prohibitions of section 4(c) on the use of motor vehicles, motorized equipment or motorboats, the landing of aircraft, other forms of mechanical transport (except in Alaska as modified by ANILCA), and no structure or installation of structures. National Park Service *Management Policies 2006* 6.4.3 states that recreational uses in wilderness will be of a nature that

- enables the areas to retain their primeval character and influence;
- protects and preserves natural conditions;
- leaves the imprint of man's work substantially unnoticeable;
- provides outstanding opportunities for solitude or primitive and unconfined types of recreation; and
- preserves wilderness in an unimpaired condition.

Section 4(d)(6) of the Wilderness Act authorizes commercial services that are proper for realizing wilderness purposes. A determination on whether an activity is proper or appropriate for realizing a wilderness purpose is best informed by considering the following statements:

- Is the activity consistent with laws, policies, and regulations?
- Is the activity consistent with the purpose and significance of the park?
- Does the activity impact park resources or values?
- Does the activity fulfill one of the purposes of wilderness (recreational, scenic, scientific, educational, conservation, or historic)?
- Is the activity compatible with desired conditions for wilderness character?

In addition, the backcountry and wilderness management plan has established goals, desired conditions, and objectives for the future management of Glacier Bay designated Wilderness. The plan seeks to provide opportunities for and encourage public use and enjoyment of wilderness in accordance with the Wilderness Act and other laws and policies. This

determination identifies those activities as proper for realizing the recreational or other purposes of wilderness should contribute to achieving and maintaining desired conditions.

For the zone descriptions and associated desired conditions of Glacier Bay designated Wilderness, please refer to “Chapter 2: General Management Direction.” Desired conditions within designated Wilderness parallel those stated in the Wilderness Act as it defines the qualities of wilderness character. Refer to *Keeping it Wild 2: An Updated Interagency Strategy to Monitor Trends in Wilderness Character Across the National Wilderness Preservation System* (USFS 2015) for definitions of wilderness character qualities.

The following activities are analyzed in this determination and will complement stand-alone extent necessary determinations for other commercial activities in Glacier Bay National Park designated Wilderness (including tour vessel, charter vessel, day use kayak, kayak overnight, and Alsek rafting and boating):

- A. Guided mountaineering (year-round)
- B. Guided on-snow travel
- C. Guided watercraft (human-powered only)
- D. Guided day-hiking
- E. Guided overnight use (camping, hiking/backpacking)
- F. Guided air transport landings
- G. Guided sportfishing (freshwater)
- H. Guided sportfishing (marine)

Two additional activities are analyzed in part I of the determination but dismissed from further analysis, recognizing that these are managed under other authorities:

- commercial and guided filming
- commercial and guided photography

Part I begins with a description of the activity and current public use (not specific to commercial services) and then analyzes whether the activity is proper for realizing wilderness purposes.

A. Mountaineering (Year-Round)

Mountaineering consists of summiting a mountain, often by climbing, using specialized equipment such as ropes, harnesses, and carabiners to assist the climb. Mountaineering within the Fairweather Range typically occurs in April and May, when conditions are most ideal for summiting, also creating a greater likelihood of overlapping parties seeking to summit simultaneously. In addition to the Fairweather Range, mountaineering occurs in other locations throughout the park, including Rendu Glacier and the Chilkat Range. Popularity of mountaineering within the park has decreased due to plant succession, glacial retreat, emerging landscapes, and changing recreational uses.

Specific to commercial mountaineering, post-ANILCA planning to implement Glacier Bay designated Wilderness identified a unique opportunity to provide one of the few noncommercial climbing opportunities in North America within designated Wilderness. As a result, it determined Mount Fairweather would be “closed to commercial mountaineering.” In 2002, following requests from commercial operators to provide mountaineer services, the superintendent allowed minimal guided mountaineering for the 2003 season to grant park management staff time to gather information related to visitor demand for this activity and potential impacts on the ethnographic resources of the Fairweather Range. Starting in 2003, two guided mountaineering trips in the Fairweather Range were authorized each year until 2012. Commercially guided climbing was authorized “in order to evaluate the need and appropriateness of the service in preparation for a new backcountry management planning process” (NPS 2002). Since 2012, commercially guided climbing has been authorized on a case-by-case basis in the Fairweather Range.

Mountaineering trips are often supplemented with aircraft use for transportation into and out of the park, and commercial guides will hire one of the air taxi operators that currently hold a permit. Park staff noted that previous guided excursions entered through the northeast side of the park, mountaineered, rafted down to the marine water, and then kayaked to Bartlett Cove. However, this type of trip has not occurred in a long time.

While mountaineering is a proper use for achieving the purpose of the Glacier Bay Wilderness, the extent to which it is necessary is evaluated in parts 3 and 4 of this appendix.

B. On-Snow Travel

This activity is inclusive of recreational activities, such as human-powered snow sports and including by ski or snowboard, snowshoeing and hiking on snow, and considering potential other emerging recreational uses as they arise. The towing of persons on skis, sleds, or other sliding devices by motorized vehicles is prohibited except in the ANILCA additions, including the Glacier Bay Preserve.

Specific to commercially guided on-snow travel, areas east of the Fairweather Range historically have not authorized this activity to facilitate certain visitor experiences emphasizing self-reliance. Per current CUA stipulations, a maximum of three guided on--snow travel trips and three guided ski touring trips are authorized per company per year.

The activity of on-snow travel is deemed proper for realizing the public purpose of the Glacier Bay Wilderness. The extent to which it is commercially necessary specific to backcountry and wilderness management plan zoning is evaluated in parts 3 and 4 of this appendix.

C. Watercraft (Human-Powered Only)

Human-powered watercraft is inclusive of activities in which visitors use a vessel, in conjunction with oars, paddles, poles, pedals, or cranks, to navigate through water. Human-powered watercraft activities may depart from land, entering designated Wilderness waters by water through the Beardslee Cut out of Bartlett Cove (as tide conditions allow, which is growing more limited due to isostatic rebound) or off a marine vessel. Glacier Bay National Park marine designated Wilderness is the only place in Alaska in the national park system

that offers this rare opportunity for human-powered travel in marine wilderness waters with seamless connections to freshwater (estuaries, rivers, streams, outwashes) and shorelines also in designated Wilderness. This opportunity makes for an incomparable and immersive wilderness experience. On the Outer Coast and other remote wilderness areas, where freshwater streams are under NPS jurisdiction, packrafting is growing in popularity as a human-powered activity in which visitors backpack to a water source carrying an inflatable raft and then paddle up or downstream or use the raft to ford across. The activity often combines hiking, overnight use, and paddling.

Specific to commercial operations, guided kayak services have historically been offered within Glacier Bay National Park, both as an overnight extended trip option, and as a day use opportunity based in the park frontcountry. In recent years, park staff has also noted emerging recreational uses, such as stand-up paddle boarding. A stand-up paddleboard allows users to stand or kneel on a large board and paddle from one location to another. While the activity currently does not support overnight use due to lack of storage, it has increased in popularity for day use.

Kayaking and rafting are long-standing uses of the Glacier Bay Wilderness and serve as the main form of nonmotorized access for independent travelers. Other emerging human-powered watercraft activities, such as paddle boarding and packrafting, also enable marine wilderness and freshwater exploration. Thus, these activities are considered proper in helping achieve the recreational purposes of wilderness.

D. Day Hiking

No established trails exist in most of the Glacier Bay Wilderness, so most hiking occurs either on wilderness shorelines surrounding wilderness waters, or, for most of the park, along the edge of designated Wilderness (the boundary is mean high tide). People also seek to hike in areas devoid of vegetation that inhibits free movement and allows access up to vantage points, especially around tidewaters and glacial environments, scenic viewpoints, and wildlife viewing hot spots. The following areas of the park are most popular for day use hiking: Gloomy Knob, Lamplugh Glacier, Reid Inlet, McBride Inlet, Fern Harbor forelands, and Dundas Bay. People access areas for hiking through a variety of means. Hiking only accessible by water or in remote areas features human-powered watercraft, private boat, charter boat, tour vessel, day boat, and small plane.

Wilderness hiking also originates from Bartlett Cove, primarily on trails (Bartlett River Trail, Bartlett Lake Trail) or from beaches, where walking is relatively easy (Point Gustavus route). Originating from outside the frontcountry (and on non-NPS land), wilderness hiking tends to focus on areas accessible by Gustavus roads, primarily on the Towers Trail (17B easement) but also on primitive social and animal trails or where backcountry navigational skills are required (from the Dude Creek Critical Habitat Area, from the Falls Creek Hydroelectric Project Corridor, and proximate to the Salmon River).

Specific to commercial services, day hiking occurs with a guide during trips when a motorized vessel anchors, and its passengers hike on land. Commercial operators are permitted to guide their clients within the Bartlett Cove Frontcountry area. Near Bartlett Cove, guided day hiking is authorized on the Forest Trail, Tlingit Trail, and Campground

Trail and will be authorized on future planned trails (Coopers Notch Trail and Inner Lagoon Trail). Guided day hiking is not authorized past the designated Wilderness boundary (Bartlett River Trail, Bartlett Lake Trail, Towers Trail, Point Gustavus route, and Excursion Ridge).

While day hiking is a proper activity within Glacier Bay to help visitors experience the recreational purposes of wilderness and provide opportunities for solitude, the extent to which it is necessary in designated Wilderness proximate to the frontcountry is evaluated in parts 3 and 4 of this appendix.

E. Overnight Use (Camping, Hiking/Backpacking)

Overnight use may apply to many of the activities listed previously and consists of carrying necessary supplies with the intent of establishing temporary overnight camps on wilderness lands. Overnight use does not involve the use of improved campground facilities. Although most of the activities included in this section may be offered as day use-only activities (excluding mountaineering), they may also be combined with overnight camping.

Specific to commercial services, overnight use may occur in tandem with the following activities:

- A. Mountaineering (year-round)
- B. On-snow travel
- C. Watercraft (human-powered only)
- D. Day hiking
- E. Airplane/air transport landing (as transportation support of authorized overnight uses, and where passengers leave the air taxi as described in CUA stipulations)
- F. Sportfishing (freshwater)
- G. Sportfishing (marine)

Overnight use is a necessary and appropriate activity within Glacier Bay National Park due to the vastness of the park and the type of activities visitors participate in during their trips. Overnight use allows visitors to experience wilderness and backcountry within the park through backpacking trips, kayaking, mountaineering, on-snow travel, and other activities. These experiences are unique and consistent with purposes of wilderness because they allow visitors to witness the educational, scientific, and recreational purposes of wilderness.

This determination will consider the extent to which overnight use is necessary within the Glacier Bay Wilderness, and the evaluation will apply to all commercial operators that provide this activity in conjunction with other recreational activities.

F. Air Transport Landings

Airplane landings in designated Wilderness are an appropriate activity within Glacier Bay National Park due to the vastness of the park and range of proper wilderness activities it

enables visitors to participate in during their trips, including many described in this appendix.

ANILCA authorizes fixed-wing aircraft landings and take offs in Alaskan designated Wilderness areas, except as prohibited under section (4)c of the Wilderness Act (helicopter and rotary-wing aircraft landings, take offs, and dropping off or picking up material and supplies). Under park-specific restrictions, floatplane landings and transiting in Glacier Bay (including designated Wilderness) is managed seasonally to offer a range of visitor experiences, including recreational opportunities in nonmotorized settings. Also, while the National Park Service does not manage airspace, the Federal Aviation Authority guidance for “Noise-Sensitive Areas” (Circular 91-36D Visual Flight Rules) applies, and section 1110(a) of ANILCA specifically authorizes the secretary of the interior to issue “reasonable regulations” to protect the “natural and other values” of the affected area. This section also authorizes the secretary to close an area otherwise open to these types of motorized vehicles for such “special access” if, after notice and a hearing in the vicinity of the affected area, the secretary finds that such use would be “detrimental to the resource values of the unit or area.”

Specific to commercial services, an air taxi is a plane in which most of the passengers on the flight must either be dropped off or picked up from a day trip or overnight stay and passengers do not remain within the airplane while on the ground. These planes may be either wheeled or floatplanes (seaplanes). Under CFR 13.1180, seaplanes are not considered a motor vessel within Glacier Bay National Park. Currently, seaplanes may dock at the Bartlett Cove Public Use Dock only within designated areas. Under 36 CFR 13.1180, seaplanes are prohibited during varying seasons in locations throughout the park. Please refer to the Code of Federal Regulations for more information or current CUA air taxi stipulations.

Because the activity of airplane landings provides visitor access to the park in designated Wilderness under ANILCA (unlike wilderness areas in the rest of the United States), it is deemed proper for realizing the public purpose of the Glacier Bay Wilderness. This determination will consider the extent to which air taxi use is necessary within the Glacier Bay Wilderness, including in conjunction with other commercial activities.

G. Sportfishing (Freshwater)

Freshwater fishing in Glacier Bay designated Wilderness meets the recreational purposes of wilderness and offers an intimate experience that can deeply connect people with the aquatic environment, surrounding scenery, and intact ecosystems. This opportunity is available extensively throughout the region and Alaska and consists of primarily hike-in sportfishing opportunities along streams. Motorboats and kayaks also access freshwater streams for fishing.

While many streams in designated Wilderness only attract very dispersed and periodic use, concentrated sportfishing on spawning streams (by all user types, guided and public users) can pose concerns about impacts on the natural and solitude qualities of wilderness due to

- easy access by boat (from marine waters) or trail (Bartlett River) to many freshwater systems

- the potential for highly localized activity, including on small and newly emerging glacially influenced creeks with small populations of species that can be easily targeted
- a greater potential during fish spawning runs for bear-human conflicts
- wildlife displacement or habituation
- motorboat noise and wakes, which may occur from boat use by commercial or noncommercial users

This activity may also help fulfill the educational purpose of wilderness through guide interpretation to educate visitors on Leave-No-Trace principles, federal and state regulations, and fish history and ecology. Further, specific to fish stocks and streams, the following protections are in place to protect the natural quality of wilderness character:

- National Park Service law and policy identifies that the agency must leave park resources and values unimpaired and defines when harvesting plants and animals is allowed.
- A master memorandum of understanding exists between the National Park Service and the Alaska Department of Fish and Game with a collaborative sustainable fisheries management framework.
- Protective federal and nonconflicting State of Alaska laws, including superintendent authority, address threats to park resources or values.

Specific to bear-human conflicts, the following protections are in place to protect the natural quality of wilderness character:

- Bear management plan (2013)
- Bear-specific content in concessioner orientations and operating conditions
- Compendium regulations on proper fish handling to reduce habituation and wildlife displacement

Addressing the wilderness quality of solitude, a range of limiting conditions currently reduce concerns around concentrated freshwater sportfishing activity in Glacier Bay National Park designated Wilderness. These conditions include park remoteness, the expense of a visit, limited prime season services (transportation, guiding, and rentals), required equipment (boat for marine access), and NPS-regulated marine vessel quotas to protect park wildlife and other resources while providing a range of recreational opportunities for park visitors. Lastly, the park uses a variety of measures to disperse users, set limits on group sizes, manage specific delivery modes to reduce concentrated use, prohibit vessel access within a certain distance of salmon streams, and discourage site damage on sensitive stream banks and tidal estuaries.

Specific to commercial services, recognizing that commercial ventures can concentrate use and site damage on sensitive stream banks and tidal estuaries and reduce wilderness

character qualities, including solitude, only specific historic operators (prior to 1979) are allowed to provide this service.

Freshwater fishing is a proper activity for realizing the recreational purpose of wilderness at a limited scale (such as within vessel quotas and allowable catch limitations) in which the dispersion of users and mitigations minimize natural disturbances or impairment of resources. The extent to freshwater fishing is necessary in designated Wilderness is evaluated in parts 3 and 4 of this appendix.

H. Sportfishing (Marine)

Glacier Bay National Park is the only place in Alaska and the national park system with marine designated Wilderness, making it a rare opportunity regionally and nationally. In this context, guided marine or saltwater sportfishing meets the recreational purposes of wilderness. Sportfishing consists of primarily motorized vessel-supported angling in designated Wilderness marine waters, including catch-and-release angling and angling for the harvest and consumption of targeted species (within legal fishery catch limits). Moreover, unlike freshwater sportfishing in which Glacier Bay opportunities are more comparable to other opportunities in the region and state, marine wilderness outside the park does not exist, and, therefore, guided fishing in marine wilderness is not available outside of the park. Glacier Bay is a marine sportfishing destination of national acclaim for its

- attractive species for angling and eating, including halibut and a variety of salmon
- exceptional fish sizes and quantities, in stark contrast to fisheries elsewhere, in part due to Glacier Bay-specific measures to protect marine abundance (commercial fisheries buyout, vessel quotas, and capacity management).
- immersive, uncrowded boating experiences consistent with park general management plan directions that “balance forms of access and use to obtain a feeling of the ruggedness and wildness of this dynamic landscape and the solitude” (NPS 1984) as set forth in park vessel quotas and operating requirements.
- a scenic setting combined with stringent coastal and marine environment protections that showcase how pristine marine ecosystems look and function

Concentrated marine sportfishing within Glacier Bay National Park (by all user types, guided and public users) can pose concerns about impacts on the natural and solitude qualities of wilderness due to

- easy access by boat
- limited marine wilderness concentrating the use of marine sportfishing
- potential for wildlife displacement or habituation
- motorboat noise and wakes, which may occur from boat use by commercial or noncommercial users

As a marine angling destination attractive to guided and private users, Glacier Bay waters have several existing limitations that reduce the likelihood of unacceptable impacts on park resources and values (including to natural and solitude qualities within the park's approximately 53,000 acres of marine designated Wilderness):

- Use is highly dispersed, with marine angling opportunities extensively available in nonwilderness and nonpark areas nearby.
- The activity has limited participation in wilderness waters due to seasonal park regulations that limit the use of motorized vessels in certain park waters to provide a diversity of visitor experiences.
- National Park Service-regulated marine vessel quotas protect park wildlife and other resources while providing a range of recreational opportunities to park visitors.

This activity may also help fulfill the educational purpose of wilderness through guide interpretation to educate visitors on Leave No-Trace principles, federal and state regulations, and fish history and ecology. Further, specific to fish populations, the following protections are in place to protect the natural quality of wilderness character:

- National Park Service law and policy identifies that the agency must leave park resources and values unimpaired and defines when harvesting plants and animals is allowed.
- The International Pacific Halibut Commission (IPHC) sustainable fisheries management protections under the international Halibut Treaty of 1923 is supported by IPHC population sampling and monitoring within Glacier Bay National Park waters.
- A master memorandum of understanding exists between the National Park Service and the Alaska Department of Fish and Game with a collaborative sustainable fisheries management framework.
- Protective federal and nonconflicting State of Alaska laws, including superintendent authority, address threats to park resources or values.

Specific to commercial services, guided marine sportfishing within designated Wilderness has typically been required to limit group sizes to match the scale of noncommercial users and to disperse visitors and reduce concentrated fish harvest.

Marine fishing is deemed proper for realizing the recreational purpose of wilderness, with mitigations to minimize natural disturbances or impairment of resources, and at a modest scale (i.e., within charter vessel class passenger limits, vessel quotas, allowable catch limitations).

Activities Dismissed from Further Analysis

Two additional activities are analyzed in part I of the determination but dismissed from further analysis, recognizing that these activities are managed under other authorities:

Commercial and Guided Filming

While the Wilderness Act defines filming as a commercial service within wilderness, a recent finding from *Price v. Barr* (January 2021) required the National Park Service to update its guidance on commercial filming permits. Currently, special use permits are required for commercial filming opportunities within national park units, and park management should evaluate requests on a case-by-case basis. However, when permits are granted, operating guidelines will be included to preserve wilderness character and prohibit motorized equipment, as necessary.

Commercial and Guided Photography

Guided photography is currently not a commercially authorized use within the Glacier Bay Wilderness; however, the activity currently occurs within the Bartlett Cove developed area along the following trails: Forest Trail, Tlingit Trail, Campground Trail, and to the wilderness boundary on the Bartlett River Trail and Point Gustavus route.

The activity may include supplemental educational opportunities, such as workshops in nature or carrying art easels, to teach photography and painting. Commercially guided photography as a stand-alone activity is currently not authorized within the Glacier Bay Wilderness because it is not necessary for realizing the purposes of wilderness. However, this activity, when paired with others such as hiking, may enhance the educational and scenic purpose of wilderness. Therefore, the activity may be offered in conjunction with other commercially guided activities, and operators must follow all regulations and guidelines.

Part II: Aspects of Wilderness Activities that May Necessitate Commercial Support

Part II of the analysis sets up the framework for considering the extent to which these forms of commercial service support are necessary, which depends on a number of factors. The framework evaluates six broad categories that are listed below. This analysis considers what the park seeks in terms of self-reliant experiences as opposed to novice or introductory experiences, and the range of social and environmental conditions that can be provided while preserving wilderness character. This determination represents a comparative and qualitative analysis of the relevant wilderness factors and determines whether commercial services are necessary and if so, the number of commercial services that are necessary. At the same time, this broad analysis does not represent the totality of services that may be considered when considering commercial services and operating conditions in designated Wilderness.

Glacier Bay's wilderness presents an inherently challenging environment for traveling to and throughout. To be conducted safely and in a manner that preserves wilderness character, wilderness activities often require specialized skills, knowledge, or equipment. Particularly in Glacier Bay, such activities may require technical skills, safety practices associated with exposure and environmental factors, and special equipment for which knowledge of the dynamic landscape and marine conditions can make trip and itinerary choices safer and more rewarding. Visitors to wilderness vary in their ability to conduct these more specialized or technical wilderness activities. Therefore, when parks choose to provide opportunities for these types of visitor activities, some level of commercial support may be necessary.

Specialized Skills or Knowledge

For some wilderness visitors the need for, or lack of, specialized skills or knowledge can be a barrier to engaging in that activity. A commercial service may support a visitor activity by providing or teaching the skills or knowledge that are needed to engage in a proper wilderness activity. This support may take the form of guiding, in which the outfitter/guide provides the necessary skills or knowledge to the individual or group participating in the activity. A commercial service may also take an instructional form, in which the outfitter/guide teaches an individual or group the necessary skills or knowledge so that they may independently participate in the activity in the future. In the latter case, the level of instruction may range from basic or introductory wilderness skills and knowledge to advanced technical skills and knowledge. Guides and instructors are also able to provide local knowledge that can make a wilderness trip safer and more rewarding for visitors who are unfamiliar with a wilderness area.

Specialized Equipment or Services

Wilderness activities may require specialized equipment or services that cannot be provided by all wilderness visitors who wish to engage in a certain activity. Regarding specialized equipment, the expense, care, or space required for that equipment may be too great for some wilderness visitors to provide without support from a commercial service provider. Visitors may wish to try out an activity before making the financial commitment to purchase equipment. Some visitor trips may require services, such as the transporting of equipment or supplies that cannot be provided without commercial support. For each activity that has been determined to be proper for the recreational or other purposes of wilderness, this analysis will discuss the specialized equipment or services that may necessitate commercial support.

Special Safety Concerns

Wilderness activities may involve special safety concerns that cannot be managed by all wilderness visitors without commercial support. The National Park Service does not attempt to eliminate the risks inherent in wilderness travel or those associated with participation in wilderness activities. However, for some visitors, a commercial provider may be a necessary means of managing those inherent risks or may be a means to acquire the requisite knowledge to manage those risks independently in the future. For each activity that has been determined to be proper for the recreational or other purposes of wilderness, the analysis will discuss the special safety concerns that may necessitate commercial support.

Special Resource Concerns

Wilderness activities may involve the potential for impacts on wilderness resources. A commercial service provider may be a means to ensure that activities are conducted in appropriate locations and in a manner that mitigates or minimizes resource impacts. For each activity that has been determined to be proper for the recreational or other purposes of wilderness, the analysis will discuss the special resource concerns that may necessitate commercial support. Also, specific to Glacier Bay National Park, explicit protection is also needed for sensitive historic, cultural, and ethnographic resources specifically recognizing

the centuries-old and rich cultural traditions of indigenous people and other residents to lands now managed as wilderness, including living and evolving Tlingit cultural connections to their Homeland.

Other Contributions that Support Wilderness Purposes

Commercial services most often support wilderness visitors in their recreational activities, but they may also independently or cooperatively support scenic, scientific, educational, historic, or conservation objectives.

Introductory Experiences

Commercial service providers can give assistance to visitors who lack the experience or confidence to attempt a wilderness adventure on their own. These types of trips can introduce a diverse public to a variety of ways to experience their public lands. Commercial service support can build confidence in visitors and lead to more self-reliant wilderness trips in the future. Introducing novice visitors to their publicly owned wilderness can provide rewarding experiences, build support for long-term wilderness preservation, and improve wilderness education.

Part III: Commercial Services That Are Necessary for Each Proper Activity

This section uses the categories provided in part II to analyze the aspects of activities identified as proper in part I that may necessitate commercial support to achieve wilderness purposes. This analysis framework focuses on outstanding opportunities for solitude or a primitive and unconfined type of recreation—recognizing that many forms of recreation enjoyed by the public do not require a wilderness setting and are more appropriate in other venues (like the frontcountry or on a day boat), where risks can be minimized, and visitor comfort, convenience, and social settings (including a greater tolerance for crowding) are emphasized. Further, unlike many wilderness areas, Glacier Bay National Park offers people of all ages and abilities opportunities to experience wilderness from the outside looking in (surrounded by and deeply experiencing a wilderness landscape at a safe distance from the deck of a cruise, a tour, or a smaller vessel or from Bartlett Cove shorelines).

A conclusion regarding the necessity for commercial services is made for each activity within the wilderness management zones in Glacier Bay National Park. The use of commercial services in wilderness will only be permitted when they allow visitors to use and enjoy wilderness in a manner that is consistent with the preservation of wilderness and its associated desired conditions. The amount and extent of commercial services that will be allowed in each management zone is addressed in part IV.

Table B-2a. Reasons That Commercial Support Is Necessary for Mountaineering and On-Snow Travel

Aspect of Wilderness Activity	A. Guided Mountaineering (Year-Round)
	B. Guided On-Snow Travel
Specialized skills or Knowledge	Route finding, wayfinding, use of equipment for protection, orienteering, knowledge of environmental and weather hazards, understanding of rock and ice conditions, Leave No Trace practices, ski or other on-snow travel skills, winter survival, avalanche awareness, and leadership.
Specialized equipment or services	Ropes, climbing equipment and aids, ice axes, crampons, skis, snowshoes, and survival equipment (e.g., avalanche beacons, shovels).
Special safety concerns	Minimize risk through education, training, and ensuring safe and Leave No Trace practices. Knowledge of safe routes and mountain conditions, winter survival, winter route finding, and avalanche awareness.
Special resource concerns	Mountaineering access and social trails, knowledge of what is allowed and what is prohibited (e.g., fixed anchors) including laws to protect cultural resources (no cairns on mountain tops, restricted access to sacred sites including cave karst systems). Proper disposal of human waste, knowledge of sensitive plant species.
Other contributions	Mountaineering, particularly along the Fairweather Range, is a primitive form of recreation and may be considered an intrinsic value of wilderness to be immersed in a natural setting. Guide acknowledgement of and respect for Tlingit Homeland, its cultural and ethnographic resources, and authentic tribe-approved cultural interpretation.
Introductory experiences	This service supports an introductory experience for a less common but proper wilderness activity.
Conclusion	Mountaineering and on-snow travel activities are proper for realizing the public purposes of wilderness. The high-level skills, specialized equipment, safety issues, and knowledge required for this activity listed in this table are barriers that may impede the ability of some visitors to realize the values inherent in a wilderness experience. Commercial support for these activities may include introductory experiences for novice visitors and further foster stewardship.

Table B-1b. Reasons That Commercial Support Is Necessary for Human-Powered Watercraft and Day Hiking

Aspect of Wilderness Activity	C. Guided Watercraft (Human-Powered Only)
	D. Guided Day Hiking
Specialized skills or knowledge	Wayfinding, kayak, orienteering, the use of tide charts and maps for marine navigation, appropriate food storage in wilderness, wilderness first aid, sanitation and waste disposal, leadership, and Leave No Trace practices.
Specialized equipment or services	Proper use of kayak and safety equipment. Access to rubber boots and raingear and other equipment to protect from inclement weather and sea conditions.
Special safety concerns	Marine environment, challenging open water crossings, wildlife encounters, orienteering/wayfinding, wilderness first aid, cold water emergency rescue, weather.
Special resource concerns	Avoid bird nesting areas, marine mammal haul-outs, and other sensitive areas. Knowledge of sensitive natural and cultural resources, including of tribal protocol and protective laws pertaining to cultural features and sites.
Other contributions	Introductory experiences and guided trips can lead to a better visitor understanding of wilderness character, purposes, and values, and assist the public in being capable and confident to appropriately experience their public lands and wilderness lands and waters. Guide acknowledgement of and respect for Tlingit Homeland, its cultural and ethnographic resources, and authentic tribe-approved cultural interpretation.
Introductory experiences	Provide people with the necessary skills to engage in self-reliant recreation.
Conclusion	Day hiking and human-powered watercraft activities are proper for realizing the public purposes of wilderness. The skills, equipment, and safety issues listed previously are barriers that can impede the ability of some visitors to realize the values inherent in a

Aspect of Wilderness Activity	C. Guided Watercraft (Human-Powered Only)
	D. Guided Day Hiking
	wilderness experience. These factors necessitate some level of commercial support for these recreational activities. The availability of commercial support may also enable introductory wilderness experience opportunities.

Table B-1c. Reasons That Commercial Support Is Necessary for Overnight Use

Aspect of Wilderness Activity	E. Guided Overnight Use
Specialized skills or knowledge	Route finding, wayfinding, use of equipment for protection, orienteering, knowledge of environmental and weather hazards, Leave No Trace practices, bear knowledge, and safety practices.
Specialized equipment or services	Communication devices capable of establishing two-way communication, park backcountry orientation, understanding of bear habitat, and measures to preserve the natural environment.
Special safety concerns	Minimize risk through education, training, and ensuring safe and Leave No Trace.
Special resource concerns	Allows for appropriate wilderness equipment to be utilized (e.g., food storage containers, tents) and proper disposal of human waste. Knowledge of sensitive natural and cultural resources, including of tribal protocol and protective laws pertaining to cultural features (village sites, grave sites, sacred features like caves, karsts, and cairns).
Other contributions	Allows visitors to carry supplies to reach various zones of wilderness and/or extend their stays beyond one day to immerse themselves more thoroughly in a wilderness experience. Allows visitors to experience wilderness from the land and to access tidewater glaciers. Guide acknowledgement of and respect for Tlingit Homeland, its cultural and ethnographic resources, and authentic tribe-approved cultural interpretation.
Introductory experiences	This service supports an introductory experience for a proper wilderness activity.
Conclusion	Overnight use is an activity that is proper for realizing the public purposes of wilderness and possess attributes that necessitate commercial support for other proper activities in Glacier Bay Wilderness, including kayaking, hiking, mountaineering, on-snow travel, and fishing.

Table B-1d. Reasons That Commercial Support Is Necessary for Air Taxi Landings

Aspect of Wilderness Activity	F. Guided Airplane/Air Transport Landings
Specialized skills or knowledge	Pilot skills and experience, aeronautical decision-making, understanding of weather conditions, knowledge of Federal Aviation Administration (FAA) requirements.
Specialized equipment or services	Specialized equipment includes the plane itself, certifications may be necessary, spill kit onboard, and communication devices onboard.
Special safety concerns	Follow US Department of Transportation hazmat guidelines for proper handling, transportation, and storage of hazardous materials.
Special resource concerns	Proper methods for transporting hazardous materials such as stove fuel or bear spray; air quality; alpine species sensitive to overflight noise (mountain goat kidding areas between May 1 and June 15 and winter habitat between November 15 and April 30), preservation of wilderness character; and cultural resources near landing areas.
Other contributions	Air transport landings help facilitate other activities that achieve the recreational purpose of wilderness and provide access to remote areas of the park.
Introductory experiences	This service supports an introductory experience for a less common but proper wilderness activity.

Aspect of Wilderness Activity	F. Guided Airplane/Air Transport Landings
Conclusion	Air transport landing is proper for realizing the purposes of wilderness. such as recreational, scenic, educational, and scientific. Air taxi landing facilitates activities that occur in remote areas of the park, such as the Fairweather Range or interior areas that may be difficult to access or take long periods of time. The high-level skills, specialized equipment, safety issues, and resource concerns identified in this table demonstrate the necessity for commercial service operators to help provide wilderness experiences to Glacier Bay visitors.

Table B-1e. Reasons That Commercial Support Is Necessary for Freshwater Fishing

Aspect of Wilderness Activity	G. Guided Sportfishing (Freshwater)
Specialized skills or knowledge	Wayfinding and the use of tide chart maps for marine navigation and knowledge of park regulations (including for nonmotorized marine waters). Wilderness character stewardship and fishing conservation ethics recognizing that fishing is one of a few extractive uses that are allowed in wilderness. Knowledge of fish species (ability to identify).
Specialized equipment or services	Fishing equipment, a vessel to access hike-in points for freshwater streams (marine shorelines, Bartlett River Trailhead), or to access upstream fishing locations.
Special safety concerns	Marine waters with dangerous conditions and changing tides, human-wildlife conflict, environmental and weather conditions.
Special resource concerns	Guides and visitors must be aware of any species that may be threatened or endangered throughout the park and rules to reduce bear habituation. Dispersed use, restricted use, and closures may occur to mitigate effects to species and to reduce any impacts on wildlife displacement. Knowledge of sensitive natural and cultural resources, including of tribal protocol and protective laws pertaining to cultural features and sites.
Other contributions	Fishing is a primitive form of recreation that can lead to increased self-reliance. Guided services can provide education on the appropriate methods and regulations for fishing and encourage fishing conservation ethics and leave-no-trace principles. Guide acknowledgement of and respect for Tlingit Homeland, its cultural and ethnographic resources, and authentic tribe-approved cultural interpretation.
Introductory experiences	This service supports an introductory experience for a proper wilderness activity.
Conclusion	Freshwater fishing is an activity that is proper for realizing the public purposes of wilderness and possesses some attributes that necessitate commercial support in Glacier Bay Wilderness (travel by floatplane or motorboat to reach remote freshwater streams to participate requires specialized skills and knowledge, uses specialized equipment, and involves safety and environmental concerns). Guided services can provide education on the appropriate methods and regulations for fishing and encourage fishing conservation ethics and Leave No Trace principles.

Table B-1f. Reasons That Commercial Support Is Necessary for Marine Fishing

Aspect of Wilderness Activity	H. Guided Sportfishing (Marine)
Specialized skills or knowledge	Wayfinding and the use of tide chart maps for marine navigation. Knowledge of park regulations (including for nonmotorized waters). Wilderness character stewardship and fishing conservation ethics recognizing that fishing is one of a few extractive uses that are allowed in wilderness.
Specialized equipment or services	Communication device capable of establishing two-way communication, fishing equipment, measures to preserve the natural environment, a vessel for navigating the water.

Aspect of Wilderness Activity	H. Guided Sportfishing (Marine)
Special safety concerns	Fast and cold waters with dangerous conditions, human-wildlife conflict, changing tides, environmental and weather conditions.
Special resource concerns	Guides and visitors must be aware of any species that may be threatened or endangered throughout the park to mitigate wildlife displacement or habituation. Dispersed use, restricted use, and closures may occur to mitigate effects to species. Knowledge of sensitive natural and cultural resources, including of tribal protocol and protective laws pertaining to cultural features and sites. Impacts on wilderness character from vessel noise and operation should be reduced and mitigated.
Other contributions	Fishing is a primitive form of recreation that can lead to increased self-reliance. Guided services can provide education on the appropriate methods and regulations for fishing and encourage fishing conservation ethics and Leave No Trace principles. Guide acknowledgement of and respect for Tlingit Homeland, its cultural and ethnographic resources, and authentic tribe-approved cultural interpretation.
Introductory experiences	This service supports an introductory experience for a proper wilderness activity.
Conclusion	Marine fishing is an activity that is proper for realizing the public purposes of wilderness and possesses some attributes that necessitate commercial support in Glacier Bay Wilderness. The activity requires specialized skills and knowledge, uses specialized equipment, involves safety and environmental concerns, and natural resource concerns. Glacier Bay National Park is one of the few areas with designated marine Wilderness; consequently, the activity is not offered in areas outside of the park and is unique. Guided services can provide education on the appropriate methods and regulations for fishing and encourage fishing conservation ethics and Leave No Trace principles.

Part IV: Extent of Commercial Services Determined Necessary for Each Proper Activity in Wilderness

This section evaluates each proper activity in conjunction with the desired conditions and visitor capacities to determine the extent of commercial services that are proper throughout each zone. A visitor capacity analysis (on file at the park) identified the visitor capacity for specific areas of the park and was used to inform the commercial allocation associate for each proper activity. A conclusion is reached about the amount of overall level of use that may be commercially supported. Other mechanisms available for the management of commercially supported activities are discussed where relevant.

Current use levels for each activity do not necessitate daily monitoring. Park staff monitors commercial visitor services on an annual basis by reviewing CUA and concession contract activity reports. This monitoring of commercial use will continue annually to determine if any adjustments are necessary through an adaptive management strategy. All commercially guided activities will operate in a manner that is consistent with preserving wilderness character and policy.

The quality of visitor experience in the Glacier Bay Wilderness is deeply enhanced by standing on shore, kayaking the waters of the bay, traversing a glacier, or camping among the wild remote lands of Alaska. These opportunities allow visitors to intimately experience the sounds and scenery of the park. While many visitors to the park view wilderness from the deck of a boat, when one has the experience of comparing the immensity of a brown bear paw print to one's own hand or feel a connection to the indigenous people who have survived off the wilderness land for centuries, the experience can be profound.

To be consistent with the desired conditions set forth for natural and cultural resources, visitor use and experience, and the preservation of wilderness character, all groups within the Glacier Bay Wilderness will not camp on shore within sight and sound of other groups. Due to the popularity of recreational activities and particular locations in the glacial environment, topography, and weather, guided groups may encounter others. Encounter rates serve as an indicator that allow park management to better understand if desired conditions for visitor experience and wilderness character are being achieved. For more information, please see “Chapter 4: Wilderness Character Monitoring.”

Table B-2 presents a high-level summary of activities that may be commercially guided within each management zone identified in chapter 2. The narrative rationale for each activity and applicable measures and standards are outlined under each respective activity.

Table B-2. Zoning and Commercial Services

Management Zone (see chapters 2 and 3 for detailed descriptions)	A. Guided Mountain-eering (Year-Round)	B. Guided On-Snow Travel	C. Guided Watercraft (Human-Powered Only)	D. Guided Day Hiking	E. Guided Overnight (Camping, Hiking/ Backpacking)	F. Guided Air Transport Landing	G. Guided Sportfishing (Freshwater)	H. Guided Sportfishing (Marine)
Remote Wilderness – <i>Aasgatú</i>	Yes	Yes	No	No	Yes	Yes	No	No
Shoreline Access Outer Coast - <i>Yán shooka</i> Glacier Bay - <i>Yán</i>	Transitional	Yes	Yes	Yes	Yes	Yes	Conditional	No
Wilderness Waters – <i>L'é Héen</i>	*	*	Yes	*	*	No	Conditional	Yes
Glacier Access – <i>Yinaadé S'it</i>	Transitional	Yes	Yes	Yes	Yes	Yes	Conditional	No
Frontcountry Access – <i>Yinaadé Aaní</i>	No	No	Yes	No	No	No	No	No

*While no specific prohibition exists, the nature of the environment and the activity naturally preclude these activities.

A. Guided Mountaineering (Year-Round)

The activity of mountaineering is proper for realizing the public purposes of wilderness, and the park determined that commercial support was appropriate. This decision aligns with the management direction provided in the general management plan, which indicates that commercial services should facilitate visitor access in the least accessible areas of the park.

Guided mountaineering trips may occur within the Fairweather Range and along the Chilkat Range, which lies along the eastern border of the park and borders wilderness managed by the US Forest Service and Bureau of Land Management. The geographic scope and proximity of the Chilkat Range to gateway communities, such as Juneau, Gustavus, and Haines, allow guides and clients to more easily access this area of the park compared to the Fairweather Range. Both mountain ranges, in addition to other areas of the park, lie within the Remote Wilderness Zone of the backcountry and wilderness management plan (see chapter 2). This zone includes the most interior regions of the park and lands that are greater than 1 mile from the shoreline of Glacier Bay proper and more than 0.5 miles from shoreline of Icy Strait and the Outer Coast. In the Shoreline Access and Glacier Access Zones, guided mountaineering is allowed as a “transitional” activity because guided groups need to trek through lands within this zone to reach their mountaineering destinations. During this excursion, guided mountaineering groups may stay overnight within these zones before or after their trip as they transition from Glacier Bay proper to interior lands. The provision of commercially guided mountaineering trips is consistent with desired conditions to promote intact ecosystems and self-reliance with limited commercial services to facilitate some visitor experiences. However, management of commercially guided mountaineering differs across these ranges for several reasons.

Mount Fairweather is typically climbed during a narrow one- to two-month window in April and May, while the Chilkat Range is generally suitable for mountaineering during a longer period. Second, the Fairweather Range (*Yéik Yi Aani*, Land of the Spirits)—and Mount Fairweather (*Tsalxaan* – Ground Squirrel/Marmot Land) in particular—hold specific cultural significance to the Huna Tlingit, particularly the T’akdeintaan Clan. The Fairweather Range is the place of origin of many tales from the Raven Cycle, which shape Tlingit cultural convention, and as its Tlingit place name suggests, the entire area is a deeply sacred place. Mount Fairweather and its foothills are associated with shamanic initiation and were used for this purpose into the 20th century. The area is suitable as a Traditional Cultural Property.

To ensure the protection of sensitive cultural resources through consultation with the Hoonah Indian Association, all mountaineering trips will be prohibited from entering Karst or other cave features within the park unless a specific permit is requested by the user and granted by the National Park Service. In addition, to preserve wilderness character and the natural and cultural resources within the park, no fixed anchors may be bolted unless for the reasons described in section 4(c) of the Wilderness Act. Also, prescribed education of the cultural significance will be done by all operators as a mitigating factor to address these sensitivities. To ensure natural and cultural resource preservation, park staff will regularly inform commercial operators of the requirements for food storage and human waste disposal within the backcountry and wilderness.

Through this analysis and the evaluation of current mountaineering use between commercial and private users, a commercial allocation for mountaineering within the Fairweather Range has been identified as 6 groups per year. No more than three guided mountaineering trips per year may be offered by each company. Within the Chilkat Range, commercial allocation for mountaineering is established as 12 groups per year. All group sizes are limited to 12 people, including the guide. Based on current conditions, and because these areas are primarily accessed via commercial service operators, the commercial allocation is established at 50% of total use. Simultaneous commercial trips will be prohibited within the same area (first-come, first-served) to preserve the wilderness experience of the area.

B. Guided On-Snow Travel

The activity of on-snow travel is proper for realizing the public purposes of wilderness and park staff determined that commercial support was necessary, to an extent, to provide visitor access to tidewater glaciers, which is in the park's enabling legislation. In addition, commercially guided on-snow travel, when paired with overnight use, may allow visitors to experience more remote and wild areas of the park that are less accessible to private visitors. These immersive experiences in wilderness present visitors with opportunities to feel extreme solitude in some of the most remote areas in the entire national park system. To ensure preservation of wilderness character while providing these opportunities, park staff will regularly inform commercial operators of best practices for food storage and human waste disposal.

Commercially guided on-snow travel is prohibited in the Frontcountry Access Zone, where commercial services are limited, and the Wilderness Waters Zone to protect wilderness character. Commercially guided on-snow travel is aligned with the desired conditions for the Remote Wilderness, Shoreline Access, and Glacier Access Zones and is permitted in these zones. Although the desired conditions for the Remote Wilderness Zone include limited commercial services, on-snow travel is often required for activities such as mountaineering. Where permitted, group size is limited to 12 people (including guides and clients) and must not remain longer than three consecutive nights in the same location. For this activity, location is defined as all points within a 2-mile radius of the campsite. A commercial allocation for the Remote Wilderness Zone is identified at 18 groups per year to be consistent with guided mountaineering in this zone, with no more than three annual trips provided by each company.

In the Shoreline Access Zone, where commercial services are likely to occur, but visitor self-reliance is encouraged, only one commercially guided group at a time will be allowed within sight and sound of each other to provide guided on-snow travel. In the Glacier Access Zone, which accommodates higher use to allow visitors to experience shorelines, no more than two vessels providing commercially guided services will be allowed within sight and sound of each other to provide guided on-snow travel. Current measures and standards for encounter rates in this zone are no more than five groups per day. Based on current conditions and because these areas are primarily accessed via commercial service operators, the commercial allocation is 50% of total use on an annual basis.

C. Guided Watercraft (Human-Powered Only)

The range of activities offered via human-powered watercraft is proper for realizing the purposes of wilderness, as it allows visitors to experience nonmotorized waters and unique aspects of wilderness. Park staff determined that commercial support is appropriate in certain zones to facilitate visitor experience and the achievement of desired conditions. Because this activity includes various potential vessels (e.g., kayak, stand-up paddleboard, packrafts), the park will review emerging uses and consider the need for commercial services on a case-by-case basis.

The activity is prohibited in the Remote Wilderness Zone, which consists predominantly of wilderness lands and provides limited commercial services to promote high levels of self-reliance among visitors. Commercial guiding for this activity is deemed necessary in the Shoreline Access, Wilderness Waters, Glacier Access, and Frontcountry Access Zones because these areas include wilderness and nonwilderness waters that can accommodate nonmotorized vessel use. The guided activity may only be offered where commercial services contracts authorize it (such as for kayak concessioners) or as an incidental mode of transportation under a commercial use authorization.

Within the Frontcountry Access Zone, commercially guided day trips must depart and return from the Bartlett Cove developed area, may not exceed 12 hours in length, and do not include overnight camping. Additionally, group size may not exceed 12 people, including guides. A commercial allocation in this zone will be established at no more than 4 groups at one time with an encounter rate of no more than 10 groups in one day.

For the remaining zones (Shoreline Access, Wilderness Waters, and Glacier Access), human-powered watercraft may only be offered where commercial services contracts authorize it (such as for kayak concessioners). Because these zones are primarily accessed via vessels providing commercial services, no more than two commercial vessels at a time will be allowed within sight and sound of each other. However, if, because of topography, weather, or logistics, each group cannot remain out of sight of each other, they will remain at least one-quarter mile apart. Group size may not exceed 12, including guides, within these zones. Overnight use may be provided to complement the human-powered watercraft activity throughout the park. Please refer to the overnight use section for the commercial allocation for these activities.

D. Guided Day-Hiking (Day Use Only)

The activity of hiking is proper for realizing the purposes of wilderness, and the park determined that commercial support is appropriate in certain zones of the park to help achieve the desired conditions for visitor experience. Given the management direction that commercial visitor services would be provided for areas of the park that are remote and, therefore, difficult to access, guided hiking will not be permitted in the Frontcountry Access Zone. In addition, to manage for the preservation of wilderness character, guided day use hiking will not be permitted in the Remote Wilderness Zone. Guided hiking is not feasible within the Wilderness Waters Zone.

Commercially guided hiking may be provided on lands within 1 mile of Glacier Bay proper, within 0.5 mile of the Outer Coast, and along access to tidewater glaciers. These locations of the park typically receive the most concentrated visitor use and allow visitors to access tidewater glaciers, which is consistent with park legislation and the provision of commercial services helps the park achieve desired conditions for these zones.

Guided day hiking, outside of the Frontcountry Access Zone, is predominantly offered in areas of the park that may only be accessed via tour and charter vessel operators, classes of vessels that have the potential to carry upward of 20,000 visitors annually (NPS 2019c). These vessels are authorized to provide guided day hiking activities for a group size of up to 12 visitors. When these activities occur, groups must be out of sight and sound of each other and other wilderness groups to preserve wilderness character. However, if, because of topography, weather, or logistics each group cannot remain out of sight of each other, they will remain at least one-quarter mile apart.

Through this analysis and the evaluation of current day use hiking between commercially guided and private users, a commercial allocation for day use hiking has been identified for the Shoreline Access and Glacier Access Zones. In the Shoreline Access Zone, where commercial services are likely to occur that encourage self-reliance, only one commercial group at a time will be allowed in an area for guided day use hiking. In the Glacier Access Zone, which accommodates higher use to allow visitors to experience shorelines, no more than four commercial groups at a time will be allowed within sight and sound of each other for guided day use hiking. Within this zone, the measures and standards for encounter rates are no more than five groups per day.

E. Guided Overnight (Camping, Hiking/Backpacking)

Overnight use is proper for realizing the purposes of wilderness, and park management determined that commercial support is necessary in some zones of the park to help achieve the desired conditions for visitor experience. This activity may be offered in conjunction with other recreational activities, including, but not limited to, hiking, mountaineering, kayaking, and on-snow travel. If commercial operators provide any activity in conjunction with overnight use, they are subject to the requirements for that activity, as well as those for overnight use.

Except where authorized as a primary activity in concessions contracts (such as kayak concessioners), commercially guided overnight use will be prohibited in the Frontcountry Access and Wilderness Waters Zones. Similar to day use hiking, the Frontcountry Access Zone is proximate to frontcountry areas of the park that provide developed camping opportunities and overnight accommodations, while prohibiting camping outside established areas and within specified proximities; therefore, the activity is available within a reasonable distance. The desired conditions for the Wilderness Waters Zone indicate that visitors will have an opportunity to experience solitude, challenge, and self-reliance; therefore, use in this zone will be reserved for private and independent visitors to Glacier Bay National Park and activities of comparable scale and intensity as authorized in concessions (such as kayak concessioners). This authorized use does not imply that a commercial activity will be authorized for all other locations or at all times. Annual operating agreements in this zone

will determine opportunities and limitations in coordination with ongoing wilderness character and encounter monitoring and may require an annual orientation to cover key stewardship topics (e.g., designated Wilderness, resource protection, state and federal take and reporting requirements).

To facilitate activities such as mountaineering in the Remote Wilderness Zone, which includes interior lands and remote areas of the park, guided overnight use is proper for achieving the public purpose of wilderness. Group size must not exceed 12 persons, including guides and clients. The commercial allocation for guided overnight trips is three groups per company per year. Because these areas are primarily accessed via commercial service operators, the commercial allocation is 50% of total use.

Commercially guided overnight use is permitted in the Shoreline Access and Glacier Access Zones, where commercial services are likely to occur and facilitates visitor access to tidewater glaciers and experience wilderness. Group size must not exceed 12 persons, including guides and clients and cannot remain longer than three consecutive nights at the same campsite, unless specifically authorized by the superintendent. Further, except as authorized in concessions contracts and operating requirements, commercially guided groups may only camp in the Glacier Access Zone during the first and last nights of their multiday trip. Groups engaging in activities within the interior lands, such as mountaineering, should not use the beach areas as base camp. The commercial allocation for guided overnight trips is three groups per company per year. Charter vessels, primarily hired to transport visitors, may not provide overnight transportation for more than 12 people per night per the vessel quota operating requirements.

To ensure the protection of sensitive cultural resources, all overnight trips will be prohibited from entering Karst or other cave features within the park unless a specific permit is requested and granted by the National Park Service in consultation with the Hoonah Indian Association. Prescribed education will address legal protections for sensitive cultural sites (e.g., gravesites, cairns, village sites) as a mitigating factor and make available authentic tribe-approved cultural interpretation resources and Tlingit Homeland acknowledgement statements to share with guests.

F. Guided Air Transport Landing

The activity of air transport landing is proper for realizing the public purposes of wilderness, and the park determined that commercial support was necessary in certain zones of the park. Commercially guided air transport landing allows visitors to experience more remote and wild areas of the park that are less accessible to visitors, allowing for immersive experiences in wilderness to present visitors with opportunities for solitude. This decision aligns with the management direction provided in the general management plan, which indicates that commercial services should facilitate visitor access to the least accessible areas of the park.

Commercial air transport landings are allowable in the Remote Wilderness, Shoreline Access, and Glacier Access Zones. In the Remote Wilderness Zone, guided air transport landings are often used for mountaineering and/or on-snow travel groups to facilitate access to remote areas of the park. In the Glacier Access Zone, guided air transport landings allow

visitors to access the tidewater glaciers by ordinary means, as identified in the park's enabling legislation.

Similar to other commercial activities, group size must not exceed 12 persons, including guides and clients. All pilots are required to inform park staff where they land in the park by providing the latitude and longitude. Once an air taxi lands, pilots must follow requirements as identified in the Code of Federal Regulations. Air taxis are prohibited in wilderness waters during seasonal closures, which includes Adams Inlet, Rendu Inlet, Hugh Miller complex, and waters within the Beardslee Island group except for the Beardslee entrance. In addition, guided air transport landings are not permitted in the Frontcountry Access Zone because they have access to nonwilderness areas in Bartlett Cove and may use the dock. Per the Code of Federal Regulations, docking, tying down, or securing the aircraft to the dock for longer than 3 hours in a 24-hour period is prohibited.

Commercial allocation for guided air transport landing must be consistent with the activities for which pilots are transporting visitors. In the Remote Wilderness Zone, commercially guided air transport landings allow visitors to engage in the activities of mountaineering and on-snow travel; therefore, air transport landings are subject to the same commercial allocation of 18 groups per year when services also provide mountaineering and on-snow travel (6 in Fairweather Range, 12 in Chilkat Range). If air transport landings are dropping off passengers engaging in nonguided activities, they are subject to the allocation for such activities in the zone. In the Glacier Access Zone, commercial air transport landings will be evaluated on a case-by-case basis to prevent regularly scheduled air service to Glacier Bay National Park and Preserve, which is currently not authorized. Simultaneous commercially guided air transport landings within sight of each other will be prohibited to reduce potential for visitor conflict and preserve wilderness experiences.

G. Guided Sportfishing (Freshwater)

Self-guided freshwater fishing opportunities in the Glacier Bay Wilderness are generally attainable without commercial guide participation, including for visitors representing a wide range of skill and ability levels. While commercial service providers may help transport visitors access freshwater streams, the activity of freshwater sport fishing does not necessitate commercial guides due to the ease of freshwater stream access. Another reason is the ability of guides to provide commercial services needed pre-trip (e.g., provide specialized skills and knowledge and specialized equipment, alleviate safety and environmental concerns). In addition, freshwater fishing opportunities are available to visitors throughout southeast Alaska and in areas surrounding the park, such as Salmon River, Mud River, and Chicken Creek.

Guides leaving their clients at the wilderness boundary further benefits the wilderness experience for all users, enhancing both the natural qualities and solitude on these wild and often modest-sized systems.

For these reasons, guided freshwater sport fishing is not allowed in any zone except by historic operators. Specific historic operators (prior to 1979) are authorized to conduct guided freshwater fishing in designated Wilderness on the river system that flows into Dundas Bay for all five species of salmon and Dolly Varden, steelhead, and cutthroat trout

under section 1307(a) of ANILCA (16 USC 1397[a]). Also, for clarification, this analysis does not pertain to guided fishing along the Outer Coast north and west of Lituya Bay or in the Glacier Bay Preserve (which is outside the scope of the planning effort).

At the same time, commercial contracts on a case-by-case basis may authorize guided freshwater sportfishing as a provisional and incidental (not primary) service in designated Wilderness that supports proper introductory wilderness experiences. No authorization may occur at the following locations:

- the Bartlett River (trail and water access above mean high tide) to enable frontcountry visitors who may not have access to other wilderness experiences a greater sense of solitude, remoteness, and self-reliance
- the Remote Wilderness Zone, to enable visitor experiences, where the likelihood of encountering other visitors is low, and to maintain self-reliance as a key component of the visitor experience

This provision does not imply that a commercial activity will be authorized for all other locations or at all times. Annual operating agreements will determine opportunities and limitations in coordination with ongoing wilderness character and encounter monitoring and may require an annual orientation to cover key stewardship topics (e.g., designated Wilderness, resource protection, state and federal take and reporting requirements). Finally, where applicable, this activity is subject to nonmotorized water park restrictions to provide a diversity of visitor experiences seasonally and Glacier Bay proper allocations determined by vessel quota operating requirements.

H. Guided Marine Sportfishing

Historically, throughout the management of national parks, fishing has been a primitive recreational activity that encourages visitors to experience solitude, primitive and unconfined recreation, and natural qualities of wilderness character. Guided marine sportfishing is proper for realizing the public purposes of wilderness, and guided services may help achieve the desired conditions for visitor experience.

Guided marine sportfishing is prohibited in the Shoreline Access and Glacier Access Zones because the primary purpose of commercial services in these locations is to provide visitor access to tidewater glaciers, which is a goal of Glacier Bay National Park as described in the enabling legislation. Off-vessel activities that facilitate this access include hiking and kayaking; guided fishing may potentially monopolize the public's ability to participate in these activities and could result in visitor conflict. In the Frontcountry Access Zone, commercial services should be limited as identified in the desired conditions (see chapter 2). Commercially guided marine fishing will continue to be allowed in the Wilderness Waters Zone with necessary restrictions in place. The activity has limited participation in wilderness waters due to seasonal park restrictions to provide a diversity of visitor experiences. Charter vessels may continue to provide guided marine sportfishing services; however, because these services occur within Glacier Bay proper, the allocation will be determined by vessel quota operating requirements.

APPENDIX C: IMPACT TOPICS CONSIDERED BUT NOT CARRIED FORWARD FOR DETAILED ANALYSIS

ECONOMIC IMPACTS

The changes in recreational opportunities proposed in Alternative B—guided mountaineering and a new trail—would not have a noticeable effect on the park’s overall economic output. While the extent necessary determination allocates up to six commercially guided mountaineering trips a year in the Fairweather Range, between 2003 and 2015, about one guided trip per year occurred there, with an average of five people per trip (one to two of whom are presumed to be guides, given typical client-guide ratios). Use—at least for the foreseeable future—would likely mirror previous activity patterns, but even if all six trips took place, they would still contribute a negligible amount to the parks overall economic output (NPS 2021b; AMGCSI n.d.). The proposed trail may result in longer trips for some park visitors (potentially resulting in more spending) or some travelers foregoing commercial services in favor of a self-directed recreational opportunity (potentially resulting in less spending). Altogether, the financial impact would be too small to be perceived in the local economy.

ARCHEOLOGICAL RESOURCES

Archeological resources are not carried forward as an impact topic in this environmental assessment since the specific locations and design for the trail and installation of communications infrastructure are not yet known. Once this information is available, the park will conduct section 106 reviews per the National Historic Preservation Act and its implementing regulations (36 CFR Part 800), as appropriate. As part of the 106 process, existing data, surveys, and planning documents would be reviewed, new inventories and surveys conducted, and archeological sites buffered or avoided along proposed trail alignments and communications infrastructure. If eligible archeological resources cannot be avoided, additional impact analysis would be necessary, and all possible/necessary mitigation measures would be explored. The project proposing adverse effects would be evaluated and proceed as a separate undertaking. The Excursion Ridge trail area of potential effect has not been surveyed. Surveys would be completed during the development of area specific designs and before trail construction begins. If any sites are identified during this survey, the trail would be rerouted, or other appropriate mitigation measures would be taken (appendix D).

The allowance of commercially guided mountaineering and increase in the number of annual guided trips in the Fairweather Range could lead to inadvertent disturbance of archeological sites. However, the relative change in the number of annual visitors would be small due to the limited number of guided trips allocated in the extent necessary determination analysis (appendix B). The National Park Service would implement mitigation measures, such as area closures and cave and karst systems, and all operators will conduct prescribed education of the cultural significance to address sensitivities and mitigate impacts. To ensure natural and cultural resource preservation, park staff will regularly inform commercial operators of the

requirements for food storage and human waste disposal within the backcountry and wilderness. Therefore, impacts on archeological resources are unlikely.

HISTORIC STRUCTURES

Historic structures are dismissed as an impact topic in this EA because no historic structures are at risk of being adversely impacted with the implementation of this plan. Evaluation and reevaluation of historic structures associated with Tlingit populations and Tlingit Homeland will take place outside of this backcountry and wilderness management plan as a part of its own process. Following the evaluation of these structures, changes may occur to the classification and park management actions for these historic structures. If any compliance or consultation needs are identified as an outcome of that evaluation, they will be addressed in their own process.

CEMETERIES

Cemeteries are dismissed as an impact topic in this EA because no cemeteries are at risk of being adversely impacted. If burial sites are located during the archeological survey prior to the Excursion Ridge trail development, the trail would be rerouted around those sites, and no disturbance would occur (appendix D).

SOILS

Trail construction and use under the action alternative would result in soil compaction, erosion, and disturbance along the trail corridor. Due to cycles of glacier advancement and recession in the area, the soil composition within the Falls Creek area where the Excursion Ridge trail is proposed is known to be saturated and often unstable. The new ground disturbance and removal of mature vegetation in an area known for its instability could increase the potential for slide events. Slide events already occur in the area periodically. The use of best management practices and direction on trail alignment, design, and construction from both agencywide guidance, such as the *NPS Park Planning Technical Reference Trail System Planning* (NPS 2019c), and park-specific guidance, such as *Glacier Bay National Park Soil and Slope Guidance for Trail Routing* (Shields 2022c), would minimize impacts on soil stability. Implementation of the articulated mitigation measures within these guidance documents, such as avoiding silt-rich or clay-rich soils and contouring trail alignments, would minimize the potential for slumping, erosion, and soil loss during trail construction. Site-specific soil investigations would confirm soil-bearing capacity and drainage characteristics for any new facilities, and alternative alignments would be selected if conditions were determined to be inappropriate for trail construction.

Potential installation and maintenance of VHF radio and AIS stations would result in a tiny amount of soil compaction and erosion in the 100-square-foot ground footprint of each site. Station sites that are accessed on foot could show signs of trailing, but this would be temporary. Station maintenance would not occur frequently enough to maintain noticeable trailing. Any impacts on geologic resources and soils from actions are expected to be minimal

by implementing mitigation measures and other best management practices. Therefore, this topic was not carried forward for detailed analysis.

SPECIAL STATUS SPECIES

As confirmed by park staff and the US Fish and Wildlife Service Information for Planning and Consultation (IPaC) database, no federally listed species are expected to occur within the action area and no critical habitats are within the action area. As feasible locations are defined for VHF radio and AIS stations, the National Park Service would consult with US Fish and Wildlife Service and the National Marine Fisheries Service regarding potential impacts on federally listed threatened and endangered species and breeding migratory birds, or if accidental take of any migratory bird were possible. If new species are listed prior to implementation, the National Park Service would consult with the US Fish and Wildlife Service on potential effects on those species. Therefore, this topic was not carried forward for further analysis.

WILDLIFE

Native wildlife in the project area includes many species of birds, mammals, fish, and invertebrates. During construction of the trail and installation and maintenance of VHF radio and AIS receiver stations, noise and activity may alter wildlife use of the area if animals avoid the disturbed area. In particular, temporary noise from activity and the use of mechanized equipment during construction and maintenance activities may have adverse impacts on wildlife through impeding wildlife communication, feeding, resting, courtship and mating, predation and predator avoidance, and effective use of habitat (Shannon et al. 2016). To minimize impacts on nesting birds, vegetation clearing for construction of the trail would be done outside the bird nesting season (April 15 to July 15 or longer, depending on species); however, the loss of trees, shrubs, and herbaceous vegetation would reduce and fragment available nesting habitat. The permanent removal of up to 6.1 acres of varying forest vegetation for trail construction would reduce available habitat for species.

Following construction of the trail, use of the area by hikers would likely increase, and wildlife would be subject to long-term intermittent disturbance and displacement associated with increased human presence and activities. Within the productive subalpine and alpine zones, visibility and sound transfer farther, potentially disturbing sensitive wildlife across a greater area. However, Sitka spruce and hemlock forests are widespread in the park, covering more than 300,000 acres of the park's vegetated land. Common landcover classes found within the subalpine and alpine habitat, such as mesic herbaceous, wet herbaceous, Ericaceous dwarf shrub, and dwarf shrub-herbaceous, together cover more than 140,000 acres of the park's vegetated lands (Boggs et al. 2007). Although approximately 10 miles of trail would be constructed, this would not result in noticeable habitat fragmentation for most species.

Park staff has anecdotally received reports that visitors have brought pets onto Excursion Ridge where they are not permitted. To minimize impacts, the National Park Service would continue to enforce existing regulations and educate visitors about the impacts of dogs on wildlife.

Proposed mitigation measures for the actions discussed above would reduce the potential for adverse impacts on wildlife populations. No other actions in this plan would have a measurable adverse impact on wildlife species. Therefore, the impact topic of wildlife was not carried forward for further analysis.

APPENDIX D: ACTIONS AND STRATEGIES CONSIDERED BUT DISMISSED

ACTIONS CONSIDERED BUT DISMISSED FROM INCLUSION IN THIS PLAN

Strategic stream crossings to facilitate beach hiking. Maintained stream crossings would require significant construction and maintenance. That level of maintenance would be a difficult commitment except for the crossings on the Point Gustavus route, which would have primitive, natural aids to crossing as described in the frontcountry management plan.

Beach biking routes. Designating beach biking routes could impact the wilderness quality of unconfined recreation and would not contribute to the desired condition of maintaining a sense of self-reliance and challenge.

Designating water routes. Designating water routes could impact the wilderness quality of unconfined recreation and would not contribute to the desired condition of maintaining a sense of self-reliance and challenge.

Cabins and shelters. While ANILCA allows public use cabins and shelters in designated Wilderness, Glacier Bay National Park has no history of them. Recent social science indicates that visitors prefer no developed amenities in park wilderness (NPS 2021a). Data also show low use rates for many southeast public cabins and shelters (USFS 2020). Vessel use provides opportunities for visitors to stay overnight in many of the protected bays and inlets within Glacier Bay and along its outer coast. Because primary travel in Glacier Bay is via vessel within the bay, this provides opportunities for overnight stays either through private vessel or commercial or chartered vessels. Other considerations involved in not pursuing cabins and shelters in the backcountry include the dynamic marine setting, steep costs, and operational demands relative to public benefit, and the Glacier Bay-specific marine conditions where emergency assistance is typically offered by passing boats, US Coast Guard helicopters, or park vessels. Further explanation is provided in chapter 2 of the revised backcountry and wilderness management plan in the nonhistoric structures and shelters section. The National Park Service will reevaluate if or when there is a substantial glacial retreat in areas that would require significant overland travel or other means necessary to access glaciers and glacial features.

Banning campfires along shoreline. Banning campfires would limit personal freedom in wilderness (primitive and unconfined recreation). The park would provide education on the ecological importance of interstadial wood, the impacts of burning it, and other regulations regarding campfires as part of camping orientation.

ACTIONS CONSIDERED IN THE PLAN, BUT NOT RETAINED FOR DETAILED ENVIRONMENTAL ANALYSIS

Management progressions. For many of the zones, the park identified a series of progressive management actions to address impacts to resources and the visitors experience. These actions would not be implemented unless conditions were approaching specific thresholds or there was other evidence that desired conditions were not being met. Because current conditions are acceptable and thresholds are not being approached, there is no time line on when or if these progressions would be implemented. Because these actions are

therefore not reasonably foreseeable, management progressions were not carried forward for detailed analysis in this plan. Should the park move forward with any of the actions in the progressions, additional analysis and compliance would occur prior to implementation.

Portable or moveable totems to mark vessel drop-off and pick-up locations. In the past, the drop-off/pick-up sites have been marked with stone cairns, a modern practice that is problematic because historically, the Huna Tlingit used similar cairns in their traditional Homeland. To replace these cairns, portable or moveable totems will be carved as a collaborative project with the Hoonah Indian Association to acknowledge Homeland values and serve as guidance for backcountry users that they are about to enter designated Wilderness. Because the exact location of the totem placement is unknown at this time and is likely to be site specific, environmental analysis was not completed as part of this planning effort. Site specific analysis and compliance will be completed prior to installation.

APPENDIX E: BEST MANAGEMENT PRACTICES AND MITIGATION MEASURES

To ensure the protection of the park's fundamental resources and values, the following mitigation measures and best management practices would be implemented under all action alternatives. The National Park Service (NPS) has the authority to implement mitigation measures presented in this appendix under the Organic Act, The National Historic Preservation Act (NHPA), *NPS Management Policies 2006*, park-specific regulations at 36 CFR Part 13 Subpart N, and other federal and state applicable requirements. These measures are intended to provide a practical approach to everyday management of Glacier Bay National Park and Preserve's resources. These best practices and mitigation measures are intended to avoid or minimize potential adverse impacts from implementing the management actions proposed in this plan.

WILDERNESS CHARACTER

Most lands within Glacier Bay National Park are designated Wilderness. All section 4(c) prohibited acts, including but not limited to installations, helicopter landings, and the use of motorized equipment, would be subject to a minimum requirements analysis, as described in the Wilderness Act. For areas managed as wilderness, specific restrictions may affect the approval of transportation means, field work timing and frequency, group size, base camp locations, installations or structures, and the use of motorized equipment. Activities would be limited to the minimum necessary to meet the objectives of the proposed action.

Helicopter flights would be limited to trips that address essential park objectives with maximum efficiency per visit (coordinated with other co-located installation and maintenance activities), so the park can continue to minimize impacts on wilderness character. Helicopter use and landings would require advance approval from the superintendent and appropriate compliance review. If deemed the minimum tool necessary to accomplish the action, helicopter flights would be kept to the minimum number required to accomplish field activities. The project lead would be required to give advance notice to the park dispatch center and provide expected dates, times, and locations of helicopter activities. All helicopter activity would be logged (day, time, coordinates of landing site[s]) with data sent to the wilderness coordinator within 30 days of activity.

The park would develop an operational plan for helicopter use with park staff well in advance of trips to minimize impacts based on local knowledge of visitor and wildlife activities. This would allow joint planning of flight paths/routes in advance that minimize the impacts on wilderness character. Mitigations include but are not limited to:

- minimizing flight duration using the most efficient and direct route
- setting the minimum altitude to 1,000 feet above and away from terrain, while also avoiding coastline travel where helicopters may be seen and heard by the concentration of park visitors and wilderness users on park beaches and within narrow fjords where sounds would be pronounced

- minimizing the amount of time on the ground
- employing environmental best practices (fuel handling, waste, minimizing installations and footprints)

Effort would be made to minimize the disturbance of wildlife (e.g., mountain goats, Steller sea lions, seals) by:

- choosing travel routes that minimize helicopter and fixed wing transit over known wildlife hotspots (e.g., open alpine goat habitat, rookeries, major haulouts)
- designating one person in flight to notify the pilot of wildlife observations
- maintaining a minimum of 1500 meters (1.5 km/0.93 miles) vertical and horizontal distance from mountain goat habitat. Pilots will not hover over, circle, harass, or pursue wildlife in any way.
- maintaining a minimum of 915 meters (0.9 km/0.57 miles) vertical and horizontal distance from major rookery and haulout terrestrial zones for Steller sea lions (NMFS 1993)
- avoiding known bald eagle nests and maintaining a minimum 400 meters (0.4 kilometers/0.25 miles) clearance from all active known eagle nests. All nests are considered active March 1–May 31, and occupied nests are considered active through August 31.
- reporting any observed wildlife disturbance to the National Park Service

The Wilderness Act prohibits permanent or temporary structures and installations of any kind to retain its primeval character and influence. All equipment left in the field must be specifically authorized in advance. Mitigations related to installations include but are not limited to:

- Seek alternatives to installations, and minimize the number of project installations to the extent practicable.
- Use natural elements instead of plastic or metal to secure or build installations when possible.
- Camouflage installations as appropriate to minimize effects to the viewshed.
- Minimize the number and duration of field activities (i.e., trips for installation and maintenance).
- Minimize ground disturbance to the smallest practicable footprint.
- Document authorized installations consistent with protocol developed by the Alaska Regional Office. Report GPS coordinates and dates of all installations to the wilderness coordinator to be included in the park's database.

- Remove installation once no longer needed.
- Use nonmotorized tools to the extent practicable; however, motorized tools may be used if considered the minimum tool required to accomplish mission objectives.

Installations would be labeled with an engraving (preferred), paint pen, or removable label. Installations should be as unobtrusive as possible and should not interfere with visitor enjoyment of the park.

The National Park Service would implement mitigation measures and best management practices identified in the “Acoustic Environment” section to reduce adverse impacts on wilderness character from noise.

Specific to the proposed actions within this plan that support visitor access in designated Wilderness (hiking routes, trails, dayboat drop-off markers), the National Park Service would apply mitigations and best management practices that protect wilderness character. Site amendments or installations (totem foundations, constructed trails, boardwalks, bridges) will apply the minimum extent framework and limit the use of motorized tools in compliance with the Wilderness Act as implemented by ANILCA. Additional best practices and mitigations, include:

- Provide no visitor wayfinding or signage (or very minimal).
- Use natural site elements (wood, stone) to enable visitors to cross streams and areas of tidal inundation, and protect sensitive resources from impacts caused by foot traffic.
- Minimally scale constructed elements to meet operational objectives while also considering life-cycle efficiencies (e.g., apply a trail class that minimizes annual and cyclic maintenance, incorporate drainage control features that prevent erosion and resource damage).
- Design to demonstrate ecosystem-scale awareness (e.g., wetland functions, wildlife, vegetation succession), and model environmental stewardship.
- Use removable and/or temporary installations where operationally feasible.

TRAIL DEVELOPMENT

- For safety reasons, the area encompassing the new trail will be closed to the public during construction and improvement. Details on area closure times and durations will be posted for the public at the trailhead and other town locations and on the park website and social media outlets.
- NPS trail crews would coordinate and supervise any trail construction or maintenance. Specifically, the National Park Service would monitor and/or direct water bar placement; drainage placement; brushing and clearing; revegetation; where to obtain fill and other materials for trails; how to apply fill materials such as soil, gravel, and rocks, and apply erosion; and sedimentation control techniques. Park staff

would be responsible for ensuring that crews perform the necessary work in accordance with NPS instructions and standards.

- According to *NPS Management Policies 2006*, the National Park Service would construct the proposed trail with a sustainable design to minimize potential environmental impacts. Development would not compete with or dominate park features or interfere with natural processes, such as the seasonal migration of wildlife, forest regeneration, hydrologic activity, and geological processes. To the extent possible, the design and management of the proposed trail system would emphasize environmentally sensitive construction, use of nontoxic materials, resource conservation, recycling, and integration of visitors with natural and cultural settings.
- Trail design would follow existing guidance and reference documents, including the following relevant documents:
 - *NPS Park Planning Technical Reference Trail System Planning* (NPS 2019c)
 - *An Introduction to Terrain Dynamics for Trail Folks* (Shields 2022a)
 - *Trail Design and Layout* (Shields 2022b)
 - *Glacier Bay National Park Soil and Slope Guidance for Trail Routing* (Shields 2022c)
- All crew members and volunteers assisting in the trail work efforts would be educated about the importance of avoiding impacts on sensitive resources that have been flagged for avoidance, which may include natural and cultural resources.
- The National Park Service would implement measures to reduce adverse effects of construction on visitor safety and experiences. Measures may include, but are not limited to, noise abatement, visual screening, and directional signs that aid visitors in avoiding construction activities.
- The National Park Service would implement timely and accurate communication with visitors regarding construction activities via news releases, visitor contacts, web, or social media, as well as signage.
- Construction activities would be scheduled to minimize construction-related impacts on visitation and wildlife behavior (e.g., nesting seasons). Areas not under construction would remain accessible to visitors as much as is safely possible.
- To minimize new ground disturbance, staging areas would be located in previously disturbed areas. All staging areas would be returned to preconstruction conditions and/or revegetated following construction. Parking areas for construction vehicles would be limited to these staging areas, existing roads, and previously disturbed areas.
- A construction zone for installation of the proposed trail, as well as staging areas and work zones, would be identified and demarcated with construction tape or some similar material prior to any construction activities. The construction zone would be confined to the minimum area needed for implementing the project.

CULTURAL RESOURCES

The National Park Service would conduct NHPA section 106 reviews prior to the implementation of proposed actions, where appropriate. This may include a site-specific inventory, buffers to mitigate impacts on cultural resources, and existing development area surveys prior to upgrades where sites have not previously been surveyed. Proposed projects with the potential for ground disturbance would undergo site-specific planning and compliance procedures. If cultural resources could not be avoided, an appropriate mitigation strategy (e.g., excavating, recording, and mapping cultural remains before disturbance to ensure that important archeological data is recovered and documented) would be developed in consultation with the Alaska State Historic Preservation Officer, associated Alaska Native tribal representatives, and other concerned parties, as necessary.

Unless specifically authorized, disturbance of historic or cultural features would not occur; artifacts would not be collected; management actions and activities would avoid and buffer cultural sites; and if archeological or historic resources are discovered, work would stop at the discovery site, the discovery would be protected as required, and the park superintendent or park archeologist would be notified as soon as possible. Information and photographs regarding the location (including GPS coordinates), size, and nature of the discovery should be provided, if possible. All projects with the potential for ground disturbance or any adverse effects would undergo site-specific planning and compliance procedures. Adverse impacts on archeological or ethnographic resources would be avoided to the extent possible in accordance with the secretary of the interior's *Standards and Guidelines for Archeology and Historic Preservation*.

To appropriately preserve and protect national register-listed or eligible historic structures and associated cultural landscape features, all stabilization, preservation, or restoration efforts would be undertaken in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (1995) and the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes (1996).

Park staff would continue to develop inventories for and oversee research regarding archeological, historic, and ethnographic resources to better understand and manage the resources, including the development of maritime cultural landscapes. Park staff would conduct any needed archeological or other resource-specific surveys and National Register of Historic Places evaluations and identify recommended treatments. The results of these efforts would be incorporated into comprehensive planning and resource assessments, as well as site-specific planning, mitigation, and environmental analysis.

Known archeological sites would be routinely monitored to assess and document the effects of natural processes, human activities, and visual impacts associated with proposed projects on the resources. Archeological resources would be left undisturbed and preserved in a stable condition to prevent degradation and loss of research values unless intervention could be justified based on compelling research, interpretation, site protection, or park development needs. Recovered archeological materials and associated records would be treated in

accordance with *NPS Management Policies 2006*, the *NPS Museum Handbook*, and 36 CFR 79.

Given the extent of proposed actions within this plan, the National Park Service will follow the mitigations and best management practices prior to implementation, including but not limited to:

- If, during trail construction, previously unknown archeological resources were discovered, all work in the immediate vicinity of the discovery would be halted until the resources could be identified and documented. If the resources could not be preserved in situ, an appropriate mitigation strategy would be developed. In the unlikely event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, provisions outlined in the 1990 Native American Graves Protection and Repatriation Act (25 USC 3001) would be followed. If non-Indian human remains were discovered, standard reporting procedures to notify appropriate authorities would be followed, as would all applicable federal, state, and local laws.
- To minimize visual and auditory intrusions on cultural resources from trail development, the National Park Service would use screening or sensitive designs that would be compatible with historic resources and cultural landscapes and would not intrude on ethnographic resources. If adverse impacts could not be avoided, impacts would be mitigated through a consultation process with all interested parties.

The National Park Service would consult with associated Alaska Native tribal representatives to develop and accomplish park programs in a way that respects the beliefs, traditions, and other cultural values of the tribes who have ancestral ties to park lands. The National Park Service recognizes the past and present connections of associated tribes with park lands and that potential resources, places, and traces of tribal use are important parts of the cultural environment to be preserved, protected, and interpreted as appropriate.

The park would encourage visitors through the park's interpretive programs to respect and leave undisturbed any inadvertently encountered archeological and historical resources.

The park would cooperate with partners, park neighbors, and other stakeholders to establish and enforce measures to prevent and reduce human impacts such as vandalism and looting, on cultural resources.

Archeological Resources

Archeological resources within Glacier Bay National Park have been, and continue to be, largely managed according to federal laws and policies, including the National Historic Protection Act, the Archaeological Resource Protection Act, and the National Environmental Policy Act, with a host of others (e.g., the Native American Graves Protection and Repatriation Act, American Indian Religious Freedom Act.) These laws will continue to be the basis for the management and protection of archeological resources. Many of the best management practices listed above will be implemented in consideration to archaeological resources, particularly survey, monitoring, and recordation.

Ethnographic Resources/Traditional Cultural Properties

The recording of ethnographic resources and traditional cultural properties, as well as historic structures, archeological sites, non-altered geographic features, and commemorative sites (non-cemeteries) that are part of traditional cultural properties, will take place outside of the backcountry and wilderness management plan (plan). Before any action is implemented, site-specific inventories of ethnographic resources and traditional cultural properties will occur. If any ethnographic or traditional cultural property resources are identified, the area will be avoided and the action modified. Site-level management recommendations, actions, and priorities of actions will be completed following the recording and, in some cases, redefining of the resource.

Mitigations of adverse impacts of commercial climbing within the Fairweather Range may include the educational description of the sacredness of Mt. Fairweather within this document, education and orientation of the sacredness of Mt. Fairweather to mountaineers, and prohibiting mountaineers from entering Karst or other cave features within the park unless a specific permit is requested by the user and granted by the National Park Service. Should monitoring efforts indicate that desired conditions for resource protection are not being met, park staff may reduce the number of commercially guided trips that are permitted each year.

Historic Structures

The evaluation and reevaluation of historic structures for association with Tlingit Homeland, as well as criterion A and D will take place outside of this plan. Following this evaluation, changes may occur to the classification and park management actions for these historic structures. Currently, there are 39 recorded historic structures in Glacier Bay National Park and Preserve, thirteen of these structures occur within the backcountry. Narrowing this down, seven of these thirteen structures are identified for management under benign neglect (Cultural Resources Inventory System – Historic Structures, accessed December 5, 2022). Additionally, nine of these structures (69.2%) are associated in a meaningful way with Homeland.

Cemeteries

Independent of this plan, park management will develop a cemetery management plan that meets the local obligations in the American Indian Religious Freedom Act and the Native American Graves Protection and Repatriation Act. Management actions for individual cemeteries will be developed that consider the unique location and significance of these cemeteries.

VISITOR USE AND EXPERIENCE

Mitigation measures for all land- and water-based visitors may include, but are not limited to, the following:

- Implement timely and accurate communication with visitors regarding permitted activities and potential impacts on visitor experience, programs, services, and sites via news releases, visitor contacts, web and social media, signage (outside designated Wilderness), informational materials, and the NPS mobile application.
- Continue to offer and provide relevant information to visitors about the backcountry. This messaging could be expanded to include appropriate trail etiquette and Leave No Trace principles for park visitors, information about sensitive marine ecosystems for vessel operators, and information on human-wildlife interactions (i.e., safe food storage).
- Continue to instruct backcountry campers and commercial service operators in Leave No Trace best practices specifically relevant to this ecosystem and environment (e.g., use of bear resistant canisters to prevent wildlife habituation, use of intertidal zone for human waste disposal, campfires and cooking and eating to minimize wildlife habituation and ground disturbance).
- Partner with other companies, groups, entities, and access providers to connect visitors with relevant information before they arrive at the park such as safety and orientation information (e.g., maps, Leave No Trace principles).
- Schedule construction, maintenance, and recurring vegetation management outside the core visitor season of Memorial Day to Labor Day whenever practicable.
- Revisit operating plans with concessioners annually to ensure desired conditions are maintained. Monitoring could result in changes to the timing, group size, and authorized areas for commercial tour operators. If changes were necessary, the park would consider the financial impact of any proposed change.

Search and rescue operations in Glacier Bay National Park can be complex and often require substantial time to mobilize due to scarcity of NPS search and rescue resources and the remoteness of many backcountry areas of the park. Continue to partner, including with the US Coast Guard, for marine search and rescue operations in the park, while enhancing park and regional capacity to respond.

The park strives for efficient customer service and transparent permitting and continues to monitor the success of visitor serving operations.

VEGETATION

To minimize immediate and long-term impacts on vegetation, the National Park Service would conduct surveys prior to vegetation disturbance (e.g., trail planning and construction) to ensure species of concern are not present. If present, park staff would explore alternatives

to minimize disturbance, including but not limited to identifying protection zones, modifying the trail route, and transplanting any species of concern to another area with similar habitat. When appropriate, these measures would be implemented prior to and during construction.

Removal of trees greater than 18 inches in diameter would be avoided to the extent possible.

Following construction of the trail, disturbed areas would be allowed to recover naturally or revegetated with native plant species.

The project will comply with the Alaska Region Invasive Plant Management Plan Environmental Assessment and finding of no significant impact (NPS 2010):

- Equipment used in ground-disturbing operations will be cleaned of soil, mud, and debris and inspected by park personnel before it enters the park.
- Fill materials, including gravel, crushed rock, topsoil, and stockpiled project materials, will be acquired from sources identified as free of invasive plants.
- Ground-disturbing projects will be monitored for invasive species for five years after project completion. See the “Restoration” section (2.5.5) for post-project revegetation measures to minimize colonization success.

During all construction activities, best practices for invasive plants management would be employed, including the following:

- Minimize new soil disturbance and select previously disturbed areas for associated construction staging and stockpiling.
- Fence or clearly mark and enforce disturbance zones during construction to prevent disturbances to vegetation outside construction limits.
- Clean clothing and equipment carefully whenever moving between locations in the park to prevent the introduction/spread of the seeds/propagules of nonnative invasive organisms—both terrestrial and aquatic.
- Ensure that project personnel make daily checks of clothing, footwear, and equipment to ensure no exotic plant seeds and no off-site soil is transported to the work site.
- Pressure wash equipment off-site thoroughly to ensure that all equipment and machinery are clean and weed-free before being brought into the park and secondarily the project area.
- Obtain all fill, rock, topsoil, or other earth materials from certified weed-free sites.

Finally, managers will consider dynamic vegetation contexts during design, construction, and maintenance (e.g., isostatic rebound, succession). Vegetation-related activities in cultural landscapes will be managed according to treatment and preservation maintenance plans that define objectives (e.g., historic asset protection, historic viewshed preservation, forest health and age diversity, windthrow and hazard tree risk, fire-wise considerations).

SOILS

Mitigation actions would occur before, during, and after trail construction to minimize immediate and long-term impacts on soils. Mitigation measures could include, but are not limited to the following:

- Trail design would follow existing guidance and reference documents, including the following relevant documents:
 - *NPS Park Planning Technical Reference Trail System Planning* (NPS 2019c)
 - *An Introduction to Terrain Dynamics for Trail Folks* (Shields 2022a)
 - *Trail Design and Layout* (Shields 2022b)
 - *Glacier Bay National Park Soil and Slope Guidance for Trail Routing* (Shields 2022c)
- During trail construction, best practices for maintaining slope stability will be followed, as noted in *An Introduction to Terrain Dynamics for Trail Folks* (Shields 2022a):
 - Blend backslope cuts into the natural slope at as low an angle as practical to ensure the cut itself is steeper than the slope angle and thus steeper than the slope's angle of repose.
 - Tie all slope-retaining structures to the retained slope itself to ensure that the structure performs as an integral part of the slope.
 - Size structure footings based on the footing soil's bearing capacity and the slope steepness.
 - Contour your trail alignments and use the microterrain to include grade reversals designed into that alignment.
 - Avoid steep thin soils underlain by steep bedrock, particularly if the bedrock plane is similar to, or steeper than, the soil surface plane.
 - Avoid any silt-rich or clay-rich soils lacking a significant rock/gravel content, as practical, particularly if they are prone to persistent high moisture content.
 - Avoid flat ground, knowing that slopes under 5% almost invariably require elevating the tread to achieve reliable tread-section drainage and to preclude tread entrenchment.
- Design backslopes and trail tread slope to adequately handle foreseeable water volumes within that specific area.
- Maintain backslopes to allow for unrestricted drainage to an established drainage structure or by outslowing the trail tread to achieve sheet flow over the trail. This may

include yearly periodic grading, shaping, and clearing to maintain a smoothly uniform drainage system that is free from obstruction, ponding, or areas of settlement.

- Use local, native material for backslopes and downslopes wherever possible.
- Maintain effective delineation of the downslope to keep hikers on the actual trail and to prevent the perception that one is to walk where the downslope begins. Reshaping downslope sections and fill slopes may be periodically necessary to clarify the proper trail tread location.
- Use retaining walls to keep materials in place that might otherwise quickly erode (e.g., downslope areas with sandy soils).
- Install and maintain trail drainage systems as necessary to prevent water from pooling/running on the trail tread.

FISH AND WILDLIFE

Mitigation actions would occur before, during, and after trail construction to minimize immediate and long-term impacts on fish and wildlife. These actions would vary by specific project, depending on the extent of construction, its location, and the types of species and habitat affected. The National Park Service is already taking some actions to reduce wildlife-visitor conflicts within the park.

Mitigation measures to reduce impacts on wildlife could include, but are not limited to, the following:

- Conduct surveys prior to vegetation disturbance (e.g., for trail planning and construction) to ensure species of concern are not present. Work would be conducted outside nesting periods (April 15 to July 15 or longer, depending on the species) to the extent practicable if the project site harbors protected species that could be adversely impacted by construction.
- Consider trail alignment and design to reduce potential impacts on wildlife movement and ground nests. Placement and design of any elevated boardwalks would consider and minimize impacts on wildlife movement.
- Monitor the natural soundscape, and implement mitigation measures and best management practices identified in the “Acoustic Environment” section to reduce adverse impacts on wildlife from acoustic disturbances.
- Continue to engage in activities outlined in the 2013 *Glacier Bay Bear Management Plan*. The plan outlines several activities that the park will engage in to reduce bear-human conflicts, including controlling human food and attractants, enforcing food and trash storage violations, educating visitors, training staff, and using deterrents such as bear pepper spray.
- Continue to educate visitors about where they may encounter nesting birds, how to identify nests, how to identify nesting bird behavior, and how to respond

appropriately (such as moving elsewhere) to minimize disturbing nesting birds. Spatial or temporal closures would continue to be implemented in places where foot traffic or other human presence is detrimental or disturbing to pinnipeds, nesting birds, or if bear kills or other factors create a human safety risk (36 CFR 13.50). If park staff observes changes in nesting success and survivorship because of trampling or disturbance, park staff would implement strategies to reduce human impacts on bird populations such as increasing public education, restricting off-trail travel, or implementing temporary spatial or temporal closures.

- Continue to educate visitors on best wildlife viewing practices to minimize terrestrial wildlife disturbance. If concentration of wildlife activity occurs (e.g., high bear activity near a salmon stream or whale carcass), spatial or temporal closures may be implemented to limit approach distances of vessels to the shoreline or prevent foot traffic from off-vessel shoreline activities to minimize disturbance of terrestrial wildlife at critical feeding locations.
- Continue to educate visitors on where pets are and aren't allowed in the park and the effects of domestic animals, such as dogs, on wildlife.

Mitigations for both fixed-wing and helicopter flights to minimize effects to wildlife are captured in the “Wilderness Character” section above.

For visitors participating in recreational freshwater angling, the following mitigations would be followed:

- Provide details on the best available conservation fishing practices to visitors and charter fishing concessioners to share with visitors, including a focus on catch and release fishing.
- Collaborate with the Alaska Department of Fish and Game to clearly communicate allowed recreational gear types, seasons, any closures, and licensing requirements with the public (and that no federal subsistence fisheries are authorized).
- Communicate State of Alaska fish consumption guidelines associated with toxins such as mercury.

Specific to recreational harvesting of freshwater fishes, the park would monitor for both immediate and long-term impacts on fish populations and their associated habitats. Monitoring would include collecting data to estimate abundance, spatial distributions, and biometrics in park waters to inform park management decisions and ongoing efforts to preserve pristine water quality and the health of food webs. Knowledge of natural distributions, densities, age class distributions, and the behavior of harvested and non-harvested species that may be impacted from harvesting will be applied to prevent unacceptable impacts on park resources or natural processes.

The park would consult and collaborate with state and federal fisheries management agencies to help conserve harvested species. The National Park Service would explore new research opportunities and continue collaborations with partners, park neighbors, and other

stakeholders. Collaborations may include projects focused on data consolidation, fisheries, species and habitat monitoring, and science specific to stream succession and freshwater contaminants.

Federal subsistence fisheries are not allowed in Glacier Bay. Fishing in Glacier Bay by park visitors is a recreational activity. Recognizing this, the park will prioritize the experiential nature of this activity over harvest goals.

Develop science briefings to instill visitor respect for and knowledge of the aquatic environment, the food web, and keystone fish species such as Pacific salmon.

The park would educate visitors on the proper disposal of fish waste to minimize wildlife habituation issues.

WETLANDS

Mitigation measures would be applied to protect wetland resources prior to and during the installation of trail or other site development projects. Wetlands or wetland edges would be delineated by qualified NPS staff or certified wetland specialists and marked to inform the site-specific placement of the new trail. Except where public access to a wetland provides a visitor experience to appreciate these habitats and ecosystem functions, all pathway construction facilities would be sited to avoid wetlands. Where public access to wetlands is provided, paths or boardwalks would be designed in compliance with Executive Order 11990, "Protection of Wetlands," the Clean Water Act, Director's Order 77-1: *Wetland Protection*, and the *NPS Procedural Manual #77-1: Wetland Protection* (NPS 2016). Additional mitigation measures would include the following, as appropriate:

- Employ standard avoidance, minimization, and mitigation strategies.
- Where possible, avoid wetlands during construction using elevated boardwalks with support posts if determined to be the minimum tool necessary under the Wilderness Act. Exercise increased caution to protect these resources from damage caused by construction equipment, erosion, siltation, and other activities with the potential to affect wetlands. Take measures to keep construction materials from escaping work areas, especially near streams or natural drainages.
- Design footbridges to span the channel and the associated wetland habitat (i.e., no pilings, fill, or other support structures in the wetland/stream habitat) if identified as the minimum tool necessary under the Wilderness Act. If footbridges could not be designed to avoid wetlands, then complete additional compliance (e.g., a wetland statement of findings) to assess impacts on wetlands and ensure no net loss of wetland area.

ACOUSTIC ENVIRONMENT

The National Park Service would encourage pilots to fly at altitudes higher than the minimum permitted by regulation and on flight paths that would reduce aircraft noise. In developing an operations plan for helicopter use associated with park operations, the

National Park Service would recommend a preferred route over water with ocean approaches for each site, if safe and possible.

The National Park Service would implement standard noise abatement measures during construction, maintenance, and administrative activities. Standard noise abatement measures may include the following elements: a schedule that minimizes impacts on adjacent noise-sensitive users; the use of best available noise control techniques wherever feasible; the use of quieter impact tools when feasible; the use of hand when feasible; the placement of stationary noise sources as far from sensitive uses as possible; and the use of noise-muffling, shielding, or fencing.

The National Park Service would advise visitors and park staff about the impact of loud vehicles, motors, and other unnecessary noise disturbances (e.g., radios) within the park.

Additional mitigation measures to protect soundscapes would include the following, as appropriate:

- Create interpretive materials that instill a culture of awareness of and respect for the value of natural soundscapes.
- Enforce existing noise ordinances, such as 36 CFR 2.12, which is a federal regulation related to audio disturbances and prohibits noise that "... exceeds a noise level of 60 decibels measured on the A-weighted scale at 50 feet...", and 36 CFR 3.15, which sets maximum noise levels for the operation of vessels.
- Work with boat operators to reduce the use of generators.
- Manage commercial vessels' (under contract or commercial use authorizations) use of generators through their operating agreements.
- Advise visitors and park staff about the growing impact of loud vehicles, motors, and other unnecessary noise disturbances (e.g., radios).

APPENDIX F: ALASKA NATIONAL INTEREST LANDS CONSERVATION ACT SECTION 810 ANALYSIS SUMMARY EVALUATION AND FINDINGS

INTRODUCTION

This section was prepared to comply with Title VIII, section 810 of the Alaska National Interest Lands Conservation Act (ANILCA) of 1980. This section summarizes an evaluation of the potential restrictions to subsistence activities that could result from the implementation of the preferred planning vision in the draft plan in Glacier Bay National Park. The EA describes the range of alternatives for consideration.

THE EVALUATION PROCESS

Section 810(a) of ANILCA states:

“In determining whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands . . . the head of the Federal agency . . . over such lands . . . shall evaluate the effect of such use, occupancy, or disposition on subsistence uses and needs, the availability of other lands for the purposes sought to be achieved, and other alternatives which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes. No such withdrawal, reservation, lease, permit, or other use, occupancy or disposition of such lands which would significantly restrict subsistence uses shall be effected until the head of such Federal agency:

- 1. Gives notice to the appropriate State agency and the appropriate local committees and regional councils established pursuant to Section 805;*
- 2. Gives notice of, and holds, a hearing in the vicinity of the area involved; and*
- 3. Determines that (A) such a significant restriction of subsistence uses is necessary, consistent with sound management principles for the utilization of the public lands, (B) the proposed activity would involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other disposition, and (C) reasonable steps would be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions.”*

Presidential proclamations in 1925 and 1939 established and expanded Glacier Bay National Monument. In 1980, Title II of ANILCA created new units and additions to existing units of the national park system in Alaska. More specifically, ANILCA section 203 provides for lands, waters, and interests therein withdrawn or reserved for the former Glacier Bay National Monument to be incorporated within and made a part of Glacier Bay National Park subject to valid existing rights for the following purposes:

“To preserve for the benefit, use, education, and inspiration of present and future generations certain lands and waters in the State of Alaska that contain nationally significant natural, scenic, historic, archeological, geological, scientific, wilderness, cultural, recreational, and wildlife values.”

ANILCA section 202(1), added of an area containing approximately 523,000 acres, including the south bank of the Alsek River at Dry Bay, Alaska for the following purposes:

“To protect a segment of the Alsek River, fish and wildlife habitats and migration routes and a portion of the Fairweather Range including the northwest slope of Mount Fairweather. Lands, waters, and interests therein within the boundary of the park and preserve which were within the boundary of any national forest are hereby excluded from such national forest and the boundary of such national forest is hereby revised accordingly.”

Federal law and regulations prohibit ANILCA Title VIII subsistence uses on federal public lands in the park only. However, ANILCA (sections 1313) and Title 36 CFR 13.41 authorize subsistence uses on federal lands in the preserve.

ANILCA 816 (a) states:

“All national parks and park monuments in Alaska shall be closed to the taking of wildlife except for subsistence uses to the extent specifically permitted by this Act. Subsistence uses and sport fishing shall be authorized in such areas by the Secretary and carried out in accordance with the requirements of this title and other applicable laws of the United States and the State of Alaska.”

With regards to the preserve, section 1313 of ANILCA states:

“A National Preserve in Alaska shall be administered and managed as a unit of the National Park System in the same manner as a national park except as otherwise provided in this Act and except that the taking of fish and wildlife for sport purposes and subsistence uses, and trapping shall be allowed in a national preserve under applicable State and Federal law and regulation. Consistent with the provisions of Section 816, within national preserves the Secretary may designate zones where and periods when no hunting, fishing, trapping, or entry may be permitted for reasons of public safety, administration, floral and faunal protection, or public use and enjoyment. Except in emergencies, any regulations prescribing such restrictions relating to hunting, fishing, or trapping shall be put into effect only after consultation with the appropriate State agency having responsibility over hunting, fishing, and trapping activities.”

ANILCA sections 1314 (c) states:

The taking of fish and wildlife in all conservation system units; and in national conservation areas, national recreation areas, and national forests, shall be carried out in accordance with the provisions of this Act and other applicable State and Federal law. Those areas designated as national parks or national park system monuments in the State shall be closed to the taking of fish and wildlife, except that:

- 1. notwithstanding any other provision of this Act, the Secretary shall administer those units of the National Park System and those additions to existing units, established by this Act and which permit subsistence uses, to provide an opportunity for the continuance of such uses by local rural residents; and*
- 2. fishing shall be permitted by the Secretary in accordance with the provisions of this Act and other applicable State and Federal law.”*

The potential for significant restrictions must be evaluated for the proposed action's effect upon “. . . subsistence uses and needs, the availability of other lands for the purposes sought to be achieved and other alternatives which would reduce or eliminate the use . . .” (ANILCA section 810[a]).

PROPOSED ACTION ON FEDERAL LANDS

The National Park Service is charged with managing approximately 2.6 million acres of designated Wilderness lands and waters within Glacier Bay National Park. The draft plan proposes to enhance preservation and protection of the park's fundamental resources and values, as identified in its 2010 foundation station; address new NPS planning and wilderness management requirements; and support the park in incorporating wilderness character into management decisions. The EA analyzes actions within the draft plan that are subject to NEPA compliance.

Alternatives that meet the purpose and need for taking action are detailed in chapter 2 of the EA. The National Park Service identified Alternative B as the preferred alternative. Customary and traditional subsistence use on NPS park lands would continue where authorized by federal law under all alternatives.

Under Alternative B – Preferred Alternative, the National Park Service proposes the following programmatic and site-specific actions:

Required Backcountry Camping Permits Year-Round

A backcountry camping permit would be required on a year-round basis instead of only between May 1 and September 30 for all commercial and noncommercial camping in the wilderness and backcountry.

- This permit would apply within all of Glacier Bay National Park, not just lands accessed via the Glacier Bay Zone as is currently the case.

- This permit system would be free of charge and not involve a lottery or quota.

Group Size

- The group size for Glacier Bay National Park would remain at 12 or fewer people but apply to both overnight and day visitors. The group size would also apply year-round instead of only between March 1 and October 31.
- Group size exceptions may be granted for educational purposes, research, safety, traditional Tlingit Homeland activities, or administrative groups.

Trail Development

- The development of approximately 10 miles of new trail that access the park's designated Wilderness if development of a trail is feasible.
- Additional trail design would be required before construction.
- The EA assumes the trail will be a maintained trail, where sections of the trail could be built and maintained to different trail class standards to ensure maintainability and limit resource damage.

Commercial Mountaineering

- Commercially guided mountaineering and associated activities would be allowed in the Fairweather Range.
- This change would officially codify a recreational use that has been occurring on a temporary basis and allow the park to continue to regulate use to protect resources.
- The provision of this use aligns with objectives of the general management plan to encourage commercial services for the least-accessible areas of the park while reversing the 1984 decision that specific areas be closed to commercial mountaineering (figure 4).

Communications Upgrades

- Upgrades to existing and deploying new communications infrastructure would occur within the next one to three years.
- New automatic identification system (AIS transponder sites may be installed at up to 10 sites in the park with the goal of full coverage of park waters).

AFFECTED ENVIRONMENT

Subsistence uses, as defined by ANILCA section 810, means the following:

“The customary and traditional use by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of non-edible byproducts of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption; and for customary trade.”

Subsistence activities include hunting, fishing, trapping, and collecting berries, edible plants, wood, or other materials.

Other important subsistence use areas within the region include Icy Strait, Excursion Inlet, Cross Sound, Port Frederick, and Tongass National Forest. Most of the rural communities of southeastern Alaska rely on renewable natural resources for at least a portion of their subsistence needs. About one-third of the region’s rural communities take at least half of their meat and fish by hunting and fishing (Holleman and Kruse 1992).

Residents of such communities as Gustavus (population of 655), Hoonah (931), Elfin Cove (24), Pelican (98), Excursion Inlet (40), Sitka (8,458), and Yakutat (657) engage in subsistence uses near the boundaries of the park (ADOL 2020). Community subsistence resource activities include hunting, fishing, and gathering gull eggs, shellfish, firewood, wild plants, and berries. Historical resource utilization patterns, such as gull egg gathering, fish camps or communal marine mammal and deer hunts, are linked to traditional social and subsistence use patterns. Sharing of resource occurs between communities, as well as within communities throughout the region.

ANILCA and NPS regulations authorize subsistence use of resources in all Alaska national parks, monuments, and preserves, except pre-ANILCA reserved federal conservation units, including Glacier Bay National Park. ANILCA provides a preference for local rural residents over other consumptive users should a shortage of subsistence resources occur, and harvest allocation becomes necessary (ANILCA 804).

The main subsistence species, by edible weight, are salmon, deer, non-salmon fish, marine invertebrates, bears (black and brown), moose, and seals. Local people use a variety of salmon (chum, coho, pink, and sockeye), while halibut, herring, smelt, cod, greenling, lingcod, char, and Dolly Varden are also used for subsistence purposes (Alaska DFG 2012).

ANILCA and NPS regulations authorize subsistence use of resources in the preserve and prohibit subsistence uses in the park (codified in 36 CFR 13). Legislation enacted in 2000 (Public Law 106-455) and a legislative environmental impact statement authorize the limited harvest of glaucous-winged gull eggs by the Huna Tlingit in the park under a management plan cooperatively developed by the National Park Service and the Hoonah Indian Association, the federally recognized tribe of the Huna Tlingit. Glacier Bay is the traditional Homeland of the Huna Tlingit, who traditionally harvested eggs prior to park establishment. The practice was curtailed in the 1960s as the Migratory Bird Treaty Act and federal

regulations prohibited it. Current US Fish and Wildlife Service regulations allow residents of Hoonah and Yakutat to gather glaucous-winged gull eggs on national forest lands in Icy Strait and Cross Sound, including Middle Pass Rock near the Inian Islands, Table Rock in Cross Sound, and other traditional locations on Yakobi Island between May 15 and June 30. The land and waters of the park remain closed to all federal subsistence harvesting.

SUBSISTENCE USES AND NEEDS EVALUATION

To determine the potential impact on existing subsistence activities, three evaluation criteria were analyzed relative to existing subsistence resources that could be impacted. The evaluation criteria are:

- the potential to reduce important subsistence fish and wildlife populations by (1) reductions in numbers, (2) redistribution of subsistence resources, or (3) habitat losses;
- the effect the action might have on subsistence fishing or hunting access; and
- the potential to increase fishing or hunting competition for subsistence resources.

The Potential to Reduce Populations

- The implementation of the draft plan, including the EA preferred alternative, is not expected to adversely affect or significantly restrict the distribution or migration patterns of subsistence resources on federal public lands within the region. Therefore, no change in the availability of subsistence resources is anticipated as a result of the implementation of the preferred alternative.

Restriction of Access

- The preferred alternative is not expected to significantly restrict Title VIII traditional subsistence use patterns on federal public lands within the region. No restrictions or changes in subsistence access are proposed in the preferred alternative. The park is closed to ANILCA Title VIII subsistence uses.

Increase in Competition

- The preferred alternative is not expected to significantly increase competition for subsistence resources on federal public lands within the region. Provisions of ANILCA and NPS regulations mandate that if and when it is necessary to restrict the taking of fish or wildlife, subsistence users will have priority over other user groups (ANILCA 804).

AVAILABILITY OF OTHER LANDS

Choosing a different alternative would not decrease the impacts on park resources for subsistence. The preferred alternative is consistent with the mandates of ANILCA, including Title VIII and the NPS Organic Act.

ALTERNATIVE CONSIDERED

The EA describes and analyzes the alternatives considered in chapter 2. The range of alternatives is consistent with NPS mandates, ANILCA, and the purposes for which the park and preserve were established. No other alternatives that would reduce or eliminate the use of public lands needed for subsistence purposes were identified.

FINDINGS

This analysis concludes that the preferred alternative would not result in a significant restriction of subsistence uses.

APPENDIX G – SELECT LAWS, REGULATIONS, POLICIES, AND GUIDANCE

As an agency, the National Park Service has a long legacy of protecting Glacier Bay and its resources, unimpaired for the enjoyment, education, and inspiration of this and future generations. Associated with the Marine Management Plan, the National Park Service reaffirms its enduring commitment to implement the laws, regulations, policies, and guidance that will conserve park waters as a national treasure for future generations. Select laws, regulations, policies, and guidance by topic area include:*

ACOUSTIC ENVIRONMENT

NPS Director's Order 47
Noise Control Act
Alaska National Interest Lands Conservation Act

AIR QUALITY

Clean Air Act
NPS Organic Act
Alaska National Interest Lands Conservation Act

AQUATIC AND MARINE RESOURCES

Anadromous Fish Conservation Act
Clean Water Act
Endangered Species Act
Fish and Wildlife Coordination Act
Magnuson-Stevens Fishery Conservation and Management Act
Marine Mammal Protection Act
Marine Protection, Research, and Sanctuaries Act
North Pacific Halibut Act
Pacific Salmon Treaty
Alaska National Interest Lands Conservation Act
Alaska v. United States (545 U.S. 75, 125 S. Ct. at 2153)
Non-Conflicting State of Alaska Fishing Regulations
Executive Order 13158 – Marine Protected Areas

CULTURAL, HISTORIC, AND ARCHAEOLOGICAL RESOURCES

Archeological Resources Protection Act
Director's Order 28
National Historic Preservation Act
NPS Organic Act
Alaska National Interest Lands Conservation Act

ENERGY REQUIREMENTS AND CONSERVATION

Energy Policy Act
Energy Independence and Security Act
Executive Orders 13031, 13123, 13149
Alaska National Interest Lands Conservation Act

NATIVE ALASKAN TRIBAL SOVEREIGNTY, SELF-DETERMINATION, CONSULTATION, AND COORDINATION

1995 NPS Hoonah Indian Association Memorandum of Understanding (MOU)
2002 NPS Yakutat Tlingit Tribe MOU
Executive Orders 13007 and 13175
Indigenous Traditional Ecological Knowledge and Federal Decision-Making Memorandum
DOI Secretarial Orders 3206, 3175, 3342, 3403 (including co-stewardship Policy Memorandum 22-03)
NPS Director's Orders 66 and 71B
Hoonah Indian Association Reserved Rights in Berg Bay
Huna Tlingit Traditional Gull Egg Use Act, 2014 (Public Law 113-142)
Alaska National Interest Lands Conservation Act
DOI Policy on Alaska Native Land Claims Act Corporation
Consultation for actions substantially affecting their land, water areas, resources, and programs

NATIVE SPECIES AND EXOTICS MANAGEMENT

Alaska Region Invasive Plant Management Plan
National Invasive Species Act
Alaska National Interest Lands Conservation Act
Executive Order 13751

PARK OPERATIONS

NPS Organic Act
Alaska National Interest Lands Conservation Act
Park General Management Plan

PARK PURPOSES

Park Foundation Document
Organic Act (1916)
Presidential Proclamations 1733 (1925), 2330 (1939), 3089 (1955)
Alaska v. United States (545 U.S. 75, 125 S. Ct. at 2153)
Alaska National Interest Lands Conservation Act (1980), including Senate Committee Report 96-413, p.137).
Park General Management Plan (1984)
Federal Register, List of National System Marine Protected Areas (Document Number E9-9335)

PUBLIC HEALTH AND SAFETY

Pollution Prevention Act
Resource Conservation and Recovery Act
Alaska National Interest Lands Conservation Act
Pollution Prevention Act
Occupational Safety and Health Act
Resource Conservation and Recovery Act

SOCIOECONOMIC RESOURCES

Alaska National Interest Lands Conservation Act
NPS Director's Orders 2 and 12

THREATENED AND ENDANGERED SPECIES AND ECOLOGICALLY CRITICAL AREAS

Endangered Species Act
National Environmental Policy Act
NPS Endangered Species Reference Manual 77-8
NPS Organic Act
Alaska National Interest Lands Conservation Act

VISITOR USE AND EXPERIENCE

NPS Organic Act
The National Parks and Recreation Act of 1978 (54 USC§ 100502)
Alaska National Interest Lands Conservation Act
Park Foundation Document
Park General Management Plan
Park Frontcountry Management Plan
Park Backcountry and Wilderness Management Plan (In Preparation)

WATER QUALITY, HYDROLOGY

Clean Water Act
Executive Order 12088
Erosion and Sedimentation Control Act
Alaska National Interest Lands Conservation Act

WETLANDS

Clean Water Act
Executive Orders 12088, 11990
NPS Director's Order 77-2
Alaska National Interest Lands Conservation Act

WILDERNESS

Wilderness Act
Alaska National Interest Lands Conservation Act
NPS Director's Order 41
NPS Reference Manual 41: Wilderness Stewardship

WILDLIFE AND HABITAT MANAGEMENT

NPS Organic Act
Alaska National Interest Lands Conservation Act
NPS/ADF&G Master MOU (1982)
Migratory Bird Conservation Act and Migratory Bird Treaty Act
Park Bear Management Plan

**This list was prepared in 2023 and is included for planning reference only. The National Park Service makes no claims, promises or guarantees about its accuracy, adequacy, or completeness. Further, it also assumes the comprehensive application of the NPS Management Policies (2006), the National Environmental Policy Act, and park-specific plans and requirements.*

APPENDIX H: CULTURAL RESOURCE STUDIES

ARCHAEOLOGICAL INVENTORY AND MONITORING IN GLACIER BAY NATIONAL PARK AND PRESERVE, WITH A NEW FOCUS ON CULTURALLY MODIFIED TREES (2013)

This inventory identified new archeological sites, updated the status and condition of previously recorded sites, and created new records for sites that had not been adequately recorded. The inventory identified 323 culturally modified trees and recorded stone cairns, as well as other structures such as camping platforms, canoe troughs, and storage pits within the park. Overall, the research presented in this study increased the number of recorded archeological sites in the park by 64%. The report also identified certain elements of concern, such as the need to record culturally modified trees before they die and decay, trespassing, vandalism, unauthorized ground disturbance, and the construction and pilfering of artifacts.

THE HOONAH TLINGIT CULTURAL LANDSCAPE IN GLACIER BAY NATIONAL PARK AND PRESERVE: AN ARCHAEOLOGICAL AND GEOLOGICAL STUDY (2013)

This report recorded the results of a 1995 interdisciplinary survey jointly conducted by the Smithsonian Institution, the National Park Service, and the University of Alaska Fairbanks under the auspices of the Systemwide Archeological Inventory Program in 1995 that examined Tlingit archeology, history, and settlement patterns. The researchers collaborated with the community of Hoonah to capture and understand the cultural landscape that lives on in memory, ancestral generations, oral tradition, and traditional place names. While the report did not suggest management actions, the study brought together material evidence, indigenous knowledge, and cultural practices to discuss settlement and adaptive patterns of ancestral Tlingit within Glacier Bay National Park and Preserve and to inform management decisions.

TLINGIT HOMELAND

Early park planning documents address Tlingit Homeland concerns peripherally, if at all. The 1984 General Management Plan did identify the need to collect archeological and ethnographic information for use by researchers and interpreters and spoke to the need to strengthen relationships in “neighboring communities with a significant population of native Americans.” The plan did not, however, provide specific direction for managing the park as Tlingit Homeland. Early wilderness management proposals and documents also fail to mention any cultural resource concerns or management strategies and do not acknowledge that Glacier Bay encompasses Tlingit Homeland. Management direction for protecting Tlingit Homeland values focuses on continued efforts to document ethnographic resources, including resources previously classified as historic structures; facilitate and encourage ongoing, meaningful connection with ancestral places; and commemorate village or other sacred sites in appropriate ways. Homeland concepts, including land acknowledgments, would be embedded in all literature, orientation materials, and materials prepared by commercial service operators.

With adoption of the 1984 General Management Plan and for the next several decades thereafter, former cabins, camps, and affiliated structures were classified as historic structures, regardless of who had built them. At the time, this was standard practice in cultural resource management at the park. Given the generally dilapidated, collapsed, and decayed conditions of these historic structures, a policy of benign neglect was implemented in the 1984 General Management Plan. With the 1992 National Register Bulletin #38, cultural resource professionals began to appreciate the category of “Ethnographic Resource” or “Traditional Cultural Property,” and another decade afterward the concept of “Cultural Landscape” began to take shape in park planning. This backcountry management plan recognizes the progression of cultural resource management in the park, as it proposes a significant step in a new direction by recommending documenting the cabins, camps, rock art, cairns, cemeteries, and non-altered sacred and commemorative sites as elements of Tlingit cultural landscapes to be managed as an integrated resource, updating existing cultural landscape inventories such as Dundas Bay and seeing formal nomination of others, such as the Bartlett Cove Cultural Landscape/Traditional Cultural Property, and bringing a deeper understanding of Tlingit lifeways and ethnohistory into park planning.

APPENDIX I – PLANNING TEAM AND CONSULTATION LIST

Glacier Bay National Park and Preserve would like to express sincere thanks towards all who contributed their time and expertise in the preparation of this plan. Below left are the names of the main contributors inside the National Park Service. Below right are interests and entities outside the agency, contacted to request consultation during the planning process, and/or during the 30-day public and agency review:

NPS PLANNING CONTRIBUTIONS

PARK PLANNING TEAM

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Laura Buchheit, Matthew Cahill, and Ingrid Nixon, Interpretation Team
Lisa Etherington and Sean Eagan, Chief of Resource Management
Jacob Ohlson, Chief of Maintenance
Elizabeth Withers, Administrative Officer
Sara Doyle, Outdoor Recreation Planner
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Wes Bacon-Schulte, Archeologist
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Martin Hutten, Terrestrial Ecologist
Tania Lewis, Terrestrial Wildlife Biologist
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Danielle Lehle and Alexa Miles, Denver Service Center Natural Resource Specialists
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Sarah Conlin, Alaska Region Planning Portfolio Manager
Elizabeth Bella, Alaska Region Environmental Planning and Compliance Team Lead
Leah Schofield and Joan Kluwe, Alaska Region Environmental Coordinators
Brenna McGown and Sharon Kim, Alaska Region Outdoor Recreation Planners
Bella Furr, Park Environmental Protection Specialist

GUIDING POLICY

*The **Backcountry and Wilderness Management Plan** is part of an NPS planning portfolio with individual plans, studies, and inventories that together guide park decision making.*

*The **Environmental Assessment** was developed consistent with National Environmental Policy Act (NEPA) of 1969, and Council on Environmental Quality (CEQ) implementing regulations: Director's Order 12: Conservation Planning, Environmental Impact Analysis, and Decision-Making (NPS 2011) and its accompanying handbook (NPS 2015a).*

TRIBES AND EXTERNAL CONSULTATION LIST

TRIBAL CONSULTATION

Hoonah Indian Association
Yakutat Tlingit Tribe

ALASKA NATIVE INTERESTS

Cook Inlet Region Inc. (Gustavus landowner)
Huna Totem Corporation
Alaska Native Voices
Sealaska Corporation

GATEWAY COMMUNITY INTERESTS

City of Gustavus
Gustavus Visitors Association
City of Hoonah
Travel Juneau

ADVOCACY INTERESTS

National Parks Conservation Association
Friends of Glacier Bay
Alaska Travel Industry Association
The Wilderness Society

COMMERCIAL PARTNERS

Aramark, Incorporated (Glacier Bay Lodge contract)
Allen Marine Tours (Dayboat sub-contract)
Park contract holders (various)

AGENCIES

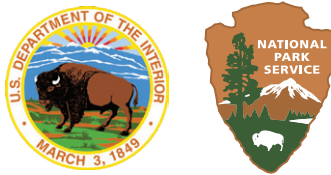
Alaska State Historic Preservation Office (SHPO)
US Fish and Wildlife Service
Alaska Department of Fish and Game
Alaska Department of Natural Resources,
ANILCA Program
National Marine Fisheries Service

ELECTED OFFICIALS

Lisa Murkowski, United States Senator
Dan Sullivan, United States Senator
Mary Peltola, United States Representative
Jesse Kiehl, Alaska State Representative
Sara Hannan, Alaska State Representative
Andi Story, Alaska State Representative

Gunalchéesh to Dzéiwsh, James Crippen, McGill University and Yukon Native Language Centre; K'ashGé, Daphne Wright; Kèyishí (Keiyishí), Bessie Cooley; Yeilt'ooch' Tláa, Collyne Bunn; and Xetli.Éesh, Lyle James for assistance with Tlingit language and orthography.

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As the nation’s principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historic places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

Revised Backcountry and Wilderness Management Plan Environmental Assessment

Glacier Bay National Park and Preserve
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Produced by the National Park Service

