

APPENDIX C

Biological Assessments for the Petersburg Outfitter Guide Environmental Assessment

Biological Evaluation
for the
Petersburg Outfitter and Guide Management Plan

USFWS, reference # 71440-2009-SL-0062

Petersburg Ranger District
Tongass National Forest

Prepared By: /s/ Matthew T. Moran Date: June 4, 2009
Matthew T. Moran
West Zone Wildlife Biologist, Bighorn National Forest

Reviewed By: /s/ Chuck Parsley Date: June 4, 2009
Chuck Parsley
Wildlife Biologist, Petersburg Ranger District, Tongass National Forest

TABLE OF CONTENTS

Biological Evaluation for the Petersburg Outfitter and Guide Management Plan Project, Petersburg Ranger District, Tongass National Forest

I. INTRODUCTION	3
II. PROJECT DESCRIPTION	6
III. THREATENED, ENDANGERED, CANDIDATE AND PROPOSED SPECIES	6
SPECIES NOT ADDRESSED IN DETAIL	9
Effects Analysis	10
Affected Environment	10
HUMPBACK WHALE	10
STELLER SEA LION	12
Yellow-billed Loon	13
Determinations	14
IV. SENSITIVE SPECIES	16
KITTLITZ'S MURRELET	16
NORTHERN/QUEEN CHARLOTTE GOSHAWK	18
ALEUTIAN TERN	19
BLACK OYSTERCATCHER	21
Determinations	22
VI. REFERENCES	23
VII. APPENDIX	28

I. INTRODUCTION

Biological Evaluations (BE) provide a process to review all Forest Service planned, funded, executed or permitted programs and activities for possible effects on threatened, endangered, proposed or sensitive species (TEPS) (Forest Service Manual 2672.4). BEs are intended to help ensure that Forest Service actions do not contribute to a loss of viability or any native or desired non-native plant or animal species or contribute to trends toward Federal listing of any species. They provide a process and standard to ensure that TEPS species receive full consideration in the decision-making process (FSM 2672.41).

The effects analysis in the BE is required to address any direct, indirect, and cumulative effects of an action on threatened or endangered species or their critical habitat (50 Code of Federal Regulations [CFR] 402.02) and on sensitive species or their habitat (FSM 2672.42). This BE also complies with Section 7 of the Endangered Species Act (ESA), which requires all Federal Agencies, in consultation with the U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS), to insure that their actions are not likely to jeopardize the continued existence of threatened, endangered or proposed species or adversely modify their habitat.

Current management direction on desired conditions for Threatened, Endangered, Proposed and Sensitive species on the Tongass National Forest can be found in the following documents:

- Forest Service Manual and Handbooks (FSM/H 2670/2609)
- National Forest Management Act (NFMA)
- Endangered Species Act (ESA)
- National Environmental Policy Act (NEPA)
- Tongass National Forest Land and Resource Management Plan (referred to as the Forest Plan) (USDA 2008a)
- Species-specific recovery plans that establish population goals for recovery of those species
- Regional Forester policy and management direction (i.e., Sensitive Species List)

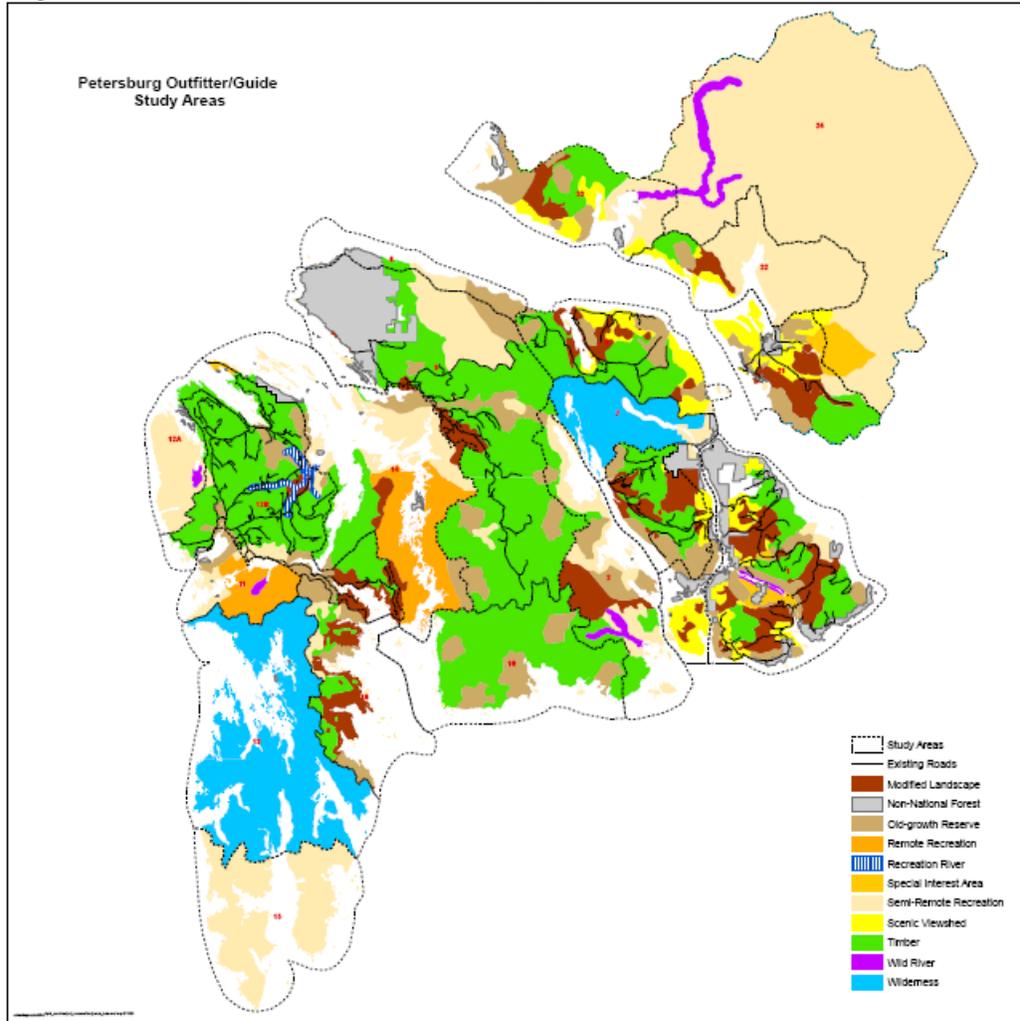
The Forest is organized into Land Use Designations (LUD) for management purposes. Each LUD has specific goals, objectives, desired conditions and management prescriptions which are discussed in Chapter 3 of the Forest Plan. LUDs within the project area are included in Table 1.

Table 1. Acres and percent of project area for each type of Land Use Designation (LUD)

LUD Acre	s	Percent of Project Area
LUD II (L2)	3341.53	0.17%
Modified Landscape (ML)	142,548.14	7.31%
Municipal Watershed (MW)	5,538.71	0.28%
Non-National Forest Land (NNF)	94,556.07	4.85%
Old Growth (OG)	176,598.58	9.06%
Research Natural Area (RA)	633.65	0.03%
Remote Recreation (RM)	61,892.59	3.18%
Recreation River (RR)	6,519.31	0.33%
Special Interest Area (SA)	19,440.76	1.00%
Semi-Remote Recreation (SM)	660,667.83	33.90%
Scenic Viewshed (SV)	73,517.44	3.77%

Timber Production (TM)	509,085.24	26.12%
Wild River (WR)	19,706.32	1.01%
Wilderness (WW)	172,659.34	8.86%
Wilderness Wild River (WWWR)	2,408.49	0.12%
Total 1,949,11	4.00	100.00%

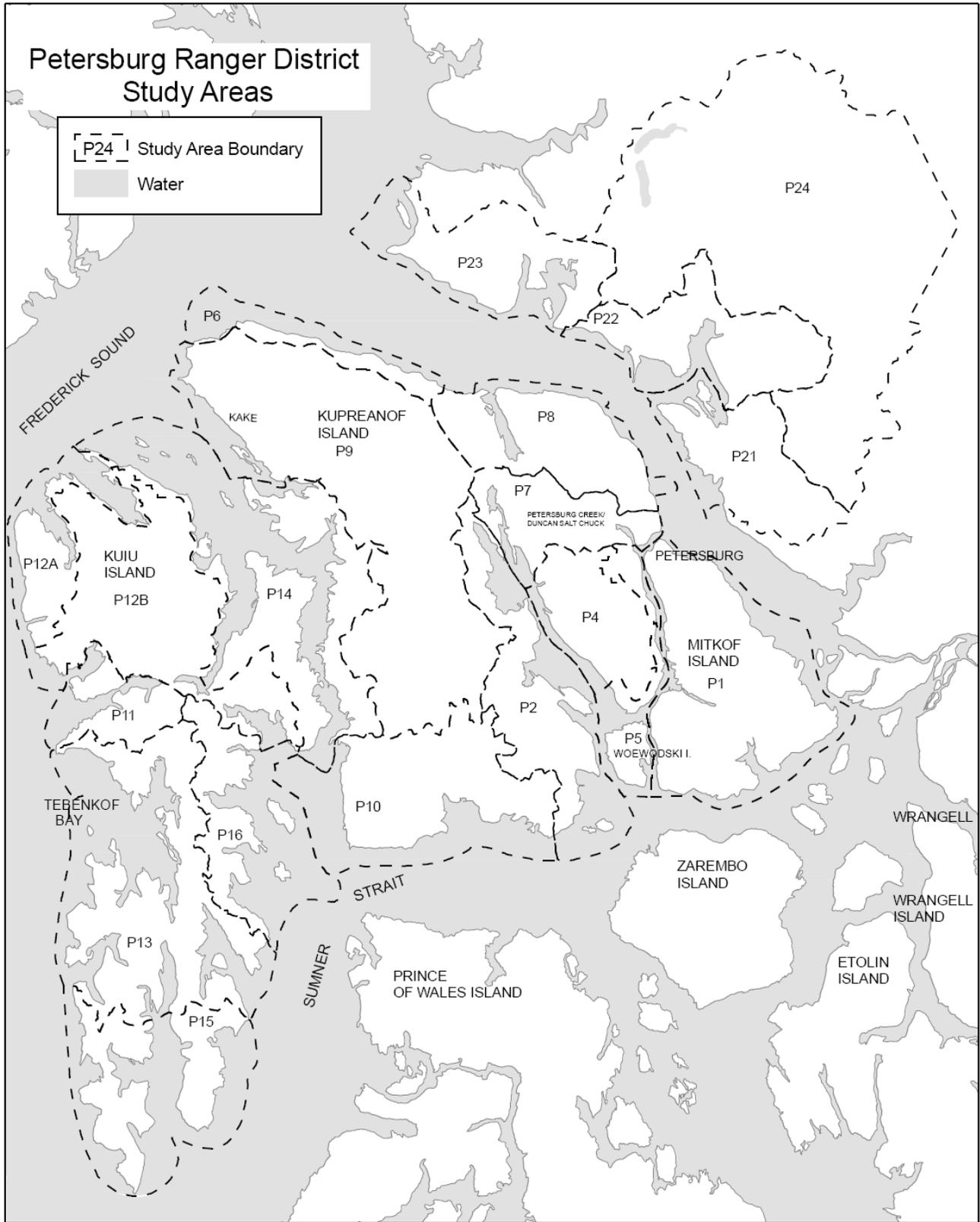
Figure 1. Petersburg Outfitter and Guide Management Plan Project Area by LUD



The Forest Plan provides specific information on how TEPS species will be managed. Forest-wide desired conditions and goals for fish and wildlife are included in Chapter 2 of the Forest Plan. The Forest Plan standards and guidelines for TEPS species provide the direction for species management within the project area (USDA 2008a, pp. 4-14, 4-89 through 4-100). The direction is incorporated by reference.

The project area consists of the National Forest System lands encompassing the Petersburg Ranger District of the Tongass National Forest (TNF), totaling approximately 1.9 million acres in central Southeast Alaska, including Mitkof, Kupreanof, Woewodski, and Kuiu Islands, a section of the mainland, and several smaller islands. It surrounds the communities of Petersburg, Kupreanof, and Kake. A map displaying the project area is presented in Figures 1 and 2.

Figure 2. Petersburg Outfitter and Guide Management Plan Project Area by study areas.



II. PROJECT DESCRIPTION

The USDA Forest Service, Tongass National Forest, Petersburg Ranger District is proposing the Petersburg Outfitter and Guide Management Plan. The proposed action is to authorize outfitter and guide operations through the issuance of special use permits, based on the Petersburg Recreation Use Carrying Capacity Report. The District is proposing to allocate outfitter and guides up to 10% of the capacity within an identified home range and 25% outside an identified home range. These allocations would be proportioned out by season; 10% in the spring, 65% in the summer, 15% in the fall and 10% in the winter (Appendix III and IV). This emphasizes more limitation on commercial use in the spring and fall to reduce user conflicts and provide more opportunities for solitude.

The proposal would authorize up to approximately 39,605 Recreation Visitor Days (RVDs) across the District for use by outfitters and guides. The use authorized may be temporary in nature (less than one year) or could be for multiple years. For those operators who have demonstrated satisfactory performance, the District Ranger may issue priority use permits, for a period of up to 10 years, in accordance with FSH 2709.11.

This action is needed to analyze the potential impacts from outfitter/guide use on National Forest System (NFS) lands and to set reasonable levels of use based on social and environmental conditions. It responds to the goals and objectives outlined in the Tongass Forest Plan (2008), and helps move the Petersburg Ranger District towards the desired conditions described in the Forest Plan (p. 2-1). The Forest Plan provides standards and guidelines to authorize services of qualified outfitters and guides to the public, where the need has been identified and is compatible with the objectives and management direction of the affected Land Use Designation (LUD), and to issue priority use permits, whenever possible, supplemented with temporary permits (p. 4-46). Forest Service policy (FSM 2720 and FSH 2709.11) allows for the issuance of special use authorizations for up to 10 years. Applications for multi-year permits allow outfitters and guides to make financial commitments necessary to continue to provide services to the public.

Special Use Authorizations permitting individuals, companies, or organizations to provide visitor services in Wilderness may be issued if there is demonstrated need for the service(s) and they are deemed appropriate for the area proposed (Forest Plan, p. 3-20). In September 2007, the Forest Supervisor made a determination of need for the services of outfitters and guides within Wilderness Areas to meet recreational purposes on the Tongass. In that document, it specifies that District Rangers remain responsible for making the final decision regarding the type, extent, amount, and location of commercial use within wilderness. In addition, as Congress has identified each wilderness as being separate management units with their own unique characteristics, decisions will be made on a wilderness-by-wilderness basis.

The analysis of this document is tiered to the Tongass National Forest Land and Resource Management Plan (2008a), the Wildlife Specialist Report, and the Subsistence Report for this project. These documents are incorporated by reference.

III. THREATENED, ENDANGERED, CANDIDATE AND PROPOSED SPECIES

In compliance with the Forest Plan and ESA, species that are listed as threatened, endangered, candidate or proposed in this area were identified. Federally listed threatened and endangered species are those plant and animal species formally listed by the Fish and Wildlife Service or National Marine Fisheries Service under authority of the Endangered Species Act of 1973, as amended. An endangered species is defined as one that is “in danger of extinction throughout all or a

significant portion of its range.” A threatened species is defined as one that “is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” Petitioned species are species that are actively being considered for listing.

The FWS and NMFS Internet web sites were consulted, for the preparation of this document because they provide occurrence and habitat information. An email correspondence from Katharine Savage (NMFS) to Chuck Parsley (USDA FS) was also obtained for clarification of current listed species recognized by NMFS.

The FWS list of threatened, endangered, candidate, and proposed species for all of Alaska is shown in **Table 2** (USDI 2009). The Kittlitz’s murrelet is listed as a candidate species, but will be addressed in the Forest Service Sensitive Species listing, further on in the document, and will not be covered here.

Table 2. Threatened, endangered, candidate and proposed species managed by the FWS and location description throughout Alaska (USDI 2009).

Common Name	Scientific Name	ESA Status	Location Description
Eskimo Curlew	<i>Numenius borealis</i>	Endangered	Occurred in the arctic and is assumed to no longer occur in Alaska (USDI 2007a and 2006a).
Short-tailed Albatross	<i>Phoebastria albatrus</i>	Endangered	Occupies coastal waters in the Gulf of Alaska and the Aleutian Islands (USDI 2001).
Spectacled Eider	<i>Somateria fischeri</i>	Threatened	Occupies coastal waters in northern and western Alaska (USDI 2004 and 2007).
Polar Bear	<i>Ursus maritimus</i>	Proposed	Lives only in the Northern Hemisphere (USDI 2006b, p. 1).
Steller's Eider	<i>Polysticta stelleri</i>	Threatened	Occurs in northern and western Alaska (USDI 2004 and 2007).
Steller Sea Lion (Eastern AK DPS)*	<i>Eumetopias jubatus</i>	Threatened	Includes sea lions born on rookeries from CA north through Southeast Alaska (NMFS 2008).
Steller Sea Lion (Western AK DPS)*	<i>Eumetopias jubatus</i>	Endangered	Includes sea lions born on rookeries from Prince William Sound westward (NMFS 2008).
Northern sea otter (SW Alaska Population)	<i>Enhydra lutris kenyoni</i>	Threatened	The FWS listed only the sea otter populations in southwest Alaska as threatened (USDI 2008, pp. 5-6).
Leatherback Sea Turtle	<i>Dermochelys coriacea</i>	Endangered	Species is "known to occur" in Alaska (USDI 2009).
Bowhead whale	<i>Balaena mysticetus</i>	Endangered	Species is "known to occur" in Alaska (USDI 2009).

Appendix C

Finback whale	<i>Balaenoptera physalus</i>	Endangered	Species is "known to occur" in Alaska (USDI 2009).
Humpback whale	<i>Megaptera novaeangliae</i>	Endangered	Species is "known to occur" in Alaska (USDI 2009).
Yellow-billed loon	<i>Gavia adamsii</i>	Candidate	Species is "known to occur" in Alaska (USDI 2009). Breeds in arctic Alaska. Winters as far south as Southeast Alaska (USDI 2006d).

* DPS = Distinct population segment.

The list of Alaska threatened, endangered, and proposed species from the NMFS is shown in **Table 3**. A discussion to validate referenced occurrence information was obtained from an email correspondence from Katharine Savage, NMFS, on 12 February 2009.

Table 3. Summary of NMFS listed threatened, endangered, proposed & candidate species in Alaska (NMFS 2009).

Common Name	Scientific Name	ESA Status	Location Description	
Blue whale	<i>Balaenoptera musculus</i>	Endangered	These whales are generally found in off-shore (pelagic) marine waters of the Bering Sea, Chukchi Sea, North Pacific Ocean and/or Gulf of Alaska (NMFS 2009b). Critical habitat has been designated for North Pacific right whales in the Bering Sea and the Gulf of Alaska (NMFS 2009b).	
Beluga whale (Cook Inlet)	<i>Delphinapterus leucas</i>	Endangered		
Bowhead whale	<i>Balaena mysticetus</i>	Endangered		
Fin whale	<i>Balaenoptera physalus</i>	Endangered		
North Pacific right whale	<i>Eubalaena japonica</i>	Endangered		
Sei whale	<i>Balaenoptera borealis</i>	Endangered		
Sperm whale	<i>Physeter macrocephalus</i>	Endangered		
Humpback whale	<i>Megaptera novaeangliae</i>	Endangered	This species is likely to occur in waters surrounding the Tongass NF.	
Green sea turtle	<i>Chelonia mydas</i>	Threatened	These species occur in the Gulf of Alaska and some species are found as far west as the Aleutian Islands. Adults are highly migratory, but the details and locations of migrations are largely unknown (NMFS 2009c).	
Leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered		
Loggerhead sea turtle	<i>Caretta caretta</i>	Threatened		
Olive Ridley sea turtle	<i>Lepidochelys olivacea</i>	Threatened		
Steller sea lion - Western AK DPS*	<i>Eumetopias jubatus</i>	Endangered	The eastern DPS is likely to occur in waters surrounding the Tongass NF. There may be an occasional occurrence by the western DPS in the Yakutat area. Critical habitat has been designated.	
Steller sea lion - Eastern AK DPS*		Threatened		
<i>Fish Species</i>				
Chinook salmon:	<i>Onchorhynchus tshawytscha</i>	Threatened	Listed stocks of salmon and steelhead originate from freshwater habitats in Washington, Idaho, Oregon and California. Some of the listed species migrate into marine waters off the coast of Alaska. Some individuals are occasionally present in the inside waters of Southeast Alaska where they may feed on prey resources originating within marine and estuarine waters of the Tongass NF (USDA FS 2008b, p. F-7).	
Lower Columbia River				
Puget Sound				
Snake River spring/summer				
Snake River fall				
Upper Columbia River spring				
Upper Willamette River	<i>Onchorhynchus nerka</i>	Endangered		
Snake River Sockeye Salmon				
Steelhead:				
Lower Columbia River	<i>Onchorhynchus mykiss</i>	Threatened		
Middle Columbia River				
Snake River Basin				
Upper Columbia River				

Common Name	Scientific Name	ESA Status	Location Description
Upper Willamette River		Threatened	

* DPS = Distinct population segment.

SPECIES NOT ADDRESSED IN DETAIL

Blue, Right, Finback, Sei, Beluga, and Sperm whales are generally found in off-shore (pelagic) marine waters of the Bering Sea, Chukchi Sea, Cook Inlet, North Pacific Ocean and/or Gulf of Alaska (NMFS 1998, NMFS 2006, and NMFS 2005). No critical habitat has been designated for these species in Alaskan waters. Bowhead whales are distributed in seasonally ice-covered waters of the Arctic and near-Arctic, generally north of 54°N and south of 75°N in the western Arctic Basin. The majority of the Western Arctic stock migrates annually from wintering areas in the northern Bering Sea, through the Chukchi Sea in the spring, to the Beaufort Sea where they spend much of the summer before returning again to the Bering Sea in the fall to overwinter. No critical habitat has been designated for this species in Alaskan waters (Shelden and Rugh 1995). These species generally are not known to occur in the project areas. Therefore, no effects to these species are expected and they will not be discussed further in this document.

The spotted, bearded, and ringed seals that are listed in Alaska occur further north than the Petersburg Ranger District, in the Bering Sea and the Chukchi Sea (NMFS 2009), therefore are not effected by our project area, and will not be discussed further in this document.

The Green, Leatherback, Olive Ridley and Loggerhead sea turtles occur in the Gulf of Alaska and some species are found as far west as the Aleutian Islands. Adults are highly migratory, but the details and locations of migrations are largely unknown. These turtle species have been documented to occur in Southeast Alaska (NMFS 2009), but those sightings are considered incidental and the species are not common to the Petersburg Ranger District. These turtle species are suspected to be uncommon in Alaska marine waters and critical habitat has not been designated in Alaskan waters (NMFS 2007a and NMFS 2009, NMFS and FWS 1998). Leatherback, Green, Olive Ridley and Loggerhead sea turtles have not been documented in or around the salt waters of the Petersburg Outfitter and Guide project area are not known to occur in habitats likely to be affected by this project. Therefore, no effects to these species are expected and they will not be discussed further in this document.

The Yellow-billed loon is an uncommon winterer in Southeast Alaska in offshore and inshore waters adjacent to the Tongass National Forest. Allocations would be proportioned by season and is only expected to be 10-15% when Yellow-billed loons would occur. Proposed activities are for permitted land-based activities, therefore, no effects to this species or its habitat are expected and they will not be discussed further in this document.

The proposed action to increase permitted land based activities is outside of Pacific Herring (Lynn Canal DPS). Transportation via boat to get to land based activities is not expected to increase from existing use, therefore, no effect to these species is expected and they will not be discussed further in this document.

None of the stocks of Pacific salmon or steelhead known to originate from freshwater habitat in Alaska are listed under the Endangered Species Act. However, some individuals of the listed species originating from freshwaters in the lower 48 states occur in Alaskan outside waters. No critical habitat has been designated for these species in Alaskan water (USDA 2008b, p. F-7). None

of the listed stocks of salmon or steelhead are known to originate in Alaskan streams. However, many species and stocks are listed that originated from freshwater habitats in Washington, Idaho, Oregon, and California. Some of the listed species migrate into marine waters off the coast of Alaska. While distribution of these stocks is primarily in outer coastal waters some are occasionally present in the inner waters of Southeast Alaska and they may feed on prey resources originating within marine and estuarine waters of the Tongass National Forest (USDA 2008b, p. F-7). Critical habitat has not been designated for these species in Alaskan waters, therefore, no effect to these species is expected and they will not be discussed further in this document.

General Forest Plan direction for threatened and endangered species applies (USDA 2008a, p. 4-98 through 4-100).

Effects Analysis

The analysis area was analyzed and a determination was made to assess the direct, indirect, and cumulative effects of the proposed project on proposed, endangered, and threatened species or critical habitat (50 CFR 402.14, FSM 2671.44) (Table 4). There will be no effect to the Eskimo curlew, Polar bear, Northern sea otter, Short-tailed albatross, Yellow-billed loon, Spectacled eider, and Steller's eider listed by the FWS and the Blue whale, Bowhead whale, Fin whale, Green sea turtle, Leatherback sea turtle, Olive Ridley sea turtle, Loggerhead sea turtle, North Pacific right whale, Sei whale, or Sperm whale listed by the NMFS have not been documented to occur in southeast Alaska, or on the Tongass National Forest, or in habitats likely to be affected by the Petersburg Outfitter and Guide Management Plan Project Area or they are not listed as threatened, endangered, or proposed in southeast Alaska. Therefore, there should be no direct, indirect or cumulative effects to these species and they will not be addressed further in this document. Informal consultation with USFWS (Steve Brockmann, 20 May 2009, reference #71440-2009-SL-0062) occurred.

Affected Environment

The NMFS and FWS listed wildlife species that may occur within the waters surrounding the project area include the endangered humpback whale (*Megaptera novaeangilae*) and the threatened Steller sea lion (*Eumetopias jubatus*). This Biological Evaluation will address the Humpback whale and Steller Sea Lion in further detail.

HUMPBACK WHALE

The NMFS listed the humpback whale as a threatened species because of over-exploitation from commercial whaling (NMFS 1991, p.15). Primary objectives of humpback whale recovery include maintaining and enhancing habitat and reducing human-related mortality, injury, and disturbance (NMFS 1991, p. 7).

Humpback whales are the most abundant of the seven species of endangered whales that occur in southeast Alaska waters. They are common in the inside waters of the Alexander Archipelago and are regularly sighted in the Inside Passage and coastal waters of the southeast Alaska panhandle from Yakutat Bay south to Queen Charlotte Sound. The local distribution of humpbacks in Southeast Alaska appears to be correlated with the density and seasonal availability of prey, particularly herring (*Clupea harengus*) and euphausiids (NMFS 1991, p. 18). Humpback whales feed in southeast Alaskan panhandle waters from about May through December, although some have

been seen every month of the year. Peak numbers of whales are usually found in near shore waters during late August and September, but substantial numbers usually remain until early winter (NMFS 1991).

Important feeding areas include Glacier Bay and adjacent portions of Icy Straight, Stephens Passage/Frederick Sound, Seymour Canal, and Sitka Sound. Glacier Bay and Icy Straight appear to be important feeding areas early in the season, when whales prey heavily on herring and other small, schooling fishes. Frederick Sound is important later in summer, when whales feed on swarming euphausiids. During autumn and early winter, humpbacks move out of the Sound to areas where herring are abundant, particularly Seymour Canal. Other areas of southeast Alaska may also be important for humpbacks and need to be evaluated. These include: Cape Fairweather, Lynn Canal, Sumner Strait, Dixon Entrance, the west coast of Prince of Wales Island, and offshore banks such as the Fairweather Grounds (NMFS 1991). The NMFS has not designated critical habitats for this species in Alaskan waters. Humpback whales are known to use the waters of Fredrick Sound and Chatham Strait, areas already having high commercial vessel use; slow-moving barge traffic should not increase the disturbance of these animals.

Humpback whales are commonly observed in the waters adjacent to the Tongass NF. Specific Forest Plan direction for humpback whale is given on pages 4-98 to 4-99 (USDA 2008a).

Direct and Indirect Effects

The implementation of the Petersburg Outfitter and Guide Management Plan are limited to the land-based permitting system, and would not affect stream or marine environments, so would result in a negligible level of influence and “no effect” to this species or its habitat. No critical habitat for this species has been designated on the PRD.

Humpback whales may inhabit shallow coastal areas where they are increasingly exposed to human activity. Recovery plans for the humpback whale (NMFS 1991, p. 25) identified potential human induced factors that could affect individual reproductive success, alter survival, and/or limit the availability of habitat for these species.

National Forest management activities that could have an effect on habitats or populations of this species generally fall into the categories of direct disturbance, acoustic disturbance, and habitat degradation (including effects to prey species). The proposed action would have no direct, indirect or cumulative effects to the humpback whale. Increasing the allocation of permits is not anticipated to result in an increase in boating activity or alter habitat that could affect streams or the marine environment. It is anticipated that increased use will cause permittees to use larger, slower boats causing no net increase in existing disturbance.

The Marine Mammal Protection Act (NMFS 2007B) and 50 CFR 224 establish measures to protect marine mammals. These measures includes prohibiting the harassment, hunting, capturing, or killing of any marine mammal and prohibiting approaching within 100 yards of a humpback whale.

Permit-holders are required to ensure that activities conducted are in a manner consistent with Marine Mammal Protection Act, Endangered Species Act, and NMFS regulations for approaching whales, dolphins, and porpoise. “Taking” of whales is prohibited; “taking” includes but is not limited to: harassing or pursuing, or attempting any such activity, as per page 4-99 of the Forest Plan. Because permitted individuals are required to comply with all prohibitions and regulations

protecting marine mammals, there is no effect expected to these species.

Cumulative Effects

No cumulative effects are expected to the Humpback whale as a result of this project. Permittees are required to adhere to regulations and prohibitions governing the “taking” of protected marine mammals, therefore no direct, indirect or cumulative effects are expected from such activities.

STELLER SEA LION

NMFS recognizes two distinct population segments (DPS) of Steller sea lions. The eastern DPS includes sea lions born on rookeries from California north through Southeast Alaska; the western DPS includes those animals born on rookeries from Prince William Sound westward. The regulatory division between DPSs is Cape Suckling (144° west longitude) in the northeast Gulf of Alaska. However, frequent movement is seen across this boundary by animals from both populations, particularly juvenile animals (NMFS 2008, p. I-3). Due to persistent decline, the western DPS was reclassified as threatened, found at <http://www.nmfs.noaa.gov/pr/pdfs/recovery/stellersealion.pdf>.

The Western Alaska DPS (distinct population segment) does not occur in within the Petersburg Outfitter and Guide Management Plan Project area and will not be discussed further in this Biological Evaluation.

Steller sea lion habitat includes marine and terrestrial areas. Adult Steller sea lions congregate at rookeries; a site where breeding occurs and sea lions may haulout during the non-breeding period. Rookeries are generally located on relatively remote islands, often in exposed areas that are not easily accessed by humans or other mammals. The breeding season generally extends from late May to early July (NMFS 2008, p. I-2). During fall and winter many sea lions disperse from rookeries and congregate at “haulout” areas. Rookery and haulout locations are specific and use of these sites changes little from year to year. Rocks, reefs, beaches, breakwaters, navigational aids, floating docks and sea ice may also be used as haulouts. Life history and population information is contained in the Recovery Plan (NMFS 2008) and is incorporated by reference.

Critical habitat for Steller sea lions was designated by NMFS in 1993 (50 CFR 226). Three rookeries and 11 haulouts were designated as critical habitat in Southeast Alaska. Since this designation, two additional sites, Graves Rocks and Bialy Rocks, appear to have developed into rookeries (NMFS 2008, p. I-14). Steller sea lion critical habitat includes a 20 nautical mile buffer and three large offshore foraging areas (see <http://alaskafisheries.noaa.gov/protectedresources/stellers/habitat.htm>). A known sea lion activity area occurs on the Sukoi Islands off Kupreanof Island near the Five-mile Creek drainage and Horn Cliffs near Petersburg, AK. They also occur on small islands at the mouth of Keku Strait and on small islands to the north of the project. These areas will not be affected by this project.

Specific Forest Plan direction for Steller sea lion is given on pages 4-93 and 4-98 to 4-99 (USDA 2008a).

Direct and Indirect Effects

Southeast Alaska populations have not declined as much as other populations. Harassment or displacement of sea lions from preferred habitats by human activities such as boating, recreation,

aircraft, log transfer facilities, log raft towing, etc. is a concern with regard to long term conservation of the sea lion in Southeast Alaska. Forest-wide S&Gs direct the Forest Service to prevent and/or reduce potential harassment of sea lions and other marine mammals due to activities carried out by or under the jurisdiction of the Forest Service.

Steller sea lions may inhabit shallow coastal areas where they are increasingly exposed to human activity. Recovery plans for Steller sea lion (NMFS 2008) identified potential human induced factors that could affect individual reproductive success, alter survival, and/or limit the availability of habitat for these species. National Forest management activities that could have an effect on habitats or populations of this species generally fall into the categories of direct disturbance, acoustic disturbance, and habitat degradation (including effects to prey species). The proposed action should have no direct, indirect or cumulative effects to the Steller sea lion. Increasing the allocation of permits is not anticipated to result in an increase in boating activity or alter habitat that could affect streams or the marine environment. It is anticipated that increased use will cause permittees to use larger, slower boats causing no net increase in existing disturbance. A known haul-out occurs on the Sukoi Islands off Kupreanof Island near the Five-mile Creek drainage near Petersburg, Alaska. They also occur on small islands at the mouth of Keku Strait and on small islands to the north of Kupreanof Island, and at Horn Cliffs. These areas are expected to have no effects from this project.

Permit-holders are required to ensure that activities conducted are in a manner consistent with Marine Mammal Protection Act and Endangered Species Act, and to ensure that guidelines for approaching seals and sea lions from the NMFS are adhered to. “Taking” of sea lions is prohibited; “taking” includes but is not limited to: harassing or pursuing, or attempting any such activity, as per 4-99 of the Forest Plan. Because permitted individuals are required to comply with all prohibitions and regulations protecting marine mammals, there is “no effect” expected to these species.

Cumulative Effects

No cumulative effects are expected to the Steller sea lions as a result of this project. Permittees are required to adhere to regulations and prohibitions governing the “taking” of protected marine mammals, therefore no direct, indirect or cumulative effects are expected from such activities. These regulations will also protect haulout sites, should Steller sea lions be present.

YELLOW-BILLED LOON

The yellow-billed loon is the largest of the loon species. They nest near freshwater lakes in the arctic tundra of Alaska on the Arctic Coastal Plain, northwestern Alaska and Saint Lawrence Island, and in portions of Canada and Russia. Winter range includes the coastal waters of southern Alaska from the Aleutian Islands to Puget Sounds and portions of Asia, Norway and potentially Great Britain (USDI FWS 2009).

Yellow-billed loons nest exclusively in coastal and inland low-lying tundra associated with permanent lakes. Lakes are generally larger in size (33 acres), greater than six feet deep, are often connected to streams and must be fish-bearing. Important lake features include clear water, dependable water levels, and shoreline vegetation. Nests are constructed of mud or peat and are located on islands, hummocks, peninsulas or along low shorelines within three feet (one meter) of the water (USDI FWS 2009).

The FWS developed a conservation agreement to protect yellow-loons in 2006. The yellow-billed

Appendix C

loon was designated as a candidate species throughout its range and petitioned for listing as a threatened or endangered species in March 2009 (Federal Register 2009).

Although yellow-billed loon nest areas have not been identified on the Tongass NF, loons may be observed along the Pacific coast while migrating to winter habitat. General Forest Plan direction for seabirds and shorebird habitats apply to this species (USDA FS 2008a, pp. 4-93 to 94) and direction for the protection of beach, estuary and riparian habitats maintain some habitat for this species.

Direct and Indirect Effects

Yellow-billed loon would be affected most by activities that occur along the shoreline and in coastal habitats. Direct effects can result from disturbances that adversely affect individuals or their young. Indirect and cumulative effects can result if activities alter potential nesting or foraging habitat or reduce limiting habitats or long term productivity. Factors that could affect yellow-billed loons include subsistence harvest, oil and gas development and other contaminants, climate changes, fishing by-catch, and marine pollution in wintering habitat. Because permitted individuals are required to comply with all prohibitions and regulations protecting marine mammals, there is “no effect” expected to these species.

Cumulative Effects

No cumulative effects are expected to the yellow-billed loon as a result of this project. Permittees are required to comply with all Forest-wide Standards and Guidelines. Proportioned allocations will only be between 10-15% during times when this species may occur.

Determinations

A determination was made to assess the effects of the project on threatened, endangered, and proposed species or their critical habitat (50 CFR 402.14, FSM 2671.44). Based on the physical and biological requirements of the humpback whale and Steller sea lion and considering the potential effects from implementing the proposed action, it is my opinion that the proposed action will have “no effect” the listed species or their habitats. Proposed action is limited to the land-based permitting system and would not affect stream or marine environments. No critical habitat for these species has been designated on the PRD. Recovery plans for the humpback whale (NMFS 1991, p. 25) and the Steller sea lion (NMFS 2008) identified potential human induced factors that could affect individual reproductive success, alter survival, and/or limit the availability of habitat for these species. National Forest management activities that could have an effect on habitats or populations of these species generally fall into the categories of direct disturbance, acoustic disturbance and habitat degradation (including effects to prey species). These effects are generally associated with the development and use of marine access facilities, increased marine activities, and activities that alter stream habitats that flow into marine environments. Marine transits between the islands and mainland will occur. However, neither the humpback whale nor the Steller sea lion are known to congregate in any known marine transit areas where outfitters/guides may be operating with a Forest Service permit. In addition, the increase in RVDs to be allocated in the proposed action is not expected to result in increased marine transits between islands where permitted activity occurs. Increasing the allocation of permits is not anticipated to result in an increase in boating activity or alter habitat that could affect streams or the marine environment. It is likely that increased use may cause permittees to use larger, slower boats or float planes which would cause minimal net increase in existing disturbance. The number of RVDs has increased as a result of the formula now used for calculating carrying capacity and not due to an increase in demand for permitted activity. Existing permitted levels have not exceeded allowable RVDs.

The yellow-billed loon and Kittlitz’s murrelet (addressed later) would be affected most by activities that occur along the shoreline and in coastal habitats. Direct effects can result from disturbances that adversely affect individuals or their young. Indirect and cumulative effects can result if activities alter potential nesting or foraging habitat or reduce limiting habitats or long term productivity. Factors that are suspected to negatively affect Kittlitz’s murrelet populations include cyclic changes in the oceanic environment and glacial retreat that may contribute to a reduction in prey or foraging habitat. Other factors include predation, oil pollution, disturbance by commercial and recreational boaters and flight seeing operations (USDI FWS 2006c). Factors that could affect yellow-billed loons include subsistence harvest, oil and gas development and other contaminants, climate changes, fishing by-catch, and marine pollution in wintering habitat (USDI FWS 2009).

I therefore request, that a “no effect” determination be rendered in regard to the humpback whale, Steller sea lion, yellow-billed loon, and Kittlitz murrelet for this project. The activity proposed would have the possibility of an incidental occurrence by any species in the marine habitat adjacent to the project area, but this expected to have no effect on the species viability or critical habitat. All project activities would be conducted in a manner consistent with the ESA and regulations. Special use permit requests will be considered upon consultation with district wildlife biologists to ensure any new information is reflected in the decision prior to issuing any permits.

Table 4. TES effects to species that occur or are likely to occur on the Tongass National Forest or in waters adjacent to the forest.

Species/Issue	Presence		Direct, indirect and Cumulative Effects	
	Species Present in Analysis Area	Species Habitat Present in Analysis Area	Determination ¹	Reason for Determination/ Level of Influence
Threatened, Endangered or Proposed				
Humpback Whale	Yes	Yes	No Effect	Proposed land-based allocations would not increase marine disturbance or alter habitat that could affect streams or the marine environment. Guides don’t currently use their total allocated days and increasing the allocation will not automatically result in an increase in boating activity.
Steller Sea Lion	Yes	Yes	No Effect	Proposed land-based allocations would not increase marine disturbance or alter habitat that could affect streams or the marine environment. Guides don’t currently use their total allocated days and increasing the allocation will not automatically result in an increase in boating activity.
Yellow-billed loon	Yes	Yes	No Effect	Proposed land-based allocations would not increase marine disturbance or alter habitat that could affect streams or the marine environment. Guides don’t currently use their total allocated days and increasing the allocation will not automatically result in an increase in boating activity. Additionally, this species would only likely occur in winter where the allocation would be proportioned from 10-15%.

1 - Possible determinations for T&E species and Designated Critical Habitat: “no effect”, “not likely to adversely affect”, or “likely to adversely affect”. Possible determinations for Proposed Species and Proposed Critical Habitat: “no effect”, "not likely to jeopardize proposed species, or adversely modify proposed critical habitat", or "likely to jeopardize proposed species, or adversely modify proposed critical habitat".

IV. SENSITIVE SPECIES

Sensitive species are those plant and animal species identified by the Regional Forester for which population viability is a concern on NFS lands within the region. This is evidenced by a significant current or predicted downward trend in population numbers, density, or habitat capability that will reduce a species’ existing distribution (FSM 2670.5). The Forest Service Manual states that viable populations and habitat of these species will be maintained and distributed throughout their geographic range on NFS lands (FSM 2670.22). As part of the NEPA process, Forest Service impacts to these species will be minimized or avoided (FSM 2670.32). The BE should identify all sensitive species known or suspected to occur in the analysis area or all sensitive species that the project potentially effects (FSM 2672.42).

The Alaska Region Sensitive Species List was last updated in 2009 (**Table 5**) (FSM 2600 Supplement No.: R-10 2600-2009-1). The Regional Sensitive Species List continues to be revised as new information dictates (USDA 2009).

Table 5. Alaska Region (R10) listed sensitive species.

Common Name	Scientific Name
Kittlitz’s murrelet	<i>Brachyramphus brevirostris</i>
Queen Charlotte goshawk	<i>Accipiter gentilis laingi</i>
Aleutian Tern	<i>Sterna aleutica</i>
Black oystercatcher	<i>Haematopus bachmani</i>
Dusky Canada Goose	<i>Branta Canadensis occidentalis</i>

* Based on our Alaska Region and National Forest System policy, USFWS and NMFS Candidate species are considered and treated as FS Sensitive, analyzed as such per Regional Forester letter to Forest Supervisors, February 2, 2009 (USDA 2009).

This project was analyzed to assess the direct, indirect, and cumulative effects of the proposed project activities on sensitive species and/or their critical habitats (50 CFR 402.14, GSM 2671.44). The Alaska Region (R10) listed sensitive species that may occur near or within the project area are: Kittlitz’s murrelet (*Brachyramphus brevirostris*), Queen Charlotte goshawk (*Accipiter gentilis laingi*), Aleutian tern (*Sterna aleutica*), and the Black oystercatcher (*Haematopus bachmani*). This Biological Evaluation will address these four species in further detail. The Dusky Canada Goose does not occur outside of the Yakutat Ranger District on the Tongass National Forest and will not be addressed further

KITTLITZ’S MURRELET

On May 9, 2001, the Secretary of the Interior was petitioned to list the Kittlitz’s murrelet as endangered with concurrent designation of critical habitat under the ESA. Petitioners cited dramatic reductions in population size over the past decade and declining habitat quality as reasons for the requested listing. The species was officially designated a candidate species (warranted, but

precluded) on May 4, 2004. A candidate species is a species for which the FWS has sufficient information to support a proposal to list as endangered or threatened, but for which preparation and publication of a proposal is precluded by higher priority listing actions. The Kittlitz's murrelet has been designated as a sensitive species, added to the R10 sensitive species list. Current Forest Plan direction for sensitive species applies (USDA 2009).

In March of 2009, the Commissioner of the ADFG was petitioned to list the Kittlitz's murrelet. Petitioners cited concerns with rapidly declining global population size and highly restricted distribution that make this species vulnerable to extinction from land and sea-based threats including global warming, oil spills, mortality in the gillnet fishery, and disturbance from vessel traffic (Center for Biological Diversity 2009, p. 1).

Kittlitz's murrelet is a small diving seabird that is closely associated with glacial habitats along the Alaska mainland coast. The only North American population occurs in Alaskan waters from Point Lay south to the northern portions of Southeast Alaska (Endicott and Tracey Arm). The largest breeding populations are believed to be in Glacier Bay National Park and Preserve, Prince William Sound, Kenai Fjords, and Icy Bay (Kendall and Agler 1998). The Kittlitz's murrelet population has shown a significant decline in Prince William Sound, Glacier Bay and in the Malaspina Forelands (USDI 2006c). The Prince William Sound population has shown an 18 percent per year decline and an 84 percent decline from 1989 to 2000. The Glacier Bay population declined approximately 80 percent between 1991 and 2000. In the Malaspina Forelands the population has declined at least 38 percent (5 percent per year) but possibly up to 75 percent between 1992 and 2002 (USDI 2002).

Major threats to this species are global warming, which is correlated with a loss of suitable habitat (glacial melt) and reduction in prey availability due to warming sea temperatures. Human activity in the marine environment, particularly vessel traffic and fishing operations, are additional threats. Speculated causes for Kittlitz's murrelet decline include: glacial recession, oil pollution, gillnet mortality, and availability of preferred forage fish (Kuletz et al. 2003; Piatt and Anderson 1996). Increased disturbance from helicopter tours and cruise ships may also be a factor.

They have been seen as far south as Frederick Sound, Snow Passage and Sea Otter Sound (Day et al. 1999). During the breeding season they congregate near tidewater glaciers and offshore of remnant high-elevation glaciers. Breeding sites are usually chosen in the vicinity of glaciers and cirques in high elevation alpine areas with little or no vegetative cover (Van Vilet 1993). When present, vegetation is primarily composed of lichens and mosses (Day et al. 1983). The species generally nests within 0.2 to 47 miles inland and a short distance below peaks or ridges on coastal cliffs, and on barren ground, rock ledges, or talus above timberline (Day et al. 1983). During winter and spring, the marine distribution of Kittlitz's murrelet is farther offshore in the Alaska coastal Current and mid-shelf region (USDI 2006c).

Kittlitz's murrelets congregate near tidewater glaciers and offshore of remnant high-elevation glaciers during the breeding season. Breeding sites are usually chosen in the vicinity of glaciers and cirques in high elevation alpine areas with little or no vegetative cover (van Vilet 1993). Nesting habitat in Alaska is believed to be unvegetated scree-fields, coastal cliffs, barren ground, rock ledges, and talus above timberline in coastal mountains, generally in the vicinity of glaciers, cirques near glaciers, or recently glaciated areas. During winter and spring, the marine distribution of Kittlitz's murrelet is farther offshore (USDI 2007).

Prey consists of fish (Pacific sand lance (*Ammodytes hexapterus*), Pacific herring (*Clupea pallasii*),

capelin (*Mallotus villosus*), Pacific sandfish (*Trichodon trichodon*), euphausiids, amphipods and small crustacean (Day et al. 1999). They forage extensively near outflow from glaciers, both tidewater and retreated glaciers with turbid glacial streams, primarily within 656 ft (200m) from shore (Day et al. 1999).

Kittlitz's murrelet is known to occur on the oceanic glaciers that occur on the Petersburg Ranger District. These glacial outwashes are within landscapes that fall outside normal land disturbance projects and we do not expect Forest Service activities to affect these areas. This habitat is found on the mainland portions of the Petersburg Ranger District. It is made up of active glacial terrains and boundary range icefields (Nowacki et al. 2001). The majority of these ecological subsection areas are managed as natural settings, within wilderness or national monuments. The main areas are the Le Conte, Patterson and Baird Glaciers.

Direct, Indirect, and Cumulative Effects

The Kittlitz's murrelet prefers an association with glacial habitat, not abundant on the Petersburg Ranger District, except in some areas of the mainland, such as the areas near Le Conte, Patterson, and Baird Glaciers. These areas are unlikely to be selected for Outfitter and Guide Management Plan activities. General Forest Plan direction for sensitive species applies (USDA 2008a, p. 4-99 through 4-100). Because of this there are no direct, indirect or cumulative impacts expected to the species. The determination as a candidate species is no effect.

NORTHERN/QUEEN CHARLOTTE GOSHAWK

The northern goshawk is identified as a species of concern throughout its range and is identified as a sensitive species by the Alaska Region of the USFS. In an effort to evaluate the status, population, and habitat ecology of the northern goshawk on the Tongass National Forest, the Alaska Department of Fish and Game (ADF&G) and the Forest Service (FS) conducted a goshawk study from 1991 to 1999. A total of 63 nesting sites in Southeast Alaska were documented as a result of this study. A "nest site" is defined as the portion of a goshawk pair's home range that contains all active and inactive nests. Of 47 nest trees (trees that include a nest), 53 percent were in Sitka spruce, 43 percent were in western hemlock, and 4 percent were in yellow cedar (ADGF 2006).

Productive old growth (POG) forest is an important component of goshawk habitat in southeast Alaska. POG forest is characterized as an old growth forest type that generally includes older and/or larger trees with a dense canopy and a diverse understory. The goshawk is a wide-ranging forest raptor that occupies old-growth forest habitat in Southeast Alaska. Goshawks select POG forest types at all scales (nest tree, nest site, post-fledging areas). However, non-productive forest types and second-growth stands are also used by goshawks for movement and foraging (ADFG 2006). Suitable nest site habitat consists of large trees with a dense canopy and generally an open under-story averaging 12 to 37 acres in size (Flatten et al. 2001). Although goshawks prefer to place their nests in mature to old growth forest types, they will nest in younger forest or in smaller patches of trees, and forage in young forest as well as along edges and in openings (Boyce et al. 2006). Although there is some documented use of second growth in southeast Alaska, for the most part goshawks are associated with older forests. Goshawk nest sites generally occur far from openings, in stands more than 600 feet wide, on slopes of less than 60 percent, and near the toe of a slope or on a bench. On average, nest trees occur at 423 feet elevation but generally do not occur above 1,100 feet (USDA 2008b pp. D-22 through D-25; Titus et al. 1994, p. 5). Continuous disturbances likely to result in nest abandonment within the surrounding 600 feet of the nest are not permitted from March 15 to

August 15, as per General Forest Plan direction.

Foraging areas comprise the largest percentage of the goshawk's home range. Foraging habitat is characterized by forested stands with a greater diversity of age classes and structural characteristics (e.g., snags, woody debris) than nesting areas (Reynolds et al. 1992, p. 16). Breeding season home range size is strongly dependent upon the quality of foraging habitat and prey availability. In Southeast Alaska, prey remains were dominated by a few key species including Steller's jays (*Cyanocitta stelleri*), grouse (*Dendragapus* spp.), varied thrush (*Ixoreus naevius*), red squirrel (*Tamiasciurus hudsonicus*), ptarmigan (*Lagopus* spp.), and woodpeckers (Picidae) (Titus et al. 1994, p. 6, Lewis et al 2006).

The FWS completed a review and determined that the subspecies' populations in British Columbia (B.C.) and Alaska each constitute distinct population segments (DPS) of the Queen Charlotte goshawk. Based on difference in forest management with substantially greater existing and anticipated habitat loss in B.C. than in Alaska, the FWS determined that the B.C. DPS would be listed as threatened or endangered but the Alaska DPS would not be listed (Federal Register 2007).

The General Forest Plan direction includes a conservation strategy for goshawks that includes a system of reserves (Old Growth Habitat Reserves and other non-development LUD) and direction for managing the matrix between reserves (USDA 2008a, pp. 4-99 and 4-100). Forest Plan provides standards and guidelines to maintain nesting habitat for the Queen Charlotte and northern goshawk. An area of not less than 100 acres of POG, if it exists, generally centered over the nest tree or probable nest tree will be maintained. Continuous disturbances likely to result in nest abandonment within the surrounding 600 feet of the nest are not permitted from March 15 to August 15 (USDA 2008a, pp. 4-99 to 100).

Eighty-one percent of the confirmed and probable nest sites in Southeast Alaska are south of Frederick Sound. The Regional Forester added this species to the Sensitive Species List in 1994, and the 2009 revision reflects the same listing (USDA 2009).

Direct and Indirect Effects

This project does not propose to change alter any habitat, therefore there will not be a decrease POG habitat. Queen Charlotte/northern goshawks are known to occur within the project area but disturbances from this project area not expected to disturb goshawks especially during nesting season. If a disturbance occurs it is expected to be infrequent and very short in duration, therefore no impacts are expected for the species as a result of the activities associated with the project.

Cumulative Effects

The proposed project would have negligible direct, indirect or cumulative effect to goshawks because the project would not affect productive old-growth forest habitat, "no impact" on goshawk or its habitat is expected because of this project.

ALEUTIAN TERN

The Aleutian Tern (*Sterna aleutica*) is a coastal, colonial nesting seabird of Alaska and eastern Siberia. Discovered in 1868 on Kodiak Island, this species has been little studied to date. The terns range is coastal areas of southern and western Alaska. Breeding colonies often shift year to year,

Appendix C

especially in the Northern Bering and Chukchi seas. Breeding colonies have been located along coast of Chukchi Sea as far north as Kasegaluk Lagoon, on Seward Peninsula, Yukon-Kuskokwim River Delta, along Alaska Peninsula, in scattered locations in the Aleutian Islands, on the Kodiak Archipelago, on Kenai Peninsula, Copper River delta, and along the Gulf of Alaska as far east as Dry Bay. Aleutian terns may breed farther south and east at Lituya Bay and Glacier Bay (North 1997).

On its breeding grounds, this tern frequently associates with Arctic Terns (*Sterna paradisaea*) in North America. Its distribution, abundance, breeding phenology, and habitat use are fairly well known, but its behaviors are not well described (North 1997).

Colonies in North America are generally located between 51°20'N and 69°50'N latitude. Colonies are coastal in North America, up to 3.2 km inland in sub-Arctic and boreal regions. Colonies are usually located on flat vegetated islands, dwarf-shrub tundra, grass and sedge meadows, sandy spits and islands (usually on inner side of barrier islands, in lagoon systems, or river estuaries), and freshwater marshes (North 1997).

Usually forages in shallow water, including tidal “rips”, along rivers, and over inshore marine waters, but not in freshwater lakes along outer Alaska Peninsula. The Aleutian tern forages in near-shore marine waters, up to 11 km offshore from Seward Peninsula, and pelagic waters >50 km offshore from other colonies, but, the species reportedly forages nearly exclusively over bays and fjords. One flock observed foraging in Prince William Sound where the muddy Copper River water and clear marine water meet (North 1997).

Some causes for Aleutian tern mortality include: [scarcely] shooting and trapping, [historically] pesticides and other contaminants; ingestion of plastics, lead, and other toxins, degradation of habitat, disturbance at nest and roost sites, and occasionally human research impacts at roost sites (North 1997). Data from studies of the Aleutian Tern Working Group recently reviewed the species status, natural history, uses, and threats and concluded that data suggests suspected causes of natural and human-induced population decline causes (FSM 2600 Supplement No.: R-10 2600-2009-1).

Population viability concerns have been raised due to reduced size or disappearance of colonies in Kodiak, Prince William Sound, Yakutat, and Icy Bay. The largest colonies on record exist or existed on the Cordova and Yakutat Ranger Districts. An estimated population in the Cordova area of greater than 2,400 individuals in 1980 may be less than 400 now. Whereas some of the colonies are in remote sites, others exist in areas where Forest Service permitting can cause or relieve site perturbations (FSM 2600 Supplement No.: R-10 2600-2009-1).

The direction from the Regional Forester on a new “Alaska Region Sensitive Species List,” was distributed on February 2, 2009; therefore, this direction is not specifically reflected in the 2008 Forest Plan; however general direction for sensitive species applies.

General Forest Plan direction for sensitive species and Seabird Rookeries and Shorebirds can be found on pages 4-92 through 4-100.

Direct, Indirect and Cumulative Effects

This species is not known to occur on the Tongass National Forest outside of the Yakutat area. The proposed action would not affect the Aleutian Tern or its habitat.

BLACK OYSTERCATCHER

The Black Oystercatcher (*Haematopus bachmani*) is an eye-catching, with orange bill and coal black plumage, a member of the rocky inter-tidal communities along the west coast of North America. Completely dependent on marine shorelines for its food and nesting, this is a monogamous, long-lived bird (Andres, B. A. and G. A. Falxa, 1995). In Prince William Sound, AK, nesting pairs distributed along shorelines as follows: exposed rocky shores 10%, exposed wave-cut platforms 21%, mixed sand and gravel beaches 21%, gravel beaches 30%, sheltered rocky shores 15%, and sheltered tidal flats 3%. Pairs distributed fairly equitably between rocky (45%) and gravelly (55%) shorelines (Andres, B. A. and G. A. Falxa, 1995).

Breeding pairs establish well-defined feeding and nesting territories and generally occupy the same areas year after year, usually along low-sloping gravel or rocky shorelines where inter-tidal prey species are abundant. Pairs nest just above the high-tide line and use the inter-tidal zone to feed themselves and their chicks and their reproductive rates are slow. Rocky shores exposed to surf action and on sheltered gravel, cobble, or sandy shores and mudflats of bays and sounds are extremely important to microhabitat foraging. Access to foraging habitat is almost exclusively dependent on tides changes and surf action, with most feeding done during low tide. They feed on inter-tidal marine invertebrates, including molluscs (bivalves, limpets, whelks, and chitons—generally numerous in areas of rocky substrates); but also crabs, sea urchins, isopods, and barnacles. Sea mussels are taken as prey in Southeast Alaska. Oysters, contrary to the name of the bird, are not typically a part of the diet (Andres, B. A. and G. A. Falxa, 1995). Black Oystercatchers have been known to congregate in the winter months in Prince William Sound where mussel beds are dense; prey does not however vary greatly with seasonal changes.

Black Oystercatchers have a small global population (estimates of 8,500 – 11,000 individuals) with distribution from the Aleutian Islands down the Pacific Coast to Baja California. Over half, (65%) of the population of Black oystercatchers breeds in Alaska. Populations were affected by the 1989 Exxon Valdez oil spill in Prince William Sound, recovery has been slow, and oil still lingers in nesting areas. Aggregations usually number <100 birds, but have been known to reach 350 birds on Kodiak Island and 600 birds in the Glacier Bay area. The highest recorded breeding densities in Alaska (and British Columbia and Washington) occur on non-forested islands dominated by shell or gravel beaches. Nesting densities in Glacier Bay were 10 times higher on sparsely vegetated islands than on heavily vegetated islands (Andres, B. A. and G. A. Falxa, 1995).

Chick survival is low due to several natural and human-induced factors; including snow conditions, timing, prey availability, nest predation, and human use. Data indicates extensive overlap between nesting territories and remote shoreline campsites. Viability of this species remains a concern and populations in some areas have dramatically declined, due to unknown causes (from 48 pairs to 2 pairs in Sitka Sound), and there is high overlap between nest sites and areas permitted for recreational use (e.g., Prince William Sound) (FSM 2600 Supplement No.: R-10 2600-2009-1). Retreat of glaciers, which expose gravel moraines, and uplifting events of earthquakes create new nesting habitat in Alaska (Andres, B. A. and G. A. Falxa, 1995).

The direction from the Regional Forester on a new “Alaska Region Sensitive Species List,” was distributed on February 2, 2009; therefore, this direction is not specifically reflected in the 2008 Forest Plan; however general direction for sensitive species applies.

Appendix C

General Forest Plan direction for sensitive species and Seabird Rookeries and Shorebirds can be found on pages 4-92 through 4-100.

Direct, Indirect, and Cumulative Effects

There have been no surveys to document or assess the occurrence of the Black oystercatcher on the Petersburg Ranger district, as it is a new addition as of February 2009 to the Region 10 Sensitive Species list. The Black oystercatcher forages in rocky inter-tidal habitats that do occur on the Petersburg Ranger District, so it is likely that the species may occur within our district boundaries and therefore, may also occur within the project area. Because activities associated with the project are not expected to take place in rocky inter-tidal habitats that may be occupied by Black oystercatchers, we expect the project to have “no impact” to the Black Oystercatcher or its habitat.

Determinations

Table 6 displays a summary of determinations for fish and wildlife species listed as sensitive in Region 10. Determinations were based on current forest direction (Bosch 2004). It is my determination that the proposed project should have “no impacts” on the Queen Charlotte goshawk, Kittlitz’s Murrelet, Aleutian Tern, Black Oystercatcher, or Dusky Canada Goose or cause any detrimental effect on suitable habitat for these species

Table 6. Summary of determinations for sensitive species for the Petersburg Outfitter and Guide Management Plan.

Species/Issue	Presence		Direct, indirect and Cumulative Effects	
	Species Present in Analysis Area	Species Habitat Present in Analysis Area	Level of Influence/ Determination ¹	Reason for Determination/ Level of Influence
Sensitive				
Goshawk	Yes	Yes	Negligible/ No Impacts	Proposed allocations would not reduce or affect productive old growth habitat.
Kittlitz's Murrelet	No	No	Negligible/ No Impacts	Proposed allocations would not reduce or affect recently de-glaciated areas or scree-slopes.
Aleutian Tern	No	No	Negligible/ No Impacts	This species does not occur on the Tongass National Forest outside of the Yakutat area.
Black Oystercatcher	No	No	Negligible/ No Impacts	Proposed allocations would not affect rocky shorelines.
Dusky Canada Goose	No	No	Negligible/ No Impacts	Species does not occur in the analysis area.

1 – Potential determinations for Sensitive Species: "no impacts", "beneficial impacts", "may impact individuals but not likely to cause a trend to federal listing or a loss of viability", or "likely to result in a trend to federal listing or a loss of viability" (Bosch 2004).

Additional Management Measures

If any previously undiscovered endangered, threatened or sensitive species are encountered at any point in time prior to or during the implementation of this project, a District Biologist would be consulted and appropriate measures would be enacted.

The Forest Plan contains a comprehensive conservation strategy, using a system of Old Growth

LUDs designed to provide old growth habitats in combination with other non-development LUDs to maintain viable populations of native and desired non-native fish and wildlife species and subspecies that may be associated with old growth forests (USDA 2008b, p. 3-174 through 3-175). This strategy, in addition to the implementation of Forest Plan standards and guidelines, was developed to maintain species viability. The application of the Forest Plan standards and guidelines is integral to protecting and providing habitat to maintain viable fish and wildlife populations.

VI. REFERENCES

- Alaska Department of Fish and Game. 2006. Northern goshawks on the Tongass National Forest—summary of study findings related to forest management. Slide presentation from the Interagency Review of the Tongass National Forest Conservation Strategy Meeting, Ketchikan, Alaska. Found at <http://tongass-constratreview.net/Documents/Present7-Goshawk-LocalNewInfo.pdf>
- Bosch, M. 2004. BA and BE Effects, and Determinations of Effects, for TEPS Species. USDA Forest Service. Region 10. 2 pp.
- Boyce, D.A., Jr., R. T. Reynolds, and R. T. Graham. 2006. Goshawk status and management: what do we know, what have we done, where are we going? Pages 312-325 in M. L. Morrison, editor. The northern goshawk: a technical assessment of its status, ecology, and management. Studies in Avian Biology No. 31, Cooper Ornithological Society. 14 pp.
- Code of Federal Regulations. 2007. Rules and regulations. 50 CFR 17. Endangered and threatened wildlife and plants; response to court on significant portion of the range, and evaluation of distinct population segments, for the Queen Charlotte goshawk (*Accipiter gentilis laingi*). Vol. 72, No. 216. 18 pp.
- Code of Federal Regulations (CFR). 2006. 50 CFR Part 223. Threatened marine and anadromous species. Table 1. 1 p.
- Code of Federal Regulations. 2006. 50 CFR Part 226 and Part 223. Critical habitat for Steller sea lions. 7 pp. Available at: <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=f5ece0c4fc85953a677cd8e2983c44cf&rgn=div5&view=text&node=50:7.0.1.3.5&idno=50>
- Code of Federal Regulations. 2004. 50 CFR Part 402. Interagency Cooperation – Endangered Species Act of 1973, as amended. 4 pp. Available at: http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=f5ece0c4fc85953a677cd8e2983c44cf&tpl=/ecfrbrowse/Title50/50cfr402_main_02.tpl
- Code of Federal Regulations. 2001. 50 CFR Part 224. Regulations governing the approach to humpback whales. Federal Register/Vol. 66, No. 105/ Thursday, May 31, 2001/Rules and Regulations. 8 pp. Available at: http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=/ecfrbrowse/Title50/50cfr224_main_02.tpl
- Day, R.H., K.J. Kuletz and D.A. Nigro. 1999. Kittlitz's murrelet (*Brachyramphus brevirostris*). In: A. Poole and F. Gill, eds., The Birds of North America, No. 435. The Birds of North America, Inc., Philadelphia, PA. Available at: <http://bna.birds.cornell.edu/bna/species/435>

Appendix C

- Day, R. H., K.L. Oakley and D.R. Barnard. 1983. Nest Sites and Eggs of Kittlitz's and Marbled Murrelets. *Condor* 85(3) L265-273. 9 pp.
- Flatten, C., K. Titus and R. Lowell. 2001. Northern goshawk monitoring, population ecology and diet on the Tongass National Forest. Grant SE-4-2-6. Alaska Department of Fish and Game, Douglas, Alaska. 33 pp.
- Forest Service Manual. 2005. Chapter 2600 – Threatened, endangered and sensitive plants and animals. Supplement No. R-10 2600-2005-1. 19 pp.
- Forest Service Manual. 1995. Title 2670 – Wildlife, fish and sensitive plant habitat management. Amendment No. 2600-95-7. 21 pp.
- Forest Service Manual. 1990. Title 2672.24b to 2676.17b – Wildlife, fish and sensitive plant habitat management. WO Amendment No. 2600-90-1. 18 pp.
- Kendall, S.J. and B.A. Agler. 1998. Distribution and abundance of Kittlitz's murrelets in south-central and southeastern Alaska. *Colonial Waterbirds* 21(1):53-60. 8 pp.
- Kuletz, K.J., S. W. Stephensen, D.B. Irons, E.A. Labunski, and K.M. Brenneman. 2003. Changes in Distribution and Abundance of Kittlitz's Murrelets (*Brachyramphus brevirostris*) relative to glacial recession in Prince William Sound, Alaska. *Marine Ornithology* 31:133-140. 7 pp.
- Lewis, S. B., K. Titus, and M. R. Fuller. 2006. Northern Goshawk Diet During the Nesting Season in Southeast Alaska. *Journal of Wildlife Management* 70(4):1151-1160.
- National Marine Fisheries Service. 2009. Endangered and threatened species under NMFS jurisdiction. Updated January 2009. Available at: <http://www.nmfs.noaa.gov/pr/species/esa/>
- National Marine Fisheries Service. 2008. Recovery Plan for the Steller Sea Lion (*Eumetopias jubatus*). Revision. National Marine Fisheries Service, Silver Spring, MD. 325 pp.
- National Marine Fisheries Service. 2007a. Green, Leatherback and Loggerhead sea turtle website. Available at: <http://www.nmfs.noaa.gov/pr/species/turtles>.
- National Marine Fisheries Service. 2007b. Marine Mammal Protection Act of 1972 as amended. Compiled and annotated by the Marine Mammal commission, Bethesda, MD. 113 pp. Available at: <http://www.nmfs.noaa.gov/pr/pdfs/laws/mmpa.pdf>
- National Marine Fisheries Service. 2006. Draft recovery plan for the fin whale (*Balaenoptera physalus*). Silver Spring, Maryland. 78 pp. Available at: http://www.nmfs.noaa.gov/pr/pdfs/recovery/draft_finwhale.pdf
- National Marine Fisheries Service. 2005. Recovery plan for the northern right whale (*Eubalaena glacialis*). Prepared by the Office of Protected Resources, Silver Spring, Maryland. 137pp. Available at: http://www.nmfs.noaa.gov/pr/pdfs/recovery/whale_right_northatlantic.pdf

- National Marine Fisheries Service. 1998. Recovery plan for the blue whale (*Balaenoptera musculus*). Prepared by Reeves R.R., P.J. Clapham, R.L. Brownell, Jr., and G.K. Silber for the National Marine Fisheries Service, Silver Spring, Maryland. 42 pp.
- National Marine Fisheries Service. 1991b. Recovery plan for the humpback whale (*Megaptera novaeangliae*). Prepared by the Humpback Whale Recovery Team for the National Marine Fisheries Service, Silver Spring, Maryland. 105 pp.
- National Marine Fisheries Service and U.S. Fish and Wildlife Service. 1998. Recovery plan for U.S. Pacific populations of the leatherback turtle (*Dermochelys coriacea*). National Marine Fisheries Service, Silver Spring, MD.
- North, Michael R. 1997. Aleutian Tern (*Sterna aleutica*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/291doi:10.2173/bna.291>
- Nowacki, G. J., M. Shepard, P. Krosse, W. Pawuk, G. Fisher, J. Baichtal, D. Brew, E. Kissinger and T. Brock. 2001. Ecological Subsections of Southeast Alaska and Neighboring Areas of Canada. USDA Forest Service, Alaska Region, Technical Publication R10-TP-75. October 2001, 306 pp.
- Piatt, J.F., and P. J. Anderson. 1996. Response of Common Murres to the Exxon Valdez Oil Spill and Long-Term Changes in the Gulf of Alaska Marine Ecosystem. American Fisheries Society Symposium. 18:720-737. 17 pp.
- Reynolds, R. T., R. T. Graham, M. H. Reiser, R. L. Bassett, P. L. Kennedy, D. A. Boyce, G. Goodwin, R. Smith and E. L. Fisher. 1992. Management recommendations for the northern goshawk in the southwestern United States. Gen. Tech. Rep. RM 217. Ft Collins, CO: USDA, Forest service, Rocky Mountain Forest and Range Experimental Station. 93 p.
- Savage, K. 2009. Personal Communication between Chuck Parsley and Katharine Savage regarding NOAA listed TEPC species between Feb 12-17, 2009. National Marine Fisheries Service, AK Region.
- Shelden, K.E.W. and D.J. Rugh. 1995. The bowhead whale, *Balaena mysticetus*: Its historic and current status. Marine Fisheries Review 57(3-4):1-20.
- Titus, K., C.J. Flatten, and R.E. Lowell. 1994. Northern goshawk ecology and habitat relationships on the Tongass National Forest (goshawk nest sites, food habits, morphology, home range and habitat data): Final Annual Project Report. USDA Forest Service Contract No. 43-0109-0272. Alaska Dept. of Fish and Game, Division of Wildlife Conservation. 69pp. + appendices.
- USDA Forest Service. 2009. Approval of Revised Alaska Region Sensitive Species List. Letter from Dennis Bschor, Regional Forester to Forest Supervisors. February 2, 2009. 1 pp.
- USDA Forest Service. 2008a. Tongass National Forest Land and Resource Management Plan. Forest Service, R10-MB-603c.

Appendix C

- USDA Forest Service. 2008b. Tongass Land and Resource Management Plan, Final Environmental Impact Statement, Plan Amendment. Forest Service, R10-MB-603c.
- USDI Fish and Wildlife Service. 2009. Endangered, threatened, proposed, candidate, and delisted species in Alaska, May 2009. Available at:
http://ecos.fws.gov/tess_public/pub/stateOccurrenceIndividual.jsp?state=AK. 2 pp.
- USDI Fish and Wildlife Service. 2009b. Short-tailed albatross. Available at:
<http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B00Y>. 2 pp.
- USDI Fish and Wildlife Service. 2008. Northern sea otter (*Enhydra lutris kenyoni*): Southwest Alaska Stock. Revised 08/01/2008. Available at:
<http://alaska.fws.gov/fisheries/mmm/stock/finalsouthwestalaskaseaottersar01aug2008.pdf>. 7pp.
- USDI Fish and Wildlife Service. 2007. The Steller's eider. Available at:
<http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B090>. 2 pp.
- USDI Fish and Wildlife Service. 2006a. The Eskimo curlew. Available at:
<http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=B01A>. 2 pp.
- USDI Fish and Wildlife Service. 2006b. The polar bear. Available at:
<http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?sPCODE=A0IJ>. 3 pp.
- USDI Fish and Wildlife Service. 2006c. Alaska Seabird Information Series. Kittlitz's murrelet. Anchorage, Alaska. Pp. 67-68. Available at:
<http://alaska.fws.gov/mbsp/mbm/seabirds/pdf/kimu.pdf>. 2 pp.
- USDI Fish and Wildlife Service. 2006d. Conservation Agreement for the Yellow-billed Loon (*Gavia adamsii*). Available at:
http://alaska.fws.gov/fisheries/endangered/pdf/ybl_conservation_agreement.pdf. 31 pp.
- USDI Fish and Wildlife Service. 2004. The spectacled eider. Available at:
<http://alaska.fws.gov/media/SpecEider.htm>. 2 pp.
- USDI Fish and Wildlife Service. 2002. Candidate and listing priority assignment form. *Brachyramphus brevirostris*. September 2002. Ecological Services, Anchorage Field Office.
- Van Vliet, G. 1993. Status concerns for the "Global" population of Kittlitz's Murrelet: Is the "Glacier Murrelet" receding? Pacific Seabird Group Bulletin 20(1):15-16.

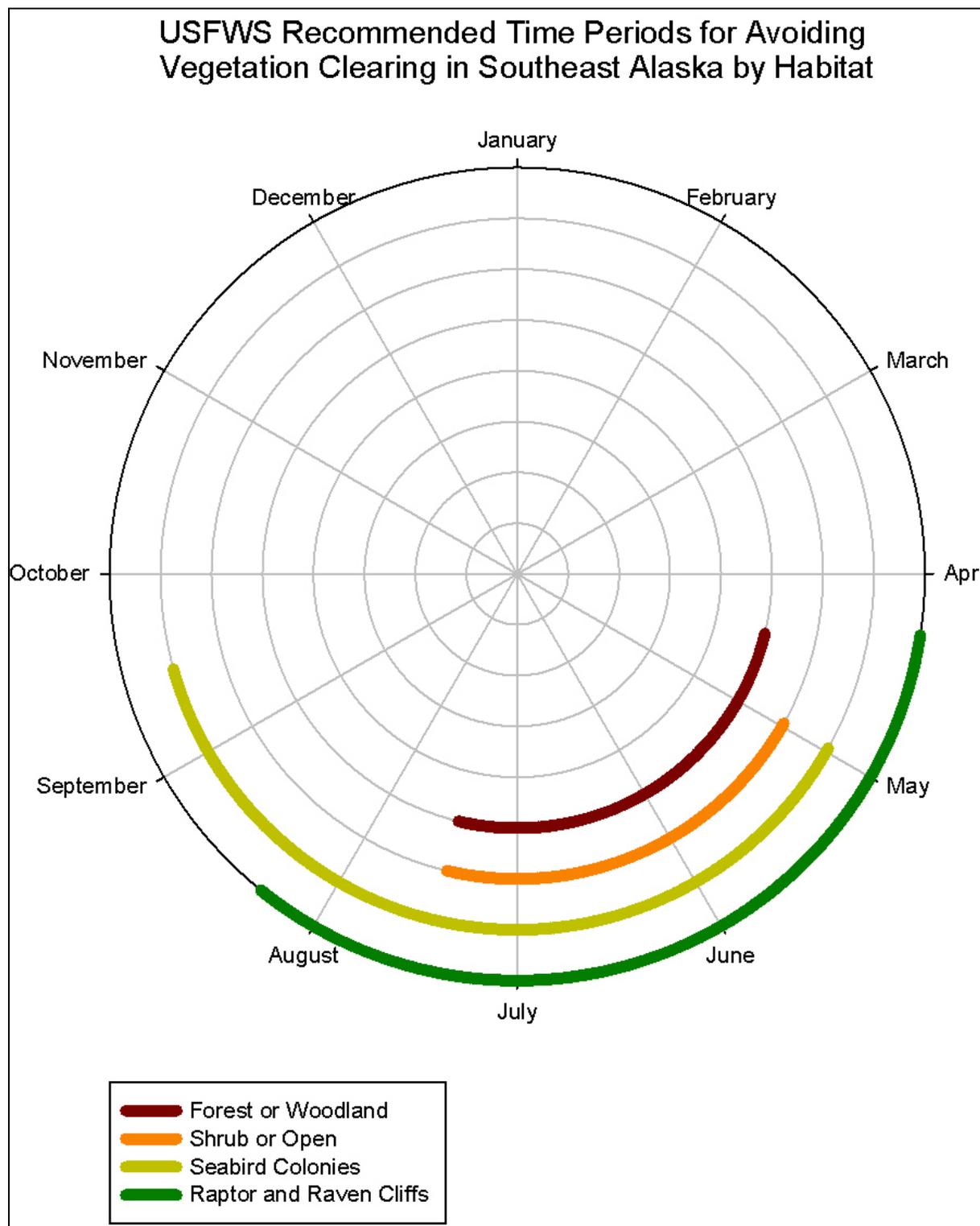
Appendix I. This table represents a list of the Tongass National Forest Neotropical migratory bird species of concern as developed by the Regional Office in 2002. This list was derived from Boreal Partners in Flight (1999) and U.S. Fish and Wildlife Service Bird Species of Concern Lists (2002). Information on abundance and habitats was adapted from Isleib and Kessel (1973).

Common Name	Scientific Name	Occurrence ¹	Abundance	Habitat ²														
				Tundra	Shrub Thickets	Hemlock/Sitka Spruce/Cedar Forest	Muskeg	Mixed Deciduous/Spruce Woodlands	Marsh	Lacustrine Waters	Fluviatile Waters	Cliffs Bluffs & Screens	Moraines, Alluvia & Barrier Islands	Beaches & Tidal Flats	Rocky Shores & Reefs	Inshore waters	Offshore Waters	
Aleutian Tern	<i>Sterna aleutica</i>						xx+							X			XX	X
American Dipper	<i>Cinclus mexicanus</i>	B	Fairly common						X		xx							
Arctic Tern	<i>Sterna paradisaea</i>	B	Fairly common			X				xx*	X			xx		xx	xx	xx
Black Oystercatcher	<i>Haematopus bachmani</i>	B, W	Uncommon											X				
Black Swift	<i>Cypseloides niger</i>	B	Rare															
Black Turnstone	<i>Arenaria melanocephala</i>	W, M	Fairly common											X		xx		
Black-footed Albatross	<i>Phoebastria nigripes</i>	B, M	Common														X	xx
Blackpoll Warbler	<i>Dendroica striata</i>	M	Rare 1		X	xx+												
Blue Grouse	<i>Dendragapus obscurus</i>	B, W	Common		X	xx*		xx*										
Caspian Tern	<i>Sterna caspia</i>		Casual														X	
Chestnut-backed Chickadee	<i>Poecile rufescens</i>	B, W	Abundant		X	xx*												
Golden-crowned Kinglet	<i>Regulus satrapa</i>	B, W	Common		X	xx#		xx+										
Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>	M, B	Fairly common		xx#	X	X	X										
Gray-cheeked Thrush	<i>Catharus minimus</i>	B	Rare		X	X		xx*										
Hammond's Flycatcher	<i>Empidonax hammondi</i>	B	Uncommon			X		X+										
Kittlitz's Murrelet	<i>Brachyramphus brevirostris</i>	B, W	Common												x#		xx	xx
Long-billed Curlew	<i>Numenius americanus</i>		Accidental															
MacGillivray's Warbler	<i>Oporornis tolmiei</i>	B	Uncommon		xx*	X		X										
Marbled Godwit	<i>Limosa fedoa beringiae</i>	M	Rare 1													X		
Marbled Murrelet	<i>Brachyramphus</i>	B, W	Common			xx*											xx	xx

Common Name	Scientific Name	Occurrence ¹	Abundance	Habitat ²										Offshore Waters				
				Tundra	Shrub Thickets	Hemlock/Sitka Spruce/Cedar Forest	Muskeg	Mixed Deciduous/Spruce Woodlands	Marsh	Lacustrine Waters	Fluvial Waters	Cliffs Bluffs & Screens	Moraines, Alluvia & Barrier Islands		Beaches & Tidal Flats	Rocky Shores & Reefs	Inshore waters	
	<i>marmoratus</i>																	
Northern Goshawk	<i>Accipiter gentilis laingi</i>	B, W	Uncommon	X	X	XX*	X	XX*										
Northern Shrike	<i>Lanius excubitor</i>	W	Uncommon	X	XX	X	XX											
Northernwestern Crow	<i>Corvus caurinus</i>	B, W	Abundant			XX*	X	X				X	XX	XX	X			
Olive-sided Flycatcher	<i>Contopus cooperi</i>	B	Uncommon		X	X		XX*										
Pacific-slope Flycatcher	<i>Empidonax difficilis</i>	B	Common			XX*		XX*										
Peregrine Falcon	<i>Falco peregrinus pealei</i>	B, W, M	Uncommon															
Red Knot	<i>Calidris canutus</i>	M	Rare 1															
Red-breasted Sapsucker	<i>Sphyrapicus ruber</i>	B	Abundant			XX*	X	X										
Rock Sandpiper	<i>Calidris ptilocnemis</i>	W	Uncommon															
Rufous Hummingbird	<i>Seiophorus rufus</i>	M, B	Common		X	XX*		X										
Short-billed Dowitcher	<i>Limnodromus griseus</i>	B, M	Locally common															
Steller's Jay	<i>Cyanocitta stelleri</i>	B, W	Abundant		X	XX*		X										
Surf-bird	<i>Aphriza virgata</i>	W, M	Uncommon															
Townsend's Warbler	<i>Dendroica townsendi</i>	B	Common		X	XX*		XX*										
Varied Thrush	<i>Ixoreus naevius</i>	M, B, W	Abundant	X	XX*	XX*	X	XX*										
Vaux's Swift	<i>Chaetura vauxi</i>	M, B*	Uncommon		XX*	X#												
Western Screech-Owl	<i>Otus kennicottii</i>	B, W	Uncommon			XX#												
Western Wood-pewee	<i>Contopus sordidulus</i>	B	Uncommon		X	X		XX*										
Whimbrel	<i>Numenius phaeopus</i>	M	Rare 1															
Yellow-billed Loon	<i>Gavia adamsii</i>	W	Uncommon															

¹ Occurrence: 1 = Migration Only, B=Breeding, W=Winter, M=Migration, and * =no record, but thought to breed in the area
² Habitats are described as preference: xx = primary; x = secondary; * = breeding; # = probable breeding; + = possible breeding. Minor habitat preferences are not included.

Appendix II. U.S. Fish and Wildlife Service recommended time periods for avoiding vegetation clearing to minimize impacts to birds in Southeast Alaska (USDI 2006).



Appendix C

Appendix III. Study area comparisons of average actual use (2005-2008), by RVD, for outfitter and guides on the Petersburg Ranger District for all seasons.

STUDY AREA	Average Recreation Visitor Days Used				
	Spring	Summer	Fall	Winter	Total Annual
	(April 1- May 31)	(June 1- August 31)	(Sept 1- Oct. 31)	(Nov 1- March 31)	
1 Mitkof Island	22	391	16	0	429
2 Duncan Canal – West Side	4	60	2	0	66
4 Duncan Canal – East Side	0	0	0	0	0
5 Wrangell Narrows/Woewodski Island	0	27	4	0	31
6 Kupreanof Island – North Shore	6	349	8	0	363
7 Petersburg Creek/Duncan Salt Chuck	35	179	14	0	228
8 North Lindenberg Peninsula	11	151	37	8	207
9 Central Kupreanof Island/Road System	0	8	0	0	8
10 Southwest Kupreanof Island	17	365	2	0	384
11 Rowan Bay/Bay of Pillars	26	89	16	1	132
12A Saginaw/Security/Washington Bays	90	308	94	2	494
12B Kuiu Island Road System	23	66	72	1	162
13 Tebenkof Bay/Kuiu Wilderness	54	363	7	2	426
14 Keku Strait/Port Camden	45	283	40	3	371
15 South Kuiu Island	7	264	0	1	272
16 Reid/No Name Bays	6	136	1	0	143
21 Muddy River Area	0	134	47	31	212
22 Thomas Bay/Point Vandeput	13	239	13	17	282
23 Farragut Bay/Cape Fanshaw	1	30	1	0	32
24 Baird/Patterson Glaciers	1	8	6	0	15

Appendix IV. Study area comparison of proposed RVD allocation for outfitters and guides on the Petersburg Ranger District for all seasons.

STUDY AREA	Recreation Visitor Days Proposed				
	Spring	Summer	Fall	Winter	Total Annual ¹
	10%	65%	15%	10%	100%
1 Mitkof Island	1278	8308	1917	1278	12,781
2 Duncan Canal – West Side	112	729	168	112	1,122
4 Duncan Canal – East Side	50	324	75	50	499
5 Wrangell Narrows/Woewodski Island	175	1136	262	175	1,747
6 Kupreanof Island – North Shore	45	291	67	45	448
7 Petersburg Creek/Duncan Salt Chuck	126	821	189	126	1,263
8 North Lindenberg Peninsula	137	892	206	137	1,373
9 Central Kupreanof Island/Road System	353	2,293	529	353	3,528
10 Southwest Kupreanof Island	147	955	220	147	1,469
11 Rowan Bay/Bay of Pillars	96	627	145	96	964
12A Saginaw/Security/Washington Bays	129	839	194	129	1,291
12B Kuiu Island Road System	213	1381	319	213	2125
13 Tebenkof Bay/Kuiu Wilderness	289	1880	434	289	2,893
14 Keku Strait/Port Camden	156	1015	234	156	1,562
15 South Kuiu Island	126	816	188	126	1,255
16 Reid/No Name Bays	112	728	168	112	1,120
21 Muddy River Area	129	841	194	129	1,294
22 Thomas Bay/Point Vandeput	126	820	189	126	1,261
23 Farragut Bay/Cape Fanshaw	120	780	180	120	1,200
24 Baird/Patterson Glaciers	41	265	61	41	407

¹Differences in totals are due to rounding.

Biological Evaluation for Sensitive Plant Species

Petersburg Outfitter Guide Environmental Assessment

Petersburg Ranger District

Tongass National Forest

/s/ Mary A. Clemens

Date August 23, 2009

Mary A. Clemens
Botanist, Petersburg Ranger District

Biological Evaluation for Sensitive Plant Species.....	33
Petersburg Outfitter Guide Environmental Assessment	33
Introduction	36
Summary:	36
Guidance:	36
Proposed Action:.....	36
Pre-field review.....	36
Affected Environment.....	37
Threatened and Endangered Species	37
Sensitive Species.....	37
Direct and Indirect Effects	37
Cumulative Effects.....	37
Summary of affected environment, effects, risk assessment and determination by species.	39
Table 2. Summary of Risk Assessments and Determination for Sensitive Plant Species...44	
Appendix A: Criteria for Risk Assessment.....	45

Introduction

Summary:

The past effects on sensitive plants by recreational users on the Petersburg Ranger District are not well quantified. Guided recreational use on the District is likely to affect individual rare and sensitive plants. Effects due to the proposed action are not expected to have significant impacts on sensitive plants. No trend leading to federal listing of sensitive species is expected due to the proposed action.

Guidance:

Forest-wide goals and objectives, and standards and guidelines for this resource are on pages 2-1, (Viable Populations), 2-4 (Biological Diversity), 2-5 (Plants), 4-41 through 4-42 of the Tongass Land Management Plan (TLMP 2008). Other legal and administrative directions are found in:

- The Endangered Species Act of 1973 governs the protection of listed species and the ecosystems upon which they depend.
- The Forest Service Manual (2672) requires the Regional Forester to identify sensitive species occurring within the region.
- The Forest Service Manual (2672.4) requires that a biological evaluation (BE) be prepared for all Forest Service activities to address impacts to Forest Service sensitive species.

Proposed Action:

The action proposed by the Forest Service to meet the purpose and need is to authorize outfitter/guide operations through the issuance of special use permits, based on the Petersburg Recreation Use Carrying Capacity Report and the Wilderness Needs Assessments. This alternative would allocate outfitter and guide permits for 10 percent of the study area capacity within an identified home range and 25 percent of the study area capacity outside an identified home range. The proposal would authorize up to approximately 41,100 RVDs across the district for use by outfitters and guides (4,110 RVDs in the spring, 26,716 RVDs in the summer, 6,165 RVDs in the fall and 4,110 RVDs in the winter). The use authorized may be temporary in nature (less than one year) or could be for multiple years. For those operators who have demonstrated satisfactory performance, the District Ranger may issue priority use permits, for a period of up to 10 years, in accordance with FSH 2709.11.

Pre-field review

No field work was conducted specifically for this project. Review consisted of examining rare plant survey and sighting data in the Tongass GIS library.

Affected Environment

Threatened and Endangered Species

The only plant federally listed or proposed by the U.S. Fish and Wildlife Service in Alaska is *Polystichum aleuticum* C. Christensen, listed as endangered. It is only known from Adak Island in the Aleutian Island chain and is not expected to occur in the Petersburg Ranger District.

Sensitive Species

Seventeen plant species and one lichen are on the Regional Forester's Sensitive Species List.

Table 1. Alaska Region Sensitive Species. Species known or suspected in the planning area are in bold.

<i>Aphragmus eschscholtzianus</i>	<i>Ligusticum calderi</i>	<i>suspected</i>
<i>Botrychium spathulatum</i>	<i>Lobaria amplissima</i>	<i>known</i>
<i>Botrychium tunux</i>	<i>Papaver alboroseum</i>	
<i>Botrychium yaaxudakeit</i>	<i>Piperia unalascensis</i>	<i>suspected</i>
<i>Cirsium edule</i> var. <i>macounii</i>	<i>Platanthera orbiculata</i>	<i>suspected</i>
<i>Cochlearia sessilifolia</i>	<i>Polystichum kruckebergii</i>	<i>suspected</i>
<i>Cypripedium guttatum</i>	<i>Romanzoffia unalascensis</i>	<i>suspected</i>
<i>Cypripedium montanum</i>	<i>Sidalcea hendersonii</i>	<i>suspected</i>
<i>Cypripedium parviflorum</i> var. <i>pubescens</i>	<i>Tanacetum bipinnatum</i> subsp. <i>huronense</i>	

Direct and Indirect Effects

Plants or their habitats can be negatively affected by recreational activities. Effects can include crushed or buried plants or habitat. Direct effects occur immediately or soon after the implementation of the action (such as habitat loss, crushing or burying actual plants, sediment accumulation etc.).

Indirect effects are those effects that are “reasonably likely” to occur at a later point in time after project implementation. Indirect effects include changes in hydrology or solar radiation intensities.

Cumulative Effects

The National Environmental Policy Act requires that planners consider effects of accumulating effects on a resource within the planning area (in this case the Wrangell

Ranger District) by actions in the past, present and foreseeable future in order to prevent long-term degradation of the resource.

Since the overall impacts of guided recreational use on all types of vegetation (sensitive, rare, or otherwise) are minimal on a daily basis but can be expected to accumulate over time, effects on botanical resources are best evaluated for the proposed action as cumulative effects. The cumulative effects of both commercial and private use should be considered for sites used by commercial outfitter guides that are also used by private recreational parties. Any monitoring of impacts to sites will be unable to distinguish effects of private versus commercial use.

Recreational use harms plants and vegetation by crushing plants under foot and tents, construction of fire rings, movement of natural materials such as rocks and logs and construction of semi-permanent structures such as tarpaulin frames. (Bell 1973, Cole 1992, Monz 2000, Roovers 2004). No systematic analysis has been conducted to determine the effects of recreational use to botanical resources on the Wrangell Ranger District.

A process of developing carrying capacity for each study area determined the number of recreation visitor days the recreation places could accommodate without adverse environmental impact. One hundred and fifty-eight sites (recreation places) are being allocated use by outfitter guides. Only minimal surveys have been conducted for sensitive or rare species on the sites.

Backcountry recreational use in the Tongass National Forest by private parties is not managed. No permitting or allocation process for undeveloped recreation sites, such as primitive campsites, is in place. Use is on a first-come basis. Use of cabins and developed campgrounds is allocated through an online reservation process.

Compared to National Forests in other parts of the United States, recreational use of the Tongass is light and widespread. Although some sites may experience high levels of impact due to proximity to population centers or unique natural features that are a draw for the recreating public, most sites will experience only minor impacts to vegetation. Commercial group size is limited to twelve persons. Impacts on all types of vegetation are mitigated by an informal process of evaluation of sites by district recreation staff that have a basic understanding of impacts to vegetation by recreational users, following the principles of “leave no trace” best practices. This can be expected to limit harm to vegetation to a reasonable degree. But this may not prevent all harm to sensitive or rare species.

Summary of affected environment, effects, risk assessment and determination by species.

Aphragmus eschscholtzianus Eschscholtz's little nightmare.

Affected environment: This species' range in the National Forests in the Alaska region is believed to be restricted to the Chugach National Forest or the very northern part of the Tongass National Forest and will not be evaluated further.

Botrychium spathulatum Spathulate moonwort

Affected environment: Habitats include upper beach meadows and alpine areas. This species has been found in a very few places on Kruzof and Chichagof Islands on the Sitka and Hoonah Ranger Districts. It is not suspected to occur on the Petersburg District and it will not be evaluated further.

Botrychium tunux (Moosewort Fern) and *Botrychium yaaxudakeit* (No common name)

These species are known on the Tongass National Forest only from the Yakutat forelands area and will not be evaluated further.

Cirsium edule var. *macounii* Edible Thistle

Affected environment: This species is known only from the Misty Fiords National Monument Wilderness. Habitats include Forest edge, streamside riverbank, dry meadow, and landslide talus. There is some chance that this species exists in the mainland portions of the district.

Direct and indirect effects: This species could be affected by disturbance due to camping and foot travel. One threat that has been cited is due to its resemblance to invasive thistles it may be targeted by enthusiastic weed pullers. It often grows in disturbed habitat so additional disturbance may favor or disfavor this plant because plants could be killed by a disturbance but overall increased habitat could be created by the same disturbance event.

Risk Assessment: Because recreational activities are likely to occur in its habitats that could disturb individuals of this species, consequences of effects are moderate due to possible adverse effects in habitat or on population. Cumulative effects are possible. Likelihood of effects is moderate because recreational activity is not completely controllable or intense administration of recreation would be needed to prevent adverse effects on habitat or population. Adverse effects may occur.

Determination: May adversely impact individuals, but not likely to result in a loss of viability in the planning area or cause a trend to federal listing.

***Cochlearia sessilifolia* Sessileleaf scurvygrass**

This species' range in the National Forests in the Alaska region is believed to be restricted to the Chugach National Forest and will not be evaluated further.

***Cypripedium guttatum* Spotted lady's slipper**

This species' range in the National Forests in the Alaska region is believed to be restricted to the Chugach National Forest and will not be evaluated further.

***Cypripedium montanum* Mountain lady's slipper**

Affected environment: Habitats include open forest, beach meadows, and peatlands. It is suspected to occur on the Petersburg Ranger District.

Direct and indirect effects: This plant has strikingly attractive flowers. One threat that has been cited to this species in the Alaska Region is that people might pick the flowers or attempt to transplant them to a home garden or elsewhere.

Risk Assessment: Because recreational activities are likely to occur in its habitats that could disturb individuals of this species, consequences of effects are moderate due to possible adverse effects in habitat or on population. Cumulative effects are possible. Likelihood of effects is moderate because recreational activity is not completely controllable or intense administration of recreation would be needed to prevent adverse effects on habitat or population. Adverse effects may occur.

Determination: May adversely impact individuals, but not likely to result in a loss of viability in the planning area or cause a trend to federal listing.

***Cypripedium parviflorum var. pubescens* Yellow lady's slipper**

Affected environment: Habitat is peatlands. This plant is not suspected to occur on the Petersburg Ranger District and will not be evaluated further.

Ligusticum calderi

Affected environment: Habitats for this species include subalpine meadows in glacial refugia. It is suspected to exist on the Petersburg Ranger District.

Direct and indirect effects: Because meadows are likely to be used by recreationists, individuals could be affected by trampling effects from hikers and campers.

Risk Assessment: Because recreational activities are likely to occur in its habitats that could disturb individuals of this species, consequences of effects are moderate due to possible adverse effects in habitat or on population. Cumulative effects are possible. Likelihood of effects is moderate because recreational activity is not completely controllable or intense administration of recreation would be needed to prevent adverse effects on habitat or population. Adverse effects may occur.

Determination: May adversely impact individuals, but not likely to result in a loss of viability in the planning area or cause a trend to federal listing.

Lobaria amplissima

Affected environment: Habitat includes tree trunks and limbs on old-growth beach fringe edges that are exposed to large bodies of ocean. It has been found in approximately 20 locations on the Tongass, including the Petersburg Ranger District where it has been found on the Sukoi Islets, southern Mitkof Island, and some outer islands in Tebenkof Bay on Kuiu Island.

Direct and indirect effects: Hikers and campers following leave no trace principles are unlikely to affect this plant. Persons who cut down standing live or dead trees for firewood or shelter materials could conceivably affect individuals of this species.

Risk Assessment: Consequences are a questionable adverse effect on habitat or populations. No cumulative effects expected. Likelihood of adverse effects is low.

Determination: May adversely impact individuals, but not likely to result in a loss of viability in the planning area or cause a trend to federal listing.

Papaver alboroseum

This species' range in the National Forests in the Alaska region is believed to be restricted to the Chugach National Forest and it will not be evaluated further.

Piperia unalascensis

Affected environment: Habitat includes dry open sites, tall shrubs in riparian zones, mesic meadows, and dry coniferous forests from low elevation to subalpine.

Direct and indirect effects: Individuals could be trampled by hikers and campers.

Risk Assessment: Because recreational activities are likely to occur in its habitats that could disturb individuals of this species, consequences of effects are moderate due to possible adverse effects in habitat or on population. Cumulative effects are possible. Likelihood of effects is moderate because recreational activity is not completely controllable or intense administration of recreation would be needed to prevent adverse effects on habitat or population. Adverse effects may occur.

Determination: May adversely impact individuals, but not likely to result in a loss of viability in the planning area or cause a trend to federal listing.

Platanthera orbiculata

Affected environment: Habitat includes low-elevation forests and scrub. This species is known to occur in four locations on the Wrangell Ranger District but has not yet been found on the Petersburg Ranger District. This species is more common and widespread than other sensitive species, particularly to the south of Wrangell Ranger District.

Direct and indirect effects: Individuals could be trampled by hikers and campers.

Risk Assessment: This species was listed as sensitive due to concerns about the effects of logging and road building due to economics leading to targeting of specific timber species that are closely associated with it throughout much of its known habitat and distribution on the Tongass. Because recreational activities are likely to occur in its habitats that could disturb individuals of this species, consequences of effects are moderate due to possible adverse effects in habitat or on population. Cumulative effects are possible. Likelihood of effects is moderate because recreational activity is not completely controllable or intense administration of recreation would be needed to prevent adverse effects on habitat or population. Adverse effects may occur.

Determination: May adversely impact individuals, but not likely to result in a loss of viability in the planning area or cause a trend to federal listing.

Polystichum kruckebergii

Affected environment: Habitat is sheltered cracks in dunite rock of ultramafic outcrops. It is known from two locations on the Forest, one on Baranof Island and one on the Cleveland Peninsula. It is suspected to occur on the Petersburg Ranger District.

Direct and indirect effects: No effects from recreational activities are believed to be likely.

Risk Assessment: Likelihood of effects is none; activity will not affect habitat or population.

Determination: No effect.

Romanzoffia unalaschcensis

Affected environment: Habitat includes gravelly areas along streams, and on ledges and crevices in rock outcrops, often along the coast. It is suspected to occur on the Petersburg District.

Direct and indirect effects: Individuals could be trampled by hikers and campers.

Risk Assessment: Because recreational activities are likely to occur in its habitats that could disturb individuals of this species, consequences of effects are moderate due to possible adverse effects in habitat or on populations. Cumulative effects are possible. Likelihood of effects is moderate because recreational activity is not completely controllable or intense administration of recreation would be needed to prevent adverse effects on habitat or population. Adverse effects may occur.

Determination: May adversely impact individuals, but not likely to result in a loss of viability in the planning area or cause a trend to federal listing.

Sidalcea hendersonii

Affected environment: Habitat includes estuarine meadows at forest edge. It is known from only one location on the Tongass. It is suspected to occur on the Petersburg Ranger District.

Direct and indirect effects: Individuals could be trampled by hikers and campers.

Risk Assessment: Because recreational activities are likely to occur in its habitats that could disturb individuals of this species, consequences of effects are moderate due to possible adverse effects in habitat or on populations. Cumulative effects are possible. Likelihood of effects is moderate because recreational activity is not completely controllable or intense administration of recreation would be needed to prevent adverse effects on habitat or population. Adverse effects may occur.

Determination: May adversely impact individuals, but not likely to result in a loss of viability in the planning area or cause a trend to federal listing.

Tanacetum bipinnatum subsp. huronense

Habitat includes coastal sand dunes. It is known from only one location on the Tongass. It is not suspected to occur on the Petersburg Ranger District and it will not be evaluated further.

Table 2. Summary of Risk Assessments and Determinations for Sensitive Plant Species

Scientific Name	Likelihood of Negative Effects	Consequence of Negative Effects	Determination
<i>Aphragmus eschscholtzianus</i>	None		No Effect
<i>Botrychium spathulatum</i>	None		No Effect
<i>Botrychium tunux</i>	None		No Effect
<i>Botrychium yaaxudakeit</i>	None		No Effect
<i>Cirsium edule</i> var. <i>macounii</i>	Moderate	Moderate	May adversely impact*
<i>Cochlearia sessilifolia</i>	None		No Effect
<i>Cypripedium guttatum</i>	None		No Effect
<i>Cypripedium montanum</i>	Moderate	Moderate	May adversely impact*
<i>Cypripedium parviflorum</i> var. <i>pubescens</i>	None		No Effect
<i>Ligusticum calderi</i>	Moderate	Moderate	May adversely impact*
<i>Lobaria amplissima</i>	Low	Low	May adversely impact*
<i>Papaver alboroseum</i>	None		No Effect
<i>Piperia unalascensis</i>	Moderate	Moderate	May adversely impact*
<i>Platanthera orbiculata</i>	Moderate	Moderate	May adversely impact*
<i>Polystichum kruckebergii</i>	None		No Effect
<i>Romanzoffia unalascensis</i>	Moderate		May adversely impact*
<i>Sidalcea hendersonii</i>	Moderate	Moderate	May adversely impact*
<i>Tanacetum bipinnatum</i> subsp. <i>huronense</i>	None		No Effect

* Full Text: May adversely impact individuals, but not likely to result in a loss of viability in the planning area or cause a trend to federal listing.

Appendix A: Criteria for Risk Assessment

Factor 1. Consequence of Adverse Effect from a Particular Activity

LOW: None, or questionable adverse effect on habitat or population. No cumulative effects expected.

MODERATE: Possible adverse effects in habitat or on population. Cumulative effects are possible.

HIGH: Obvious adverse effects on habitat or population. Cumulative effects are probable.

Factor 2. Likelihood of Adverse Effect from a Particular Activity

NONE: Activity will not affect habitat or population. (No further risk assessment needed).

LOW: Activity controllable by seasonal or spatial restrictions and is not likely to affect habitat or populations.

MODERATE: Activity not completely controllable or intense administration of project needed to prevent adverse effects on habitat or population. Adverse effects may occur.

HIGH: Activity not controllable and adverse effects on habitat or populations likely to occur.

