

ALEUTIANS SUBAREA CONTINGENCY PLAN

SENSITIVE AREAS SECTION

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SENSITIVE AREAS: INTRODUCTION

This section is intended for use by the On-Scene Coordinators (OSC) during the initial phase of a spill event to assist in ascertaining the location and presence of spill-sensitive biological and cultural resources, services and users in this subarea. This information is specific to the Aleutians Subarea. No attempt has been made to duplicate information contained in easily accessible existing documents. This section, therefore, must be used in conjunction with the referenced materials and informational contacts identified herein. More detailed and current data should be available from on-scene resource experts when they become engaged in the response. This information is geared toward early response. If appropriate, natural resources trustees may be conducting natural resource damage assessment (NRDA) activities in conjunction with response activities. Information regarding NRDA activities should be directed to the natural resources trustees or to their appointed NRDA Liaison.

Often, the most detailed, up-to-date biological and resource use information will come from people who live and work in the impacted area. People from the local community are often knowledgeable sources for information related to fishing, hunting, non-consumptive outdoor sports, and subsistence use. They may also have a good idea of which spill response techniques (especially exclusion and diversion booming) are practicable under prevailing weather and current conditions.

The Alaska Regional Response Team (ARRT) has adopted several documents (see the *Alaska Federal/State Contingency Plan for Response to Oil & Hazardous Substance Discharges/Releases (Unified Plan)*) that address decision making to help protect sensitive areas and resources. These documents (and their location) include:

- *ARRT Oil Dispersant Guidelines for Alaska* (see *Unified Plan* Annex F, Appendix 1)
- *In Situ Burning Guidelines for Alaska* (see *Unified Plan* Annex F, Appendix 2)
- *Wildlife Protection Guidelines for Alaska* (see *Unified Plan* Annex G, Appendix 1)
- *Alaska Implementation Guidelines for Federal OSCs for the Programmatic Agreement on Protection of Historic Properties during Emergency Response under the National Oil and Hazardous Substances Pollution Contingency Plan Protection of Historic Properties* (see *Unified Plan* Annex M)

In addition, Federal OSCs in Alaska are working in cooperation with the U.S. Department of the Interior and the National Marine Fisheries Service to ensure response activities are conducted in accordance with the 2001 *Inter-Agency Memorandum of Agreement Regarding Oil Spill Planning and Response Activities Under the Federal Water Pollution Control Act National Oil and Hazardous Substances Pollution Contingency Plan* (see *Unified Plan* Annex G, Appendix 2).

In addition, Annex N of the *Unified Plan* includes *Shoreline Cleanup and Assessment Guidelines*, which provide helpful information on clean-up options by shoreline type.

Section G of the Subarea Contingency Plan contains site-specific Geographic Response Strategies (GRSs) for use by responders in protecting key sensitive areas. In addition, Environmental Sensitivity Index (ESI) maps have been produced that illustrate selected sensitive resources and shoreline types.

This section and the guidelines in the *Unified Plan* are also intended for use by facility/vessel operators in developing industry oil spill prevention and contingency plans. For an operator's facility or area of operation, industry contingency plans describe: (a) environmentally sensitive areas and areas of public

concern; (b) how sensitive areas would be prioritized during a spill event; and (c) response strategies to protect sensitive areas at risk. The information in industry plans should be consistent with Subarea Contingency Plans.

The definition of sensitive resources and their geographic locations requires use of field observations and data available from published and non-published materials or through additional field work. Identifying relative priorities among resources and resource uses takes considerable coordination and discussion among resource management agencies. With the limited time and funds available for Subarea Contingency Plan development (there are ten such plans covering the state of Alaska), not all the detailed information about every possible resource at risk is included. Future updates to this document will continue to add information relevant to response activities.

Many of the maps presented in this section are available on-line through the Internet at:

<http://www.asgdc.state.ak.us/maps/cplans/subareas.html>

Suggestions, comments, and more current information are requested. Please contact either:

Doug Mutter
U.S. Department of the Interior
Office of Environmental Policy
and Compliance
1689 C Street, Room 119
Anchorage, Alaska 99501
271-5011
FAX: 271-4102
email: douglas_mutter@ios.doi.gov

Gayle Martin
Alaska Department of Fish and Game
Division of Habitat
333 Raspberry Road
Anchorage, Alaska 99518
267-2541
FAX: 267-2464
email: gayle.martin@alaska.gov

SENSITIVE AREAS: PART ONE - INITIAL CONTACTS

[see Table at end of Part One for contact information]

AGENCY	RESOURCES	PRIMARY CONTACT	ALTERNATE CONTACT
FISH and WILDLIFE and HABITAT RESOURCES			
Alaska Department of Fish and Game	fish, shellfish, birds, terrestrial mammals, marine mammals	Gayle Martin	Mark Fink
U.S. Department of the Interior	migratory birds, sea otters, polar bears, walrus, endangered species, anadromous fish in freshwater, bald eagles, wetlands	Pamela Bergmann	Doug Mutter
U.S. Department of Commerce	sea lions, seals, whales, endangered marine species, anadromous fish in marine waters	Brad Smith	Matthew Eagleton
Alaska Natural Heritage Program	rare and endangered plants	Julie Michaelson	Rob Lipkin
CULTURAL and ARCHAEOLOGICAL SITES			
Alaska Office of History and Archaeology	historic sites, archaeological sites, national register sites	Dave McMahan	Joan Dale
U.S. Department of the Interior	archaeological/historical sites in park and wildlife refuge system units, public lands, Native allotments/trust lands; sunken vessels	Pamela Bergmann	Doug Mutter
SHORELINE TYPES			
Scientific Support Coordinator	shoreline types, environmental sensitivity index maps	John Whitney	
LAND OWNERSHIP and CLASSIFICATIONS/DESIGNATIONS			
Alaska Department of Natural Resources	state lands, state parks and recreation areas, state forests, tidelands	Clark Cox	
Alaska Department of Fish and Game	state game refuges, state critical habitats	Gayle Martin	Mark Fink
U.S. Department of the Interior	national parks and preserves, national historic sites, national monuments, national wildlife refuges, public lands, national recreation areas, wild and scenic rivers, wilderness areas, Native trust lands	Pamela Bergmann	Doug Mutter

AGENCY	RESOURCES	PRIMARY CONTACT	ALTERNATE CONTACT
U.S. Department of Defense	military installations and reservations	Alaska Command	
Local Governments	municipal and private lands, and rights-of-way	See Part B. Resources Section	
COMMERCIAL HARVEST			
Alaska Department of Fish and Game	fishing permits, seasons	Gayle Martin	Mark Fink
Alaska Department of Natural Resources	tideland leases, logging on private lands	Clark Cox	
Alaska Department of Environmental Conservation	seafood processing	Ron Klein	Robert Pressley
U.S. Department of Commerce	fishing permits, seasons	Brad Smith	Matthew Eagleton
SUBSISTENCE, PERSONAL, AND SPORT USES			
Alaska Department of Fish and Game	subsistence and personal uses statewide and navigable waters, sport hunting and fishing	Gayle Martin	Mark Fink
U.S. Department of the Interior	subsistence uses on Federal lands and reserved waters; subsistence uses of: sea otters, walrus, polar bears, migratory birds	Pamela Bergmann	Doug Mutter
U.S. Department of Commerce	subsistence use of: whales, porpoises, seals, sea lions	Brad Smith	Matthew Eagleton
RECREATION AND TOURISM USES			
Alaska Department of Natural Resources	State parks and recreation areas, anchorages, boat launches, campgrounds, State public lands	Clark Cox	
Alaska Department of Fish and Game	sport hunting and fishing	Gayle Martin	Mark Fink
Alaska Department of Commerce, Community & Economic Development	seasonal events and activities, travel, outdoor activities, local visitor bureaus, tourism industries	Alaska Division of Tourism	
U.S. Department of the Interior	recreation uses in park and wildlife refuge system units and Federal public lands	Pamela Bergmann	Doug Mutter
WATER INTAKE and USE FACILITIES			
Alaska Department of Environmental Conservation	public drinking water wells, water treatment and storage, fish processing facilities	James Weise	Chris Miller

AGENCY	RESOURCES	PRIMARY CONTACT	ALTERNATE CONTACT
Alaska Department of Fish and Game	hatcheries, ocean net pens and release sites, aquaculture	Gayle Martin	Mark Fink
Alaska Department of Natural Resources	tidelands leases, aquaculture sites, private logging camps and log transfer facilities	Clark Cox	
U.S. Coast Guard	marinas and docks, mooring buoys	Sector Anchorage	17 th District, Juneau
AREAS OF LOCAL CONCERN			
Aleutians East borough	special use locations	See access information in following table	
Aleutians West Coastal Resource Service Area	special use locations		

CONTACT INFORMATION:

AGENCY	PRIMARY CONTACT		ALTERNATE CONTACT	
	Name	Numbers	Name	Numbers
Alaska Department of Fish and Game	Gayle Martin	work: 267-2541 fax: 267-2464 email: gayle.martin@alaska.gov	Mark Fink	work: 267-2338 fax: 267-2464 email: mark.fink@alaska.gov
Alaska Department of Natural Resources	Clark Cox	work: 269-8565 fax: 269-8913 email: clark.cox@alaska.gov		work: fax: email:
Alaska Department of Environmental Conservation	James Weise	work: 269-7647 fax: 269-7655 email: james.weise@alaska.gov	Chris Miller	work: 269-7549 fax: 269-3990 email: chris.miller@alaska.gov
	Ron Klein	work: 269-7583 fax: 269-7654 email: Ron.klein@alaska.gov	Robert Pressley	work: 835-8012 fax: 835-2429 email: Robert.pressley@alaska.gov
Alaska Department of Commerce, Community and Economic Development	Alaska Division of Tourism	work: 465-2012 fax: 465-3767 email: GoNorth@dced.state.ak.us		work: fax: email:
Alaska Natural Heritage Program	Julie Michaelson	work: 257-2782 fax: 257-2789 email: anjaml@uaa.alaska.edu	Rob Lipkin	work: 257-2785 fax: 257-2789 email: anrl@uaa.alaska.edu
Alaska Office of History and Archaeology	Dave McMahan	work: 269-8723 fax: 269-8908 email: Dave.McMahan@alaska.gov	Joan Dale	work: 269-8718 fax: 269-8908 email: joan.dale@alaska.gov
U.S. Department of the Interior	Pamela Bergmann	work: 271-5011 fax: 271-4102 email: pamela_bergmann@ios.doi.gov	Doug Mutter	work: 271-5011 fax: 271-4102 email: douglas_mutter@ios.doi.gov
U.S. Department of Commerce	Brad Smith	work: 271-5006 fax: 271-3030 email: Brad.Smith@noaa.gov	Matthew Eagleton	work: 271-6354 fax: 271-3030 email: Matthew.Eagleton@noaa.gov

AGENCY	PRIMARY CONTACT		ALTERNATE CONTACT	
	Name	Numbers	Name	Numbers
U.S. Department of Defense	Alaska Command	work: 552-3944 fax: 552-4855 email:		work: fax: email:
U.S. Coast Guard	Sector Anchorage	work: 271-6700 fax: 271-4689 email:	17th District, Juneau	work: 463-2065 fax: 463-2216 email:
NOAA Scientific Support Coordinator	John Whitney	work: 271-3593 fax: 271-3139 email: john.whitney@noaa.gov		work: fax: email:
Local Government Contacts	For the current local government contact information, go to B. Resources Section, Part One Community Profiles.			
Tribal Contacts	For the current tribal contact information, go to B. Resources Section, Part Three Information Directory, Native Organizations and Federally Recognized Tribes.			

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SENSITIVE AREAS: PART TWO - AREAS OF ENVIRONMENTAL CONCERN

A. BACKGROUND/CRITERIA

The following relative priority listing was developed by the Sensitive Areas Work Group, with representatives from state and federal agencies and the private sector. The list prioritizes resources into designations of major, moderate, and lesser concern. Resources are not prioritized within each designation. These designations are for consideration in initial spill response activities, they are not applicable to extended clean-up activities. This prioritization scheme must be used in conjunction with spill-specific information (e.g., size and location of spill, type of product, trajectory) to determine the actual protection priorities for that discharge.

The following criteria were developed as a tool to establish levels of concern. These criteria are not listed in a priority order.

CRITERIA FOR RELATIVE PRIORITY RATING

- human economic disruption -- economic/social value; human food source disruption
- mortality -- wildlife, fish, other organisms (number potentially killed in relation to abundance)
- animal displacement and sensitivity to displacement
- aesthetic degradation
- habitat availability and rarity
- sublethal effects, including sensitivity to physical or toxic effects of oil or hazardous substances and long-term affects to habitat, species, or both
- threatened and endangered species, and/or other legal designation
- persistent concentration of oil or hazardous substances
- reproduction rate or re-colonizing potential
- relative importance to ecosystem
- potential for physical contact with spill--pathway of oil or hazardous substances
- resource sensitivity to response countermeasures

B. AREAS OF MAJOR CONCERN

Threatened or Endangered Species Habitats

Sea Otter Concentration Areas (> 20) and General Distribution

Steller Sea Lion Rookeries or Haulouts

Steller's eiders overwintering sites

Geomorphology - Coastal Habitat Types:

--Marshes

--Eelgrass Beds

--Sheltered Tidal Flats

--Sheltered Rocky Shores

Geomorphology - Upland Habitat Types:

--Streams and Lakes

--Riparian Habitats

Harbor Seal Haulout Areas (> 10)

Northern Fur Seal Rookeries

Walrus Haulout/Concentration Areas

Caribou Calving and Insect Relief Areas

Seabird Colonies (> 100,000)

Waterfowl and Shorebird Spring, Fall, or Winter Concentration Areas

Eagle Nest Sites

Large Anadromous Fish Streams:

> 500 king salmon

> 5,000 sockeye salmon

> 2,500 coho salmon

> 25,000 pink salmon

> 15,000 chum salmon

Subsistence Harvest Areas

High Commercial Use Areas

High Recreational Use Areas

Land Management Designations:

Federal: Wilderness

Wild and Scenic Rivers

National Natural Landmarks

State: Refuges (Izembek State Refuge)

Sanctuaries

Critical Habitat Areas (Port Moller and Port Heiden Critical Habitats)

Cultural Resources/Archaeological Sites:

National Historic Landmarks

Burial Sites

National Register Eligible Village Sites

Intertidal Sites

C. AREAS OF MODERATE CONCERN

Species of Concern Habitats (Potential Threatened or Endangered)

Geomorphology - Coastal Habitat Types:

- Gravel Beaches
- Mixed Sand and Gravel Beaches
- Exposed Tidal Flats
- Coarse Grained Sand Beaches

Harbor Seal Haulout Areas (< 10)

Northern Fur Seal Offshore Concentration Areas

Seabird Colonies (10,000 - 100,000)

Waterfowl and Shorebird Nesting or Molting Concentration Areas

Whale Migration Routes (Spring/Fall)

Bear Concentration Areas

Anadromous Fish Streams:

- 100-500 king salmon
- 1,000-5,000 sockeye salmon
- 500-2,500 coho salmon
- 5,000-25,000 pink salmon
- 5,000-15,000 chum salmon

Caribou Migration Routes

Commercial Harvest Areas

Recreational Use Areas

Land Management Designations:

- Federal: National Wildlife Refuges (Izembek and Alaska Maritime)
- State: State Parks

Cultural Resources/Archaeological Sites:

- National Register Eligible Sites (Other Than Village Sites)
- Sites Adjacent To Shorelines

D. AREAS OF LESSER CONCERN

Geomorphology - Coastal Habitat Types:

- Fine-Grained Sand Beaches
- Exposed Wave-Cut Platforms
- Exposed Rocky Shores

Harbor Seal General Distribution Areas

Walrus General Distribution Areas

Seabird Colonies (< 10,000)

Waterfowl and Shorebird General Distribution Areas

Anadromous Fish Streams:

- < 100 king salmon
- < 1,000 sockeye salmon
- < 500 coho salmon
- < 5,000 pink salmon
- < 5,000 chum salmon

General Freshwater Fish Habitats

Land Management Designations:

- Federal: Public Lands
- State: General Public Lands

Other Cultural Resources

E. AREAS OF CONCERN FOR INVASIVE RATS

All of the islands within the Aleutians subarea are rat-free, with the exception of the islands listed below, and are a major concern for adverse impacts to wildlife and birds should rats invade their habitat.

All Islands Except These:

Geomorp
Attu
Shemya
Kiska
Rat
Amchitka
Adak
Great Sitkin
Kagalaska
Atka
Unalaska
Sedanka
Amaknak
Akutan

SENSITIVE AREAS: PART THREE - RESOURCE SENSITIVITY

The following sensitivity tables were developed by the Sensitive Areas Work Group, with representatives from state and federal agencies and the private sector (not all information is complete at this time). Key references that are available are identified for each table and listed at the end of the tables. Periods and/or conditions when resources are of varying levels of susceptibility (most, medium, least) to adverse impacts from an oil spill are noted in the following tables.

GEOMORPHOLOGY

(references: 6)

CATEGORY	LESSER	MODERATE	MAJOR
COASTAL HABITAT TYPES	Fine-grained Sand Exposed Wave-cut Platforms Exposed Rocky Shores	Gravel Beaches Mixed Sand & Gravel Beaches Exposed Tidal Flats Coarse Grained Sand Beaches	Marshes Eelgrass Beds Sheltered Tidal Flats Sheltered Rocky Shores
LAKE AND RIVER HABITAT TYPES	Exposed rocky cliffs & banks Bedrock shores & ledges, rocky shoals Eroding scarps/banks in unconsolidated sediment Exposed man-made Structures	Sand beaches & bars Mixed sand & gravel beaches/bars Gravel beaches/bars Gently sloping banks Exposed flats Riprap	Sheltered scarps in bedrock Vegetated steep sloping bluffs Sheltered man-made structures Vegetated low Banks Sheltered sand & mud & muddy substrates Marshes
UPLAND HABITAT TYPES	To Be Developed	To Be Developed	To Be Developed

CARIBOU/REINDEER

(references: 2, 3, 10, 15)

CATEGORY	LESSER	MODERATE	MAJOR
ABUNDANCE ¹			
SUSCEPTIBILITY	Sept 1 - May 15		May 16 - Aug 31
HUMAN HARVEST	Apr 1 - July 31 (Caribou)	Feb 1 - Mar 31 Oct 1 - Oct 31 (Caribou) Mar 1 - Aug 31 Nov 1 - Dec 31 (Reindeer)	Aug 1 - Sept 30 Nov 1 - Jan 31 (Caribou) Jan 1 - Feb 28 Sep 1 - Oct 31 (Reindeer)

¹There are three caribou herds (i.e., North Alaska Peninsula Herd, South Alaska Peninsula Herd, and the Adak Herd) that inhabit portions of this region. Depending on the herd; abundance may vary widely. As a result, specific abundance figures have not been established for use in prioritizing protection sites.

Critical Life Periods	J	F	M	A	M	J	J	A	S	O	N	D
Calving period						====						
Insect Relief habitat										=====		

MOOSE

(references: 2, 3, 4, 10, 15)

CATEGORY	LESSER	MODERATE	MAJOR
ABUNDANCE	Very few, if any, moose are present in GMU 9D and 10 which represent this area. Therefore their abundance and susceptibility would be low.		
SUSCEPTIBILITY			
HUMAN HARVEST	No Open Season. No Subsistence Use.		

Critical Life Periods	J	F	M	A	M	J	J	A	S	O	N	D
Calving						====						

SALMONIDS

(references: 1, 2, 3, 4, 10, 15)

CATEGORY	LESSER	MODERATE	MAJOR
ABUNDANCE	< 100 (Kings) < 1,500 (Sockeye) < 500 (Coho) < 5,000 (Pinks) < 5,000 (Chum)	100-500 (Kings) 1,500-5,000 (Sockeye) 500-2,500 (Coho) 5,000-25,000 (Pinks) 5,000-15,000 (Chum)	> 500 (Kings) > 5,000 (Sockeye) > 2,500 (Coho) > 25,000 (Pinks) > 15,000 (Chum)
SUSCEPTIBILITY	Dec 1 – Feb 28	Mar 1 - Apr 30 Oct 1 - Nov 30	May 1 - Sept 30
HUMAN HARVEST	Mar 1 – Apr 30	Oct 1 - Feb 28	May 1 - Sept 30

Critical Life Periods	J	F	M	A	M	J	J	A	S	O	N	D
Spawning	=	=										
Eggs/fry in gravels												
Rearing in freshwater												

HERRING

(references: 2, 3, 4, 10, 15)

CATEGORY	LESSER	MODERATE	MAJOR
ABUNDANCE	Abundance data not available		
SUSCEPTIBILITY	Oct 1 – Feb 28	Mar 1 - Mar 31	Apr 1 - Sept 30
HUMAN HARVEST	Aug 1 – Feb 28	Mar 1 - Apr 30	May 1 - Jul 31

Critical Life Periods	J	F	M	A	M	J	J	A	S	O	N	D
Spawning												
Present nearshore												

CLAMS and OTHER MARINE INVERTEBRATES (CHITONS)

(references: 2, 3, 4, 10, 15)

CATEGORY	LESSER	MODERATE	MAJOR
SUSCEPTIBILITY		Jan 1 - May 19	May 20 - Dec 31
HUMAN HARVEST		May 1 - Aug 31	Sept 1 - Apr 30

Critical Life Periods	J	F	M	A	M	J	J	A	S	O	N	D
Spawning												
Planktonic larvae												

LEGISLATIVELY DESIGNATED LAND STATUS

(references: 13)

CATEGORY	LOW	MEDIUM	HIGH
FEDERAL LANDS	Public Lands	Wildlife Refuges	Wilderness Areas
STATE LANDS	Public Lands ¹		Izembek State Refuge Port Moller Critical Habitat Area Port Heiden Critical Habitat Area

¹ Includes submerged lands out to 3 miles, and historic bays and inlets

HISTORIC PROPERTIES

(references: 12)

CATEGORY	LOW	MEDIUM	HIGH
HISTORIC PROPERTIES, CULTURAL AND ARCHAEOLOGICAL SITES	Cultural resources that do not meet National Register criteria	National Register-eligible sites (excluding villages sites) Sites adjacent to shorelines	National Historic Landmarks; National Natural Landmarks; Burial sites; National Register-eligible village sites; Intertidal sites

REFERENCE DOCUMENTS FOR SENSITIVITY TABLES

1. Alaska Department of Fish and Game. 1994. An atlas to the catalog of waters important for spawning, rearing or migration of anadromous fishes. ADFG, Div. of Habitat, Juneau.
2. Alaska Department of Fish and Game. 1985. Fish and wildlife life histories, habitat requirements, distribution, and abundance. Southwest region. Volume I. Alaska Habitat Management Guide. ADFG, Div. of Habitat, Juneau. 545 pp.
3. Alaska Department of Fish and Game. 1985. Human use of fish and wildlife. Southwest region. Volume II. Alaska Habitat Management Guide. ADFG, Div. of Habitat, Juneau. 630 pp.
4. Alaska Department of Fish and Game. 1985. Map atlas. Southwest region. Alaska Habitat Management Guide. ADFG, Div. of Habitat, Juneau. 8 pp. + 66 plates.
5. Sowls, A.L., S.A. Hatch and C.J. Lensink. 1978. Catalog of Alaskan seabird colonies. FWS/OBS-78/78. Biological Services Program. USDI:USFWS.
6. Research Planning Institute. 1988. Sensitivity of coastal environments and wildlife to spilled oil - Southern Alaska Peninsula - An atlas of coastal resources. 61 plates.
7. Van Pelt, T.I. and J.F. Piatt. 2005. Population status of Kittlitz's murrelet *Brachyramphus brevirostris* along the southern coast of the Alaska Peninsula. Alaska Science Center, USGS biological Science Office, Anchorage, Alaska.
8. U.S. Fish and Wildlife Service
9. National Marine Fisheries Service
10. Alaska Department of Fish and Game
11. Alaska Department of Natural Resources
12. National Park Service
13. Alaska Department of Fish and Game. 1991. State of Alaska refuges, critical habitat areas and sanctuaries. ADFG, Div. of Habitat. 69 pp.
14. Alaska's Threatened and Endangered Species. 1994. 29 pp.
15. Alaska Department of Fish and Game, Division of Subsistence Technical Paper Series: Nos. 57, 58, 88, 183, 226, 227, 229, 233 and two reports *in prep.*

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SENSITIVE AREAS: PART FOUR - BACKGROUND INFORMATION

INTRODUCTION

The background information contained in this section is a mixture of references to readily available documents, knowledgeable contacts, and data not readily available elsewhere. Industry or local government-generated references that have had agency input and review are incorporated by reference.

LAND MANAGEMENT MAPS

The Alaska Department of Natural Resources, under agreement with the Alaska Department of Environmental Conservation, produced digital base and land management maps for each of the subareas using their ARC-INFO based Geographic Information System. The following land management maps provide an index to the Public Land Record and should not be viewed as legal documents. These maps are available on the internet at: <http://www.asgdc.state.ak.us/maps/cplans/subareas.html>

Primary Data Sources

- Contingency Plan (C-Plan) Regional Boundaries: Alaska Department of Environmental Conservation (ADEC) (scale approximately 1:1 million; automated in 1995 by ADNR from 18AAC 75.495 specifications).
- State Land Ownership: Alaska Department of Natural Resources (ADNR), Land Administration System (section-level resolution; December 1998).
- State Legislatively Designated Areas: ADNR, Land Administration System (section-level resolution; February 1995).
- Native and Other Private: Alaska Native Claims Settlement Act, Bureau of Land Management (section-level resolution; December 1998); ADNR, Land Administration System (section-level resolution; December 1998)
- Patented Disposed Federal Lands (Native Allotments or Private Parcels): Bureau of Land Management (section-level resolution; December 1998).
- Conservation System Units: Bureau of Land Management (1991) and ADNR edits since then (February 1998).
- Wilderness Designations:
 - U.S. Geological Survey (1:2 million scale; May 1995).
 - U.S. Fish & Wildlife Service (1:2 million scale; May 1995).
 - U.S. Forest Service (1:63,360; May 1995).
 - U.S. National Park Service (1:63,360; May 1995).
 - Bureau of Land Management (section-level resolution; December 1998).
- Military Lands: Bureau of Land Management (section-level resolution; December 1998).
- Coastline: ADNR, Land Records Information Section; US Geological Survey; US Forest Service, Chugach; US Forest Service, Tongass; EVOS Trustee Council, (February 1998).
- Streams and Lakes: Digital Chart of the World, Defense Mapping Agency (1:1 million scale; 1991 data released by Environmental Systems Research Institute).
- Roads & Railroads: Digital Chart of the World, Defense Mapping Agency (1:1 million scale; 1991 data released by Environmental Systems Research Institute).
- Geographic Place Names: Dictionary of Alaska Place Names (1967) and U.S. Geological Survey Quadrangle Maps, (1:1 million scale; automated by U.S. Geological Survey, 1994, and annotated by ADNR, June 1996).
- Borough Boundaries: Alaska Department of Community & Regional Affairs (1997) (1:250,000 scale) and ADNR (1997).
- Native Corporation Boundaries: ADNR (approximately 1:1 million scale; automated from U.S. Census Bureau digital files, verified and updated by ADNR, July 1995).

Master Legend

Land Management

	National Forest Service		Both State and ANCSA Lands within section
	National Park Service		Alaska Native Claims Settlement Act (ANCSA) Lands
	National Wildlife Refuges		Municipal or Other Private Parcels
	Wild and Scenic Rivers outside of the National Wildlife Refuges or National Park Service		Federal Designated Wilderness Areas or Wilderness Study Areas
	Bureau of Land Management		State Selected
	Military		State Wildlife, Park, Forest, and other Multiple Use Areas
	State Lands		Native Selected
			Private Parcels (Disposed Federal Lands) or Native Allotments

Other Map Features

	C-Plan Boundary (On Land)
	C-Plan Boundary (Offshore)
	Borough Boundary
	Native Corporation Boundary
	Wilderness Study Area Boundary
	Major Highways
	Other Roads

To Re-Order Maps

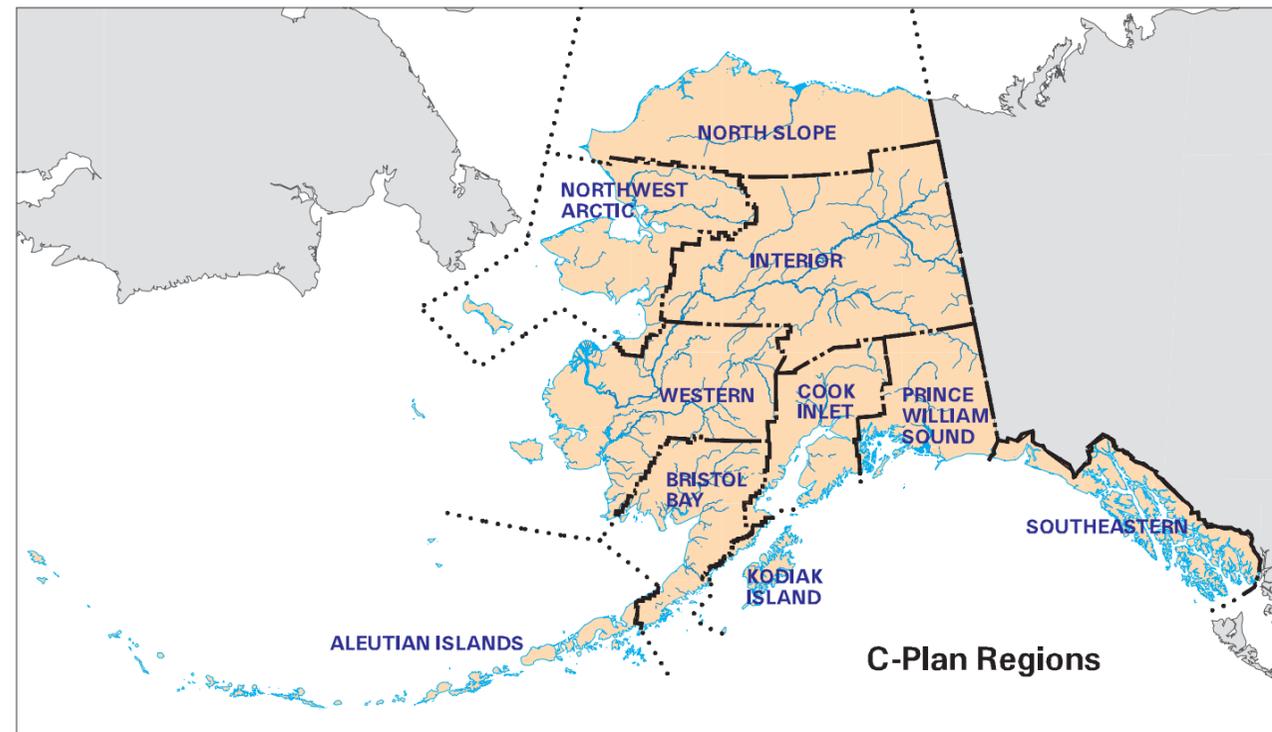
This legend page and the Sensitive Areas Land Management maps were produced using ARC/INFO software and output as digital postscript files.

To purchase copies of the Sensitive Areas Land Management maps, please contact:

Alaska Department of Natural Resources
 Division of Support Services
 Land Records Information Section
 550 W 7th Avenue, Suite 706
 Anchorage, Alaska 99501
 (907)269-8833

CONTINGENCY PLANNING

Sensitive Areas Land Management Maps



Hierarchy for Depicting Land Ownership

The land management maps in this C-Plan series depict ownership according to the following hierarchy (e.g., any portion of a section that is State Patented or Tentatively Approved causes the whole section to be depicted as State land):

- State Municipal Entitlements or Land Exchanges or other Land Disposals.
- Patented Disposed Federal Lands (Native Allotments or Private Parcels).
- State Patented or Tentatively Approved (includes casetypes 101-114, 116-117, 128-129).
- Alaska Native Claims Settlement Act (ANCSA) Patented or Interim Conveyed.
- Major Military.
- National Wildlife Refuges, National Park System Units.
- National Wild & Scenic Rivers outside National Park System Units and National Wildlife Refuges.
- National Forests and Monuments, National Petroleum Reserve-Alaska, National Recreation Areas and National Conservation Areas.
- Bureau of Land Management Public Lands.

Note: Cross-hatched areas indicate an overlay of State-Selected lands (including Alaska National Interest Lands Conservation Act topfilings) and Alaska Native Claims Settlement Act-Selected lands.

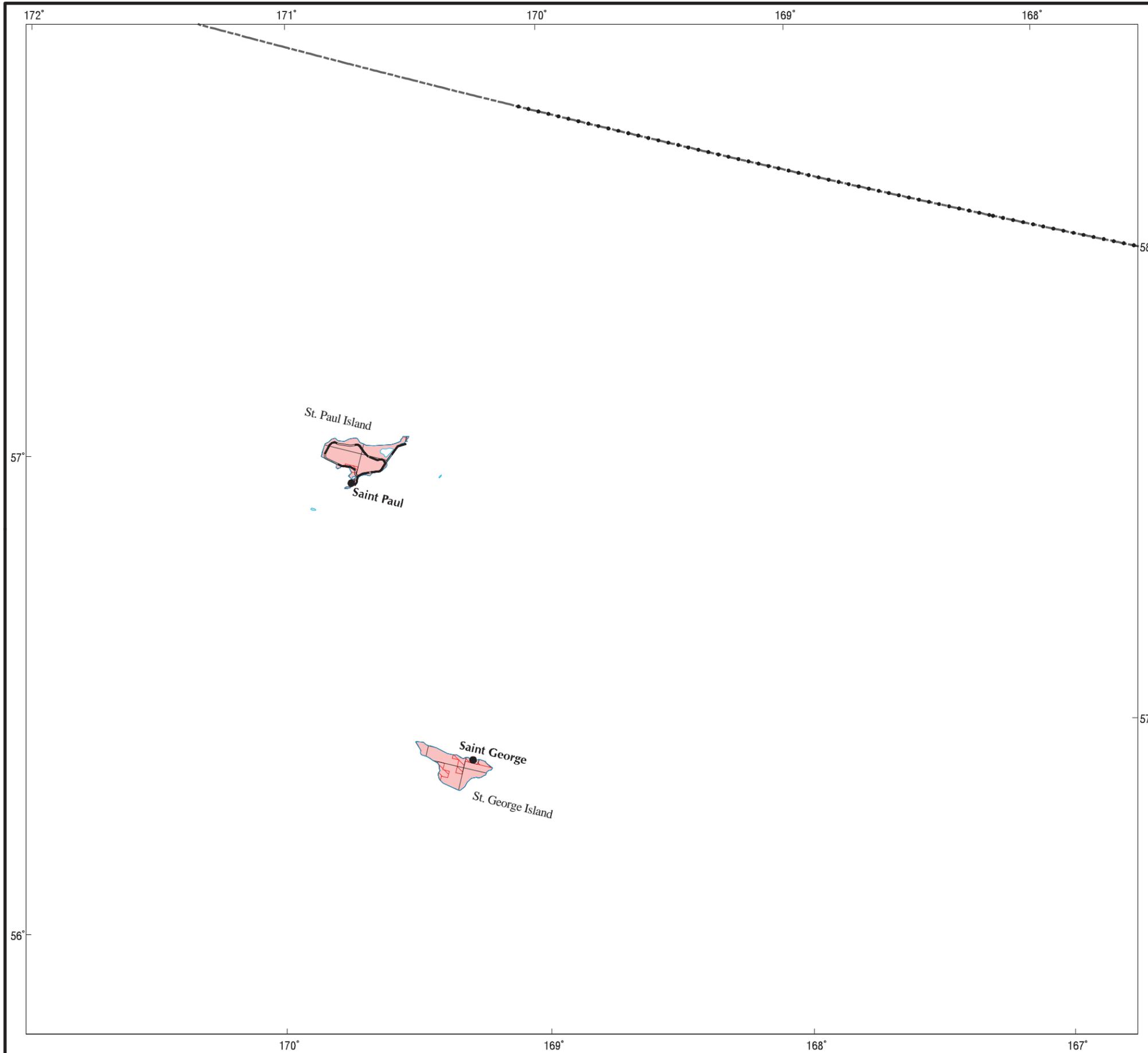
Note: The Alaska Maritime National Wildlife Refuge (NWR) is not completely depicted. Areas where it is depicted are shaded, however, they are not outlined. The Alaska Maritime NWR is described as follows:

The Alaska Maritime NWR consists of all public lands, including submerged waters and interests therein on islands, islets, rocks, reefs, spires, and designated capes and headlands in the coastal areas and adjacent seas of Alaska within five designated subunits: Chukchi Sea, Bering Sea, Aleutian Islands, Alaska Peninsula, and Gulf of Alaska Units; and includes an undetermined quantity of submerged land, if any, retained in Federal ownership at the time of statehood around Kodiak and Afognak Islands. The refuge is generally depicted on the USGS maps entitled, "Alaska Maritime National Wildlife Refuge" dated October 1979.

Background

The Alaska Department of Natural Resources (ADNR), under agreement with the Alaska Department of Environmental Conservation (ADEC), produced digital land management maps for each of the Contingency Plan (C-Plan) Region Subareas, using an ARC/INFO based Geographic Information System (GIS). The following land management maps provide an index to the Public Land Record and should not be viewed as legal documents. More detailed State Status Plats portraying State land ownership by township are available at the Alaska Department of Natural Resources' Public Information Centers. Master Title Plats portraying Federal and Alaska Native Claims Settlement Act land ownership are available at the Bureau of Land Management's Public Room, Federal Building.

The land management maps summarize land ownership and represent a hierarchical, section-level index to the underlying, detailed land ownership.



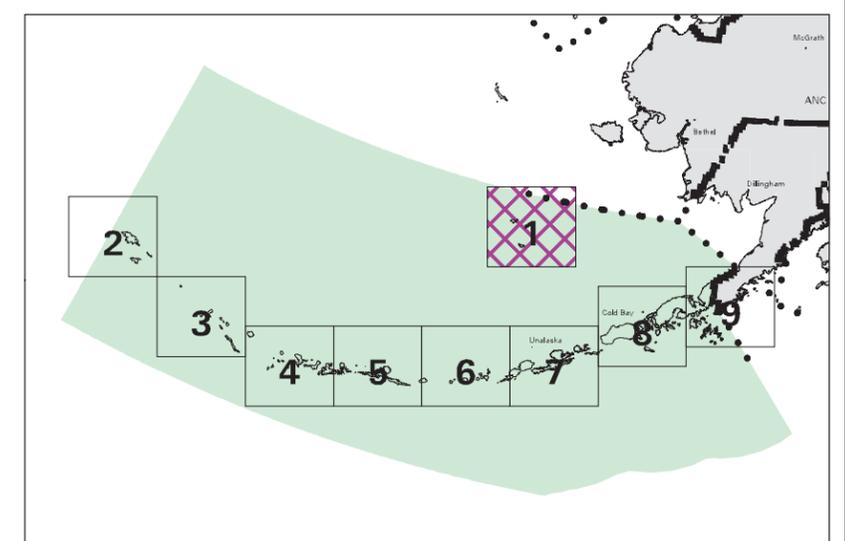
LAND MANAGEMENT ALEUTIAN ISLANDS REGION

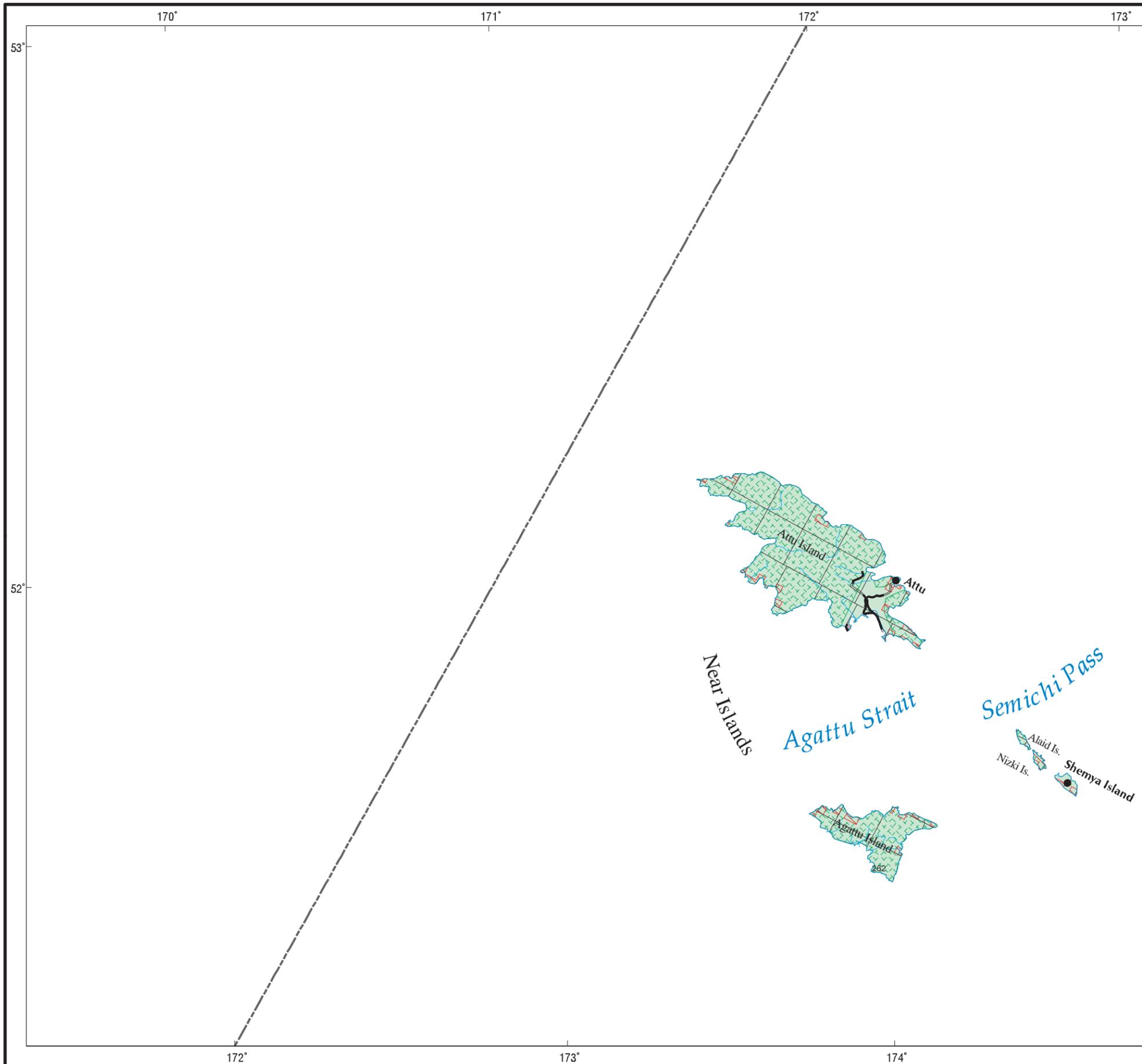
Map 1 of 9

Albers Equal Area Projection
Scale 1:1,000,000
0 25 miles

LEGEND

-  National Forest Service
-  National Park Service
-  National Wildlife Refuges
-  Wild and Scenic Rivers outside of the National Wildlife Refuges or National Park Service
-  Bureau of Land Management
-  Military
-  State Lands
-  Both State and ANCSA Lands within section
-  Alaska Native Claims Settlement Act (ANCSA) Lands
-  Municipal or Other Private Parcels
-  Federal Designated Wilderness Areas or Wilderness Study Areas
-  State Selected
-  State Wildlife, Park, Forest, and other Multiple Use Areas
-  Native Selected
-  Private Parcels (Disposed Federal Lands) or Native Allotments





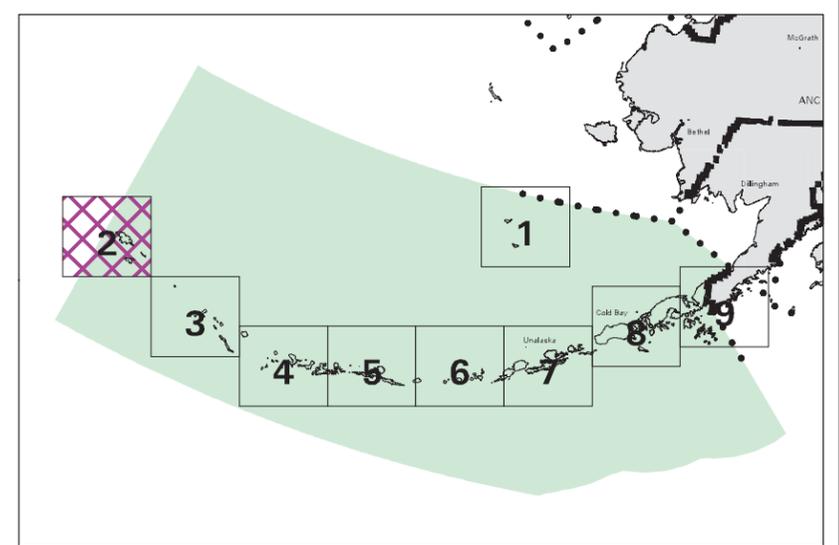
LAND MANAGEMENT ALEUTIAN ISLANDS REGION

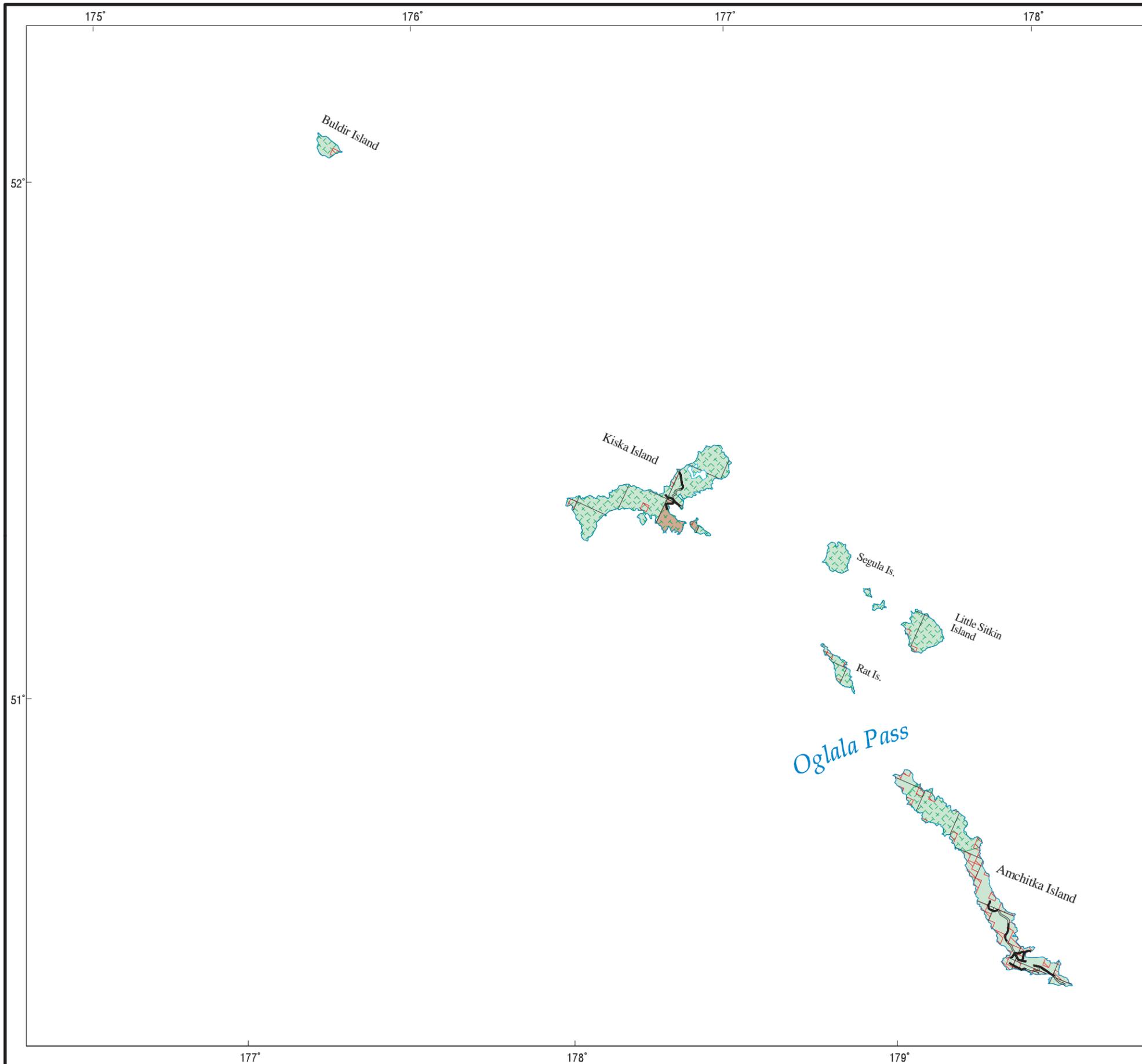
Map 2 of 9

Albers Equal Area Projection
Scale 1:1,000,000
0 25 miles

LEGEND

-  National Forest Service
-  National Park Service
-  National Wildlife Refuges
-  Wild and Scenic Rivers outside of the National Wildlife Refuges or National Park Service
-  Bureau of Land Management
-  Military
-  State Lands
-  Both State and ANCSA Lands within section
-  Alaska Native Claims Settlement Act (ANCSA) Lands
-  Municipal or Other Private Parcels
-  Federal Designated Wilderness Areas or Wilderness Study Areas
-  State Selected
-  State Wildlife, Park, Forest, and other Multiple Use Areas
-  Native Selected
-  Private Parcels (Disposed Federal Lands) or Native Allotments





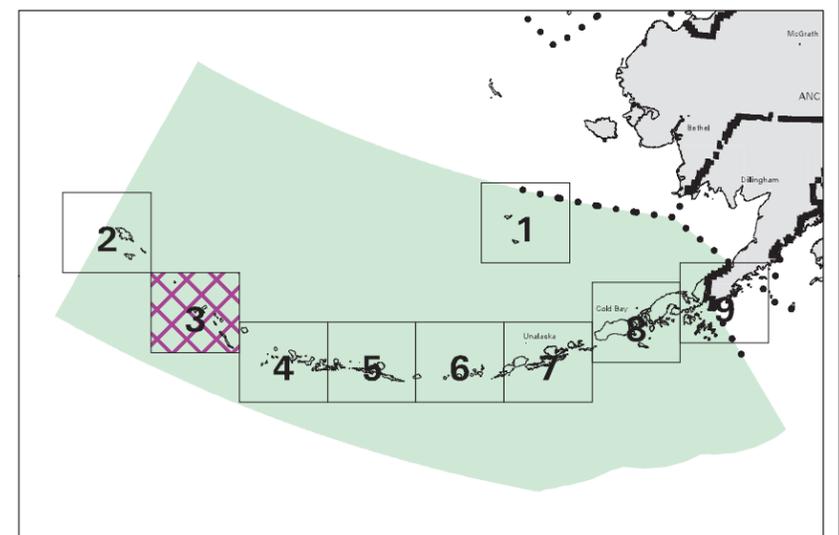
LAND MANAGEMENT ALEUTIAN ISLANDS REGION

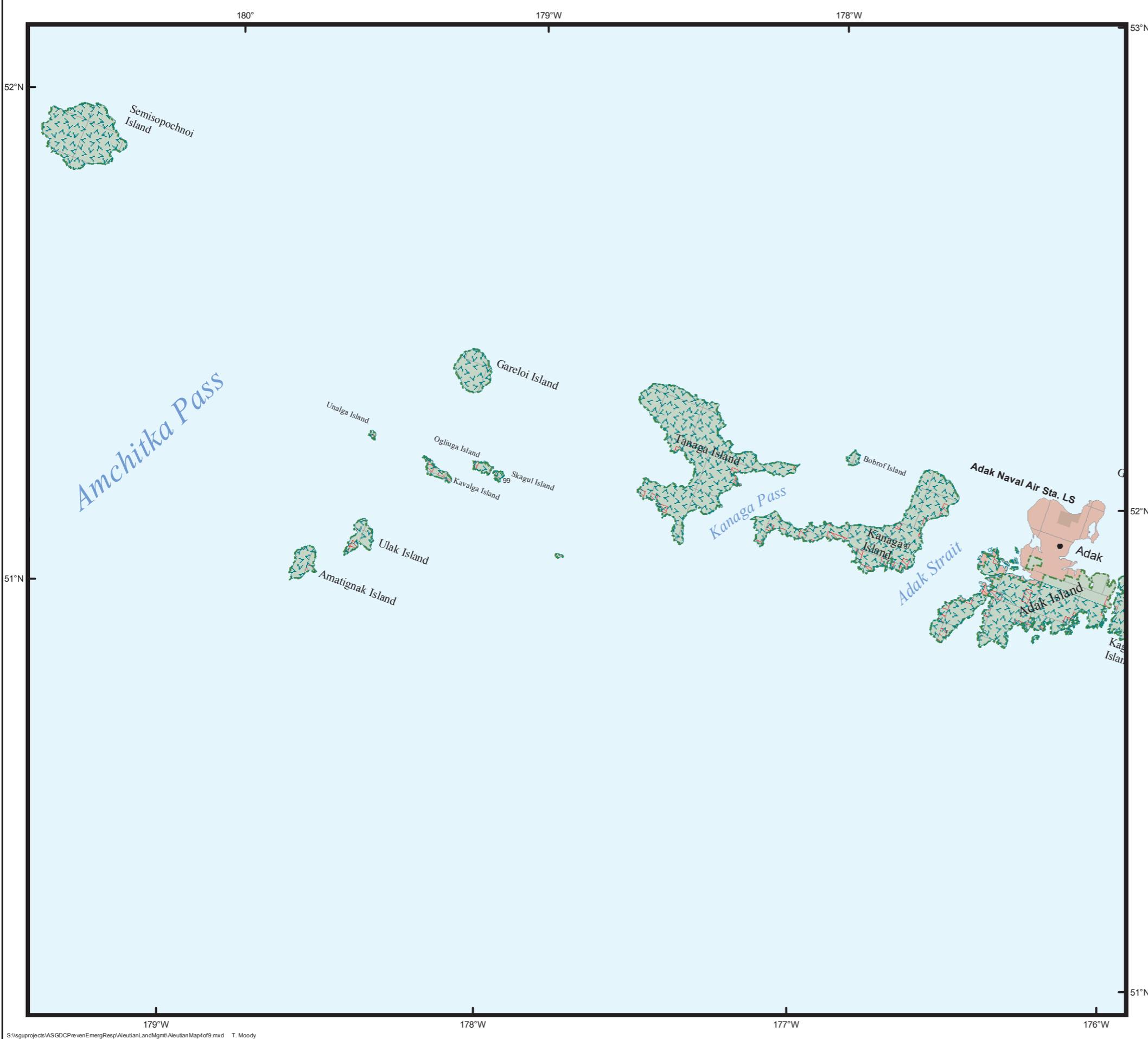
Map 3 of 9

Albers Equal Area Projection
Scale 1:1,000,000
0 25 miles

LEGEND

-  National Forest Service
-  National Park Service
-  National Wildlife Refuges
-  Wild and Scenic Rivers outside of the National Wildlife Refuges or National Park Service
-  Bureau of Land Management
-  Military
-  State Lands
-  Both State and ANCSA Lands within section
-  Alaska Native Claims Settlement Act (ANCSA) Lands
-  Municipal or Other Private Parcels
-  Federal Designated Wilderness Areas or Wilderness Study Areas
-  State Selected
-  State Wildlife, Park, Forest, and other Multiple Use Areas
-  Native Selected
-  Private Parcels (Disposed Federal Lands) or Native Allotments





LAND MANAGEMENT

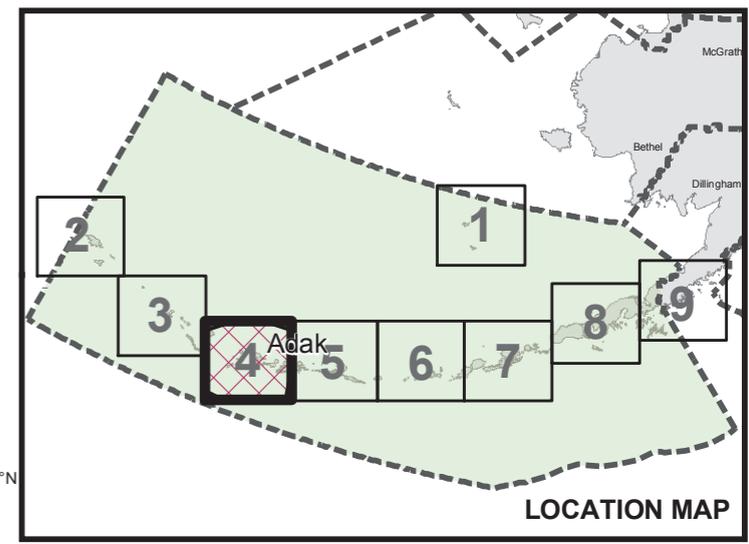
ALEUTIAN ISLANDS REGION

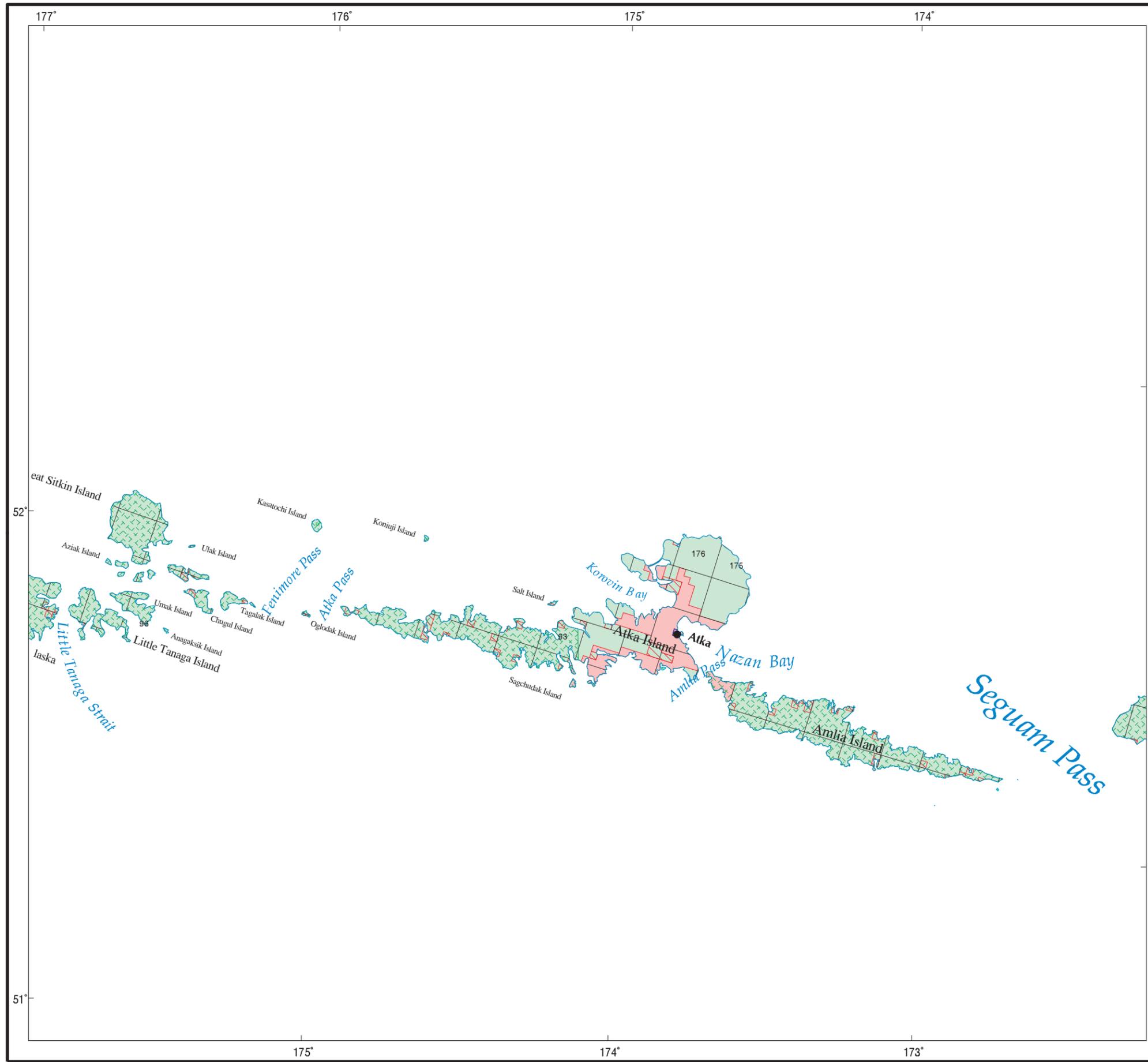
Map 4 of 9

Map projection: Albers Equal Area
Map scale: 1:1,000,000



-  National Forests, Monuments, Recreation, and Conservation Areas
-  National Park System
-  National Wildlife Refuges
-  National Wild and Scenic Rivers Outside National Park System and Outside National Wildlife Refuges
-  Bureau of Land Management Public Lands
-  Major Military
-  State Patented Tentatively Approved or Other State Acquired Lands (*Land Administration System, March 2005*)
-  Both State and ANCSA Lands Within a Section
-  ANCSA Patented or Interim Conveyed (*BLM, March 2005*)
-  Municipal or Other Private Parcels (*BLM, March 2005*) (*Land Administration System, March 2005*)
-  Federal Designated Wilderness Areas or Wilderness Study Areas
-  State Selected (ANILCA Topfilings included)
-  State Wildlife, Park, Forest, and Other Multiple Use Areas
-  ANCSA Selected (*BLM, March 2005*)
-  Native Allotments (*Bureau of Land Management, March 2005*)





LAND MANAGEMENT ALEUTIAN ISLANDS REGION

Map 5 of 9

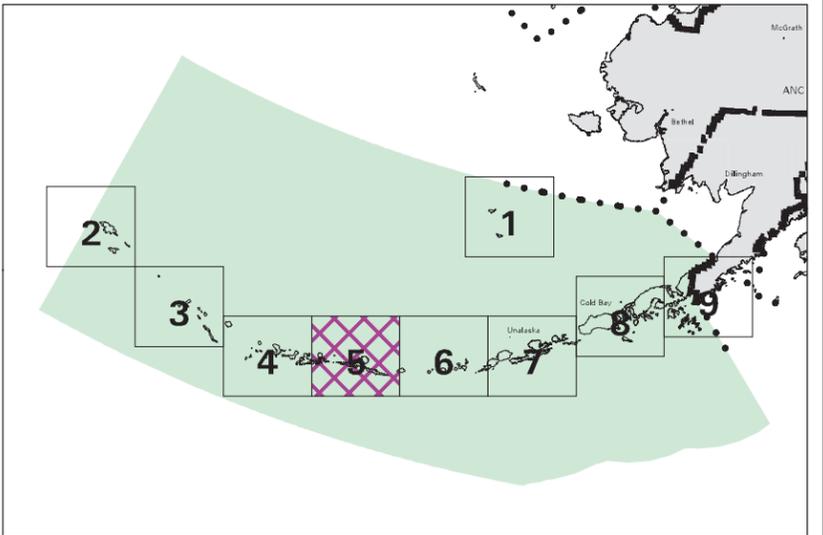
Albers Equal Area Projection

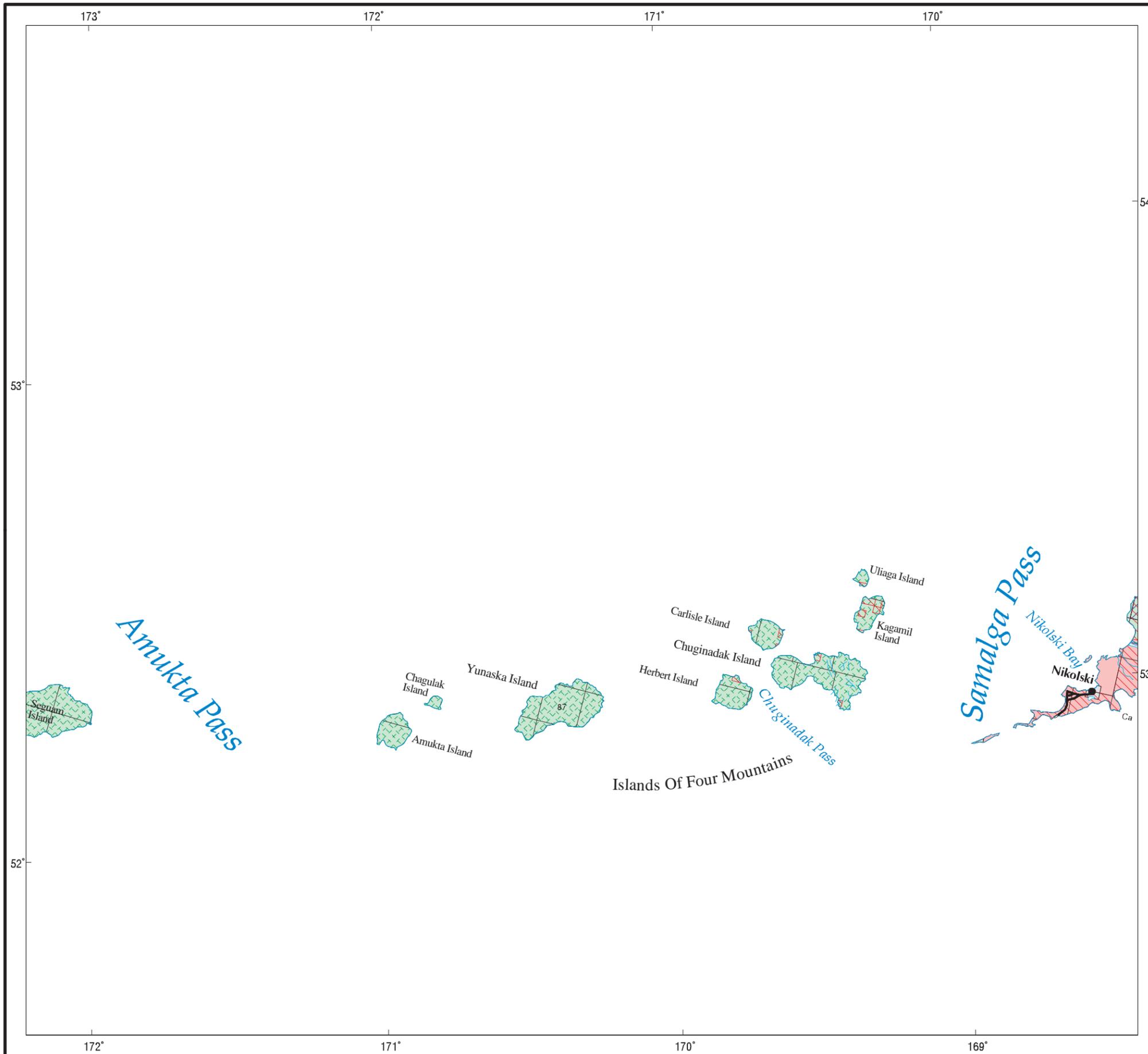
Scale 1:1,000,000



LEGEND

-  National Forest Service
-  National Park Service
-  National Wildlife Refuges
-  Wild and Scenic Rivers outside of the National Wildlife Refuges or National Park Service
-  Bureau of Land Management
-  Military
-  State Lands
-  Both State and ANCSA Lands within section
-  Alaska Native Claims Settlement Act (ANCSA) Lands
-  Municipal or Other Private Parcels
-  Federal Designated Wilderness Areas or Wilderness Study Areas
-  State Selected
-  State Wildlife, Park, Forest, and other Multiple Use Areas
-  Native Selected
-  Private Parcels (Disposed Federal Lands) or Native Allotments





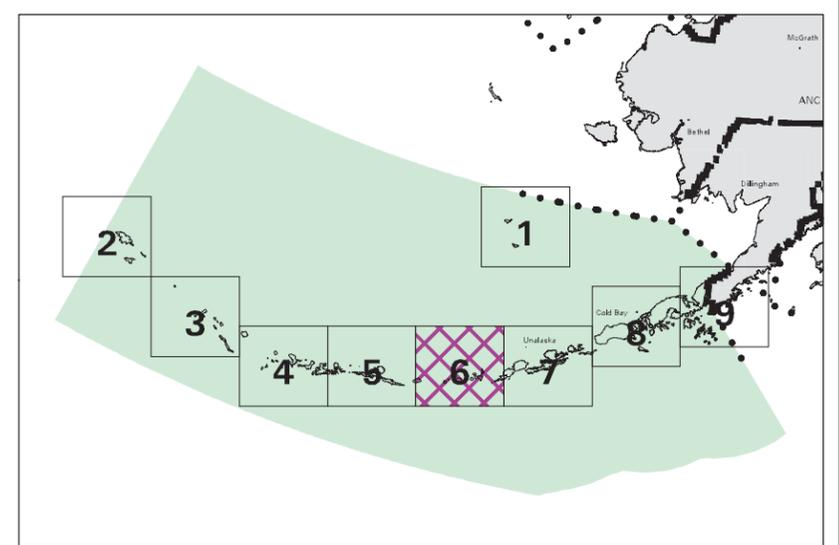
LAND MANAGEMENT ALEUTIAN ISLANDS REGION

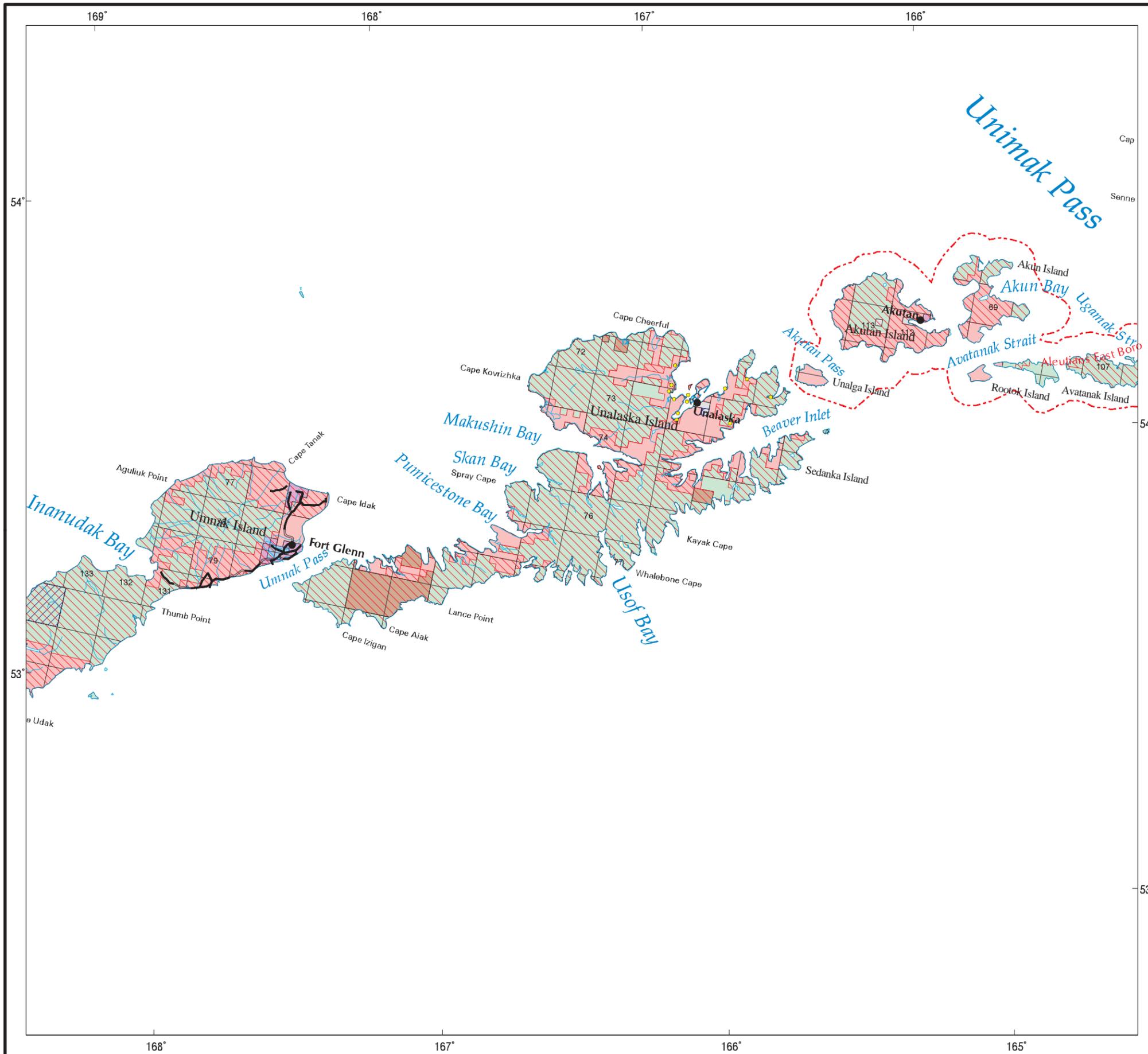
Map 6 of 9

Albers Equal Area Projection
Scale 1:1,000,000
0 25 miles

LEGEND

-  National Forest Service
-  National Park Service
-  National Wildlife Refuges
-  Wild and Scenic Rivers outside of the National Wildlife Refuges or National Park Service
-  Bureau of Land Management
-  Military
-  State Lands
-  Both State and ANCSA Lands within section
-  Alaska Native Claims Settlement Act (ANCSA) Lands
-  Municipal or Other Private Parcels
-  Federal Designated Wilderness Areas or Wilderness Study Areas
-  State Selected
-  State Wildlife, Park, Forest, and other Multiple Use Areas
-  Native Selected
-  Private Parcels (Disposed Federal Lands) or Native Allotments





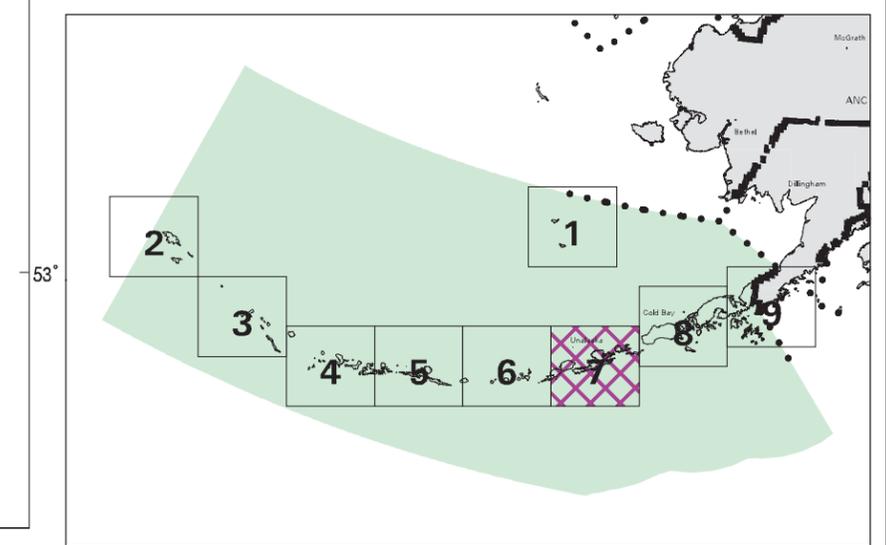
LAND MANAGEMENT ALEUTIAN ISLANDS REGION

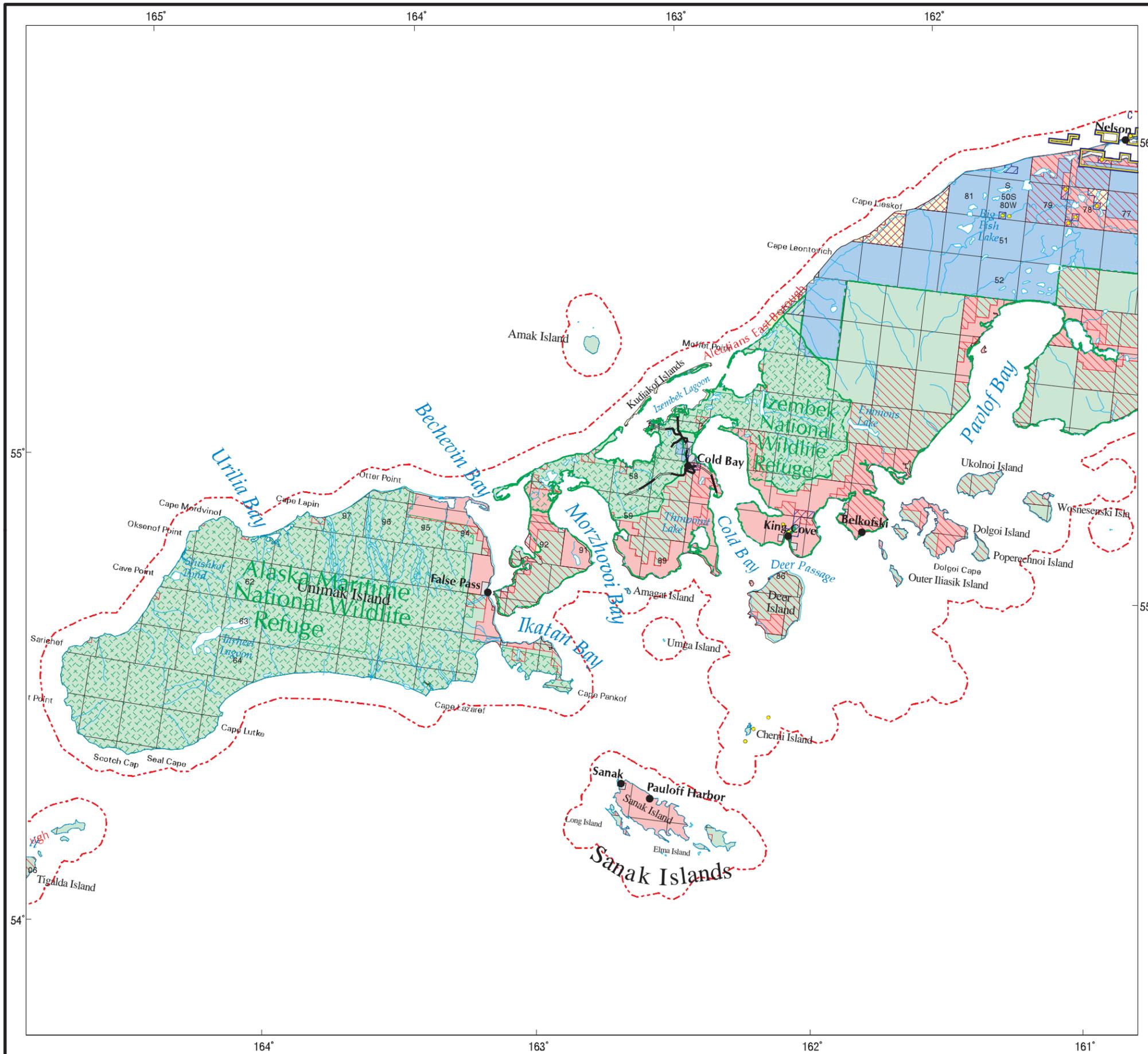
Map 7 of 9

Albers Equal Area Projection
Scale 1:1,000,000
0 25 miles

LEGEND

-  National Forest Service
-  National Park Service
-  National Wildlife Refuges
-  Wild and Scenic Rivers outside of the National Wildlife Refuges or National Park Service
-  Bureau of Land Management
-  Military
-  State Lands
-  Both State and ANCSA Lands within section
-  Alaska Native Claims Settlement Act (ANCSA) Lands
-  Municipal or Other Private Parcels
-  Federal Designated Wilderness Areas or Wilderness Study Areas
-  State Selected
-  State Wildlife, Park, Forest, and other Multiple Use Areas
-  Native Selected
-  Private Parcels (Disposed Federal Lands) or Native Allotments





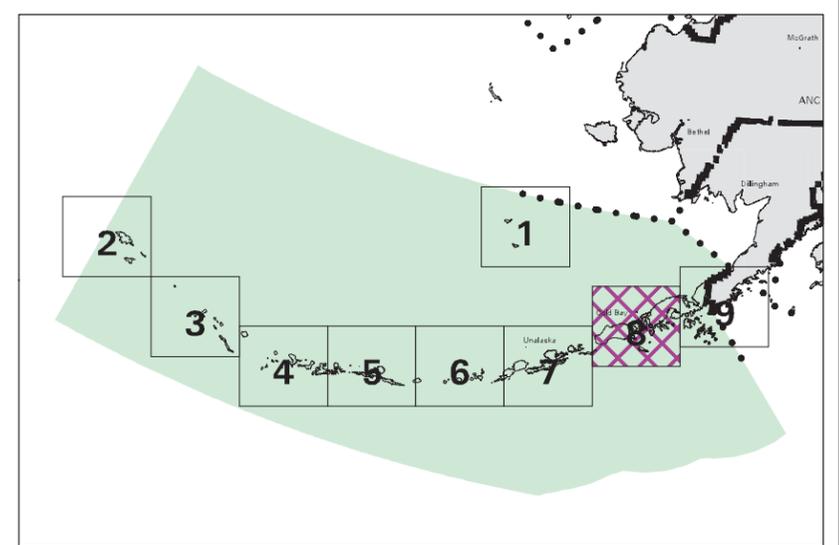
LAND MANAGEMENT ALEUTIAN ISLANDS REGION

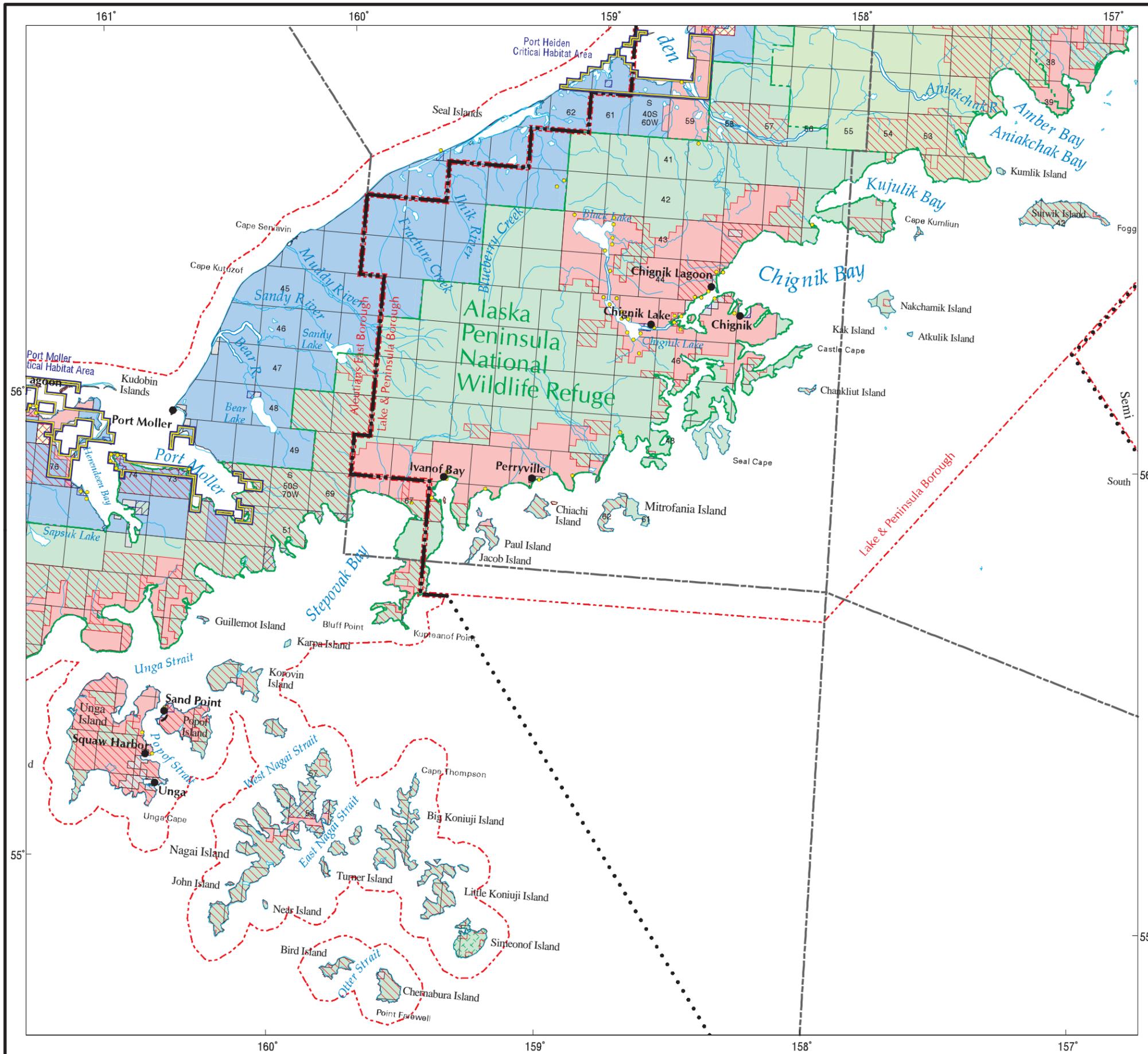
Map 8 of 9

Albers Equal Area Projection
Scale 1:1,000,000
0 25 miles

LEGEND

- National Forest Service
- National Park Service
- National Wildlife Refuges
- Wild and Scenic Rivers outside of the National Wildlife Refuges or National Park Service
- Bureau of Land Management
- Military
- State Lands
- Both State and ANCSA Lands within section
- Alaska Native Claims Settlement Act (ANCSA) Lands
- Municipal or Other Private Parcels
- Federal Designated Wilderness Areas or Wilderness Study Areas
- State Selected
- State Wildlife, Park, Forest, and other Multiple Use Areas
- Native Selected
- Private Parcels (Disposed Federal Lands) or Native Allotments





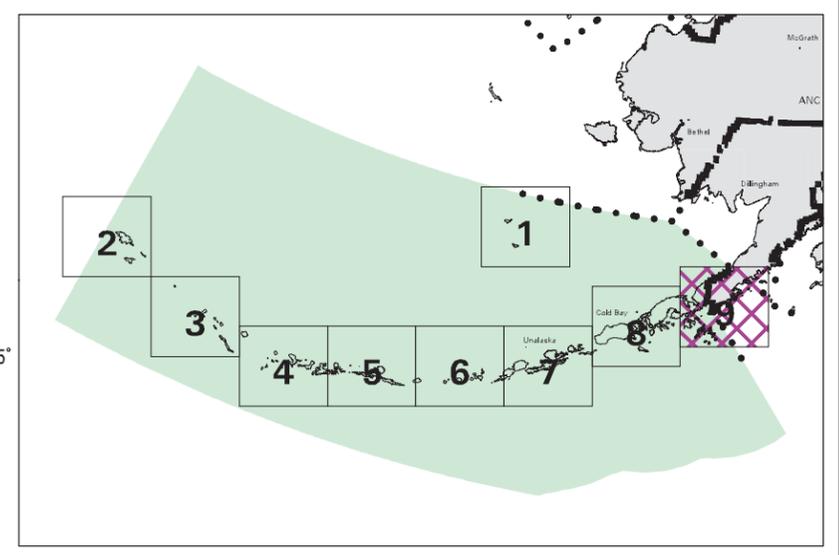
LAND MANAGEMENT ALEUTIAN ISLANDS REGION

Map 9 of 9

Albers Equal Area Projection
Scale 1:1,000,000
0 25 miles

LEGEND

-  National Forest Service
-  National Park Service
-  National Wildlife Refuges
-  Wild and Scenic Rivers outside of the National Wildlife Refuges or National Park Service
-  Bureau of Land Management
-  Military
-  State Lands
-  Both State and ANCSA Lands within section
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-  State Selected
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-  Private Parcels (Disposed Federal Lands) or Native Allotments



A. LAND MANAGEMENT DESIGNATIONS

1. Access to Lands

Land ownership must be determined and landowners contacted to evaluate incident-specific protection priorities, obtain land-use permitting requirements, and obtain permission to access lands. Native corporation lands, as well as local, State, and Federal government lands often require special use permits. If an incident affects private lands or Native Allotments, permission to enter lands should be sought from the landowner. The local Borough government is often the best source of private land ownership records.

2. State

Port Moller State Critical Habitat Area was established in 1972 to protect habitat crucial to perpetuation of fish and wildlife, especially waterfowl. The area includes uplands, tidelands and submerged lands.

Izembek State Game Refuge was established in 1960 to protect natural habitat and game populations, especially waterfowl. The area includes tide and submerged lands.

Port Heiden Critical Habitat Area was established in 1972 to protect natural habitat crucial to the perpetuation of fish and wildlife, especially waterfowl.

3. Federal

Izembek National Wildlife Refuge Covering 320,893 acres, the Refuge faces the Bering Sea on the tip of the Alaska Peninsula. Most of the refuge (300,000 acres) was designated as Wilderness in 1980 under the Alaska National Interest Lands Conservation Act. The landscape features volcanoes, glaciers, valleys, tundra and lagoons. Izembek Lagoon features one of the largest eelgrass beds in the world. The Lagoon provides a feeding area for migratory birds, particularly during fall migration, including the world's population of Pacific black brant (150,000 birds on average), Taverner's Canada geese (55,000), and emperor geese (6,000). Approximately 23,000 threatened Steller's eiders also molt, rest, and feed at Izembek each autumn. Most waterfowl arrive in August/September. A second wave of mostly sea ducks arrives in November to overwinter. Thousands of shorebirds, as well as brown bear, caribou, ptarmigan, and furbearers inhabit the Refuge. Waterfowl and other sport hunting are primary visitor activities.

Alaska Maritime National Wildlife Refuge Only a portion of this vast Refuge occurs within the Aleutians Subarea. The entire Refuge covers over 4.5 million acres and consists of over 2,400 islands, headlands, rocks, islets, spires, and reefs along the Alaskan coast, stretching from Southeast Alaska to Cape Lisburne on the Chukchi Sea. Of this, the Island groups within the Subarea include the Aleutian (Attu to Unimak), Pribilof, and Shumagin islands.

About 75 percent of Alaska's marine birds (15 to 30 million individuals from 55 species) use the Refuge. In addition, it is also home to thousands of sea lions, seals, walrus, and sea otters. Sea otters are listed as threatened in the Aleutian Islands Subarea. Wildlife viewing, photography and backpacking are primary uses of the Refuge.

Alaska Peninsula National Wildlife Refuge. The Refuge, established in 1980, lies on the Pacific side of the Alaska Peninsula and covers about 3,500,000 acres. The Pavlof Unit, which abuts the Izembek NWR, and the North Creek Unit, in the Port Moller area, of the Alaska Peninsula

Refuge are within the Aleutian Islands Subarea. The landscape includes active volcanoes along the Aleutian Range, lakes, rivers, tundra, and rugged coastline. Moose, caribou, wolves, brown bears, and wolverines reside on the Refuge. Sea lions, seals, sea otters (about 30,000), and whales live in the marine environment. The cliffs, bays and poorly-drained lowlands provide abundant habitat for millions of birds, particularly seabirds, waterfowl, and shorebirds that use the refuge primarily as a staging area during migration to and from nesting grounds in the Arctic. Seabirds also use the Refuge for breeding. All five species of Pacific salmon (king, coho, sockeye, pink and chum) spawn in the streams and lakes on the Refuge. Brown bears forage heavily in coastal marshes and along shorelines and are particularly susceptible in the spring. Big game hunting and sport fishing are popular uses.

B. HABITAT TYPES

Shoreline habitats have been defined and ranked according to Environmental Sensitivity Index (ESI) standards produced by the National Oceanic and Atmospheric Administration (NOAA) in *Environmental Sensitivity Index Guidelines* (October 1997). Seasonal ESI maps in poster and atlas formats have been produced for the subarea, as shown on the following index map. These maps are available on the internet at: <http://www.asgdc.state.ak.us/maps/cplans/subareas.html>. Updated ESI information can also be found on the internet at: <http://response.restoration.noaa.gov/order/esiindex.html>

1. Benthic Habitats

Oil vulnerability is lower in benthic (near bottom) areas than in the intertidal zone since contamination by floating slicks is unlikely. Sensitivity is derived from the species which use the habitat. Benthic habitats have not been traditionally classed by ESI rankings, but are treated more like living resources which vary with season and location. Benthic habitats include: submerged aquatic vegetation beds and large beds of kelp.

2. Shoreline Habitats

Habitats (estuarine, large lacustrine and riverine) ranked from least to most sensitive (see the following table) are described below:

ESI #1--Exposed impermeable vertical substrates: exposure to high wave energy or tidal currents on a regular basis, strong wave-reflection patterns common, substrate is impermeable with no potential for subsurface penetration, slope of intertidal zone is 30 degrees or greater, attached organisms are hardy and accustomed to high hydraulic impacts.

ESI #2--Exposed impermeable substrates, non-vertical: exposure to high wave energy or tidal currents on a regular basis, strong wave-reflection patterns regular, substrate is impermeable with no potential for subsurface penetration over most of intertidal zone, slope of intertidal zone is less than 30 degrees, there can be accumulated but mobile sediments at the base of cliff, attached organisms are hardy and accustomed to high hydraulic impacts.

ESI #3--Semi-permeable substrate: substrate is semi-permeable with oil penetration less than 10 cm, sediments are sorted and compacted, slope is less than 5 degrees, sediment and potential for rapid burial mobility is low, surface sediments are subject to regular reworking by waves, there are relatively low densities of infauna.

ESI #4--Medium permeability substrate: substrate is permeable with oil penetration up to 25 cm, slope is between 5 and 15 degrees, rate of sediment mobility is high with accumulation of up to 20

cm of sediments in a single tidal cycle, sediments are soft with low trafficability, low densities of infauna.

ESI #5--Medium to high permeability substrate: substrate of medium to high permeability which allows oil penetration up to 50 cm, spatial variations in distribution of grain sizes with finer ones at high tide line and coarser ones in the storm berm and at toe of beach, 20 percent is gravel, slope between 8 and 15 degrees, sediment mobility is high during storms, sediments are soft with low trafficability, low populations infauna and epifauna except at lowest intertidal levels.

ESI #6--High permeability substrates: substrate is highly permeable with oil penetration up to 100 cm, slope is 10 to 20 degrees, rapid burial and erosion of shallow oil can occur during storms, high annual variability in degree of exposure and frequency of wave mobilization, sediments have lowest trafficability of all beaches, natural replenishment rate is the lowest of all beaches, low populations of infauna and epifauna except at lowest intertidal levels.

ESI #7--Exposed flat permeable substrate: flat (less than 3 degrees) accumulations of sediment, highly permeable substrate dominated by sand, sediments are well saturated so oil penetration is limited, exposure to wave or tidal-current energy is evidenced in ripples or scour marks or sand ridges, width can vary from a few meters to one kilometer, sediments are soft with low trafficability, high infaunal densities.

ESI #8--Sheltered impermeable substrate: sheltered from wave energy and strong tidal currents, substrate of bedrock or rocky rubble, variable in oil permeability, slope greater than 15 degrees with a narrow intertidal zone, high coverage of attached algae and organisms.

ESI #9--Sheltered flat semi-permeable substrate: sheltered from wave energy and strong tidal currents, substrate is flat (less than 3 degrees) and dominated by mud, sediments are water-saturated so permeability is low, width varies from a few meters to one kilometer, sediments are soft with low trafficability, infaunal densities are high.

ESI #10--Vegetated wetlands: marshes and swamps with various types of emergent herbaceous grasses and woody vegetation over the substrate.

ShoreZone Mapping. A coastal habitat mapping effort has produced an on-line database, digital maps, and color aerial imagery and videos of the coastline in the subarea. This geo-referenced data set collected at low tide includes coastal geomorphology and biological habitat for intertidal and shallow subtidal areas. ESI types are cross-referenced. The information may be accessed at:

<http://www.CoastAlaska.net>

3. Upland Habitats

At this time, no uplands or wetlands classifications directly related to sensitivity to oil spills has been identified. A general wetlands classification has been developed by the U.S. Fish and Wildlife Service, National Wetlands Inventory, in Anchorage. Considerable mapping of wetlands has been completed, some of which are available in a Geographic Information System database (see the following figure). Updated map data is being placed on the National Wetlands Inventory Internet web site at: <http://wetlands.fws.gov/>

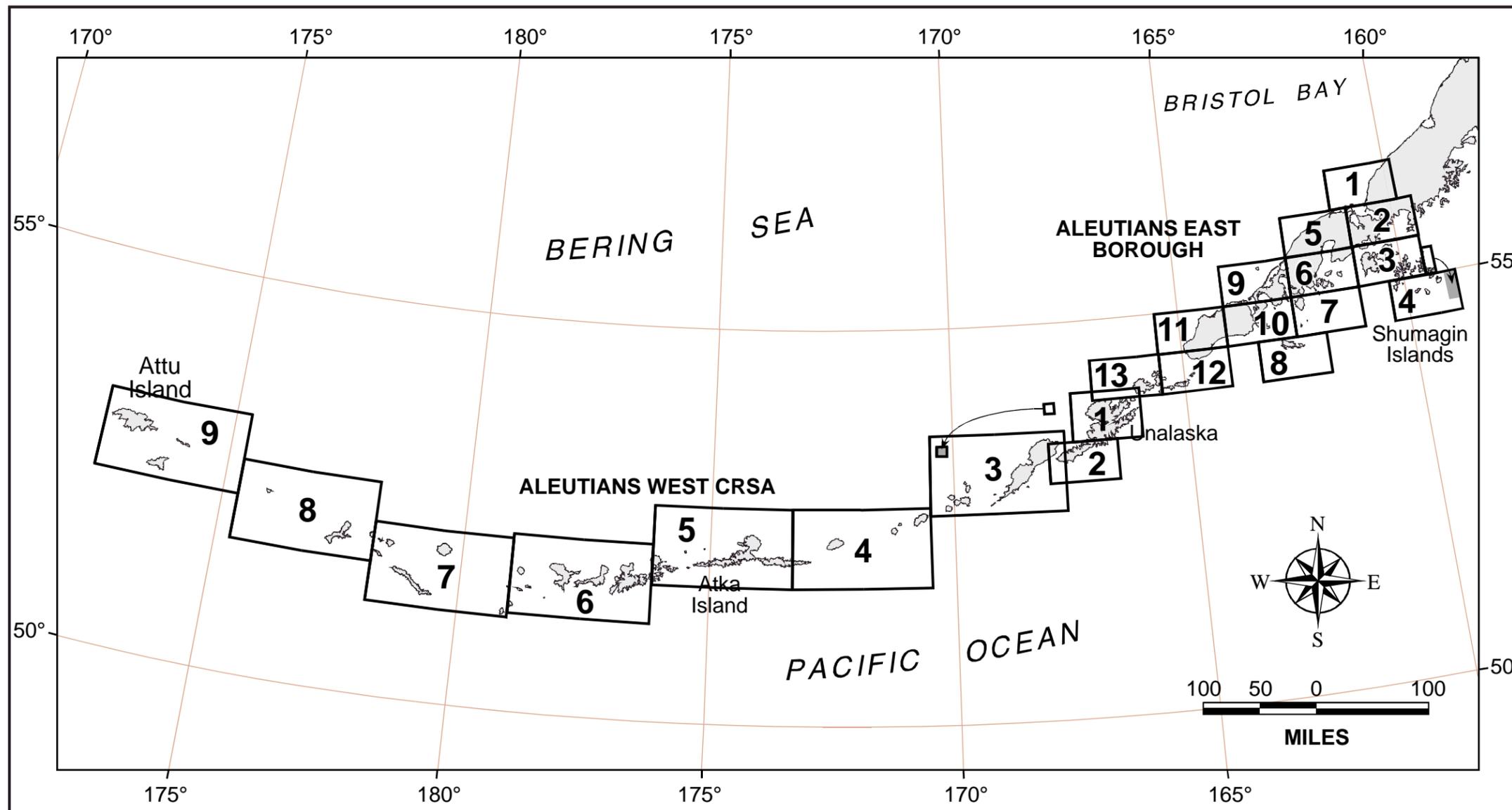
ESI HABITAT RANKING

ESI NO.	ESTUARINE	LACUSTRINE	RIVERINE (large rivers)
1 A	Exposed rocky cliffs	Exposed rocky cliffs	Exposed rocky banks
1 B	Exposed sea walls	Exposed sea walls	Exposed sea walls
2	Exposed wave-cut platforms	Shelving bedrock shores	Rocky shoals; bedrock ledges
3	Fine- to medium-grained sand beaches	Eroding scarps in unconsolidated sediments	Exposed, eroding banks in unconsolidated sediments
4	Coarse-grained sand beaches	Sand beaches	Sandy bars and gently sloping banks
5	Mixed sand and gravel beaches	Mixed sand and gravel beaches	Mixed sand and gravel bars and gently sloping banks
6 A	Gravel beaches	Gravel beaches	Gravel bars and gently sloping banks
6 B	Riprap	Riprap	Riprap
7	Exposed tidal flats	Exposed flats	Not present
8 A	Sheltered rocky shores	Sheltered scarps in bedrock	Vegetated, steeply sloping bluffs
8 B	Sheltered sea walls	Sheltered sea walls	Sheltered sea walls
9	Sheltered tidal flats	Sheltered vegetated low banks	Vegetated low banks
10 A	Saltwater marshes		
10 B	Freshwater marshes	Freshwater marshes	Freshwater marshes
10 C	Freshwater swamps	Freshwater swamps	Freshwater swamps
10 D	Mangroves		

“Environmental Sensitivity Index Guidelines” (October 1995) NOAA Technical Memorandum NOS ORCA 92

Coastal Resources Inventory and Environmental Sensitivity Maps

Aleutians East Borough, Alaska



Prepared for:

Aleutians East Borough

With Funding Provided by:

Prince William Sound Oil Spill
Recovery Institute

National Fish and Wildlife
Foundation

Alaska Chadux Corporation

U.S. Coast Guard

Prepared by:



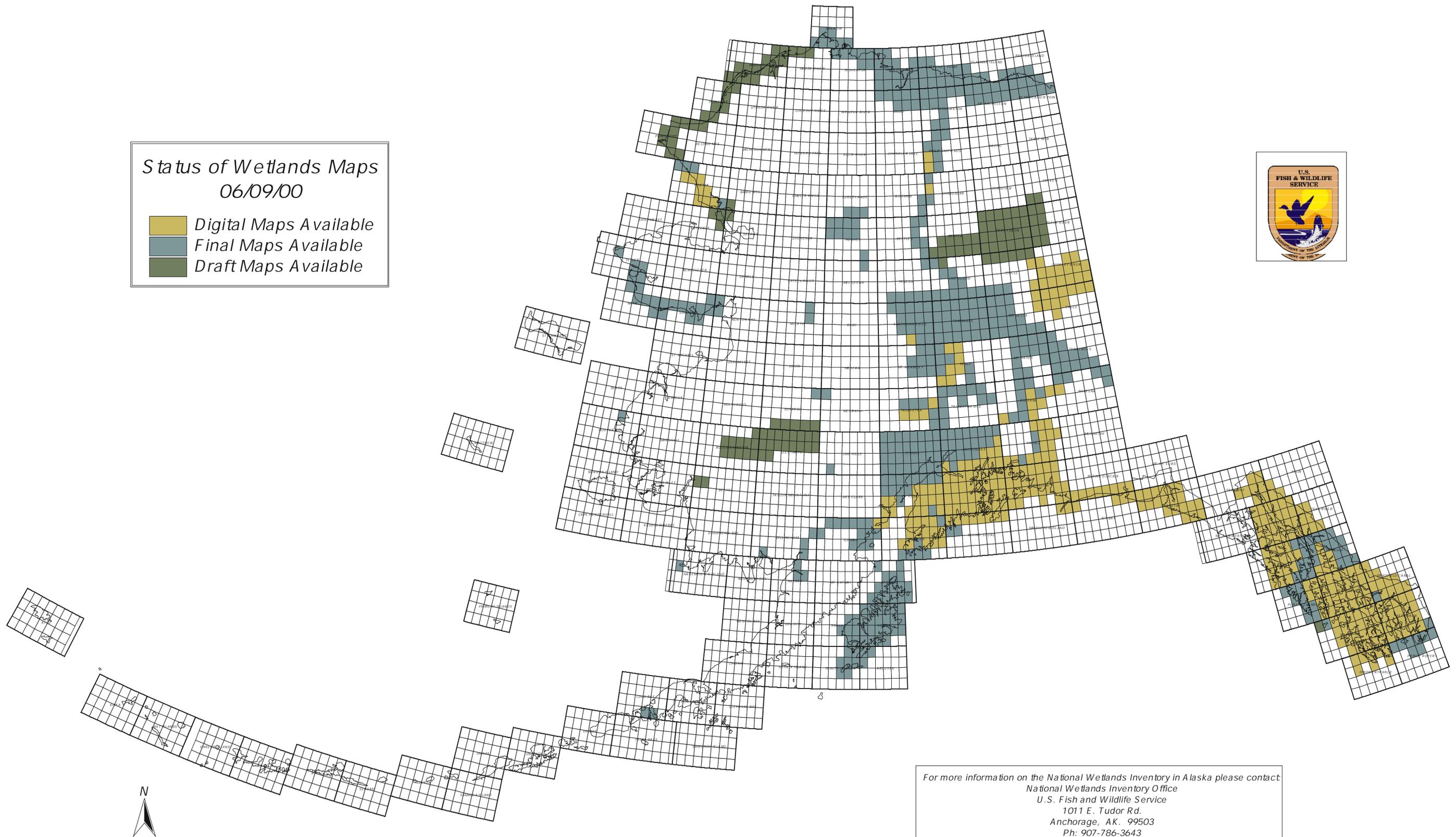
Research Planning, Inc.
Columbia, South Carolina

September 2001

NATIONAL WETLANDS INVENTORY STATUS - ALASKA

Status of Wetlands Maps
06/09/00

-  Digital Maps Available
-  Final Maps Available
-  Draft Maps Available



For more information on the National Wetlands Inventory in Alaska please contact:
National Wetlands Inventory Office
U.S. Fish and Wildlife Service
1011 E. Tudor Rd.
Anchorage, AK. 99503
Ph: 907-786-3643

C. BIOLOGICAL RESOURCES

1. Fish and Wildlife

(a) Threatened and Endangered Species

Federally listed threatened and endangered species are protected under the Endangered Species Act. Spill response activities which could impact a listed species should be coordinated with the U.S. Fish and Wildlife Service and National Marine Fisheries Service. The northern right whale, humpback whale, and short-tailed albatross are also on the State of Alaska's endangered species list. The following species¹ and critical habitat occur in Alaska and have been provided protection under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.):

Table 1: Endangered Species Act of 1973 Protected species and critical habitat			
Listed species	Stock	Latin Name	Status
Short-tailed albatross		<i>Diomedea albatrus</i>	Endangered
Steller's eider	Alaska breeding	<i>Polysticta stelleri</i>	Threatened
Spectacled eider		<i>Somateria fischeri</i>	Threatened
Blue whale		<i>Balaenoptera musculus</i>	Endangered
Humpback whale		<i>Megaptera novaeangliae</i>	Endangered
Fin whale		<i>Balaenoptera physalus</i>	Endangered
Sei whale		<i>Balaena borealis</i>	Endangered
Sperm whale		<i>Physeter macrocephalus</i>	Endangered
Northern right whale		<i>Eubalaena glacialis</i>	Endangered
Northern sea otter	Southwest	<i>Enhydra lutris kenyoni</i>	Threatened
Steller sea lion	West of 140 degrees N	<i>Eumetopius jubatus</i>	Endangered
Designated Critical Habitat			
Species Group	General Reference Area		
Whales	Northern right whale in Bering Sea waters north of False Pass (see map below)		
Birds	Spectacled eider critical habitat has been designated at Nelson and Izembek lagoons (see map below)		
Sea otters	No critical habitat has been designated in the subarea		
Sea lions	20 miles seaward around each major haulout (see map below)		

The short-tailed albatross, northern sea otters, spectacled eider, and Steller's eiders are under the jurisdiction of the U.S. Fish and Wildlife Service. All salmon species are under the jurisdiction of the National Marine Fisheries Service, Northwest Regional Office, Seattle, Washington.

¹ In its definition of species, the Endangered Species Act of 1973, as amended, includes the traditional biological species concept of the biological sciences and "any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature" (16 USC 1532). NMFS uses the term *evolutionarily significant unit* as synonymous with *distinct population segment* and lists Pacific salmon accordingly. For the purposes of section 7 consultations, these are all "species."

The Alaskan bald and golden eagles, though not on the endangered species list, are fully protected (including their nests and nest trees) under the Bald Eagle Protection Act of 1940 and the Migratory Bird Treaty Act. Spill response activities that could affect these species should be coordinated with the U.S. Fish and Wildlife Service.

While the National Marine Fisheries Service has determined the gray whale is no longer a threatened or endangered species, monitoring of the species has continued since the 1994 delisting. All marine mammals, whether or not they are on the endangered species list, are protected by the Marine Mammal Protection Act of 1972. Any spill response activities, which could affect marine mammals, should be coordinated with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service.

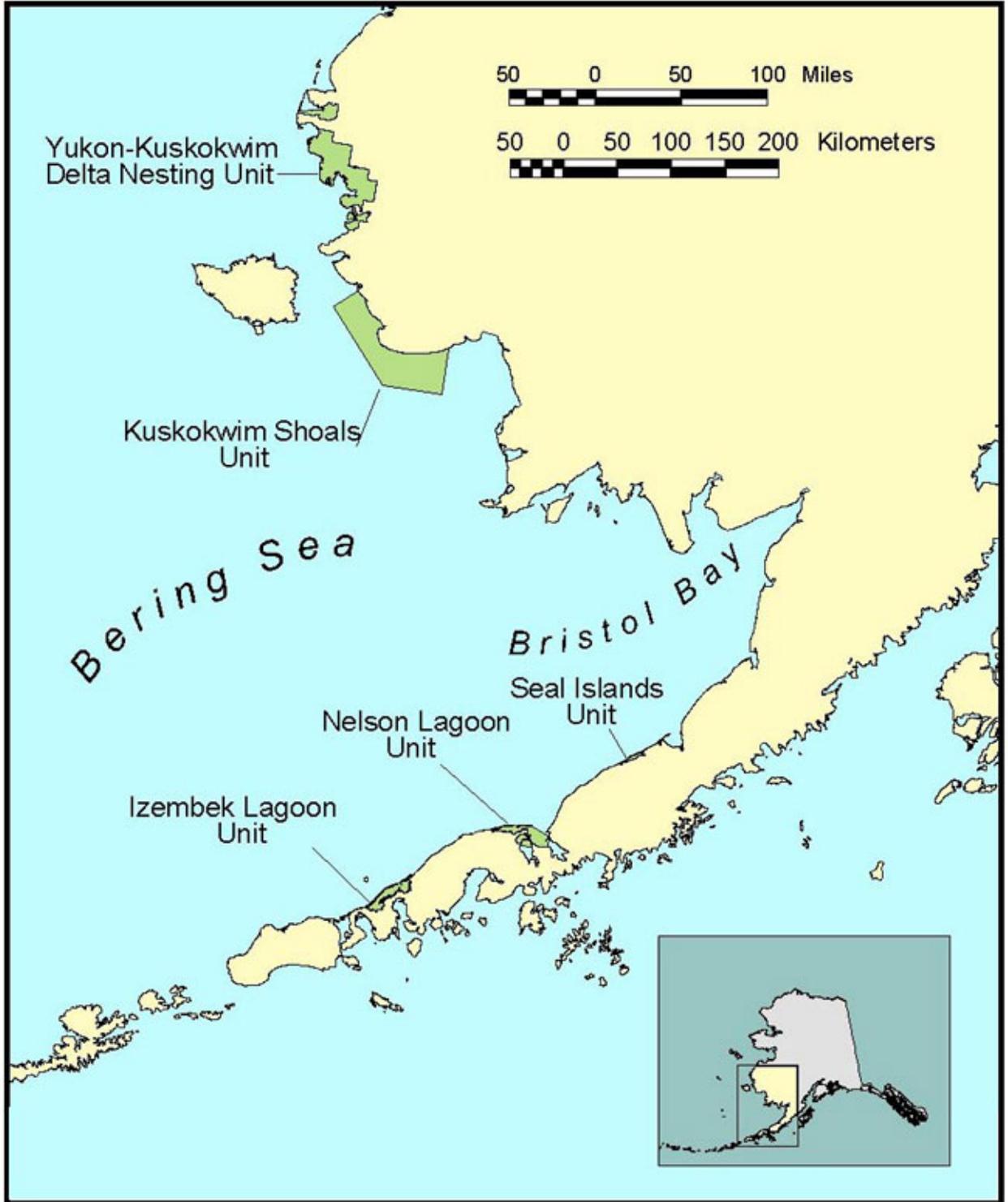
For updated information on the internet:

U.S. Fish and Wildlife Service National Threatened and Endangered Species web site:
<http://endangered.fws.gov/>

U.S. Fish and Wildlife Service Regional Threatened and Endangered Species web site:
<http://alaska.fws.gov/es/te.cfm>

Alaska Department of Fish and Game Threatened and Endangered Species web site:
http://www.state.ak.us/adfg/wildlife/geninfo/game/es_home.htm

Steller's eider critical habitat map



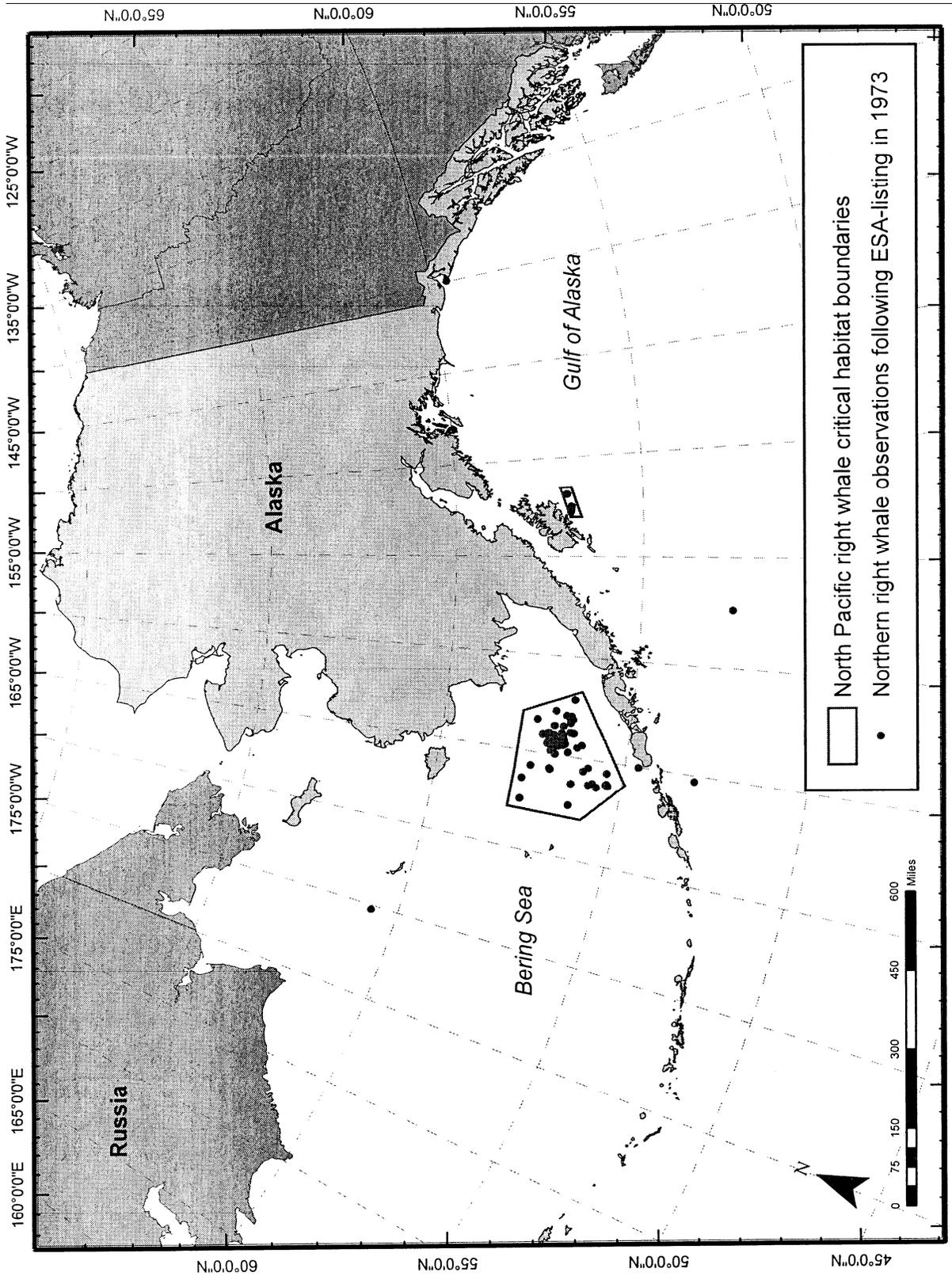


Figure 2. Critical habitat for Northern right whales in the North Pacific.

(b) Fish

The Aleutians subarea is rich in biological resources. In addition to supporting a commercial fishing industry, the area is also utilized by subsistence users.

Essential Fish Habitat

Essential fish habitat in the Aleutians subarea, as identified by the National Marine Fisheries Service, can be found on their interactive mapping internet site: <http://www.fakr.noaa.gov/maps/>

(c) Birds

All migratory birds are protected under the Migratory Bird Treaty Act. Any spill response activities which could affect migratory birds should be coordinated with the U.S. Fish and Wildlife Service.

Extensive breeding colonies containing millions of seabirds occur on the Aleutian Islands, the Pribilof Islands, and along portions of the Alaskan Peninsula. An endemic species, the whiskered auklet, only occurs on the Aleutian Islands. Least auklets, red-legged kittiwakes, Aleutian terns and red-faced cormorants – live and breed only in the Bering Sea-North Pacific Ocean zone. The overwhelming majority of fork-tailed storm-petrels and horned and tufted puffins breed in Alaska in the northern Pacific islands. Millions of shearwaters do not breed here, but spend the summer feeding in the waters of the Aleutian Island passes. The Aleutian cackling goose, one of the few species to be removed successfully from the Endangered Species List, is endemic to the Aleutian Islands, breeding here in the summer.

The Alaskan Seabird Colony Catalog is an automated database that contains the distributions of breeding seabirds and the relative size of all the colonies in Alaska. The data reports indicating estimated species composition and numbers for seabird colonies of Norton and Kotzebue Sound are summarized from the catalog. The maps display colony locations. The Alaska Seabird Colony Catalog is maintained by the U.S. Fish and Wildlife Service, Division of Migratory Bird Management, Marine and Coastal Bird Project, in Anchorage. Questions or comments regarding the information contained in the Alaska Seabird Colony Catalog should be directed to the U.S. Fish and Wildlife Service in Anchorage at 786-3444.

In addition, the Aleutians serve as a major spring and fall staging area for migrating waterfowl as well as a permanent residence for some species. Wintering and migrating birds concentrate in protected embayments and rocky, intertidal locations. Major staging areas include Izembek Lagoon, Port Heiden and Nelson Lagoon. The entire population of black brant (150,000 birds on average), Taverner's Canada geese (55,000), and emperor geese (6,000) stage at Izembek Lagoon and neighboring lagoons. Approximately 23,000 threatened Steller's eiders also molt, rest, and feed at Izembek each autumn.

A significant number of bald eagles nest on the many islands found in the Aleutians. Although bald eagles are not on the endangered species list, they are fully protected (including their nests and nest trees) under the Eagle Protection Act of 1940. Spill response activities that could affect bald eagles should be coordinated with the U.S. Fish and Wildlife Service.

(d) Marine Mammals

Steller sea lions and northern sea otters, both listed as threatened, harbor seals, spotted seals, killer whales, and porpoises are present throughout the year. Several species of endangered baleen whales migrate through the area in the spring and summer. Northern fur seals seasonally inhabit the Bering Sea and the Gulf of Alaska. Major northern fur seal rookeries and haulouts occur on the Pribilof Islands and on Bogoslof Island. Rookeries and haulouts used by sea lions are also located on the Pribilof Islands and throughout the Aleutian Islands and Alaskan Peninsula. Pacific Walrus occur seasonally in the area of the Pribilof Islands and the northern Alaska Peninsula. Haulouts on the Alaskan Peninsula at Cape Seniavin and Port Moller, and on Amak and Walrus Islands, are used by mature bulls during spring and summer. Dense concentrations of marine organisms occur throughout the Aleutian Islands, including all five species of Pacific salmon, numerous groundfish, herring, crab, shrimp, clams, and a variety of intertidal organisms.

Northern sea otters are distributed at very low densities around most of the island in the Aleutian chain and the island of the lower Alaska Peninsula. Otters generally range from 5 to 16 kilometers offshore and feed in nearshore water less than 35 meters deep. Breeding occurs year-round, with a peak in September and October. Pupping occurs year-round, with a peak in July.

All marine mammals, regardless of whether or not they are on the endangered species list, are protected by the Marine Mammal Protection Act of 1972. Any spill response activities which could affect marine mammals should be coordinated with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. The maps on the following pages locate Steller sea lion rookeries and critical habitat only, sea lions are found throughout the Aleutians.

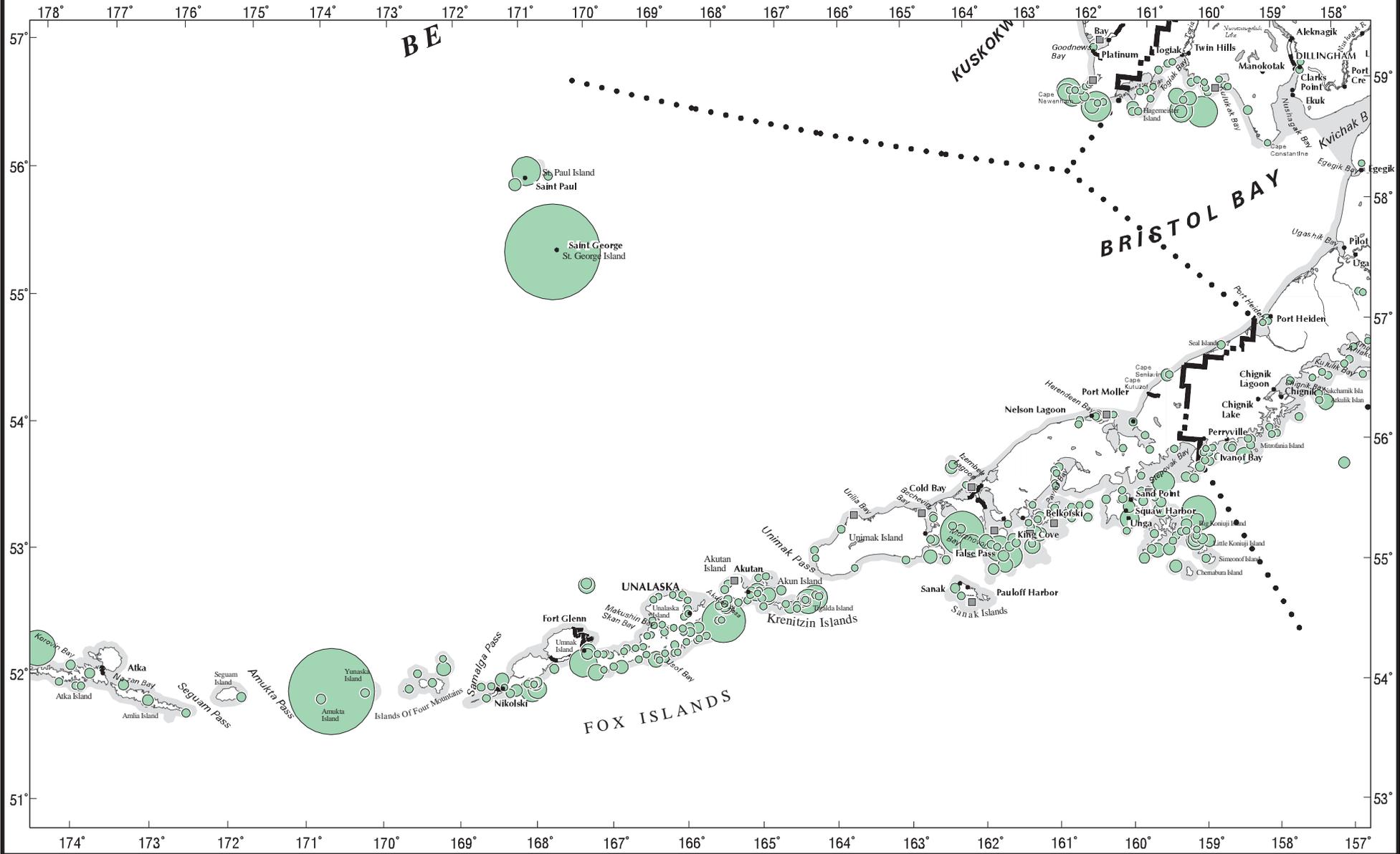
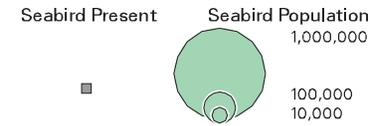
(e) Terrestrial Mammals

The majority of large terrestrial animals that occur in the Aleutian Islands are found on the Alaskan Peninsula as well as on some of the larger islands. Brown bear are found throughout the Alaskan Peninsula and on Umnak Island, and in the Pribilof Islands. Caribou occur on the Alaskan Peninsula, Umnak Island, and Adak Island. Reindeer occur on Atka, Umnak Island, and in the Pribilof Islands. Moose generally occur on the Alaskan Peninsula as far west as Port Moller, although they have been sighted as far west as the east end of Unimak Island.

1 inch = 80 miles
 Source: US Fish and Wildlife Service, 2000,
 Beringian Seabird Colony Catalog--
 computer database, Anchorage, AK

Aleutian Islands - East, Alaska

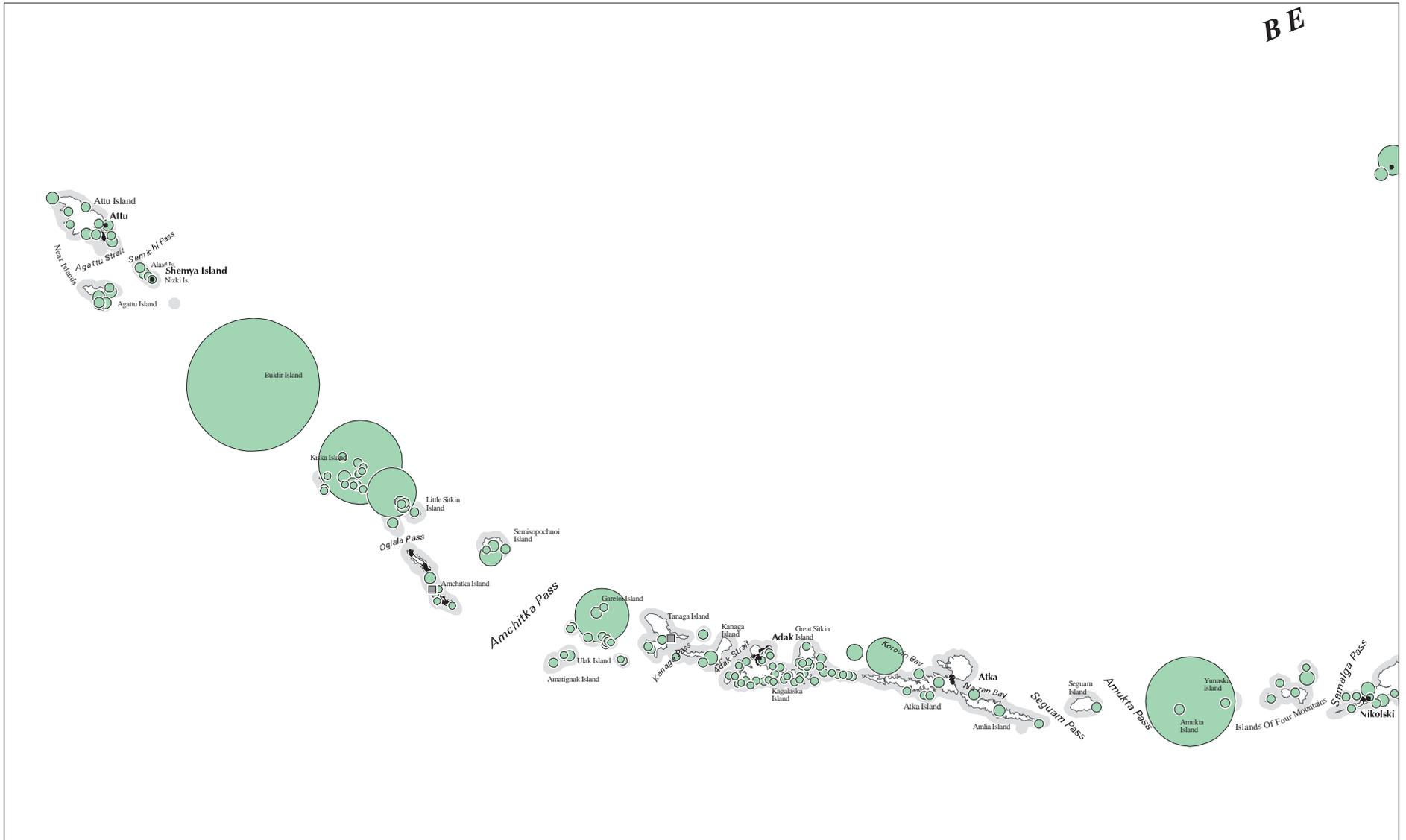
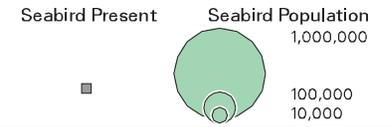
Contingency Plan Subarea with 2000 Seabird Population



1 inch = 80 miles
 Source: US Fish and Wildlife Service, 2000,
 Beringian Seabird Colony Catalog--
 computer database, Anchorage, AK

Aleutian Islands - West, Alaska

Contingency Plan Subarea with 2000 Seabird Population



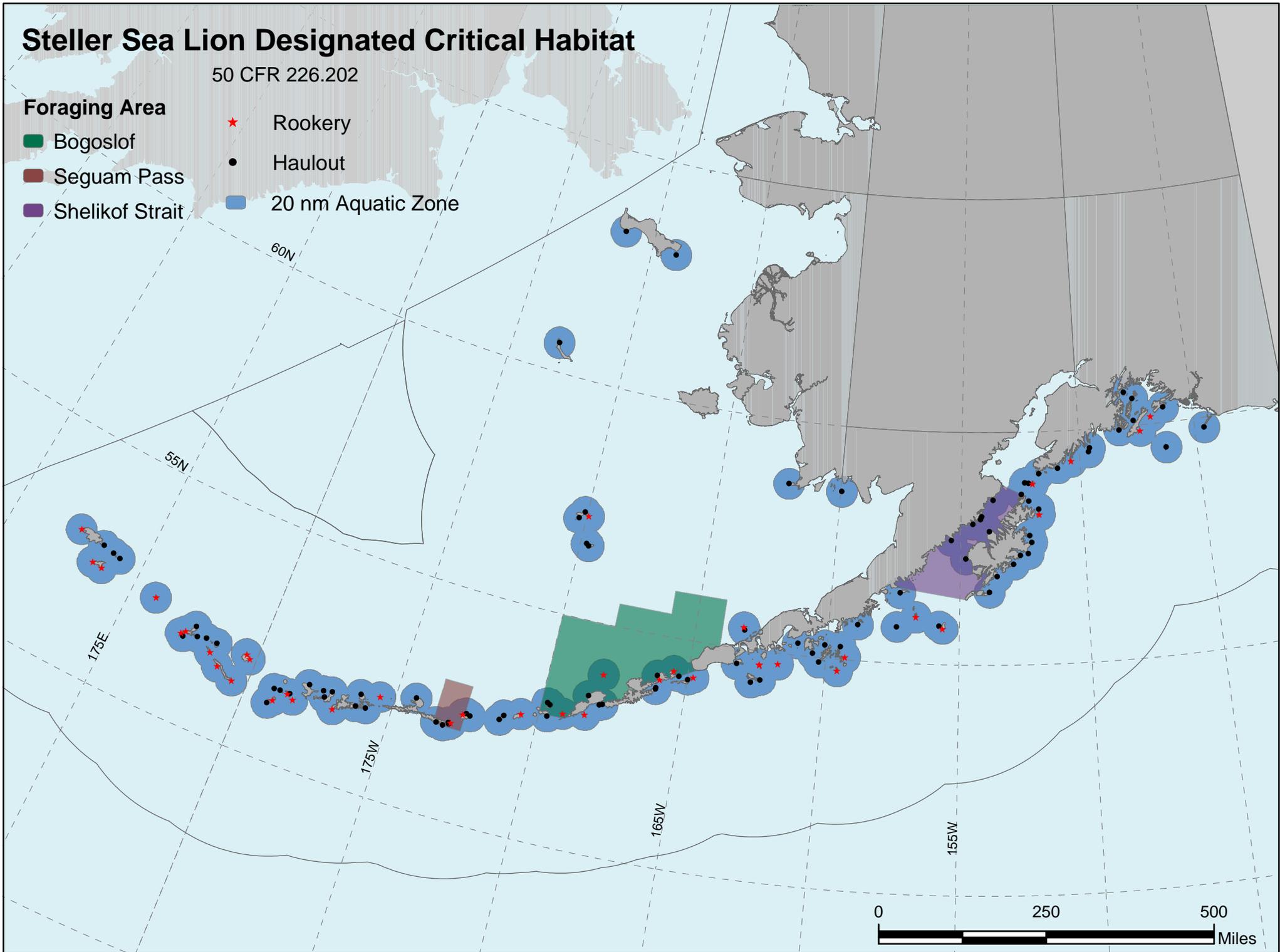
Steller Sea Lion Designated Critical Habitat

50 CFR 226.202

Foraging Area

- Bogoslof
- Seguam Pass
- Shelikof Strait

- ★ Rookery
- Haulout
- 20 nm Aquatic Zone



2. Vegetation

Threatened and endangered plants in the subarea are identified below, along with other rare plant species, as documented by the Alaska Natural Heritage Program. The map on the following page identifies the general locations of these rare plants. For further information concerning the rare plant species, including specific locations and how to avoid injuring plants, contact the Alaska Natural Heritage Program botanist at 907-257-2785.

RARE PLANTS KNOWN FROM THE ALEUTIANS SUBAREA

Global Rank	State Rank	Scientific Name	Common Name	Federal Status
G1	S1	<i>Polysticum aleuticum</i>	Aleutian Shield Fern*	Endangered
G1	S1	<i>Saxifraga aleutica</i>	Aleutian Saxifrage	
G1	S1	<i>Artemisia aleutica</i>	Aleutian Wormwood	
G4T1T2Q	S1S2	<i>Artemisia globularia var lutea</i>		
G2	S2	<i>Draba aleutica</i>	Aleutian Rockcress	
G2G3	S2S3	<i>Douglasia alaskana</i>	Alaska Rock Jasmine	
G3	S1	<i>Claytonia arctica</i>	Arctic Spring Beauty	
G5T3Q	S3	<i>Carex lenticularis var dolia</i>	Goose-grass sedge	
G3G4	S2	<i>Eleocharis nitida</i>	Neat Spike-rush	

Species Ranks used by The Alaska Natural Heritage Program:

Species Global Rankings

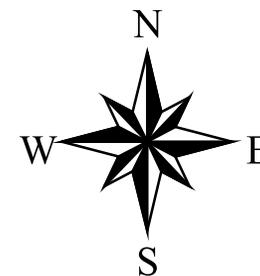
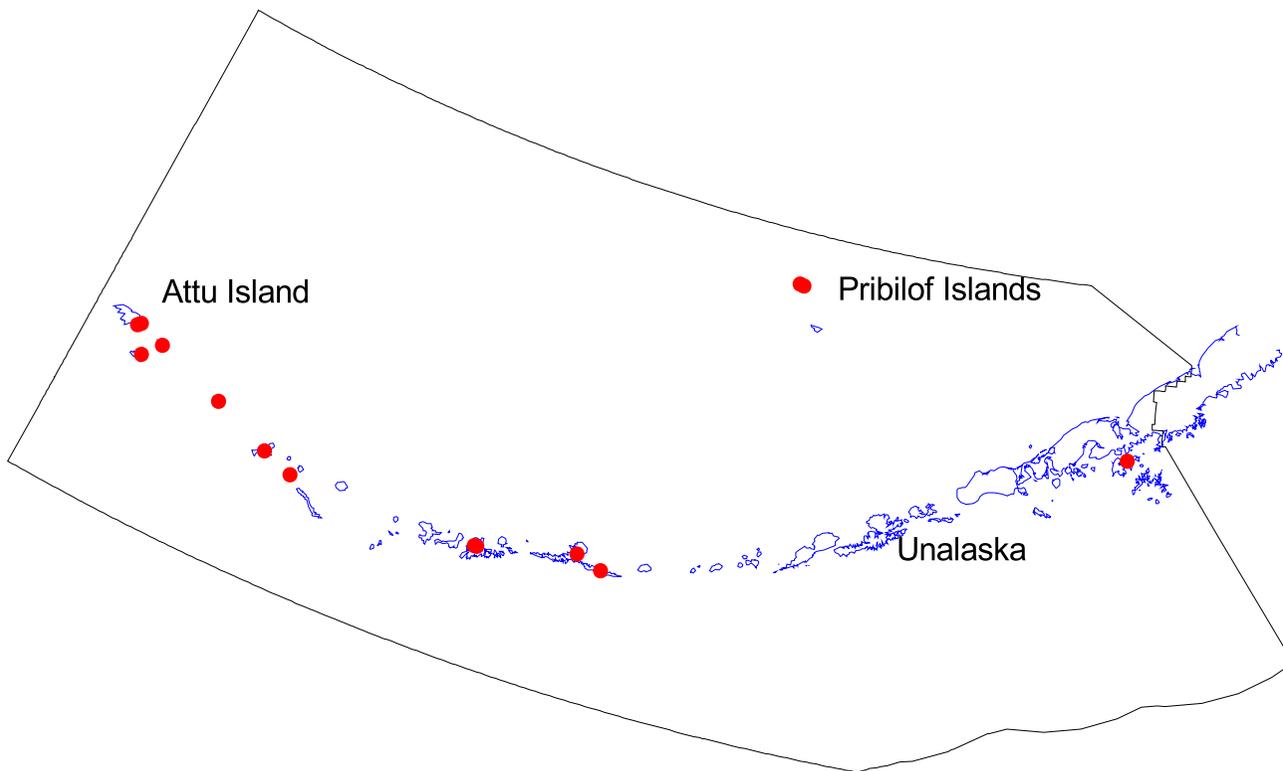
- G1: Critically imperiled globally. (typically 5 or fewer occurrences)
- G2: Imperiled globally. (6-20 occurrences)
- G3: Rare or uncommon globally. (21-100 occurrences)
- G4: Apparently secure globally, but cause for long-term concern. (usually more than 100 occurrences)
- G5: Demonstrably secure globally.
- G#G#: Rank of species uncertain, best described as a range between the two ranks.
- G#Q: Taxonomically questionable.
- G#T#: Global rank of species and global rank of the described variety or subspecies of the species.

Species State Rankings

- S1: Critically imperiled in state. (usually 5 or fewer occurrences)
- S2: Imperiled in state. (6-20 occurrences)
- S3: Rare or uncommon in state. (21-100 occurrences)
- S4: Apparently secure in state, but with cause for long-term concern (usually more than 100 occurrences)
- S5: Demonstrably secure in state.
- S#S#: State rank of species uncertain, best described as a range between the two ranks.

*The Aleutian shield-fern is a small, tufted fern which grows to about 15 centimeters (6 inches) tall and may be confused with more common ferns occurring within its range. It is now known to exist only on Adak Island in the central Aleutian Islands. Three populations totaling approximately 130 "clumps" are located on a single mountain on east-facing slopes having steep cliffs, rock outcrops, and vegetated gullies and ledges. Historically, the Aleutian shield-fern also occurred on Atka Island, but has not been seen there since it was reported in 1932.

Known Rare Plant Locations for the Aleutian Subarea Contingency Plan



Source Data: University of Alaska
Alaska Natural Heritage Program
Biological Conservation Database

3. Biologically Sensitive Areas

The Alaska Department of Fish and Game began a project in 1996 to map some of the most environmentally sensitive areas (MESAs) for wildlife along Alaska's coast. This information is for contingency planning purposes and does not cover the complete coastline or sensitive areas that other organizations may identify. Maps entitled "Most Environmentally Sensitive Areas along the Coast of Alaska" were published by the Alaska Department of Fish & Game (1997), and are available in hard copy and digital format from their Anchorage office at 267-2338.

These maps are also available at the Alaska Department of Natural Resources Prevention and Emergency Response Subarea Plan Maps website located at:

<http://www.asgdc.state.ak.us/maps/cplans/subareas.html>

Each of these sensitive areas is plotted on a 1:250,000 scale U.S. Geological Survey quadrangle map. A list of the sensitive areas in the subarea and map referencing their location is provided (see the following figure and table), followed by the MESA maps.

**Oil Spill Contingency Planning
Most Environmentally Sensitive Areas
along the Coast of the Aleutians Subarea**

24. Port Heiden
 - salmon concentrations
 - seabird colonies (>5,700 birds)
 - waterfowl spring, fall & molting concentrations
 - harbor seal haulouts
 - brown bear feeding concentrations

25. Port Moller/Nelson Lagoon
 - salmon concentrations
 - herring spawning
 - waterfowl spring and fall staging, molting and winter concentrations
 - seabird colonies (>4,800 birds)
 - harbor seal haulouts
 - walrus haulouts
 - Port Moller State Critical Habitat Area

26. Izembek Lagoon
 - seabird colonies (>15,500 birds)
 - salmon concentrations
 - waterfowl spring and fall staging, molting and winter concentrations
 - sea otter concentrations
 - harbor seal haulouts
 - razor clam concentrations
 - brown bear feeding concentrations
 - Izembek State Game Refuge
 - Izembek National Wildlife Refuge

27. Pribilof Islands
 - seabird colonies (>2.1 million birds)
 - fur seal rookeries
 - sea lion haulouts and rookeries
 - Alaska Maritime National Wildlife Refuge

28. Unimak Pass/Krenitzin Islands
 - salmon migration corridor
 - waterfowl spring and fall migration corridor
 - gray whale migration corridor
 - fur seal migration corridor
 - sea lion haulouts and rookeries (1,356 pups)
 - seabird colonies (>670,000 birds)
 - Alaska Maritime National Wildlife Refuge

29. Kagamil Island
 - seabird colonies (>34,000 birds)
 - waterfowl spring and fall staging and winter concentrations
 - sea lion haulouts
 - Alaska Maritime National Wildlife Refuge

30. Delarof Islands
 - seabird colonies (>664,000 birds)
 - sea lion haulouts and rookeries (1,590 pups)
 - sea otter concentrations
 - waterfowl winter concentrations
 - Alaska Maritime National Wildlife Refuge

31. Kiska Island
 - seabird colonies (1.5 million birds)
 - waterfowl spring staging and nesting and winter concentrations
 - sea otter concentrations
 - sea lion haulouts and rookeries (221 pups)
 - Alaska Maritime National Wildlife Refuge

32. Buldir Island
 - seabird colonies (>3.5 million birds)
 - waterfowl spring and fall staging and molting and winter concentrations
(including Aleutian cackling geese)
 - sea lion rookeries (381 pups)
 - Alaska Maritime National Wildlife Refuge

33. Agattu Island
 - sea lion haulouts and rookeries (1,127 pups)
 - seabird colonies (>65,000 birds)
 - waterfowl spring and fall staging, nesting and winter concentrations
 - Alaska Maritime National Wildlife Refuge

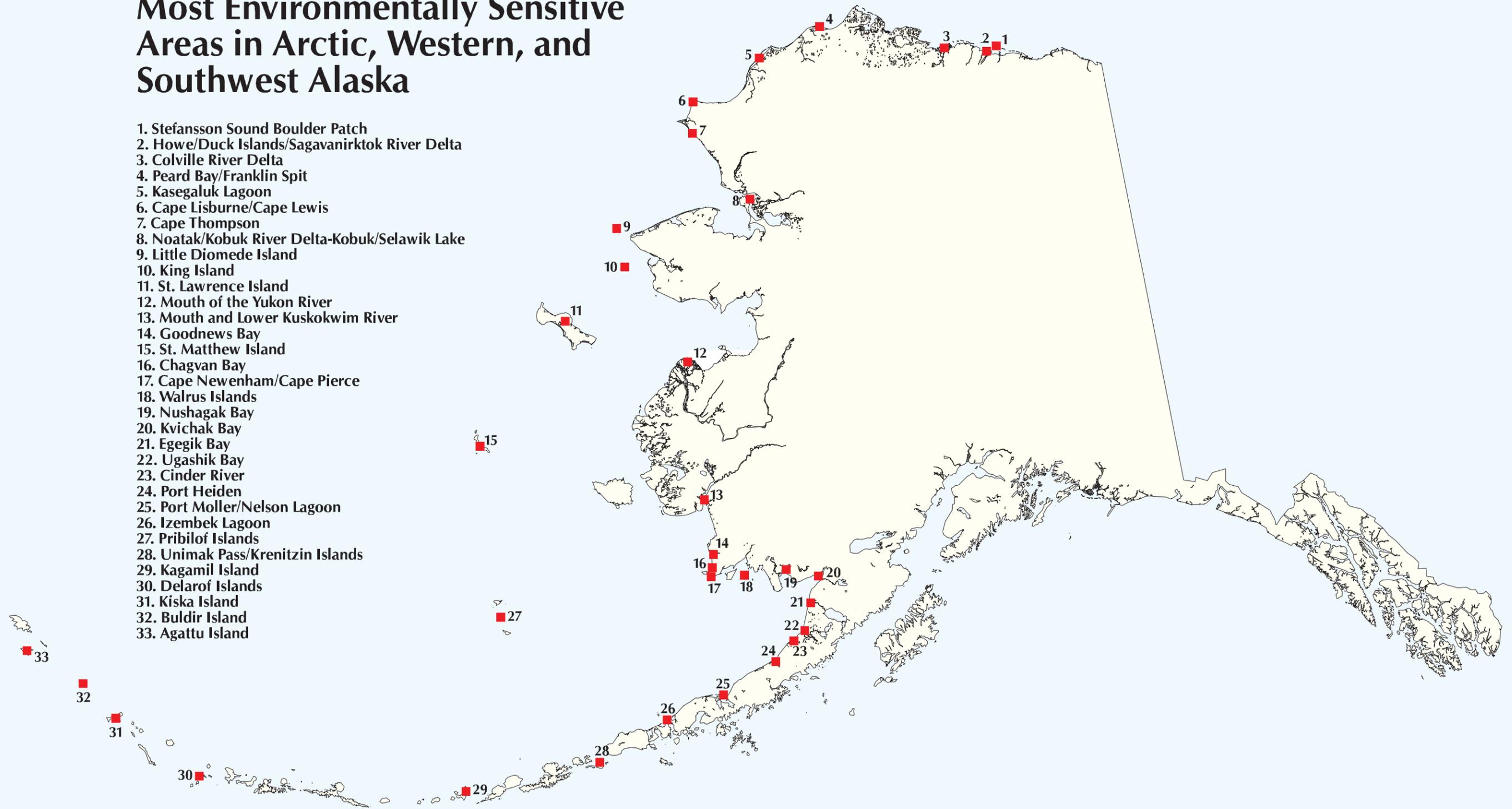
34. Amagat Island
 - seabird colonies (>451,000 birds)
 - harbor seal haulouts
 - sea otter concentrations

35. Sandman Reefs
 - seabird colonies (>202,000 birds)
 - harbor seal haulouts
 - sea lion rookeries
 - sea otter concentrations

36. Shumagin Islands
 - seabird colonies (>636,000 birds)
 - waterfowl spring and fall staging and winter concentrations
 - sea lion haulouts and rookeries (463 pups)
 - sea otter concentrations
 - herring spawning concentrations
 - Alaska Maritime National Wildlife Refuge

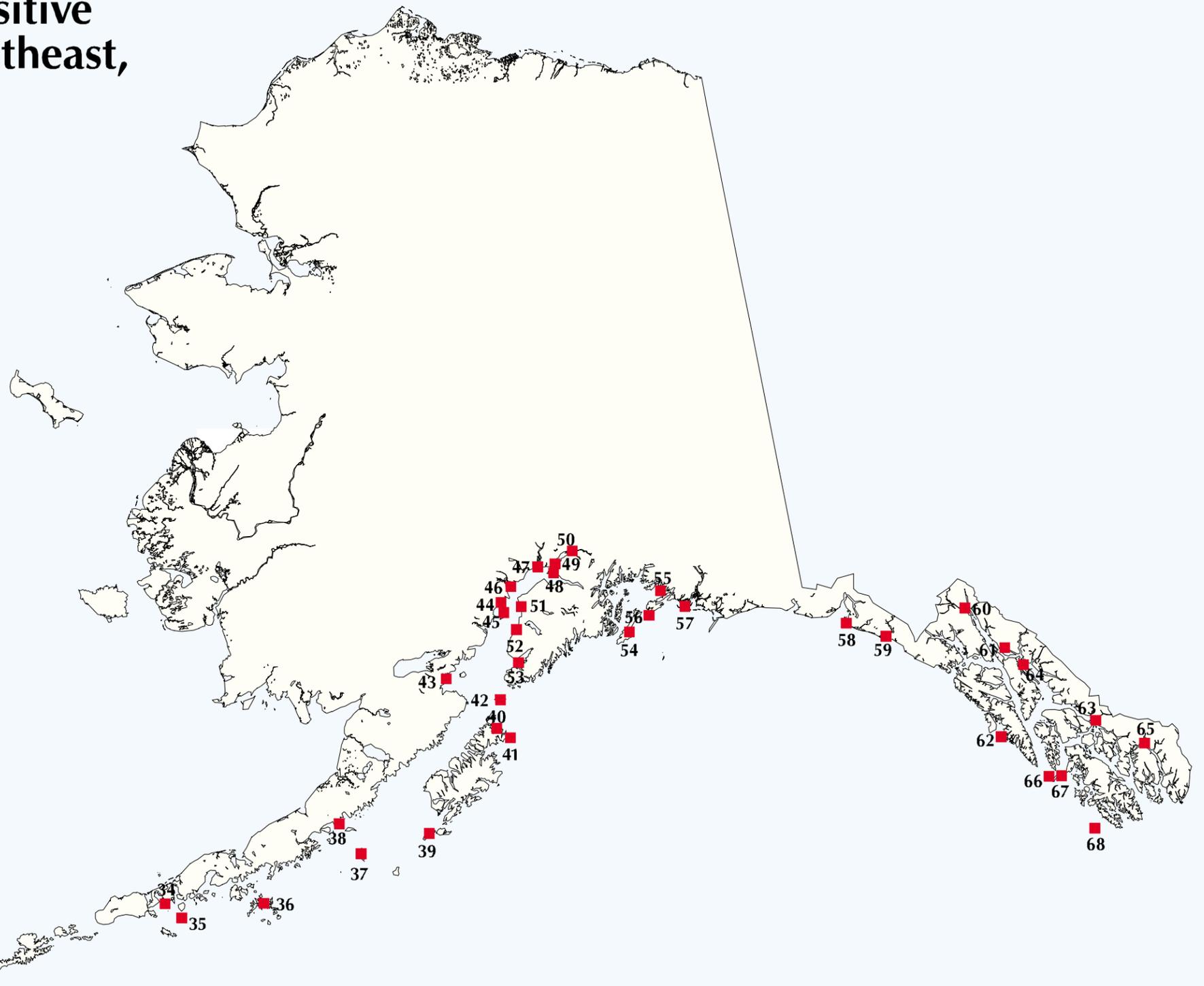
Most Environmentally Sensitive Areas in Arctic, Western, and Southwest Alaska

1. Stefansson Sound Boulder Patch
2. Howe/Duck Islands/Sagavanirktok River Delta
3. Colville River Delta
4. Peard Bay/Franklin Spit
5. Kasegaluk Lagoon
6. Cape Lisburne/Cape Lewis
7. Cape Thompson
8. Noatak/Kobuk River Delta-Kobuk/Selawik Lake
9. Little Diomedede Island
10. King Island
11. St. Lawrence Island
12. Mouth of the Yukon River
13. Mouth and Lower Kuskokwim River
14. Goodnews Bay
15. St. Matthew Island
16. Chagvan Bay
17. Cape Newenham/Cape Pierce
18. Walrus Islands
19. Nushagak Bay
20. Kvichak Bay
21. Egegik Bay
22. Ugashik Bay
23. Cinder River
24. Port Heiden
25. Port Moller/Nelson Lagoon
26. Izembek Lagoon
27. Pribilof Islands
28. Unimak Pass/Krenitzin Islands
29. Kagamil Island
30. Delarof Islands
31. Kiska Island
32. Buldir Island
33. Agattu Island



Most Environmentally Sensitive Areas in Southcentral, Southeast, and Southwest Alaska

- 34. Amagat Island
- 35. Sandman Reefs
- 36. Shumagin Islands
- 37. Semidi Islands
- 38. Kujulik Bay
- 39. Tugidak Island
- 40. Perenosa Bay/Seal Bay (Afognak Island)
- 41. Marmot Island
- 42. Barren Islands
- 43. Chenik Head to Silver Beach (Kamishak Bay)
- 44. Redoubt Bay
- 45. Kalgin Island
- 46. Trading Bay
- 47. Susitna Flats
- 48. Anchorage Flats
- 49. Goose Bay
- 50. Palmer Hay Flats
- 51. Mouth of the Kenai River
- 52. Clam Gulch
- 53. Kachemak Bay
- 54. Patton Bay (Montague Island)/Wooded Island
- 55. Sheep Bay
- 56. Seal Rocks (southwest of Hinchinbrook Island)
- 57. Copper River Delta/Controller Bay
- 58. Situk
- 59. Dry Bay
- 60. Chilkat River Flats
- 61. Mendenhall Wetlands
- 62. St. Lazaria Island
- 63. Stikine River Flats
- 64. Mouth of Pack Creek (Seymour Canal)
- 65. Burroughs Bay (east of Behm Canal)
- 66. Hazy Islands (west of Coronation Island)
- 67. Coronation Island
- 68. Forrester Island?

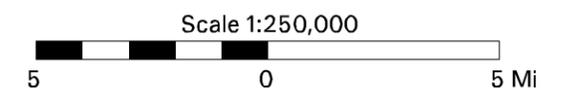


MESA24 PORT HEIDEN

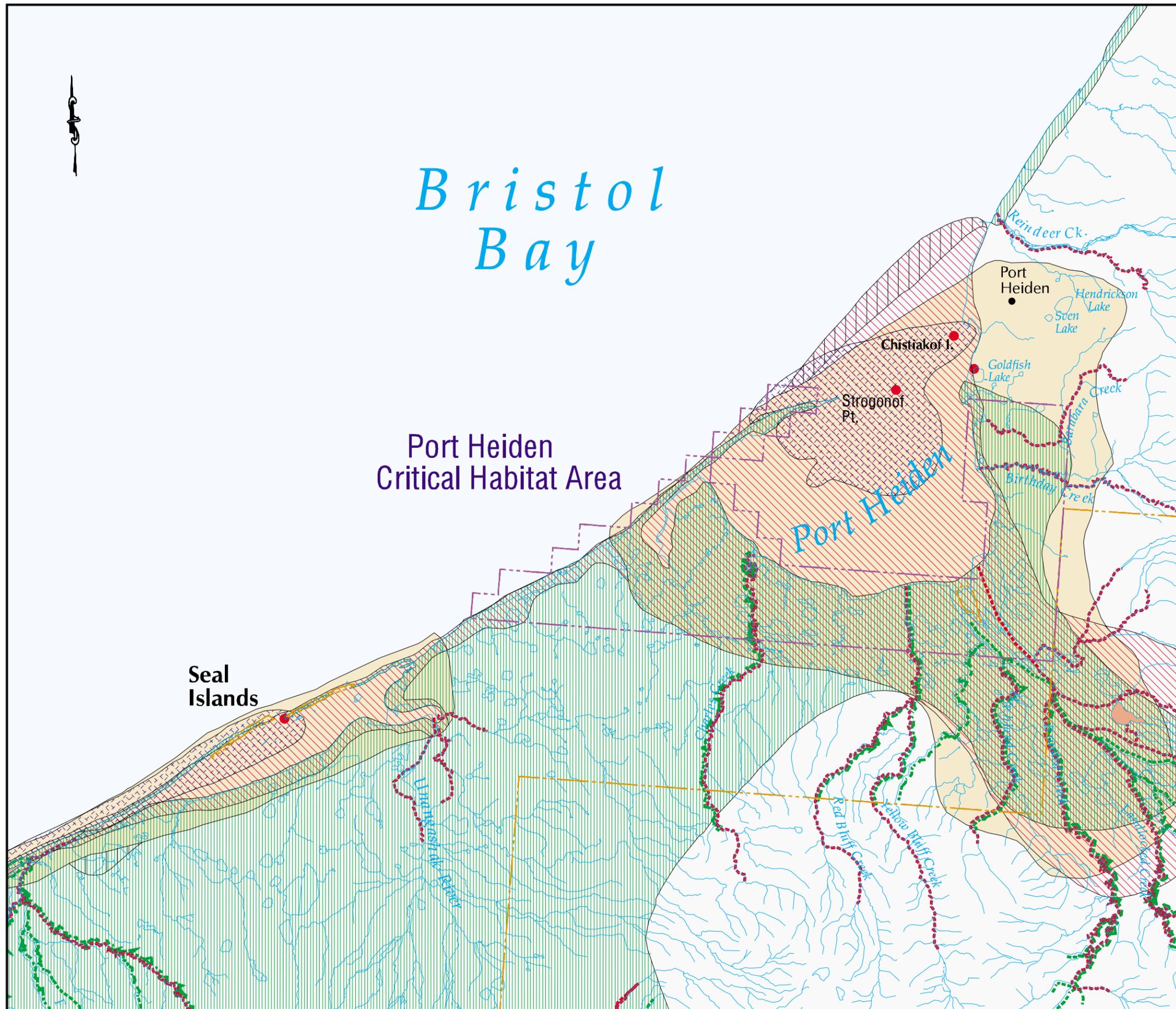
LEGEND

-  Waterfowl Spring and Fall Concentrations
-  Waterfowl Molting Concentrations
-  Waterfowl Fall Concentrations
-  Harbor Seal Haulout Concentrations
-  Brown Bear Spring Concentrations
-  Brown Bear Feeding Concentrations
-  Anadromous Lakes
-  Anadromous Streams
-  Seabird Colonies (Less Than or Equal To 10,000 Birds)
-  Port Heiden Critical Habitat Area Boundary
-  Alaska Peninsula National Wildlife Refuge Boundary

SOURCES: ADF&G 1985a,b; ADF&G 1996b; USFWS 1996.



State of Alaska
Department of Fish and Game
Habitat and Restoration Division
June, 1997

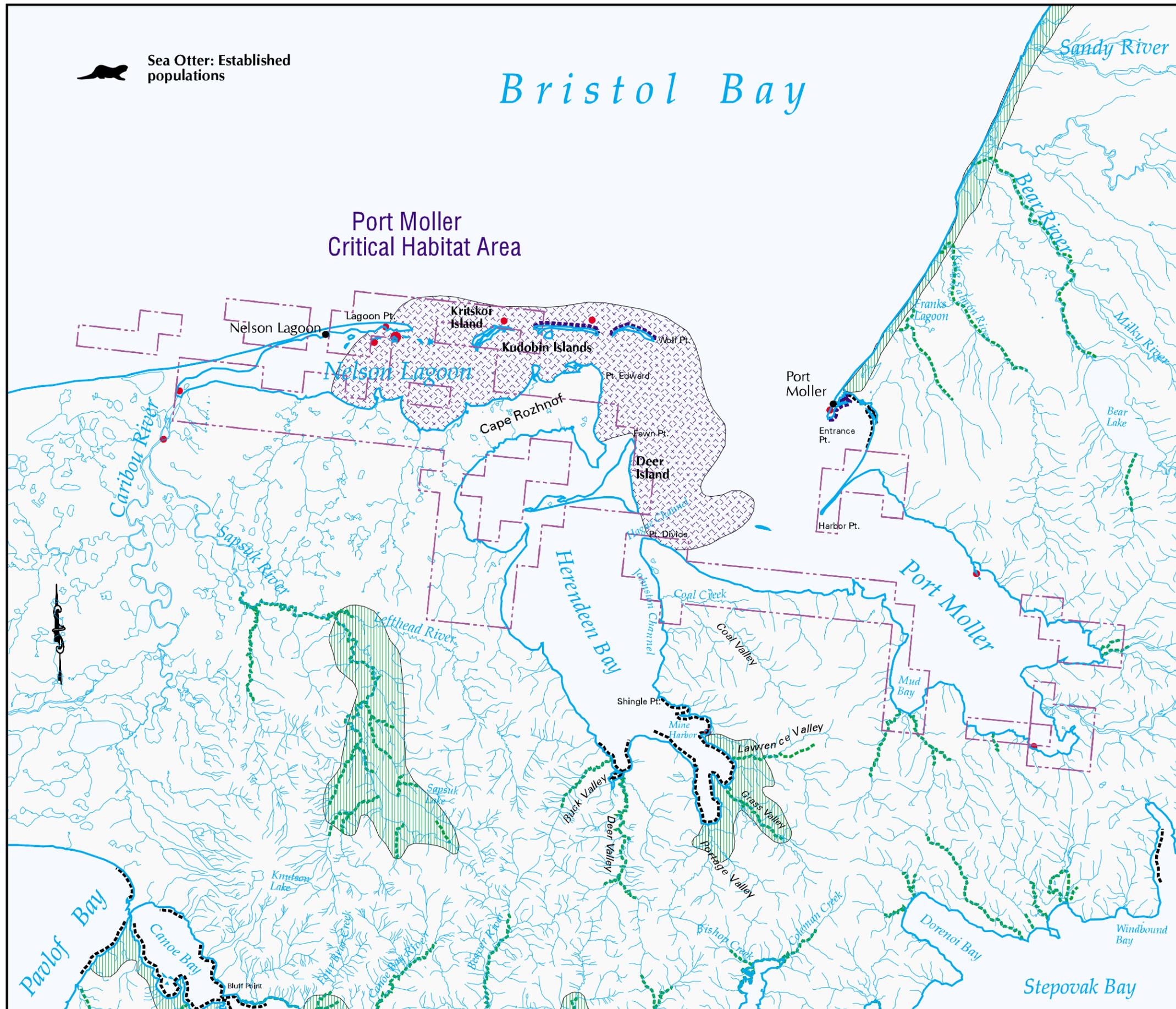




Sea Otter: Established populations

Bristol Bay

Port Moller Critical Habitat Area



MESA25a PORT MOLLER NELSON LAGOON

LEGEND

- Harbor Seal Haulout Concentrations
- Brown Bear Spring Concentrations
- Brown Bear Feeding Concentrations
- Walrus Haulout Concentrations
- Herring Spawning Areas
- Seabird Colonies**
 - Less Than or Equal To 10,000 Birds
 - 10,001 - 100,000 Birds
- Port Moller Critical Habitat Area Boundary

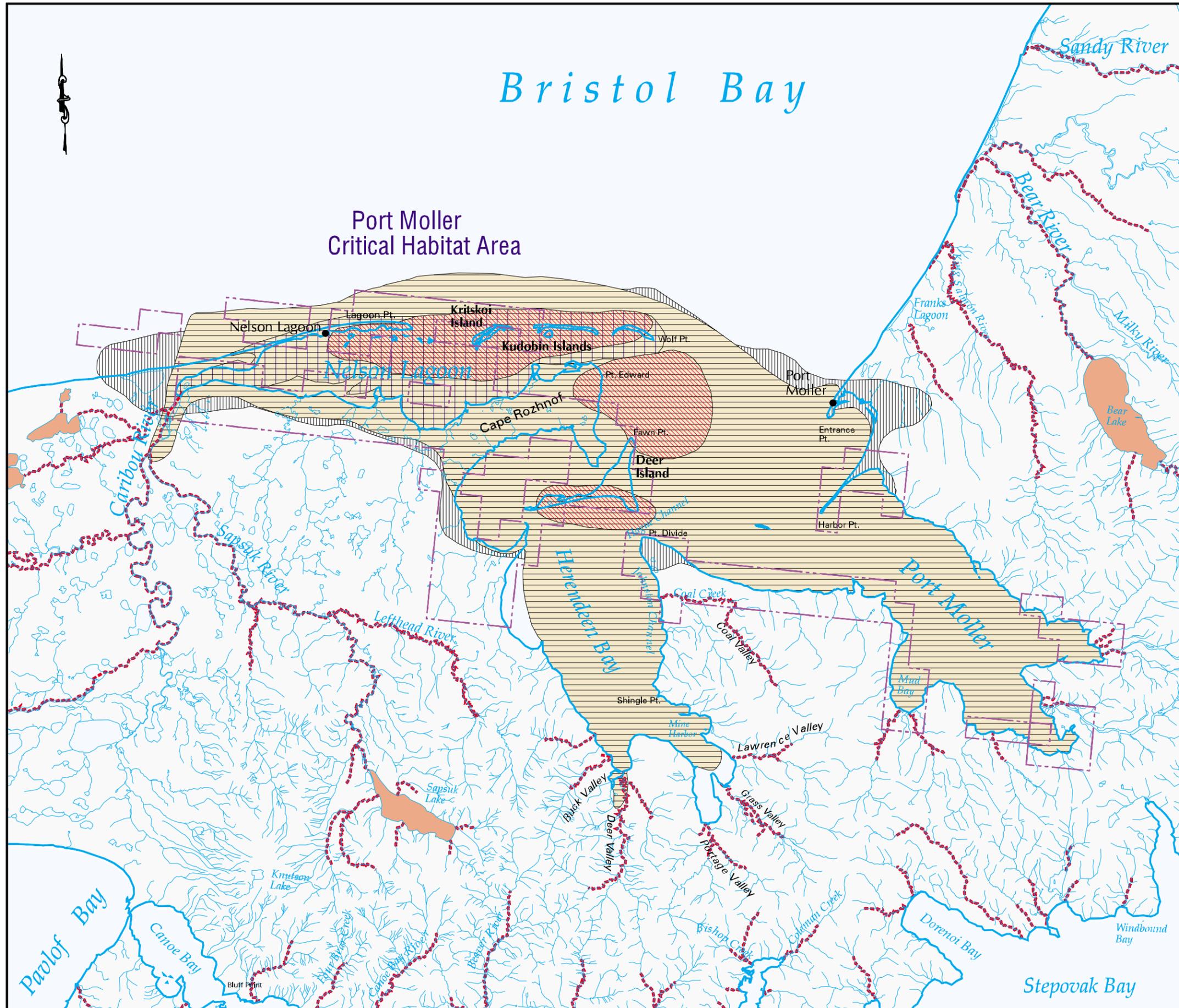
SOURCES: ADF&G 1985a,c; USFWS 1996.



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Habitat and Restoration Division
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Bristol Bay

Port Moller Critical Habitat Area

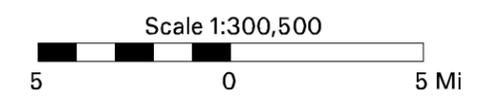


MESA25b PORT MOLLER NELSON LAGOON

LEGEND

-  Waterfowl Spring and Fall Concentrations
-  Waterfowl Nesting Concentrations
-  Waterfowl Fall Concentrations
-  Waterfowl Winter Concentrations
-  Waterfowl Molting Concentrations
-  Anadromous Lakes
-  Anadromous Streams
-  Port Moller Critical Habitat Area Boundary

SOURCES: ADF&G 1985b; ADF&G 1996b.



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MESA26a IZEMBEK LAGOON

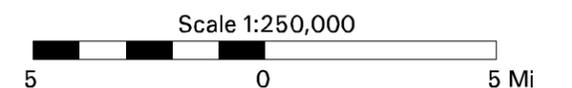
LEGEND

-  Harbor Seal Haulout Concentrations
-  Sea Otter Concentration Areas
-  Brown Bear Spring Concentrations
-  Brown Bear Feeding Concentrations
-  Razor Clam Concentrations
-  Herring concentrations
-  Walrus Haulout Concentrations
-  Sea Lion Haulout Concentrations

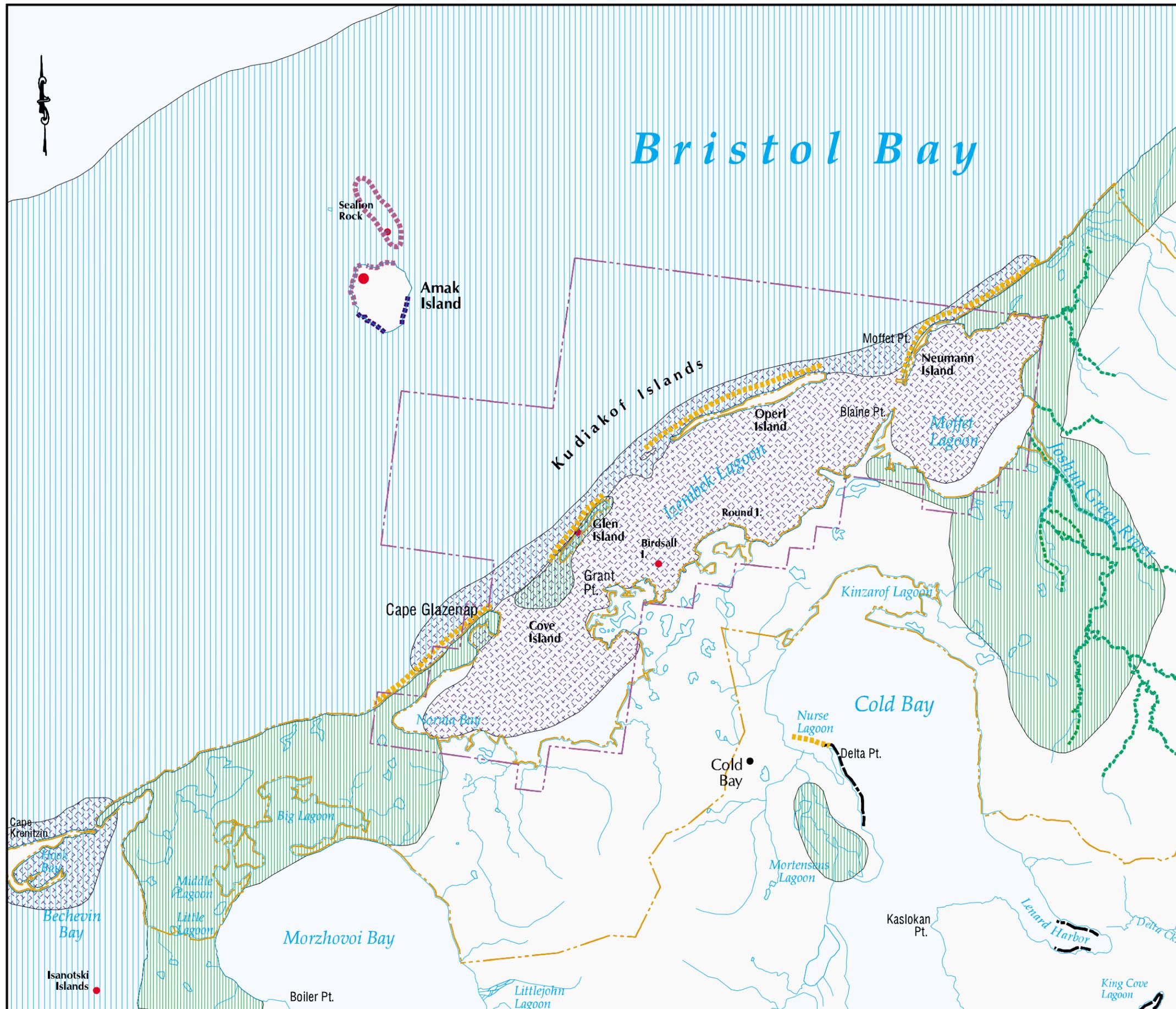
- Seabird Colonies
-  Less Than or Equal To 10,000 Birds
 -  10,001 - 100,000 Birds

-  Izembek State Game Refuge Boundary
-  Izembek National Wildlife Refuge Boundary

SOURCES: ADF&G 1985a,c; USFWS 1996.



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MESA26b IZEMBEK LAGOON

LEGEND

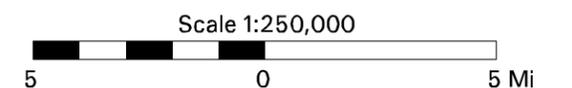
-  Waterfowl Spring and Fall Concentrations
-  Waterfowl Spring Staging Concentrations
-  Waterfowl Fall Staging Concentrations
-  Waterfowl Winter Concentrations
-  Waterfowl Molting Concentrations

 Anadromous Streams

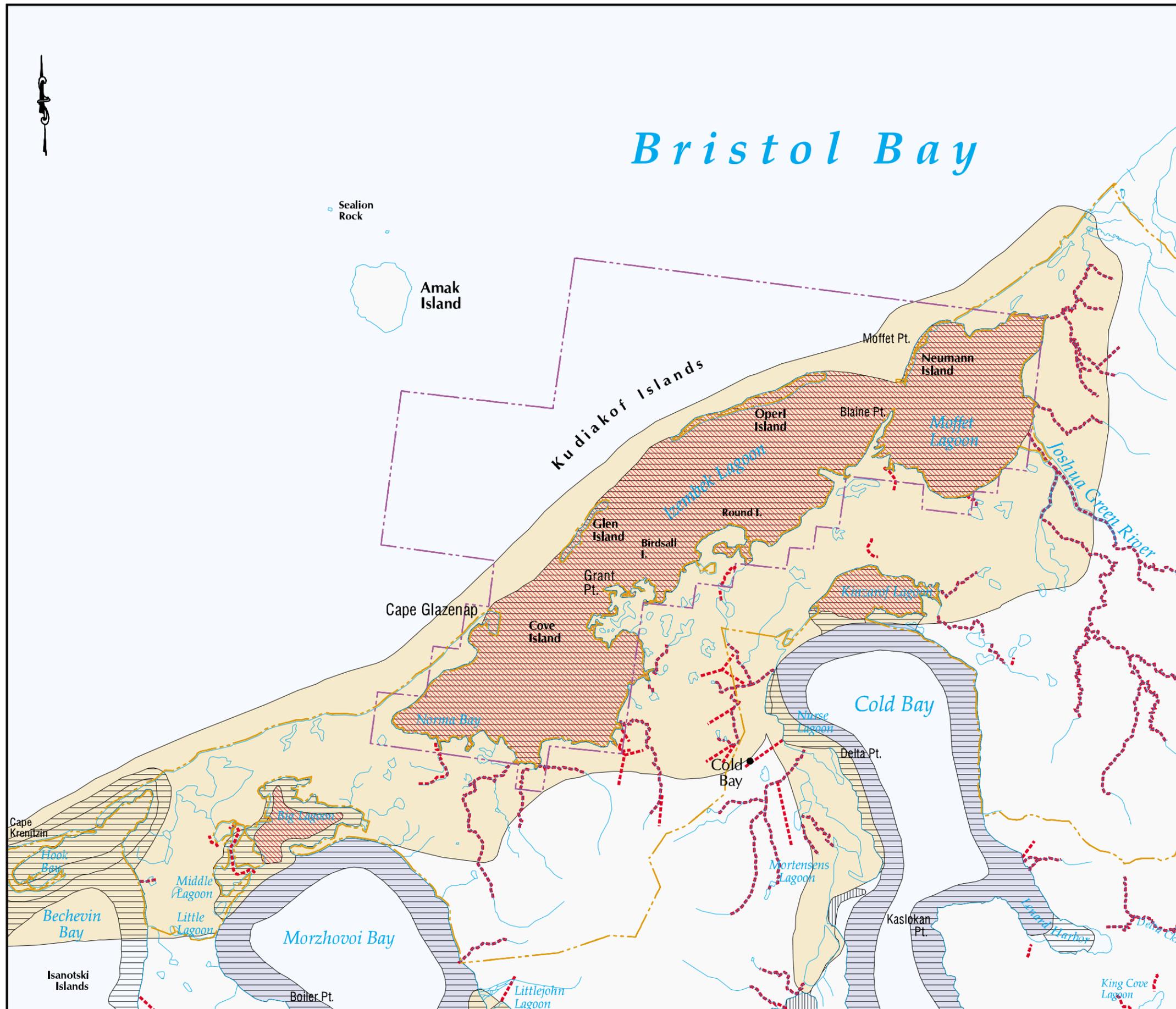
 Izembek State Game Refuge Boundary

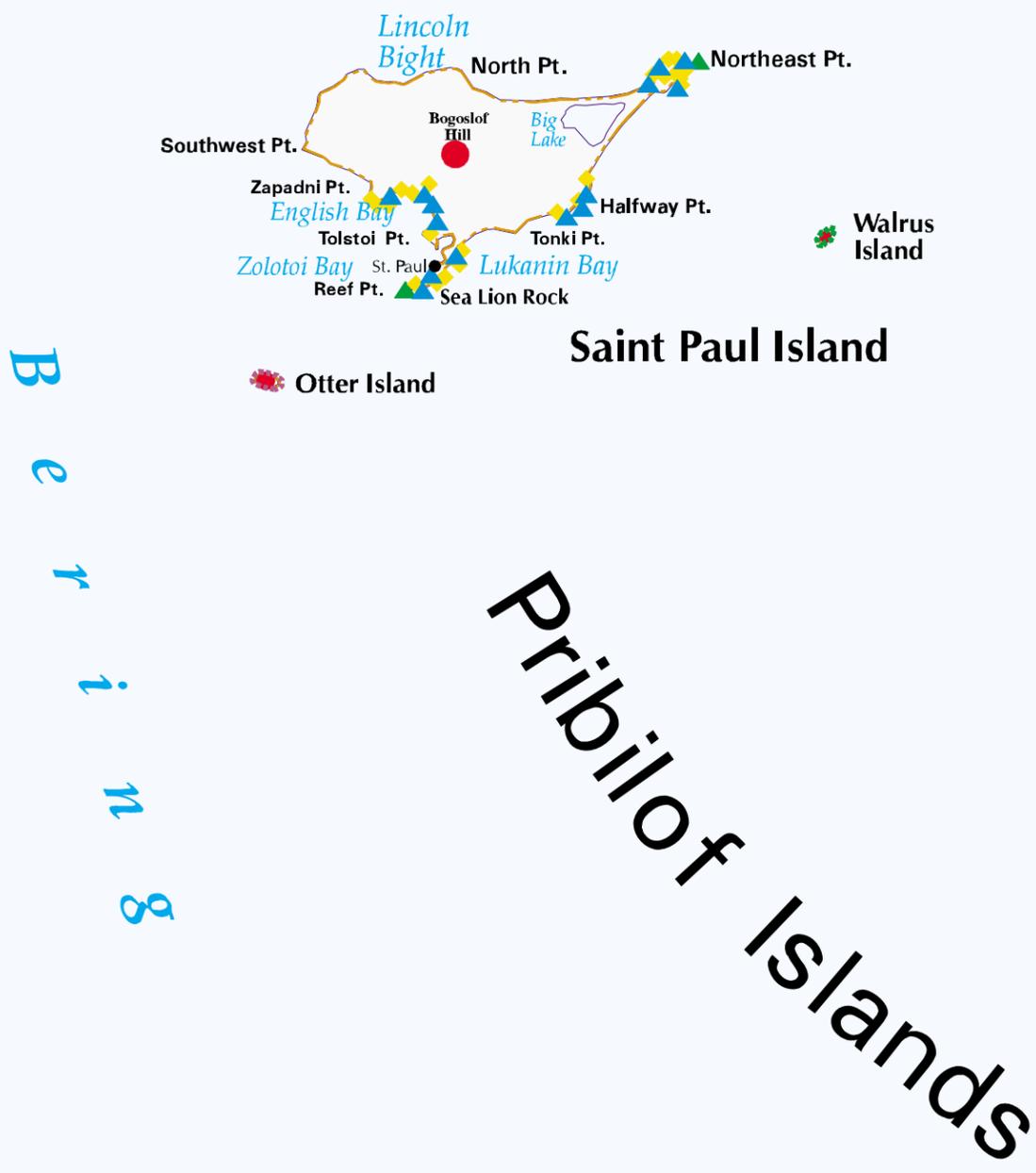
 Izembek National Wildlife Refuge Boundary

SOURCES: ADF&G 1985b; ADF&G 1996a,b.

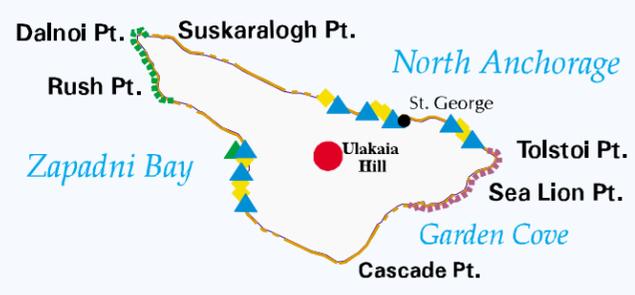


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Department of Fish and Game
Habitat and Restoration Division
June, 1997





Seabird Colonies: Found throughout coastal areas.

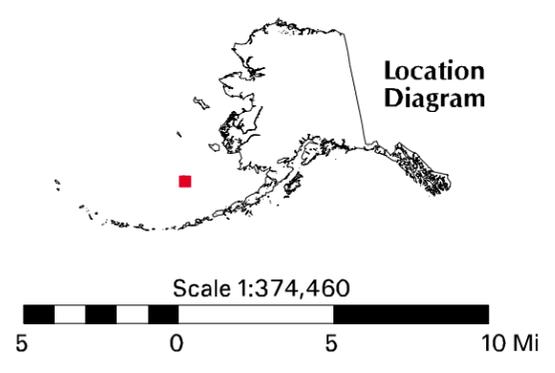


Saint George Island

MESA27 PRIBILOF ISLANDS LEGEND

- Sea Lion Haulout Concentrations
- Sea Lion Rookeries
- Fur Seal Rookeries
- Fur Seal Haulout Concentrations
- Seabird Colonies
- Less Than or Equal To 10,000 Birds
- 10,001 To 100,000 Birds
- Greater Than 100,000 Birds
- Alaska Maritime National Wildlife Refuge Boundary

SOURCES:ADF&G 1985a; USFWS 1996.



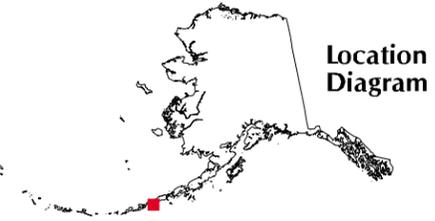
State of Alaska
Department of Fish and Game
Habitat and Restoration Division
June, 1997

MESA28a UNIMAK PASS KRENITZIN ISLANDS

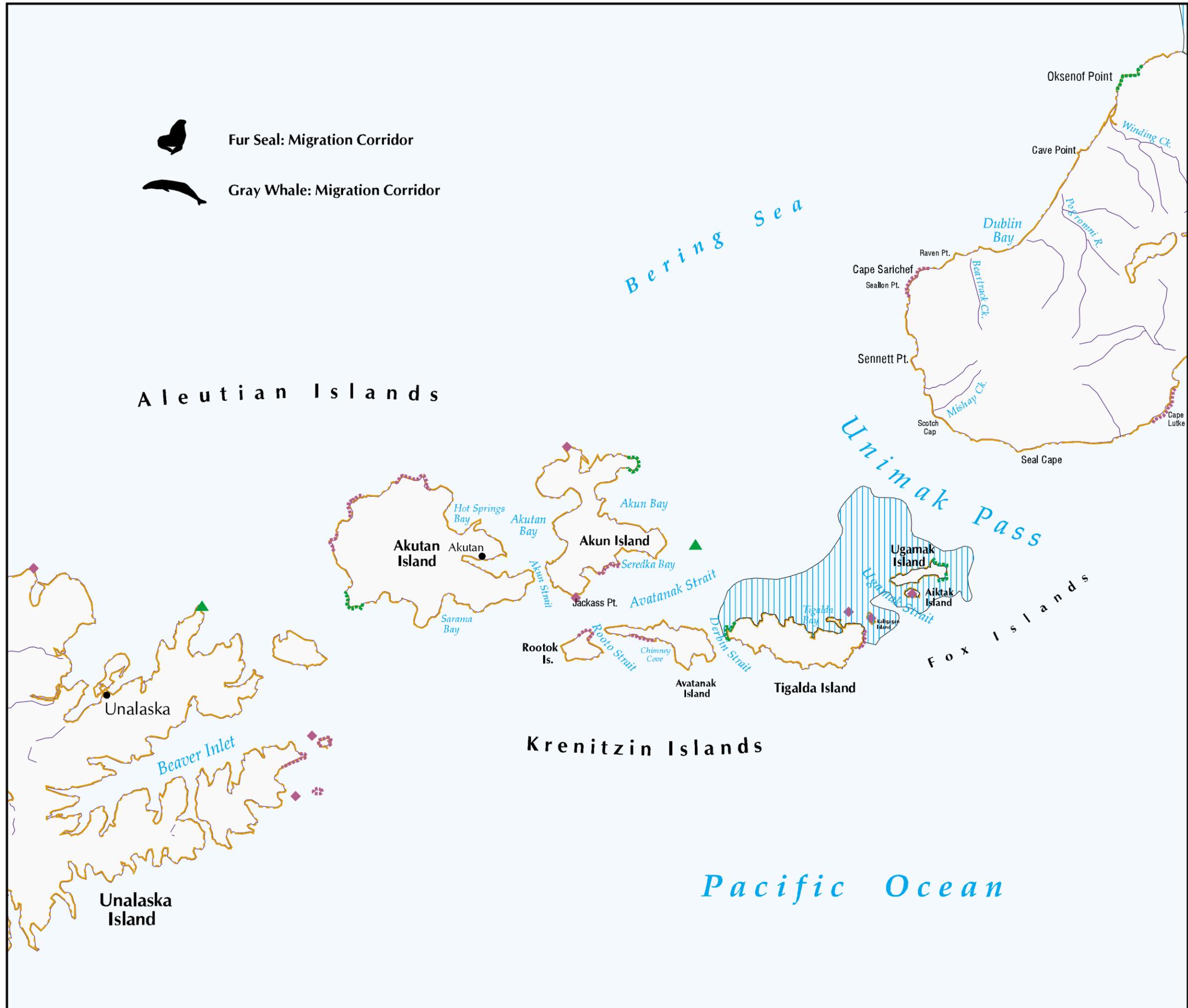
LEGEND

-  Sea Otter Concentration Areas
-  Sea Lion Haulout Concentrations
-  Sea Lion Rookeries
-  Alaska Maritime National Wildlife Refuge Boundary

SOURCES: ADF&G 1985a,d; Wynne 1993.



State of Alaska
Department of Fish and Game
Habitat and Restoration Division
June, 1997



MESA28b UNIMAK PASS KRENITZIN ISLANDS

LEGEND

-  Waterfowl Spring and Fall Concentrations
-  Waterfowl Spring Concentrations
-  Waterfowl Winter Concentrations
-  Waterfowl Molting Concentrations

Seabird Colonies

-  Less Than or Equal To 10,000 Birds
-  10,001 - 100,000 Birds
-  Greater Than 100,000 Birds

 Alaska Maritime National Wildlife Refuge Boundary

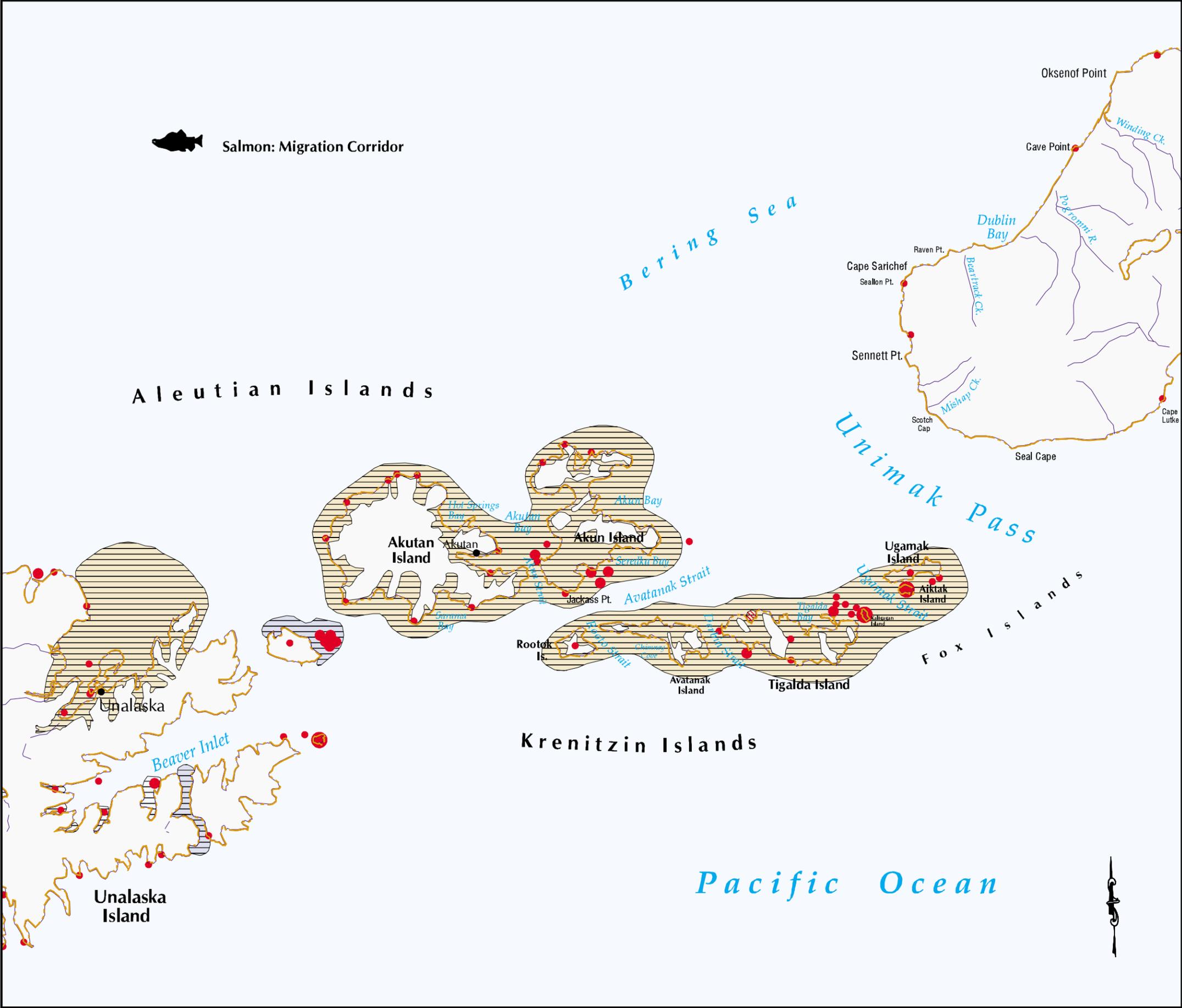
SOURCES: ADF&G 1985 b; J. McCullough, ADF&G, salmon pers. comm., 1996; USFWS 1996.



Scale 1:569942



State of Alaska
Department of Fish and Game
Habitat and Restoration Division
June, 1997



 Salmon: Migration Corridor

Aleutian Islands

Bering Sea

Unimak Pass

Fox Islands

Krenitzin Islands

Pacific Ocean





MESA29 KAGAMIL ISLAND

LEGEND

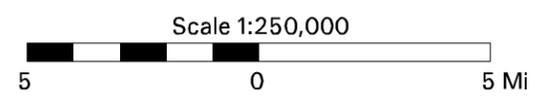
- Waterfowl Spring and Fall Concentrations
- Waterfowl Winter Concentrations
- Waterfowl Spring Concentrations

- Sea Lion Rookeries
- Sea Lion Haulout Concentrations

- Seabird Colonies**
- Less Than or Equal To 10,000 Birds
- 10,001 - 100,000 Birds

- Alaska Maritime National Wildlife Refuge Boundary

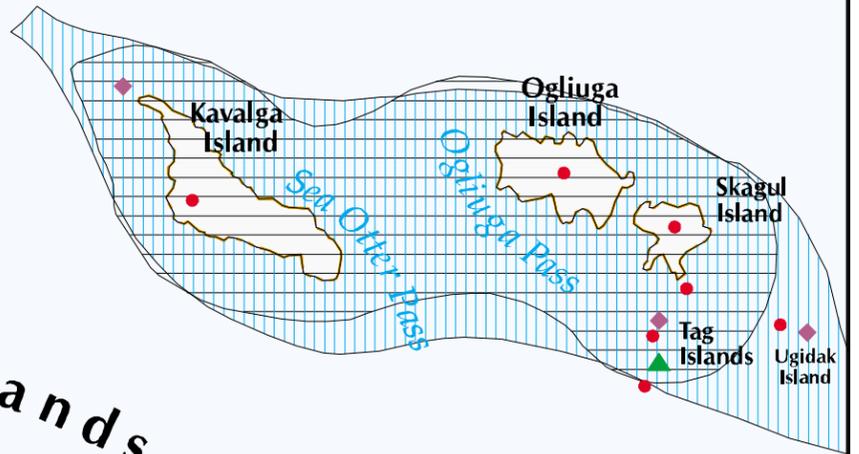
SOURCES: ADF&G 1985a,b; USFWS 1996.



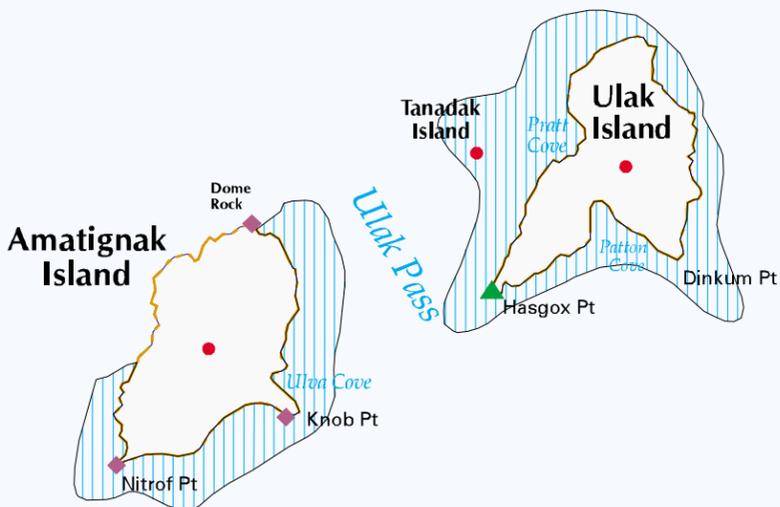
State of Alaska
Department of Fish and Game
Habitat and Restoration Division
June, 1997

Bering Sea

Aleutian Islands



Delarof Islands



Pacific Ocean



**MESA30
DELAROF ISLANDS
LEGEND**

Waterfowl Winter Concentrations

Sea Otter Concentration Areas

Sea Lion Haulout Concentrations

Sea Lion Rookeries

Seabird Colonies

Less Than or Equal To 10,000 Birds

Greater Than 100,000 Birds

Alaska Maritime National Wildlife Refuge Boundary



Scale 1:250,000
5 0 5 Mi

SOURCES: ADF&G 1985a,b; USFWS 1996.



State of Alaska
Department of Fish and Game
Habitat and Restoration Division
June, 1997

MESA31 KISKA ISLAND

LEGEND

-  Waterfowl Nesting Concentrations
-  Waterfowl Spring Concentrations
-  Waterfowl Winter Concentrations
-  Sea Otter Concentration Areas

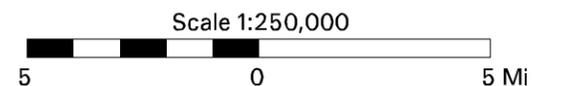
-  Sea Lion Rookeries
-  Sea Lion Haulout Concentrations

- Seabird Colonies**
-  Less Than or Equal To 10,000 Birds
-  10,001 - 100,000 Birds
-  Greater Than 100,000 Birds

-  Anadromous Streams

-  Alaska Maritime National Wildlife Refuge Boundary

SOURCES: ADF&G 1985a,b; ADF&G 1996b; USFWS 1996.



State of Alaska
Department of Fish and Game
Habitat and Restoration Division
June, 1997

Bering Sea

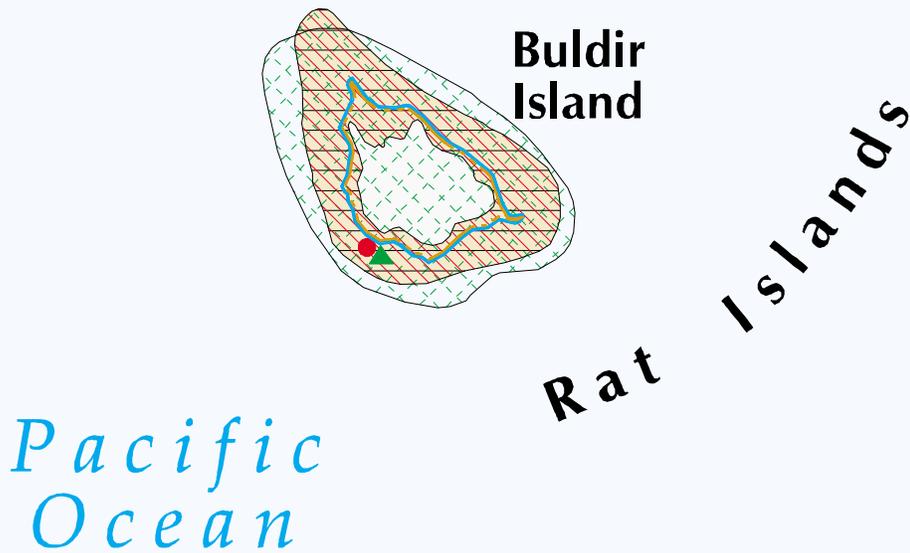


Pacific Ocean

Sea Lion Rock



Bering Sea



Sea Otter: Established populations

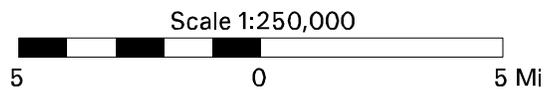
**MESA32
BULDIR ISLAND
LEGEND**

-  Waterfowl Spring and Fall Concentrations
-  Waterfowl Spring Concentrations
-  Waterfowl Molting Concentrations
-  Waterfowl Winter Concentrations
-  Sea Lion Rookery
-  Seabird Colony (Greater Than 100,000 Birds)
-  Alaska Maritime National Wildlife Refuge Boundary



Location Diagram

SOURCES: ADF&G 1985a,b; USFWS 1996.



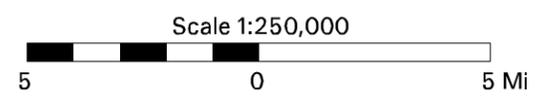
State of Alaska
Department of Fish and Game
Habitat and Restoration Division
June, 1997

MESA33 AGATTU ISLAND

LEGEND

-  Waterfowl Spring and Fall Concentrations
-  Waterfowl Nesting Concentrations
-  Waterfowl Spring Concentrations
-  Waterfowl Winter Concentrations
-  Anadromous Streams
-  Sea Lion Rookeries
- Seabird Colonies**
-  Less Than or Equal To 10,000 Birds
-  10,001 - 100,000 Birds
-  Alaska Maritime National Wildlife Refuge Boundary

SOURCES: ADF&G 1985a,b; ADF&G 1996b; USFWS 1996.

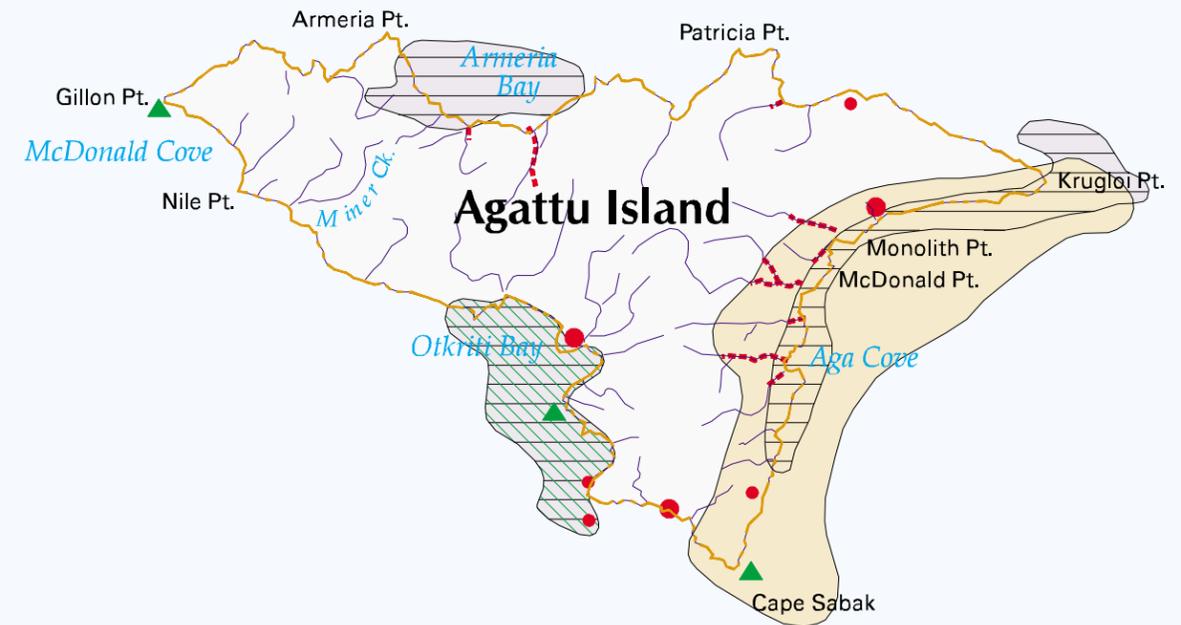


State of Alaska
Department of Fish and Game
Habitat and Restoration Division
June, 1997

Bering Sea

Near Islands

Pacific Ocean

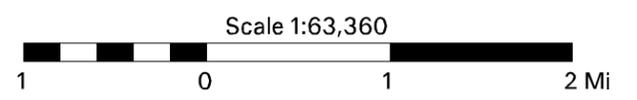


MESA34 AMAGAT ISLAND

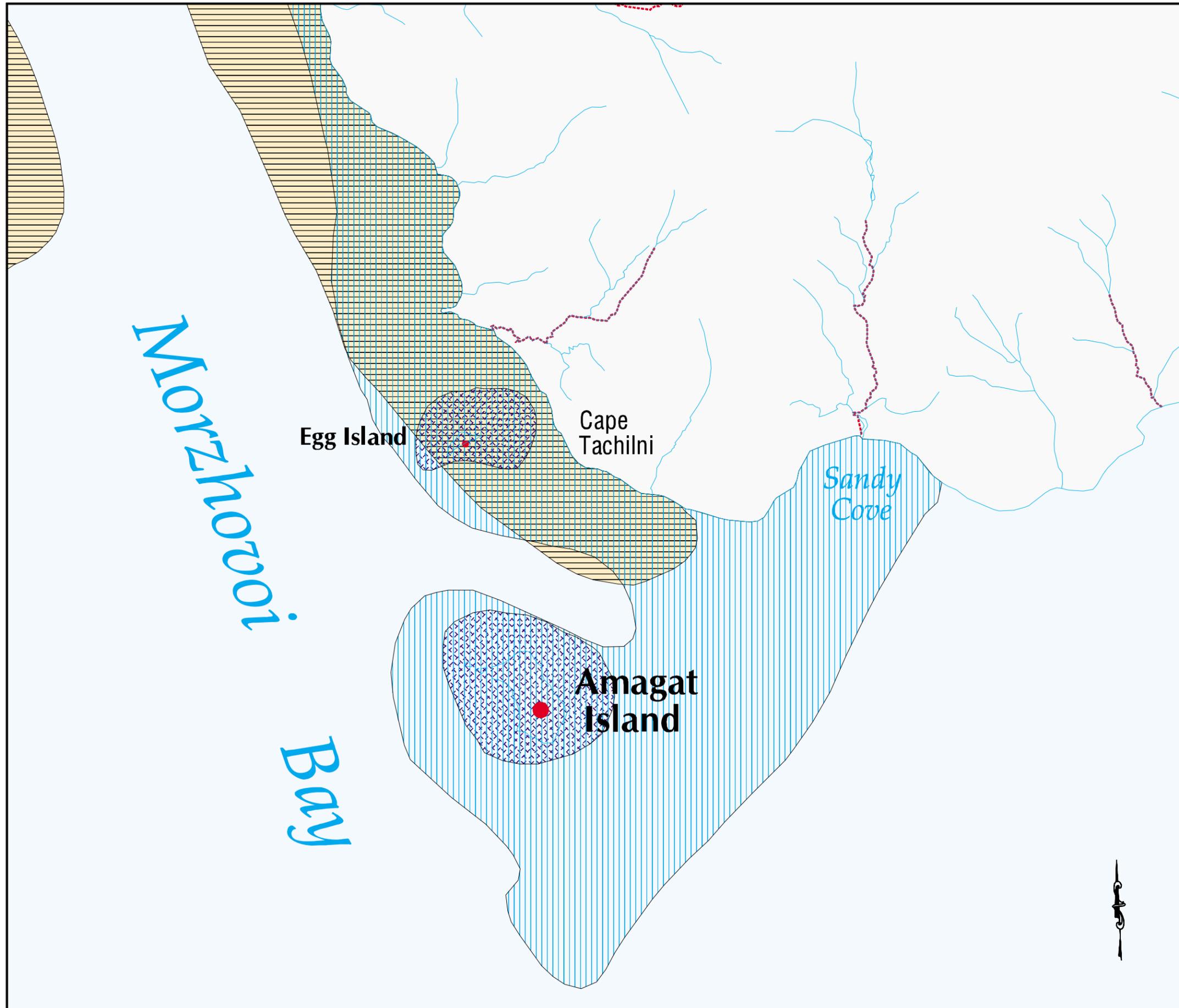
LEGEND

-  Waterfowl Spring Concentrations
-  Waterfowl Winter Concentrations
-  Harbor Seal Haulout Concentrations
-  Sea Otter Concentration Areas
-  Anadromous Streams
- Seabird Colonies**
-  Less Than or Equal To 10,000 Birds
-  Greater Than 100,000 Birds

SOURCES: ADF&G 1985c; ADF&G 1996c;
USFWS 1996



State of Alaska
Department of Fish and Game
Habitat and Restoration Division
June, 1998



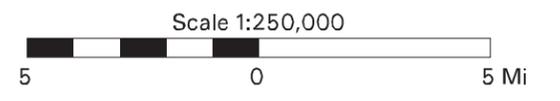


MESA35 SANDMAN REEFS

LEGEND

- Waterfowl Spring Concentrations
- Waterfowl Winter Concentrations
- Harbor Seal Haulout Concentrations
- Sea Otter Concentration Areas
- Sea Lion Rookery
- Seabird Colonies
 - Less Than or Equal To 10,000 Birds
 - 10,001 - 100,000 Birds
 - Greater Than 100,000 Birds
- Herring Spawning Areas
- Anadromous Streams
- Anadromous Lakes

SOURCES: ADF&G 1985c; ADF&G 1996c; USFWS 1996



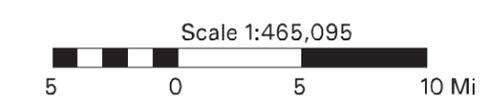
State of Alaska
Department of Fish and Game
Habitat and Restoration Division
June, 2000



MESA36 SHUMAGIN ISLANDS LEGEND

- Waterfowl Spring and Fall Concentrations
- Waterfowl Winter Concentrations
- Sea Otter Concentration Areas
- Harbor Seal Haulout Concentration
- Harbor Seal Haulout
- Sea Lion Rookery (633 Pups)
- Sea Lion Haulout
- Herring Spawning Concentrations
- Anadromous Streams
- Seabird Colonies**
 - Less Than or Equal To 10,000 Birds
 - 10,001 - 100,000 Birds
 - Greater Than 100,000 Birds
- Alaska Maritime National Wildlife Refuge Boundary

SOURCES: ADF&G 1985c,d; USFWS 1996; Strick et al. 1997; J. McCullough, ADF&G, harbor seal, sea lion, seabird pers. comm. 1999



State of Alaska
Department of Fish and Game
Habitat and Restoration Division
June, 2000

D. HUMAN RESOURCE USES

1. Fish Hatcheries and Associated Ocean Net Pens

Russell Creek hatchery located at Cold Bay is the only fish hatchery in the Aleutians Subarea. As of summer 1992, the hatchery had ceased operation because of lack of funds.

If this hatchery operates in the future, hatchery-related activities most vulnerable to spill damage would include fry rearing and release, terminal harvests and egg takes. The timing of these activities varies by species so it is difficult to generalize about the periods of highest vulnerability, however spring and summer will tend to be the most critical periods. The hatchery manager should be contacted for specific information if the hatchery again becomes operational.

2. Aquaculture Sites

At this time there are no aquaculture sites in the Aleutian Islands or the Pribilof Islands. If any sites are opened in the future, it is important to note that aquatic farms are vulnerable to spill damage on a year-round basis since shellfish are suspended from anchored gear and are submerged continuously in the water column. Harvest takes place year round.

Aquatic farms are vulnerable to spill damage on a year-round basis since the shellfish are suspended from anchored gear and are submerged continuously in the water column. Harvest takes place year round. For more information contact:

Aquaculture Coordinator
Alaska Department of Fish and Game
Juneau: 465-6150 Anchorage: 267-2333

Alaska Department of Environmental Conservation
Anchorage: 269-7638

Alaska Department of Natural Resources
Anchorage: 269-8546

3. Historic Properties

The Aleutians Subarea contains a multitude of known and unidentified archaeological and historic sites. Oil spills and hazardous substance releases may result in direct and/or indirect impacts to those cultural resources. On-Scene Coordinators (OSC) are responsible for ensuring that response actions take the protection of cultural resources into account and that the statutory requirements for protecting cultural resources are met. Annex M of the *Unified Plan* outlines OSC responsibilities for protecting cultural resources and provides an expedited process for compliance with Section 106 of the National Historic Preservation Act during the emergency phase of a response. Coastal sites in the subarea listed as National Historic Landmarks are:

<u>Name</u>	<u>Location</u>
Adak Army Base and Naval Operating Base	Adak
Anangula Archeological District	Nikolski vicinity
Attu Battlefield and U.S. Army and Navy Airfields	Attu
Cape Field at Fort Glenn	Umnak Island
Chaluka Site	Umnak Island
Dutch Harbor Naval Operating Base and Ft. Mears	Amaknak Island
Holy Ascension Orthodox Church	Unalaska
Japanese Occupation Site	Kiska
Seal Islands Historic District	Pribilof Islands

4. Subsistence and Personal Use Harvests

Subsistence-related uses of natural resources play an important role in the economy and culture of many communities in the Aleutians Subarea. A subsistence economy may be defined as follows:

...an economy in which the customary and traditional uses of fish, wildlife and plant resources contribute substantially to the social, cultural and economic welfare of families in the form of food, clothing, transportation and handicrafts. Sharing of resources, kinship-based production, small scale technology and the dissemination of information about subsistence across generational lines are additional characteristics.

Before 1990, the State of Alaska made all decisions regarding the management of fish and wildlife resources and harvest opportunities. In 1990, however, Federal agencies became responsible for assuring a federal subsistence priority on Federal public lands, and in 1999 on Federal reserved waters. The Federal Subsistence Board adopts subsistence regulations that are administered by various Federal agencies on Federal public lands. State regulations still apply on all lands, and the State is still the manager of fish and wildlife on all lands and waters in Alaska. As a consequence, the number of agencies involved in regulating subsistence uses has increased. Therefore, in the event of a spill, more extensive coordination will be required in order to address subsistence resources. Regulations regarding subsistence harvest can also be expected to undergo regular modification. Current information on harvest regulations can be obtained from the Alaska Department of Fish and Game, Subsistence Division at Anchorage: 267-2353; or the U.S. Fish and Wildlife Service Office of Subsistence Management at Anchorage: 786-3888.

Subsistence uses in the area are extensive and vary by season, resource, and village. Some information about subsistence uses is community-sensitive. Contacts for potentially affected communities are identified in the Response Section, Part One. For more information contact:

Subsistence Division, Alaska Department of Fish and Game
Anchorage, Alaska
267-2353

5. Commercial Fishing

The following chart provides general information on the timing of major commercial fisheries in the Aleutians Subarea. All fishing seasons are subject, however, to emergency openings and closures and most seasons are only open for a portion of the time specified in the regulations. Fishing regulations and seasons can change from year to year. Information on which species are currently being harvested may be obtained from the Alaska Department of Fish and Game, Commercial Fisheries Division in Anchorage, 267-2104. The shellfish and Bering Sea groundfish fisheries are the most important commercial harvests in the region.

During the Selendang Ayu oil spill incident, the Alaska Department of Environmental Conservation commissioned a study to describe the major commercial fisheries that could be impacted by the spill. The complete report can be found at the following link:

http://www.dec.state.ak.us/spar/perp/response/sum_fy05/041207201/fish/041207201_fisheries_rpt.pdf

Maps of key commercial fishing areas are available in Alaska Department of Fish and Game publications: *Alaska Habitat Management Guide Reference Maps, Southwestern Region, Vols. 1 and 2* and *Alaska Habitat Management Guide, Southwestern Region Map Atlas*. The following groups may be contacted for information on location and timing of fishing and local current conditions. Although the primary function of these organizations is not to provide such information, the individual members will be quite knowledgeable about conditions and are often willing to share information.

Alaska Crab Coalition
3901 Leary Way N.W. #6
Seattle, WA 98107
(206)547-7560

Bering Sea Fisherman's Association
725 Christiansen Drive
Anchorage, AK 99501
(907)279-6519

Alaska Dragger's Assn.
P.O. Box 991
Kodiak, AK 99615

Deep Sea Fisherman's Union / Pacific
5215 Ballard Ave., N.W.
Seattle, WA 98107 (206)783-2922

Alaska Marketing Association
Building C-3, Room 232
Fisherman's Terminal
Seattle, WA 98119

Fishing Vessel Owner's Association
West Wall Bldg., Room 232
Fisherman's Terminal
Seattle, WA 98119 (206)285-3383

American Factory Trawler Assn.
4039 21st Ave. W, Suite 400
Seattle, WA 98199

Peninsula Marketing Association
P.O. Box 248
Sand Point, AK 99661

(206)285-3739

(907)383-3600

American High Seas Fisheries Assn.
3040 W. Commodore Way
Seattle, WA 98199

United Fishermen of Alaska
211 Fourth Street, Suite 112
Juneau, AK 99801

United Fishermen's Marketing Association
Box 1035
Kodiak, AK 99615

6. Sport Fishing and Hunting

TO BE DEVELOPED

This Subarea includes State Game Management Units 9D and 10.

7. Recreational Sites and Facilities

At this time there are few state or federal recreational sites or facilities maintained in the Aleutians Subarea. (see also Part 4.A Land Management Designations)

Public Anchorages and Moorings:

Akutan Harbor, Akutan Island
Dutch Harbor, Unalaska Island
Nazan Bay, Atka Island
Kuluk Bay, Adak Island
Constantine Harbor, Amchitka Island
Kiska Harbor, Kiska Island
Massacre Bay, Attu Island

Public Recreation Cabins:

Adak Island

For recreational information, contact:

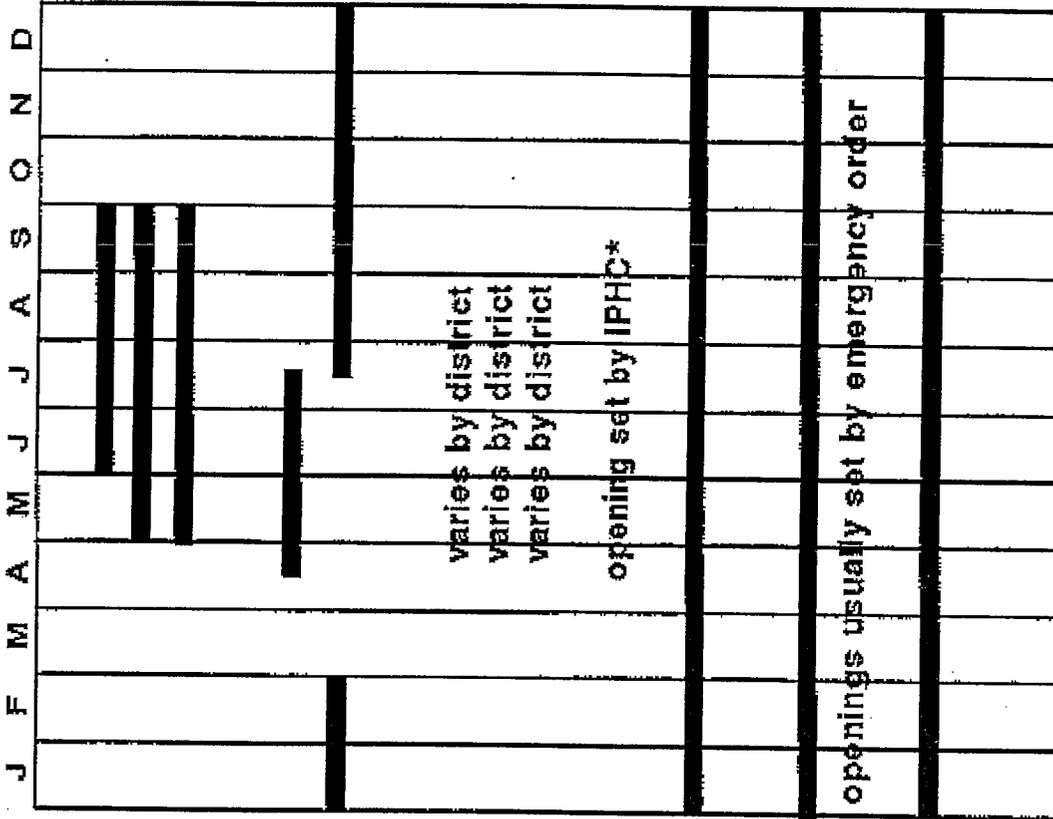
Alaska Maritime National Wildlife Refuge
Homer, Alaska
235-6546

Alaska Maritime National Wildlife Refuge, Aleutian Islands Unit
Adak, Alaska
592-2406

Izembek National Wildlife Refuge
Cold Bay, Alaska
532-2445

COMMERCIAL FISHERIES TIMING

ALEUTIAN REGION



SALMON

seine
drift net
set net

HERRING

sac roe
bait and food

CRAB

durigeness
tanner
king

HALIBUT

GROUNDFISH

SHRIMP

pots
trawls

SCALLOPS

*International Pacific
Halibut Commission

Times are approximate

8. Commercial Tourism

Tourism activities in the subarea include tour boat and ferry boat routes and stops, small boat and kayak use areas, wildlife viewing areas, and bird watching areas.

Key locations of interest: St. Paul Island
 St. George Island
 Dutch Harbor

The following organizations can be contacted with requests for specific information on location and timing of recreation and tourism activities. Although the primary function of these organizations is not to provide such information, the individual members will be quite knowledgeable about environmental conditions and will often be willing to share information.

Alaska Division of Tourism	465-2012
Alaska State Chamber of Commerce	586-2323
Alaska Native Tourism Council	274-5400
Alaska Wilderness Recreation & Tourism Assoc.	463-3038

9. Marinas and Ports (See B. Resources Section)

10. Fish Processing

The companies listed below are canneries and major processors with permits issued by the State of Alaska.

Alyeska Seafoods, Inc. Unalaska, 581-1211	Sans Souci Seafoods Dutch Harbor, 581-1533
Garden Cove Seafoods, Inc. St. George Island, (206) 851-2700	Trident Seafoods Corp. Sand Point, 383-4848
Queen Fisheries Inc. Dutch Harbor, 581-1225	Trident Seafoods Corp. Akutan, 698-2211
Trident Seafoods Corp. St. Paul Island, 546-2377	Westward Seafoods, Inc. Dutch Harbor, 581-1660
Unisea, Inc. Dutch Harbor, 581-1258	East Point Seafood Co. Dutch Harbor, (206) 284-7571
Icicle Seafoods, Inc. Dutch Harbor, (206) 282-0988	Peter Pan Seafoods, Inc. King Cove, (206) 728-6000
Seatech Corp. Akutan, (206) 782-6007	Snopac Products, Inc. St. George Island, (206) 764-9230
Adak Seafoods Adak Island, 279-5900	Icicle Seafoods, Inc. St. Paul, 546-2405
Unisea, Inc.	

St. Paul, 546-2530

11. Logging Facilities

There are no logging facilities in the Aleutians Subarea.

12. Water Intake/Use

The following list of public water intake/use permits was generated from a database maintained by the Alaska Department of Environmental Conservation. Additional information may be obtained from the Drinking Water and Water Treatment Section at 465-5300.

<u>Name of Facility</u>	<u>Location</u>	<u>State ID No.</u>	<u>Source</u>
Atka	Atka	260058	Surface
City of Akutan	Akutan	260252	Surface
Nelson Lagoon Water System	Nelson Lagoon	260804	Surface
Saint George Water System	Saint George	260074	Ground
Saint Paul Water System	Saint Paul	260286	Ground
Sand Point Water System	Sand Point	260294	Ground
USAF Eareckson AFS	Shemya Island	260511	Ground
City of King Cove	King Cove	260244	Surface
False Pass Treatment Plant	False Pass	262199	Surface
Perryville Water System	Perryville	260359	Surface
Peter Pan Housing	False Pass	260317	Surface
Peter Pan Seafood	Port Moller	261216	Surface
USN Lake Andy Rec Area	Adak	262050	Surface
USN Mitchell Creek	Adak	260943	Surface

SENSITIVE AREAS: PART FIVE – AREAS OF LOCAL CONCERN

The Aleutians East Borough, in their Coastal Management Plan, has identified several Special Use Areas based on unique, environmentally vulnerable, or commercially important fish and wildlife resources and habitats (see the following maps). Commercial fishing is a key use in many of these areas. These include:

1. Port Moller/Herendeen Bay/Bear River Special Use Area

Five species of salmon are found in this area; sockeye and chum are the most important. Large numbers of herring, and other forage fish pass through the area, and this is a major herring spawning area. Red king and Dungeness crab are in the area, and this is an important nursery for halibut and sole. The area contains several seabird colonies. Shorebirds and waterfowl migrate through the area in spring and fall. Harbor seals haulout in the area, as do walrus on Walrus Island. Sea otters are present. Gray whales migrate through the area.

2. Nelson Lagoon Special Use Area

Significant numbers of king, coho, chum, and sockeye salmon are found here. Dungeness and red king crab are here, and clams are harvested for subsistence use. A large seabird colony is on the Kudobin Islands. This is a major staging area for fall shorebird migration, and for waterfowl migration staging and feeding. Harbor seals, sea otters and gray whales are found here.

3. Izembek Lagoon Special Use Area

This large estuarine system supports one of the largest eelgrass beds in the world. This is a major chum and sockeye salmon area and a rearing area for red king crab. This is a major staging, feeding, molting, nesting and wintering area for shorebirds and waterfowl. The world's population of black brant stage here, as do most of the emperor geese, cackling geese, and female Steller's eider. This is a key haulout and breeding area for harbor seals. Sea otters frequent the area.

4. Bechevin Bay Special Use Area

The area contains king crab spawning grounds and sees substantial use by waterfowl and shorebirds for migration staging, feeding molting nesting and wintering. This is a key haulout and breeding area for harbor seals. Sea otters frequent the area. The area is also important for spring feeding by brown bears.

5. Unimak Pass Special Use Area

This area sees large numbers of adult salmon pass through as they migrate to streams in Bristol Bay and western Alaska. Juvenile salmon migrate through the area to the north Pacific. The area is also a major migration route for ducks, geese, seabirds and marine birds. Humpback, fin, and gray whales, as well as northern fur seals use the area in spring and fall.

6. Pavlof/Canoe Bay Special Use Area

This is a key salmon and herring spawning area. King, tanner, and Dungeness crabs are present, as are shrimp and groundfish. Seabirds nest here and waterfowl also use the area. Brown bears concentrate here.

7. Anadromous Fish Stream Special Use Area

Anadromous fish streams support spawning populations of fish, which are essential for the region's commercial fisheries. Associated lakes and tributaries are also important fish habitat. This area includes all streams identified in the Catalog produced by the Alaska Department of Fish and Game (see Attachment One).

The Aleutians West Coastal Resource Service Area identified two areas for study as potential Areas Meriting Special Attention:

8. Unalaska Bay

This is a traditional use area of the Aleuts and contains numerous archaeological and historic sites, including Amaknak Island, which is a National Historic Landmark for World War II military activities. The recent commercial growth in the area during recent years has put pressures on local recreational, subsistence and personal uses of resources in the area.

9. Chernofski Harbor

This is an important fish and wildlife habitat area which contains archaeological and historic sites. The area has been studied for possible commercial development.

A map showing Environmentally Sensitive Areas was produced in 1998 by the National Oceanic and Atmospheric Administration, with funding from the U.S. Coast Guard. Saint Paul, Saint George, Walrus, and Otter Islands are mapped at 1:63,360 scale, and were reviewed by Federal, State, and local organizations. This map is not included here.

A 1998 wildlife response action plan the Wildlife Protection Guidelines: Pribilof Islands (see Attachment Two) was also produced with local involvement as an adjunct to the Subarea Contingency Plan.

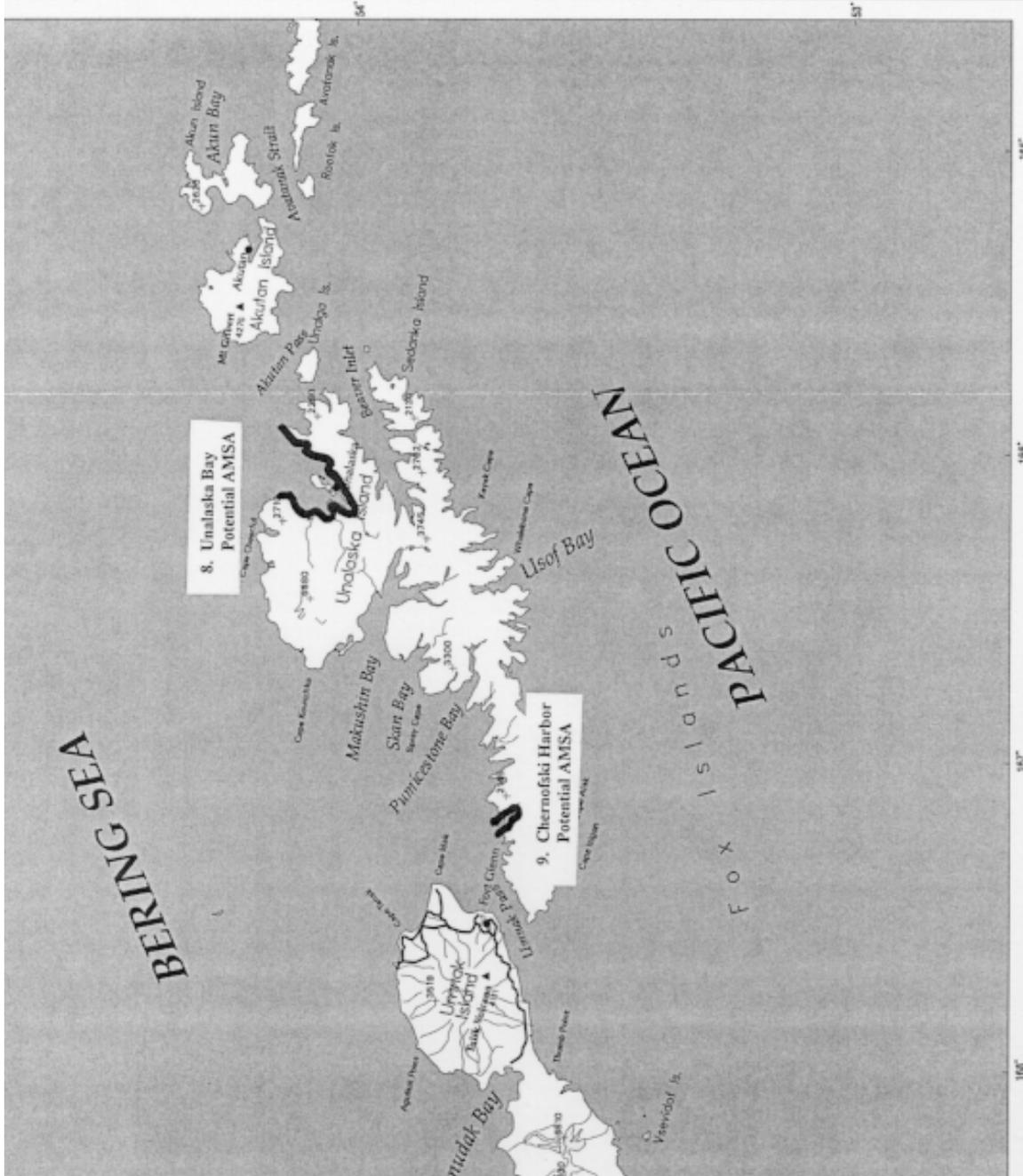
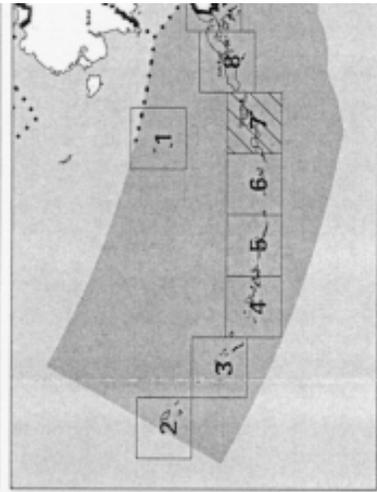
**Base Map
Aleutian Islands Region**

Map 1 of 3

Albers Equal Area Projection
Scale 1:1,000,000



Areas of Local Concern



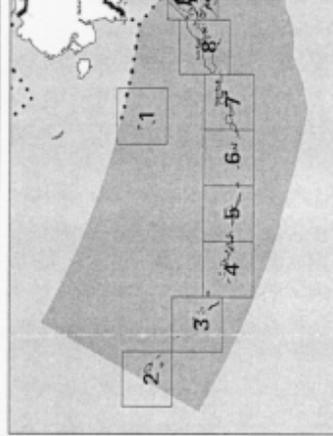
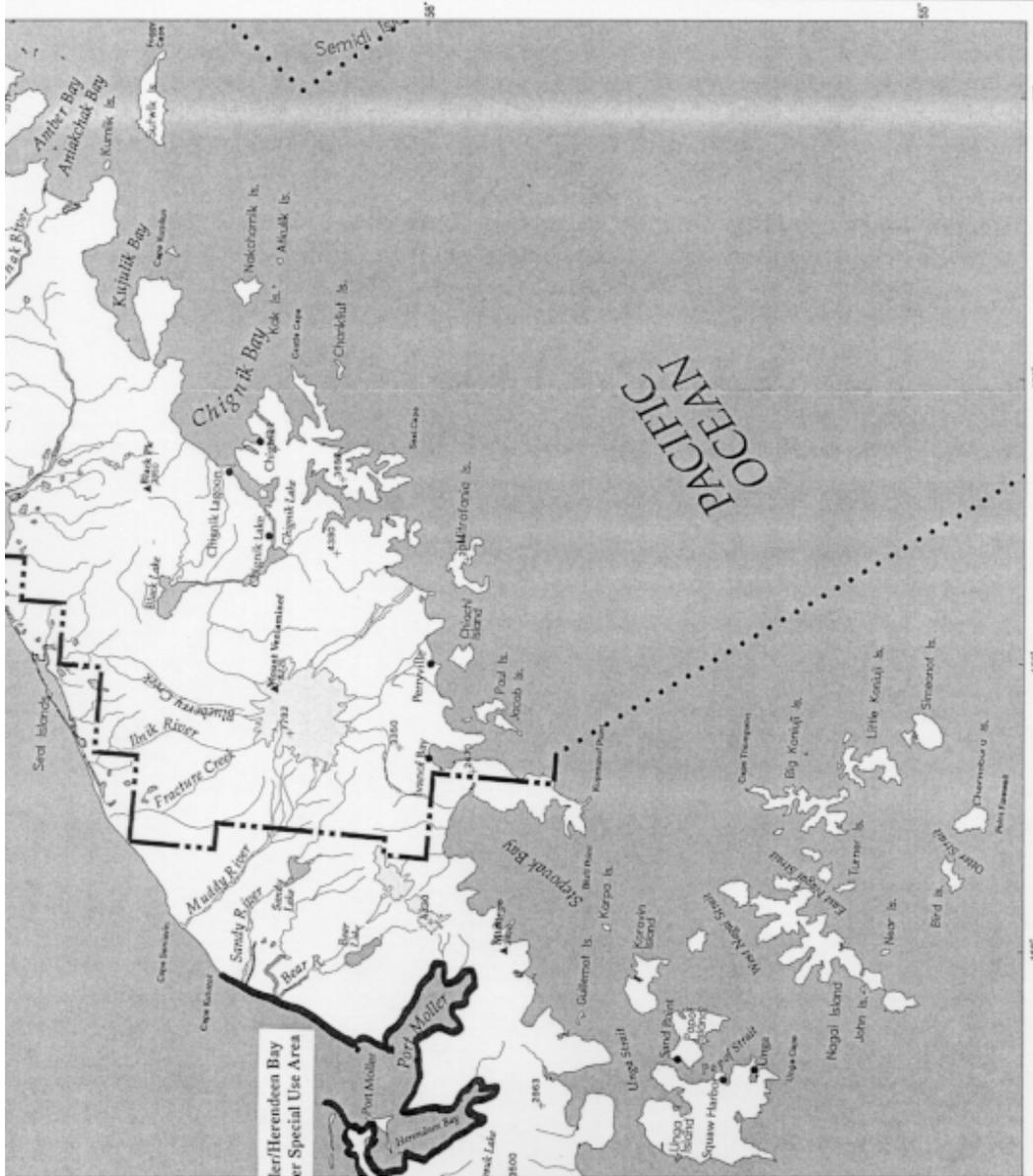
Base Map Aleutian Islands Region

Map 3 of 3

Albers Equal Area Projection
Scale 1:1,000,000



Areas of Local Concern



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SENSITIVE AREAS: PART SIX - KEY REFERENCES

The following documents will provide information on critical fish and wildlife concentrations and human uses. The information contained in these documents is not, for the most part, duplicated in this contingency plan. Also identified are Geographic Information System (GIS) databases which may have automated resources information for the area.

Documents

Alaska Department of Environmental Conservation. 1993. Water Permit Database.

Alaska Department of Fish and Game. 1985. Alaska Habitat Management Guide, Southwest Region, Vols. 1 and 2. (Description of life histories, habitat requirement, distribution, abundance and human uses of fish and wildlife).

Alaska Department of Fish and Game. 1985. Alaska Habitat Management Guide, Southwest Region Map Atlas. (1:1,000,000 scale color maps of fish and wildlife distribution).

Alaska Department of Fish and Game. 1985. Alaska Habitat Management Guide Reference Maps, Southwest Region, Vols. 1-4. (1:250,000 scale maps of fish and wildlife distribution and human use).

Alaska Department of Fish and Game. 1992. An Atlas to the Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes, Southwest Region. (Maps of locations of anadromous streams and species known to utilize them).

Alaska Department of Fish and Game. 1993. Environmental Section of the State of Alaska Regional Oil and Hazardous Substance Spill Contingency Plan for the Aleutian Region.

Alaska Department of Fish and Game. 1991. State of Alaska Refuges, Critical Habitat Areas, and Sanctuaries. (Maps of these specially designated state lands).

Aleutians East Borough. 1991. Coastal Management Program Amendments: Coastal Boundary, Resource Inventory and Analysis, Policies, Implementation.

Aleutians East Coastal Resource Service Area. 1984. Resource Inventory for the Aleutians East Coastal Resource Service Area.

Aleutians East Coastal Resource Service Area. 1985. Aleutians East Coastal Resource Service Area Volume I Coastal Management Plan.

Aleutians East Coastal Resource Service Area. 1985. Volume III An Analysis of Potential Development and Environmental Sensitivity in the Aleutians East CRSA.

Aleutians West Coastal Resource Service Area. 1990. Aleutians West Coastal Resource Service Area Volume I Resource Inventory Atlas.

Aleutians West Coastal Resource Service Area. 1990. Aleutians West Coastal Resource Service Area Volume II Resource Inventory and Analysis.

Aleutians West Coastal Resource Service Area. 1991. Aleutians West Coastal Resource Service Area Volume III Coastal Management Plan.

- CH2MHill. 1994. Circulation Study of Unalaska Bay and Contiguous Inshore Marine Waters.
- Environmental Protection Agency and National Oceanic and Atmospheric Administration. 1994. Environmental Sensitivity Mapping for Developing and Evaluating Spill Response Plans. Working Paper Review Draft.
- Jon Isaacs and Associates. 1993. Unalaska Harbor Management Plan: Planning, Management, and Permitting Guidelines.
- LaBelle, J.C. and J.L. Wise. 1983. Alaska Marine Ice Atlas.
- Michel, J., J. Halls, S. Zengel, J. Dahlin, and J. Petersen. 1997. Environmental Sensitivity Index Guidelines Version 2.0. National Oceanic and Atmospheric Administration Technical Memorandum NOS ORCA 115.
- Michel, J. and S. Christopherson and F. Whipple. 1994. Mechanical Protection Guidelines. National Oceanic and Atmospheric Administration and U.S. Coast Guard.
- Minerals Management Service. 1992. Shipwrecks of the Alaskan Shelf and Shore. U.S. Department of the Interior.
- Minerals Management Service. 1989. Offshore Scientific and Technical Publications. U.S. Department of the Interior.
- Minerals Management Service. 1990. Outer Continental Shelf Environmental Assessment Program Comprehensive Bibliography. U.S. Department of the Interior.
- National Climatic Data Center (NDC) and Arctic Environmental Information and Data Center (AEIDC). 1988. Climatic Atlas, Volume II: Bering Sea.
- National Oceanic and Atmospheric Administration and U.S. Environmental Protection Agency. 1994. Environmental Sensitivity Mapping for Developing and Evaluating Spill Response Plans. A Working Paper for the Regional Workshop on Designing a Geographic Information System for Oil Spills.
- Research Planning Institute, Inc. 1982. Sensitivity of Coastal Environments and Wildlife to Spilled Oil, Bristol Bay region.
- U.S. Department of Commerce. (Current Year's Edition) Tidal Current Tables: Pacific Coast of North America and Asia.
- U.S. Department of Commerce. (Current Year's Edition) U.S. Coast Pilot 9: Pacific and Arctic Coasts Alaska: Cape Spencer to Beaufort Sea.
- U.S. Fish and Wildlife Service. 1998. Alaska Seabird Colony Catalog

Geographic Information System (GIS) Databases

Alaska Department of Natural Resources: Rich McMahon, Anchorage, 269-8836

National Oceanic and Atmospheric Administration: John Whitney, Anchorage, 271-3593

U.S. Fish and Wildlife Service: Catherine Berg, Anchorage, 271-1630

National Park Service: Joni Piercey, Anchorage, 644-3554

Bureau of Land Management: Gust Panos, Anchorage, 271-5545

Attachments:

1 – Index Salmon Stream Escapement

2 – Wildlife Protection Guidelines – Pribilof Islands

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SENSITIVE AREAS: ATTACHMENT ONE

ALASKA DEPARTMENT OF FISH AND GAME

Index Salmon Stream Escapement Data

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**ESTIMATED AVERAGE PEAK INDEX COUNTS FOR SALMON STREAMS IN THE
ALASKA PENINSULA MANAGEMENT AREA***

NORTHERN DISTRICT

Stream/Lake	Catalog Number	King	Sockeye	Coho	Pink (Odd)	Pink (Even)	Chum
North Creek	313-10-10340	455	3,595	862	100		3,510
Cathedral River	313-10-10300	26	346	350			34
Trader Mtn Creek	313-10-10500	279	750			180	263
Next to Amco Airstrip	313-10-10800	78		153		400	32
Black Hills Creek	313-10-11000	685	304	327	10	1,350	317
Steelhead Creek	313-10-11200	582	260	380	10	1,250	421
Near Coastal Lake	313-30-10140-2006-0010		2,360				0
David's River	313-30-10140-2016	345	3,688	1,038			108
Caribou River	313-30-10140	127	13,208	3,843	3,500		387
Nelson R./Hoodoo Lake	313-30-10140-2013	3,052	72,296	14,926	200	714	54,535
S.W. Drill Hole Lake	313-30-?		1,000				0
Peterson Creek		150	237				33
Doe Valley	314-20-10200					150	6,275
Buck Valley	314-20-10300					900	17,640
Deer Valley	314-20-10410		51			4,500	
Portage Valley	314-20-10510					50	4,236
Grass Valley	314-20-10600	10	784		17,000	5,000	
Lawrence Valley	314-20-10700				14,100	34,566	
Mine Harbor	314-20-nc						1,011
Coal Creek	314-20-10900		3				

*Represents the peak index counts averaged over all years where data was collected and maintained by ADF&G.

**ESTIMATED AVERAGE PEAK INDEX COUNTS FOR SALMON STREAMS IN THE
ALASKA PENINSULA MANAGEMENT AREA***

NORTHERN DISTRICT

Stream/Lake	Catalog Number	King	Sockeye	Coho	Pink (Odd)	Pink (Even)	Chum
Mud Bay	314-30-10500	25					
Head Creek, Right Head	314-30-10700			50			
Right Head Creek	314-30-10900 (10950)		500	200			
Left Head Creek	314-30-11200, 11100, 11000			50			26,350
Frank's Lagoon	315-10-10200		625	100			106,170
King Salmon River	315-10-10300	379	500	450		1,000	1,769
Bear River, Branches	315-11-10200	427	22,595				13
Sandy River and Lake	315-12-10100	228	35,413				17
Lime Creek	316-10-10070		260	25			819
Unn; C Seniaven/3 Hills	316-10-10100		263	20			851
SW of 3 Hills	316-10-10600		138	400			15
Ocean River	316-20-10100	53	9,643	2,635	300		633
Ilnik River/Estuary	316-20-10310	6	36,546	19,327			0
Unanagashak River	316-20-10700			1,666			0
Willie Creek	316-20-10710	1008	7,712	291			0
Charles Creek	317-20-10200	68	349	1,000		150	301

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**ESTIMATED AVERAGE PEAK INDEX COUNTS FOR SALMON STREAMS IN THE
ALASKA PENINSULA MANAGEMENT AREA***

NORTHWESTERN DISTRICT

Stream/Lake	Catalog Number	King	Sockeye	Coho	Pink (Odd)	Pink (Even)	Chum
Tugamak River	311-20-nc		25		200		
Divide Creek	311-32-10600		1,033			500	133
Whaleback Mtn Creek	311-32-10700		34,800	2,050			353
Christianson Lagoon	311-32-10800		2,256	200			0
Mud Hole	311-32-11000		1,250				51,300
Clear Lagoon	311-32-nc		404				3,536
Emil's River	311-42-10100		115				492
North Creek	311-42-nc			400		550	795
Big River	311-52-10100				30		2,238
Swanson Lagoon	311-52-10200		6,118	4,250			
Mike's Valley	311-60-10100		4	680	440	4,925	
Anderson's Creek	311-60-10600				543	4,586	1,325
Trader's Cove	311-60-10700			700	233	18,466	69,100
Warm Springs Bay	311-60-11200		102		141	700	
Hungry's Creek	311-60-11409		304		702	14,844	162
Norma Bay Lakes	312-20-10100		301				216
Mike's Duck Camp	312-20-10200		240			500	
Frosty Creek	312-20-10600		120				
Blue Bill Lake	312-20-11000-0010		3,476				111
Outer Marker Lake	312-20-11300		1,585	100		30	433
Springs S Frosty Creek	312-20-10540		194				
2 nd W of Frosty Creek	312-20-10570		351				
Joshua Green River	312-40-10100	807	8,697	4,090	800	825	
Moffet Springs Creek	312-40-10200	12	549	200	100		
Moffet Creek	312-40-10300		3,107	1,320	2,600	850	319,810

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**ESTIMATED AVERAGE PEAK INDEX COUNTS FOR SALMON STREAMS IN THE
ALASKA PENINSULA MANAGEMENT AREA***

SOUTHEASTERN DISTRICT

Stream/Lake	Catalog Number	King	Sockeye	Coho	Pink (Odd)	Pink (Even)	Chum
Dorenoi Bay SW	281-10-10100			700	10,884	12,742	3,516
Dorenoi Bay NE River	281-10-10200				3,416	1,927	165
Suzy Creek	281-10-10300				39,957	63,103	69
West Cove	281-20-10100				2,088	1,901	4
Chichagof Lagoon Only	281-20-10300L				18,666	8,000	84,000
Chichagof Bay W Side	281-20-10200				4,398	4,321	386
Chichagof Bay Stream	281-20-10300			300	13,938	8,457	10,128
Chichagof Bay E Side	281-20-10400				6,851	3,429	3,616
Windbound Bay	281-20-10500				2,085	3,011	11
Orzinski Bay	281-31-10300		12,272	566	29,565	20,585	258
Little Norway	281-32-10100 and 10150		93	560	13,146	9,219	6,736
Clark Bay SW	281-32-10200				11,441	6,165	5,815
Clark Bay NE	281-32-nc					350	166
Grub Gulch	281-32-10400			575	27,600	22,876	
1 st Stm N Rock Well	281-33-10100				3,500	1,766	10,123
2 nd Stm N Rock Well	281-33-10100-2002			200	3,920	1,740	16,488
Louie's Corner	281-33-10300			600	6,162	2,725	142,270
Big River	281-34-10100				5,152	3,171	59,130
Stepovak River	281-34-10050				12,900	3,516	75,440
Granville Portage	281-34-10050-2002		10	250	275	600	2,586
Granville Bay	281-34-10100			383	4,068	3,350	
Osterback's Creek	281-34-10200			20	9,817	8,414	40
Stonehouse	281-34-10300				14,103	8,676	521
Island Bay 3404	281-34-10400				915	775	2
Island Bay 3405	281-34-10500				6,758	3,147	89
Island Bay 3406	281-34-10500-2002			300	3,875	3,116	31
Island Bay 3407	281-34-10700				750	555	
Island Bay 3408	281-34-10800				775	576	

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**ESTIMATED AVERAGE PEAK INDEX COUNTS FOR SALMON STREAMS IN THE
ALASKA PENINSULA MANAGEMENT AREA***

SOUTHEASTERN DISTRICT

Stream/Lake	Catalog Number	King	Sockeye	Coho	Pink (Odd)	Pink (Even)	Chum
Fox Bay 3501	281-35-nc					650	
Fox Bay 3502	281-35-10200			200	6,837	3,955	152
Fox Bay 3504	281-35-10400				1,038	928	296
Fox Bay 3505	281-35-10500				1,236	1,663	153
Boulder Bay	281-35-10600			1,500	1,551	942	5,803
Near Bluff Point	281-35-nc				1,300	176	60
Smiley's Creek	283-70-10400				7,985	6,166	18
Beaver River	283-70-10500			1,800	17,890	15,877	70,716
Kagayan Flats	283-70-10600						116
Cape Aliaksin, West	283-80-10300			300	6,593	6,625	
Cape Aliaksin, Center	283-80-nc				2,041	2,417	
Cape Aliaksin, East	283-80-10500				6,868	7,158	
Lefthand Bay Kagayan	283-80-10800	100	100	1,352	13,822	11,981	200,780
Foster Creek	283-80-10900			200	13,963	11,882	90,437
Monolith Pt. Creek	283-80-11090				1,982	1,425	336
Foster's Camp Creek	283-80-11200				1,225	800	247
Johnson Creek	283-80-11410				6,265	6,860	27,550
Coleman Creek	283-80-11500			500	9,543	3,434	139,150
Ballast Is. Stream	283-80-11600				150	825	29
Swedania Pt. Stream	283-90-10100			500	19,275	23,965	33
Rough Beach	283-90-10200			2,000	20,524	25,100	50
W Side San Diego Bay	283-90-10300				1,020	296	1,621
San Diego Lgn & Strm	283-90-10400				9,680	7,635	46,400
Apollo Creek Minor	282-10-10200				2,925	3,913	
Apollo Creek Major	282-10-10300				4,813	12,580	4
Acheredin Lake	282-10-10400		5,890	150	250		46
Unnamed 1010	282-10-11100				25		7
Apollo Gold Mine	282-10-nc			20	8,902	5,191	706
Unga Cape Stream	282-10-nc				1,880	57	

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**ESTIMATED AVERAGE PEAK INDEX COUNTS FOR SALMON STREAMS IN THE
ALASKA PENINSULA MANAGEMENT AREA***

SOUTHEASTERN DISTRICT

Stream/Lake	Catalog Number	King	Sockeye	Coho	Pink (Odd)	Pink (Even)	Chum
Johnny Nelson Lake	282-10-11300		421	502	2,100	1,700	27
Squaw Harbor Minor	282-10-11450				5,083	3,753	
Squaw Harbor Major	282-10-11600			2,000	34,823	29,353	50
Ben Green Bight-Farm	282-10-11300			100	7,307	5,496	60
NE Unga Is.	282-10-nc				50	25	
Humboldt Creek-Popof	282-10-11800		1	224	636	394	2
Red Cove-Popof	282-10-nc					100	
Salmon Ranch-Popof	282-11-10010				909	608	
Fox Hole-Popof	282-11-10300				3,288	2,228	
W Side Korovin Bay	282-11-nc				3,500	200	
Korovin Lake	282-11-10600		115				
Coal Harbor West	282-12-nc				279	181	7
Zachary Bay 1202	282-12-nc				1,077	645	20
Zachary Bay 1203	282-12-nc				833	597	84
Zachary Bay 1204	282-12-nc				1,740	749	277
Zachary Bay 1205	282-12-nc				3,197	1,400	1,325
Zachary Bay 1206	282-12-10600-2008				1,474	323	33
Zachary Bay 1207	282-12-10600				722	305	35
2 nd Stm S of Qtz Pt	282-12-10800				1,597	322	45
1 st Stm S of Qtz Pt	282-12-10900				1,278	396	25
Zachary Bay 1210	282-12-11000				1,160	107	29
Unga Spit	283-80-nc					250	
Dry Lagoon	283-13-10600			706	3,610	25,813	4,469
Bay Point	282-13-10500			170	13,952	16,222	11,897
Pinnacle Pt St	282-13-10400			125	2,171	12,032	6
2 nd Str S of Pinn Pt	282-13-nc				175	141	
3 rd Str S of Pinn Pt	282-13-nc				50	150	
Sanborn Hbr, S E Hbr	282-22-nc					1755	
Lagoon Lake, Sanborn	282-22-nc					10	1,000
Head of Sanborn Hbr	282-22-10400					4,012	

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**ESTIMATED AVERAGE PEAK INDEX COUNTS FOR SALMON STREAMS IN THE
ALASKA PENINSULA MANAGEMENT AREA***

SOUTHCENTRAL DISTRICT

Stream/Lake	Catalog Number	King	Sockeye	Coho	Pink (Odd)	Pink (Even)	Chum
SW Strm, Long J. Lgn	283-51-10020			1,000	1,271	2,512	
Long John Lgn, 2 S.	283-51-10030				200	375	110
Spring Fed Lakes	283-51-10040	5	1,628	50	325	550	500
Long John Lagoon	283-51-10050		1,250	618	100	500	227
Cape Tolstoi	283-62-nc				1,025	3,933	
Coal Bay 6202	283-62-10200				1,758	2,450	
Coal Bay 6203	283-62-10300				1,360	1,700	
Coal Bay Unnamed	283-62-10400			100	20,587	20,275	2,000
Coal Bay Main Stream	283-62-10500			200	66,871	65,100	
Lower Chinaman Lgn	283-65-nc		6				15,850
Chinaman Lgn South	283-65-10200						5,837
Chinaman Lgn Main	283-65-10300			200			17,500
Chinaman Lgn North	283-65-10400			1,000			1,860
Ruby's Lagoon	283-65-10500		75	333		600	
Dry Lagoon	283-65-10600				200	100	45
Middle Creek	283-63-11500				66,071	95,700	1,928
Settlement Point	283-63-11600			1,600	135,985	181,375	2,285
Bluff Point Creek	283-64-10500				13,375	11,000	
Canoe Bay River	283-64-10600		2,196	1,000	11,050	13,225	
Wolverine Gulch	283-64-10700				2,000	3,087	
Entrance Creek	283-64-10800				29,275	14,693	12,820
Inner Canoe, S Side	283-64-10900					700	
Ness Creek	283-64-11000				2,212	2,711	40
Mino Creek	283-70-10100		694	1,900	206,657	135,156	1,100
E. of Mino Creek	283-70-10200				60,871	46,085	
McGinty's Point	283-70-10300				28,384	12,262	6

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**ESTIMATED AVERAGE PEAK INDEX COUNTS FOR SALMON STREAMS IN THE
ALASKA PENINSULA MANAGEMENT AREA***

SOUTHWESTERN DISTRICT

Stream/Lake	Catalog Number	King	Sockeye	Coho	Pink (Odd)	Pink (Even)	Chum
Near Egg Island	283-20-10020				2,883	5,394	2,380
Hansen's Creek	283-12-10100		626		3,237	28,733	18
Middle Lagoon	283-12-10400		5,568	173			
Cannery Creek	283-12-11200			20	264	580	1,527
Little John Lagoon Sspt	283-12-11300				50	206	265
Little John Lagoon Strm	283-12-11330	1	3	1,000	642	1,731	
Sandy Cove Stream	283-20-10100			1,000	3,987	10,225	
McGinty's Creek	283-20-10300				13,555	14,711	
SW Bight Creek	283-20-10400				2,937	6,200	
Thin Pt Lgn & Ent	283-20-10700		8,896	4,269			292
Thin Pt West	283-20-?		205	200			
Thin Pt Lake Str	283-20-10700-0010-?		2,900				
Thin Pt Lake	283-20-10700-0010		3,331	3,500			
Fox Island Anc. East	283-31-10100				21,242	45,500	
Fox Island Anc. Center	283-31-10200				2,914	6,000	35
Fox Island Anc. West	283-31-10300				20,587	27,555	
Paw Cape (Deer Isl.)	283-31-10580				7,514	4,962	
Southern Creek	283-31-10600			1,000	107,650	147,562	
Eastern Creek	283-31-11000				34,462	29,900	
Old Man's Lagoon Str.	283-32-10100		10				
W Side King Cove Lgn	283-32-10400					1,000	666
Head King Cove Lgn	283-33-10450			100		200	5,025
Ram's Creek	283-33-10500			100	13,385	20,825	778
Mortensen Lagoon	283-34-10100		3,216	1,616			
Russel Creek	283-34-10200		274	1,520	7,625	32,662	
Trout Creek	283-34-10300		80	458	83	635	1,930
Kinzarof Lgn, North	283-34-10500		353				
Kinzarof Lgn, Middle	283-34-10600		258				
Kinzarof Lagoon	283-34-10700		951	2,000		350	166

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**ESTIMATED AVERAGE PEAK INDEX COUNTS FOR SALMON STREAMS IN THE
ALASKA PENINSULA MANAGEMENT AREA***

SOUTHWESTERN DISTRICT

Stream/Lake	Catalog Number	King	Sockeye	Coho	Pink (Odd)	Pink (Even)	Chum
Barney's Creek	283-34-10900				7,775	9,787	17,650
Delta Creek Lenard Hbr	283-34-11000		6	333	1,962	7,944	
Lenard Hbr. South	283-34-11100				1,028	2,057	
Belkofski Village Creek	283-41-10100		10	400	30,160	28,672	766
Indian Head	283-42-10300				5,318	7,488	
Belkofski Bay, West	283-42-10500			400	4,875	12,677	
Belkofski Bay Beach	283-42-10700				900	2,822	
Belkofski Bay River	283-42-10900			3,000	4,466	12,655	
Captain's Harbor	283-42-10930				2,757	5,975	118
Kitchen Anchorage	283-42-11000				4,885	7,625	
Rocky River	283-42-11200				18,320	20,785	
Dolgoi Hbr, Normal	283-51-10300				316	883	
Dolgoi Hbr, South	283-51-10600				200	983	
Dolgoi Hbr, SW	283-51-10500				5,488	5,955	
Nikolaski	283-52-10010				6,525	11,100	
Little Bear Bay	283-52-10200				3,300	3,728	3,950
Stub Creek					1,400	3,475	
Stream Guard Creek	283-52-10400				621	600	575
West Spring Holes	283-52-10500-2009			300	10,787	16,437	
Volcano Sloughs-Ctr	283-52-10500			150	3,637	2,712	
Volcano River	283-52-10700			1,250	6,587	6,655	
Ikatan Pt Stream	284-60-10100			568	608	15,162	21
Swede's Lake	284-60-10200		301		230	387	
Ikatan River	284-60-10400				1,680	9,125	1,385
Whirl Point	284-60-10500				4,88	3,962	10
Sankin Bay Creek	284-60-10600			62	292	5,487	63
Whalebone Bay	284-60-10700		1,081	200	350	771	
Deadman's Cove	284-60-10800		823	1,075	4,642	96,125	

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**ESTIMATED AVERAGE PEAK INDEX COUNTS FOR SALMON STREAMS IN THE
ALASKA PENINSULA MANAGEMENT AREA***

UNIMAK DISTRICT

Stream/Lake	Catalog Number	King	Sockeye	Coho	Pink (Odd)	Pink (Even)	Chum
Head Falmouth Hbr	282-22-10500					400	
Dodd's Bay, East	283-10-10080?		400			250	
2 mi. S of Sanak Village	283-10-10065		20			400	
W. Sanak Island Trinity	283-10-10070		866		7,000	1,850	
Washwoman Creek	283-10-10080		1,600		2,500	1,300	
Sandy Bay	283-10-10090		566		1,000		
Salmon Bay	283-10-10100		4,300		2,000	1,000	
Lazaref River	284-40-10100		30			1,700	
Otter Cove, South	284-40-10400				174	9,137	1,162
Otter Cove, North	284-40-10500			300	1,050	18,311	90
Dora Harbor, Left	284-40-10900				100	480	

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**ESTIMATED AVERAGE PEAK INDEX COUNTS FOR SALMON STREAMS IN THE
ALASKA PENINSULA MANAGEMENT AREA***

UNALASKA DISTRICT

Stream/Lake	Catalog Number	King	Sockeye	Coho	Pink (Odd)	Pink (Even)	Chum
No Name Cove	302-21-10300					500	
Station Bay, W. Arm	302-21-nc				100	5,800	
Station Bay, Center	302-21-10400					10,983	
Station Bay, East	302-21-10420				900	20,716	
Chernofski Hbr. Creek	302-21-10650			1,700	1,875	22,344	71
Aspid Bay	302-22-10100					14,700	
Kismaliuk Bay, West	302-22-10150				875	13,100	25
Kismaliuk Bay	302-22-10200					2,100	
Kismaliuk Bay, East	302-22-10300			100	1,125	28,471	44
Kashega Lake System	302-22-10510		7,091		6,991	27,507	
Mclver Bight	302-22-10600		1,278	150	107	9,683	
Pumicestone Bay	302-22-11100				931	46,284	1
Pumicestone Bay #1	302-22-nc				200		
Pumicestone Bay	302-22-11800				366	14,044	
Skam Bay, West Arm	302-23-10140				50	2,000	
Skam Bay, Lake System	302-23-10150		898		480	14,300	
Skam Bay, Main	302-23-10280				1108	15,090	
Kof Point	302-23-nc				100	600	
Volcano Bay	302-23-10800		971	450		125	
Naginak Cove	302-24-10210				5,900	265	
Cannery Bay	302-24-10400				1,421	2,345	22
Portage Bay #4	302-24-10600					2,000	
Portage Bay #3	302-24-10700				108	3,566	
Portage Bay #2	302-24-10800				1,670	2,559	
Portage Bay #1	302-24-nc				1,200	3,000	
Humpback Bay #1	302-24-11000				21,676	73,340	
Humpback Bay #2	302-24-11100				4,765	21,343	

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**ESTIMATED AVERAGE PEAK INDEX COUNTS FOR SALMON STREAMS IN THE
ALASKA PENINSULA MANAGEMENT AREA***

UNALASKA DISTRICT

Stream/Lake	Catalog Number	King	Sockeye	Coho	Pink (Odd)	Pink (Even)	Chum
Glacier Valley	302-24-11200				10,265	27,250	
Makushin Village	302-24-11300				336	1,178	
Driftwood Bay Stream	302-25-10300				200	1,877	
McLees Lake	302-25-10400		2,241			16,500	
Unnamed, Kalekta Bay	302-30-11400		2,283			100	
Makushin Valley	302-31-10900				12,875	21,289	
Nateekin River	302-31-10800		1	553	28,886	74,340	
Captain's Bay Stream	302-31-10700		1		5,335	6,192	14
Pyramid Creek	302-31-10600				147	170	
Unalaska Village	302-31-10500		221	1	3,391	8,815	
Summer Bay	302-31-10030		774		450	4,978	
Humpy Cove (Sum Bay)	302-31-10020		40	1	5,437	7,636	
Morse Cove	302-31-10010		123		100	676	
Erskine Bay	302-50-10750					1,650	
Kisselin	302-50-10800					10,000	
Kuliliak Bay Lake	302-80-?		100				
Uniktali	302-50-10600 or 10610?					2,500	
Surveyor Bay, West	302-90-10200			350		27,950	
1 st W of Mt Tum Tum	302-90-10300					16,600	

*Represents the peak index counts averaged over all years where data was collected and maintained by ADF&G.

AKUTAN DISTRICT

Stream/Lake	Catalog Number	King	Sockeye	Coho	Pink (Odd)	Pink (Even)	Chum
Akutan Harbor Creek	302-16-10300					4,650	

*Represents the peak index counts averaged over all years where data was collected and maintained by ADF&G.

**ESTIMATED AVERAGE PEAK INDEX COUNTS FOR SALMON STREAMS IN THE
ALASKA PENINSULA MANAGEMENT AREA***

ATKA-AMLIA DISTRICT

Stream/Lake	Catalog Number	King	Sockeye	Coho	Pink (Odd)	Pink (Even)	Chum
Hungry Bay (West)	305-52-10400				14	4,270	
Hungry Bay	305-52-10500		1		5	2,020	
Hungry Bay	305-52-10600				167	3,090	
Hungry Bay (East)	305-52-10700				156	8,900	
Unnamed	305-52-11100				68	1,020	
Unnamed	305-52-11200				6	880	
Chalugas Bay (West)	305-52-11300				30	3,790	
Chalugas Bay (East)	305-52-11400				94	780	
Inner Vasilief Bay	305-32-11900				164		
Vasilief Bay	305-32-12300		4	3	473	1,475	
Vasilief Bay	305-32-12400			3	147	2,880	
First Camp Creek	305-32-12700		2		1,244	6,242	
Unnamed	305-32-12900				527		
Banner Bay	305-42-11400					42	
Egg Bay – East	305-42-12000					4,576	
2-1/2 Mi. E. Egg Pt	305-42-12100					120	
West Sarana Cove	305-42-12200				396	2,056	
East Sarana Cove	305-42-12300				1,574	8,265	
Outer Sarana Cove	305-42-12150				35	3,116	
Martin Harbor	305-42-12500				1,023	6,849	
Korovin Cr./Lake	305-42-12600		706	4	461	4,585	

*Represents the peak index counts averaged over all years where data was collected and maintained by ADF&G.

**ESTIMATED AVERAGE PEAK INDEX COUNTS FOR SALMON STREAMS IN THE
ALASKA PENINSULA MANAGEMENT AREA***

ATKA-AMLIA DISTRICT

Stream/Lake	Catalog Number	King	Sockeye	Coho	Pink (Odd)	Pink (Even)	Chum
NE Sarana Cove	305-42-12350					340	
Clear Cr./Milky River	305-42-12800				57	296	
Old Harbor						3,442	
North Harbor						4,645	
Old Harbor (South)	305-42-12900			1	4,074	9,580	
Old Harbor (North)	305-42-13000				298	7,688	4
Cape Kudugnak	305-52-11460					1,312	
Spike's Camp	305-52-11620				860	5,041	2
Army Dock Creek	305-52-11500				894	11,606	1
Range Creek	305-52-11480	1		2	1,081	15,182	
Chalugas Bay	305-52-11340					214	
Atka Village Creek	305-52-11600				51	422	
Dancing Creek						800	

*Represents the peak index counts averaged over all years where data was collected and maintained by ADF&G.

Aleutians Subarea Contingency Plan
For Oil and Hazardous Substances Spills and Releases

Sensitive Areas Section – Attachment 2

Wildlife Protection Guidelines: Pribilof Islands

Revision 5 – April 2008

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100. Introduction

101. Background and Objectives

The Pribilof Islands, which are comprised of St. Paul, St. George, Walrus, Otter, and Sivutch Islands, are located in the Bering Sea approximately 300 miles off the west coast of Alaska. These islands and their offshore areas provide important seasonal feeding, breeding, reproducing, and staging grounds for significant numbers of migratory birds and marine mammals. Many of these wildlife species also serve as important subsistence resources.

Because of their interdependence with the marine environment, it is possible that these wildlife may – during an oil spill that affects offshore or coastal areas – contact oil on the water surface and/or along shorelines, marshes, or tide lands. The number of individuals and species affected will depend on several variables, such as the location and size of the spill, the characteristics of the oil, weather and water conditions, types of habitats affected, and the time of year the spill occurs.

In January 1997, the Pribilof Islands Wildlife Protection Subgroup (Pribilof Islands Subgroup)¹ was created by the Pribilof Island Working Group to develop wildlife protection guidelines specific to St. Paul and St. George Island (hereafter referred to as the Pribilofs). The resulting *Wildlife Protection Guidelines: Pribilof Islands (Pribilof Guidelines)*, which are contained herein, tier off state-wide wildlife protection guidance in the Alaska Regional Response Team’s (RRT) *Wildlife Protection Guidelines for Alaska (Alaska Guidelines)*. The *Alaska Guidelines*, which are included as Annex G of the *Alaska Federal/State Preparedness Plan for Response to Oil and Hazardous Substance Discharges/Releases (Unified Plan)*, were prepared by the Alaska RRT Wildlife Protection Working Group (WPWG). The *Alaska Guidelines* may be found on the internet at “<http://akrrt.org/UnifiedPlan/G-Annex.pdf>”. The *Pribilof Guidelines*, which are Appendix 1 of the *Unified Plan, Aleutian Islands Subarea Contingency Plan for Oil and Hazardous Substance Spills and Releases (Aleutians SCP)*, may be found on the internet at: “http://akrrt.org/AIPlan/Pribilof_WPG.shtml”.

The *Pribilof Guidelines* are based on the three wildlife response strategies that form the foundation of the *Alaska Guidelines*. Those strategies are as follows:

- Primary response strategy, which emphasizes controlling the release and spread of spilled oil at the source to prevent or reduce contamination of potentially-affected species and/or their habitat, and the removal of oiled debris (e.g., oiled wildlife carcasses).

¹ Pribilof Islands Subgroup members included: State of Alaska (Mark Fink); U.S. Department of the Interior, Fish and Wildlife Service (Art Sowls); U.S. Department of the Interior, Office of Environmental Policy and Compliance (Pamela Bergmann)-Subgroup Chairperson; U.S. Department of Commerce, National Marine Fisheries Service (Dave Cormany); Tribal Government of St. Paul (Aquilina Lestenkof); St. George Tanaq Corporation (Bret Coburn); Tanadgusix Corporation (Ron Philemonof); City of St. Paul (John Mercurief); Delta Western (Dennis Bourdukofsky); Icicle Seafoods (Mike Clutter); Trident Seafoods (Doug Donegan); and Unisea (Ted Compton).

- Secondary response strategy, which emphasizes keeping potentially-affected wildlife away from oiled areas through the use of deterrent techniques, pre-emptive capture of unoiled wildlife, or herding animals away from an oiled area.
- Tertiary response strategy, which is a last-resort strategy that includes capturing, stabilizing, and treating oiled wildlife.

The *Pribilof Guidelines* also address measures to help ensure that overall response activities are conducted in a manner that minimizes adverse effects to wildlife, such as the prevention of unnecessary or illegal disturbance to sensitive species and habitats. See Sections 302.A. and 402.A. below and Sections 301.B.1 and 302.B.1 of the *Alaska Guidelines* for examples and additional information on this topic. In addition, the *Pribilof Guidelines* address the protection of migratory birds from rats associated with grounded-vessel incidents and response-related vessels (see Section 302.A.2 below).

102. Wildlife Resources

The *Pribilof Guidelines* focus on two principal wildlife resources – migratory birds and fur seals (*Callorhinus ursinus*) – that are at risk during an oil spill in offshore and/or coastal waters or fresh water. Sections 301.A and 401.A, contain population and distribution information for migratory birds and fur seals, respectively.

As stated above, the information in the *Pribilof Guidelines* for migratory birds and fur seals tiers off information contained in the *Alaska Guidelines* for those species. Wildlife-protection information for other species that occur in the Pribilofs, such as other pinnipeds, sea lions, cetaceans, and terrestrial mammals (e.g., Arctic foxes) is found in the *Alaska Guidelines*². The *Pribilof Guidelines* focus on migratory birds and fur seals because of those species’ susceptibility and vulnerability to oiling and because of the importance of those species, both biologically and as a subsistence resource.

103. Development of *Pribilof Guidelines*

The *Pribilof Guidelines* were prepared and submitted in draft form to Pribilof Islands Subgroup members for review and comment. The resulting *Pribilof Guidelines* were then presented to the Pribilof Islands Working Group and the WPWG for review and concurrence. Following incorporation of appropriate comments, the final *Pribilof Guidelines* were submitted to the U.S. Coast Guard (USCG), Environmental Protection Agency (EPA), and the Alaska Department of Environmental Conservation (ADEC) for inclusion in the *Aleutians SCP*. The *Pribilof Guidelines* were first issued on August 1, 1998. Revision 1 was issued in May 2001; Revision 2 was issued in April 2002. Revision 3 is contained herein.

²See Appendix 7 of the *Alaska Guidelines* for information on other pinnipeds, sea lions, and cetaceans and Appendix 8 of the *Alaska Guidelines* for information on terrestrial mammals (e.g., Arctic Foxes).

104. Procedures for Revisions and Updates

The *Pribilof Guidelines* are reviewed annually by Pribilof Islands Wildlife Protection Contacts and updated as necessary. Review and revision of the document is coordinated by the U.S. Department of the Interior, Office of Environmental Policy and Compliance. Proposed changes are submitted to Pribilof Islands Wildlife Protection Contacts for their review and concurrence. If the proposed changes include substantive revisions, the revised *Pribilof Guidelines* are also submitted to the WPWG for review and concurrence. Following incorporation of appropriate comments, the final revised *Pribilof Guidelines* are submitted to the USCG, EPA, and ADEC for inclusion in the *Aleutians SCP* and subsequent distribution and placement on the internet website identified in Section 101.

105. Pribilof Guidelines Organization

Following the Introduction (Section 100), Section 200 discusses wildlife resource agency notification of oiled, or potentially-oiled, wildlife. Sections 300 and 400 identify response-related information specific to the Pribilofs for migratory birds and fur seals, respectively.

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200. Wildlife Resource Agency Notification

Wildlife resource agency representatives may be notified of oil spills or hazardous substance releases in the Pribilofs by Federal and State regulators or by Pribilof representatives as described in the following sections.

201. Notification by Federal and State Regulators

In almost all cases, oil spills and/or hazardous substance releases are reported in accordance with existing regulations by the responsible party to ADEC and the USCG or the EPA. In turn, information on the incident is provided by ADEC, USCG, or EPA to pre-identified wildlife resource agency representatives.

For spills in the Pribilof Islands that may require activation of these guidelines, wildlife resource agency representatives will notify appropriate local oiled wildlife contacts identified in Table 1A and/or Table 1B.

202. Notification by On-Island Representatives

In some cases, the responsible party fails to report oil spills or hazardous substances releases to appropriate regulatory authorities. In those cases, a spill may be first reported by local residents who may observe unusual wildlife behavior (e.g., seabirds coming ashore during the winter and continually preening), or oiled animal carcasses washing up on beaches.

Notices have been posted on St. Paul and St. George Islands that provide information to island residents or visitors on whom to contact locally if oiled, or potentially-oiled, wildlife are observed. Copies of the notices are included in Tables 1A and 1B. In the event individuals identified on the notices receive a report of oiled, or potentially-oiled, wildlife, the on-island oiled wildlife contact needs to immediately contact the appropriate wildlife resource agency emergency contacts identified in Table 2.

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Table 1A

On-Island Oiled Wildlife Contacts: St. Paul Island

NOTICE

If you see oiled wildlife,
even if you are uncertain,
contact one of the following individuals:

Aquilina D. Lestenkof

(Wk) 546-3200/3229

(Hm) 546-2206

Phillip A. Zavadil

(Wk) 546-3200/3230

(Hm) 546-2206

Dustin Jones

(Wk) 546-3200/3231

(Hm) 546-2267

Anthony Philemonoff

(Wk) 546-2312

(Hm) 546-2317

4/08

Table 1B

On-Island Oiled Wildlife Contacts: St. George Island

NOTICE

If you see wildlife that are oiled or may have been oiled, contact one of the following individuals:

St. George Traditional Council	St. George Tanaq Corporation	City of St. George
<p><i>Primary Contact:</i> Max Malavansky (Wk) 907-859-2447 (Hm) 907-859-2323 VHF Channel 9</p>	<p><i>Primary Contact:</i> Rodney Lekanof (Wk) 907-859-2255 (Hm) 907-859-2246</p>	<p><i>Primary Contact:</i> Max Malavansky, Sr. (Wk) 907-859-2263 (Hm) 907-859-2459</p>
<p><i>Alternate Contact:</i> Phill Lekanof (Wk) 907-859-2445 (Hm) 907-859-2449</p>	<p><i>Alternate Contact:</i> Anthony Lekanof (Wk) 907-859-2255 (Hm) 907-859-2204 VHF Channel 9</p>	<p><i>Alternate Contact:</i> Alvin Merculief (Wk) 907-859-2263 (Hm) 907-859-2418</p>

Table 2

Wildlife Resource Agency Emergency Contacts: Pribilof Islands

Migratory Birds	Fur Seals
<p><u>DOI Primary Contact:</u> Pamela Bergmann (Wk) 907-271-5011 (Hm) 907-333-0489/ 907-357-0488 (Cell) 907-227-3783 (Fax) 907-271-4102</p> <p><u>DOI Alternate Contact:</u> Doug Mutter (Wk) 907-271-5011 (Hm) 907-345-7726 (Cell) 907-227-3781 (Fax) 907-271-4102</p>	<p><u>NMFS Primary Contact:</u> Brad Smith (Wk) 907-271-3023 (Hm) 907-248-4211 (Fax) 907-271-3030</p> <p><u>NMFS Alternate Contact:</u> Mike Williams (Wk) 907-271-5117 (Hm) 907-333-0143 (Fax) 907-271-3030</p>
<p><u>ADF&G Primary Contact:</u> Amber Bethe (Wk) 907-267-2403 (Hm) 907-250-8947 (Fax) 907-267-2464</p> <p><u>ADF&G Alternate Contact:</u> Mark Fink (Wk) 907-267-2338 (Hm) 907-337-7933 (Fax) 907-267-2464</p>	<p><u>ADF&G Primary Contact:</u> Amber Bethe (Wk) 907-267-2403 (Hm) 907-250-8947 (Fax) 907-267-2464</p> <p><u>ADF&G Alternate Contact:</u> Mark Fink (Wk) 907-267-2338 (Hm) 907-337-7933 (Fax) 907-267-2464</p>

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300. Migratory Birds

301. General Considerations

A. Population and Distribution

The Pribilofs contain bird colonies that include more than 2.7 million birds. Principal colonial species include: murres (thick-billed and common), auklets (least, parakeet, and crested), kittiwakes (black-legged and red-legged), puffins (horned and tufted), northern fulmars, and red-faced cormorants. Auklets, particularly least and parakeet auklets, also nest extensively in boulder beach habitats on the Pribilofs. See the Environmental Sensitivity Index maps for the Pribilofs for population estimates by species and concentration areas.

The approximately 1 million murres that breed on St. George Island represent the largest concentration of murres in Alaska and the most numerous colonial species in the Pribilofs. In addition, approximately 85 percent of the world's red-legged kittiwakes breed on the Pribilofs. The Pribilofs are home to two of only six major breeding concentrations of northern fulmars in Alaska. St. George Island has a major concentration of parakeet auklets for Alaska; together St. Paul and St. George Islands host over 20 percent of the recorded total of parakeet auklets for the state.

A few waterfowl (primarily northern pintails, red-winged teal, and oldsquaws) nest in the Pribilofs. However, significant numbers of sea ducks (e.g., king eiders and harlequin ducks) inhabit offshore and nearshore waters during the winter months. In summer, huge flocks of shearwaters, numbering in the hundreds of thousands, may come close to the Pribilofs as they travel through the Bering Sea. Together, St. Paul and St. George Islands are of major importance to a subspecies of Rock Sandpipers, which are shorebirds. In addition, the Pribilofs are uniquely important to another shorebird; namely, migrant ruddy turnstones. These birds, most of which breed in north and west Alaska, stage at St. Paul and St. George in the fall on their way to wintering grounds in the central Pacific.

The endangered short-tailed albatross (*Diomedea albatrus*) has been seen in the waters near the Pribilofs; however, the likelihood of it being present is extremely low. However, the threatened spectacled eider (*Somateria fischeri*) may be present in small numbers near the Pribilofs during the mid-to-late winter months. In addition, the threatened Steller's eider (*Polysticta stelleri*) is present in small to moderate numbers near the Pribilofs during the winter and spring.

B. Potential Oil Spill Impacts

When an oil spill occurs within migratory bird habitat, every effort should be made to prevent birds from becoming oiled. If left untreated, birds exposed to oil will most likely die. When bird's feathers become oiled, their ability to thermo regulate is compromised and they become hypothermic. In the cold waters of Alaska, this can prove deadly to marine birds. Birds may also suffer toxic effects through dermal contact and ingestion of spilled oil depending on the type of oil and its toxicity. When oiled birds are captured alive and taken to treatment centers, they can often be cleaned, rehabilitated, and released back into their natural habitat. One of the keys to survivorship of oiled birds is ensuring a bird capture and treatment program is initiated in a timely manner.

Seabirds exhibit obvious immediate behavioral changes in response to exposure to oil. In particular, they preen excessively to clean oil from their feathers. As a result, normal activities such as feeding, nesting, and migrating are abandoned causing the birds to weaken and become more vulnerable to exposure and predation. Marine birds will abandon the water surface, their natural habitat, and move to land, when available, which can also make them more vulnerable to predation. Oil on a breeding bird's feathers can be transferred to the bird's eggs resulting in nest failure. Dermal contact with oil can cause burns and lesions which can compromise the bird's feather structure resulting in hypothermia. Ingestion of oil while preening may affect birds' metabolic processes. These can become long term or chronic effects based on the amount of preening and length of exposure time.

The severity of oiling impacts on migratory birds will depend on many factors including, but not limited to: degree of oiling and length of exposure; health of the birds prior to exposure; natural hardiness of the species; toxicity of the product spilled; and distribution of the spilled product in the environment.

Based on their physiology and behavior, different bird species exhibit different levels of susceptibility to oiling. Table 3 shows the susceptibility of the species commonly found on the Pribilofs.

302. Response Strategies

A. Primary Response Strategies

1. Oil Spills

The primary response in protecting birds from an oil spill should be to prevent the oil from reaching areas where migratory birds are concentrated. This can be done using either booms and skimmers, or where environmental considerations permit, using chemical dispersants and/or *in situ* burning. Booms and skimmers and *in situ* burning are preferable near concentrations of birds because dispersants, being detergents, reduce the insulating value of their plumage and, therefore, may cause mortality to some birds. If possible, spraying dispersants directly into large concentrations of birds should be avoided. After dispersants have mixed with water, their danger to birds is reduced, although not eliminated. In addition, oiled debris – particularly contaminated food sources – should be removed from the environment as soon as possible to prevent scavenging by birds, which results in secondary effects due to the ingestion of oil. See Section 301.B.2 and Section 302.B.2 of the *Alaska Guidelines* for information on the retrieval and disposition of dead oiled wildlife. Decisions on primary response strategies are made by the Federal On-Scene Coordinator (OSC) with input from wildlife trustee agencies and other interested parties.

Birds concentrate in various areas, depending on the species and season. If possible, the following types of areas where birds concentrate in the spring and fall should be protected following an oil spill:

- Seabird colonies. Birds are vulnerable to oil contamination when they are in large flocks on the water near their colony. This is a common occurrence around the Pribilof Islands during the summer when over 2.7 million birds may be at their respective colonies.

Table 3

**Migratory Bird Susceptibility to Oiling:
Selected Pribilof Islands Species**

Migratory Bird Species	Susceptibility to Oiling
Alcids (e.g., Murres, Puffins, Auklets) Sea Ducks Loons Cormorants	High High High High
Gulls, Kittiwakes Pelagic Birds (e.g., Albatross, Petrels, Fulmars)	Medium Medium
Plovers, Sandpipers Song Birds	Low Low

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- Major seabird feeding areas. Most seabirds obtain their food at sea away from land. While they may feed in areas that are close to land or more than 100 miles offshore, they are often concentrated in small areas. As a result, the presence of oil in some feeding areas could negatively affect the majority of seabirds in the region. Feeding areas shift with the tides and seasons. Therefore, the position of large flocks fluttering over or sitting on the water should be carefully noted during reconnaissance flights, and avoided when applying dispersants (assuming dispersants are approved for use). Areas near the continental shelf break beyond the Pribilofs should be examined, in particular, since seabirds often feed in those areas.
- Wintering areas of marine birds. These include localized parts of the Bering Sea and the ice pack edge and open leads in the ice. Concentrations of birds vary during the winter. Locations of large flocks should be recorded during reconnaissance flights and avoided, when applying dispersants (assuming dispersants are approved for use). In addition, other important coastal habitats, such as marshes and lagoons (e.g., Salt Lagoon on St. Paul Island) are sensitive to oil contamination and should be protected if at risk from oil contamination, even when no birds are present.

As outlined in Section 301.B.1.a. of the *Alaska Guidelines*, field activities associated with oil spills have the potential for causing unnecessary and illegal disturbance to sensitive migratory bird species, marine mammals, and their habitats. To reduce disturbance and improve the chances for wildlife survival, FWS, NMFS, and/or ADF&G representatives (as appropriate) will reiterate, through the Federal Aviation Administration (FAA) and the Federal OSC, the importance of following existing notices to aircraft currently in place for the Pribilofs. Those advisories request pilots to remain at a certain distance from migratory bird concentration areas and critical habitats, such as seabird cliffs, and may be occasionally updated as supplements. Information on aircraft advisories for St. Paul and St. George Islands, respectively, may also be found on Environmental Sensitivity Index maps for the islands.

In addition, FWS and/or ADF&G representatives (as appropriate) will provide, through the USCG, notices to mariners for areas affected by an oil spill. These advisories may request vessel operators to remain at a certain distance from migratory bird concentration areas and critical habitats, such as seabird cliffs. See Appendix 9 of the *Alaska Guidelines* for an example of a vessel advisory.

Copies of any advisories will be sent by the Federal OSC to all federal and state agency and agency-contracted spill-response personnel. In addition, a news release will be prepared by FWS and/or ADF&G representatives (as appropriate) on this subject for distribution by the Federal OSC to appropriate news media representatives (see Appendix 9 of the *Alaska Guidelines* for an example).

During a response to an oil spill, appropriate wildlife resource agencies will evaluate the potential for response activities to negatively affect sensitive migratory birds and/or their habitats. Wildlife resource agencies may recommend to the Federal OSC that response activities in or adjacent to sensitive species or areas be completed prior to or following critical biological periods. If that is not possible, wildlife resource agencies may further recommend to the Federal OSC that agency on-site monitors accompany near-shore and/or shore-based activities to help minimize or eliminate unacceptable levels of disturbance.

2. Rats

Most of Alaska's islands, including the Pribilofs, are "rat free." The introduction of rats, which has occurred on approximately 30 Alaska islands, typically results in the decimation of the islands' seabird colonies, since the rats prey on nesting birds and their eggs. Once they are established on an island, rats are difficult, if not impossible, to eradicate.

The most likely pathway for rats to be introduced to the Pribilofs as a result of an oil spill is through the grounding of a vessel onshore or grounding or sinking of a vessel sufficiently close to shore that rats aboard the vessel could swim to shore. In addition, it is also possible for rats to drift to the Pribilofs onboard vessel debris. Vessel groundings in the Pribilofs are not uncommon. Since 1987, more than eight vessels groundings have occurred. In addition, vessels and aircraft responding to an oil spill could also inadvertently introduce rats to the islands. In the event of an oil spill that includes the use of response-related vessels or aircraft that may contain rats, FWS representatives will provide the Federal OSC with rat prevention information that will in turn be provided to appropriate spill response-related vessel and aircraft operators.

If a vessel operating in the Pribilofs experiences an emergency that results, or may result, in the vessel going aground or sinking close to shore, FWS representatives or a designated representative will seek, with the assistance of the Federal OSC, information from the vessel operator/owner on whether rats are onboard. With the concurrence of the Federal OSC, FWS representatives or a designated FWS on-scene representative will conduct an onboard inspection of the vessel to determine if rats are present. If rats are known or suspected to exist onboard the vessel, FWS representatives or a designated FWS on-scene representative will deploy rodent traps and/or poisons on the vessel, if possible, prior to or following the vessel grounding. A list of rat prevention equipment and materials currently stockpiled in the Pribilofs is provided in Table 4. A list of individuals in the Pribilofs who have been trained to use rodent poisons is provided in Table 5.

In the event it is not possible to conduct onboard rat inspection and prevention activities prior to a vessel going aground, FWS representatives will develop a rat prevention plan specific to the incident for approval by the Federal OSC. The plan will include, but not be limited to, the deployment of rat trap and poison stations in appropriate locations on the vessel and the island, individual(s) authorized to deploy and monitor the stations, and a station monitoring plan.

B. Secondary Response Strategies

Section 300 of the *Alaska Guidelines* outlines the procedures that wildlife resource agencies and responsible parties must follow to initiate and implement a bird hazing program. These procedures include the use of Appendix 24 of the *Alaska Guidelines* ("Oil Spill Response Checklist: Wildlife Hazing"). Appendix 16 of the *Alaska Guidelines* identifies State and Federal permits and/or authorizations required for hazing live animals. At this time, there are no entities in the Pribilofs who are pre-permitted to conduct bird deterrent activities. Appendix 17 of the *Alaska Guidelines* lists equipment and materials suggested for inclusion in a migratory bird hazing kit.

Table 4

Rat Prevention Equipment and Materials Stockpiled in the Pribilof Islands*

Location	Type of Kit	Owner	Contact Information
St. Paul Island NMFS Lab Building	1 Shipwreck Kit	Fish and Wildlife Service	Phillip A. Zavadil Tribal Govt. of St. Paul (Wk) 907-546-3200/3230 (Hm) 907-546-2206 Dustin Jones Tribal Govt. of St. Paul (Wk) 907-546-3200/3231 (Hm) 907-546-2775
St. Paul Island Combine Shop	Rat Station Supplies	Tribal Government of St. Paul	Phillip A. Zavadil Tribal Govt. of St. Paul (Wk) 907-546-3200/3230 (Hm) 907-546-2206 Dustin Jones Tribal Govt. of St. Paul (Wk) 907-546-3200/3231 (Hm) 907-546-2775
St. George Island Cottage C	1 Shipwreck Kit	Fish and Wildlife Service	Max Malavansky, Jr. (Wk) 907-859-2247 (Hm) 907-859-2323

*The City of St. George also has rat prevention equipment and materials.

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Table 5

Pribilof Island Residents with Rodenticide Training

Individual	Location	Rodenticide Training Expiration
Hapff, Artemy	St. Paul Island	April 2010
Jones, Dustin	St. Paul Island	April 2010
Jones, Louis	St. Paul Island	October 2010
Lekanof, Shawn	St. Paul Island	March 2011
Simeonoff, James	St. Paul Island	March 2011
Tetoff, Peter G.	St. Paul Island	April 2010
Zacharof, Samatha	St. Paul Island	March 2011
Zavadil, Phillip A.	St. Paul Island	April 2010
Lekanof, Phillip	St. George Island	September 2010

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Table 6 identifies equipment and materials currently stockpiled on St. Paul and St. George Islands for deterring oiled birds, and the appropriate contact person. Table 7 identifies Pribilof Island residents who have received bird deterrent training.

C. Tertiary Response Strategies

Section 300 of the *Alaska Guidelines* establishes the procedures that wildlife resource agencies and responsible parties must follow to initiate and implement a bird capture, stabilization, and treatment program. These procedures include the use of Appendix 1 of the *Alaska Guidelines* (“Factors that Must Be Considered when Determining when to Begin and End a Wildlife Capture and Treatment Program”) and Appendix 25 of the *Alaska Guidelines* (“Oil Spill Response Checklist: Wildlife Capture, Transportation, Stabilization, and Treatment”). Appendix 16 of the *Alaska Guidelines* identifies State and Federal permits and/or authorizations required for collecting and holding live animals. At this time, there are no entities in the Pribilofs who are pre-permitted to capture and treat oiled birds.

Table 8 identifies Pribilof Island residents who have received bird capture and stabilization training. Table 9 identifies equipment and materials currently stockpiled on St. Paul and St. George Islands, respectively, for capturing and stabilizing oiled birds, and the appropriate contact person.

Tables 10A and 10B identify potential facilities that could be used for bird stabilization on St. Paul and St. George Islands, respectively, in addition to the contact person. In the event a migratory bird capture program is initiated, the availability of one or more of these facilities for bird stabilization must be verified at that time. Following stabilization, oiled birds will be flown to Anchorage for treatment.

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Table 6
Equipment and Materials Stockpiled in the Pribilof Islands
for Deterring Unoilied Birds

Location	Amount of Supplies	Estimated Birds to be Assisted with Supplies	Owner	Contact Information
St. Paul Island City of St. Paul, Public Works Department	1 shotgun/cracker shell hazing kit**	Birds at 1 onshore location	City of St. Paul	Louis Jones City of St. Paul (Wk) 907-546-3171/3172 (Hm) 907-546-2294
St. Paul Island Delta Western Fuel Facility	1 screamer/ banger hazing kit	Birds at 1 onshore location	Delta Western	Dennis Bourdukofsky Delta Western (Wk) 907-546-2404 (Hm) 907-546-2615
St. Paul Island AMNWR* Office, NMFS Lab	1 shotgun/ cracker shell hazing kit Mylar tape (12 rolls) 2 propane cannons (minus propane tanks)	Birds at 1 onshore location Birds at 1 onshore location	Fish and Wildlife Service	Phillip A. Zavadil Tribal Govt. of St. Paul (Wk) 907-546-3200/3230 (Hm) 907-546-2206 OR Mike Williams National Marine Fisheries Service (Wk) 907-271-5117 (Hm) 907-333-0143
St. George Island Delta Western	1 shotgun/ cracker shell hazing kit Mylar tape (12 rolls)	Birds at 1 onshore location	Delta Western	Mike Chercasen Delta Western (Wk) 907-859-2456 (Hm) 907-859-2208
St. George Island Fish and Wildlife Service	1 shotgun/ cracker shell hazing kit	Birds at 1 onshore location	Fish and Wildlife Service	Karin Holser Fish and Wildlife Service (Wk) 907-859-2233 (Hm) 907-859-2277 OR Max Malavansky, Jr. (Wk) 907-859-2447 (Hm) 907-859-2323

*AMNWR = Alaska Maritime National Wildlife Refuge

**See Appendix 17 of the *Alaska Guidelines* for a list of the equipment and materials suggested for inclusion in the kit.

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Table 7

Pribilof Island Residents with Bird Deterrent Training

Individual	Location	Bird Deterrent Training Completion Date
Jonas Lestenkof, Sr.	St. Paul Island	April 2005
Jason Simeonoff	St. Paul Island	October 2004
Max Malavansky, Jr.	St. George Island	May 2005
Andy Malavansky	St. George Island	May 2005
Alex Prokopiou	St. George Island	May 2005

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Table 8**Pribilof Island Residents with Bird Capture and Stabilization Training**

Individual	Location	Bird Capture and Stabilization Training Completion Date
Lestenkof, Aquilina D.	St. Paul Island	August 2004
Moon, B. J.	St. Paul Island	August 2004
Rukovishnikoff, Faith	St. Paul Island	August 2004
Tetoff, Peter	St. Paul Island	August 2004
Zavadil, Phillip A.	St. Paul Island	August 2004
Malavansky, Andy	St. George Island	May 2005
Malavansky, Debora	St. George Island	May 2005
Malavansky, Max, Jr.	St. George Island	May 2005
Malavansky, Ryan	St. George Island	May 2005
Merculief, James	St. George Island	May 2005
Merculief, Mark, Jr.	St. George Island	May 2005

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Table 9

**Equipment and Materials Stockpiled in the Pribilof Islands
for Capturing and Stabilizing Oiled Birds**

Location	Wildlife Species/ Response Action	Estimated Birds to be Assisted with Supplies	Owner	Contact Information
St. Paul Island AMNWR* Office, NMFS Lab	Bird Capture	20 to 30 birds	Fish and Wildlife Service	Phillip A. Zavadil Tribal Govt. of St. Paul (Wk) 907-546-3200/3230 (Hm) 907-546-2206 OR Mike Williams National Marine Fisheries Service (Wk) 907-271-5117 (Hm) 907-333-0143
	Bird Stabilization	24 birds		
St. Paul Island, Delta Western Fuel Facility	Bird Capture and Stabilization	50 birds	Alaska Chadux Corporation	Initial Contact: Alaska Chadux Corporation (24-hr) 907-348-2365 <i>Then:</i> Dennis Bourdukofsky (Wk) 907-546-2404
St. George Island	None at this time	n.a.	n.a.	n.a.

*AMNWR = Alaska Maritime National Wildlife Refuge

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Table 10A

**Potential Bird Stabilization Facilities:
St. Paul Island***

Facility	Owner	Contact Information	Comments
Tribal ECO Recycling Center	Tanadgusix Corporation	Jason Bourdukofsky (Wk) 907-546-2312	Facility inspected August 2004
TDX Poss Camp	Tanadgusix Corporation	Jason Bourdukofsky (Wk) 907-546-2312	Facility inspected August 2004
Machine Shop	City of St. Paul**	Myron Melovidov (Wk) 907-546-3181	Facility inspected August 2004
NMFS Lab	National Marine Fisheries Service	Phillip A. Zavadil (Wk) 907-546-3200/3230 OR Mike Williams (Wk) 907-271-5117	Facility inspected August 2004
Public Works Trades Building	City of St. Paul**	Joe Reller (Wk) 907-546-3174	Facility inspected August 2004
Recreation Center	Tanadgusix Corporation	Jason Bourdukofsky (Wk) 907-546-2312	Facility inspected August 2004
Old Post Office	Tribal Government	Phillip A. Zavadil (Wk) 907-546-3200	Facility inspected August 2004
Pole Star Building	City of St. Paul**	Louis Jones (Wk) 907-546-3173	Facility inspected August 2004

*In the event a migratory bird capture program is initiated, the availability of these facilities must be verified at that time.

**During non-work hours, City of St. Paul employees may be contacted via the Public Safety dispatch service at 907-546-3132.

Table 10B

**Potential Bird Stabilization Facilities:
St. George Island***

Facility	Owner	Contact Information	Comments
City of St. George Public Safety Building	City of St. George	Alvin Mercurief (Wk) 907-859-2263	Facility Inspected May 2005
School Lab	Pribilof School District	Jamie Stacks (Wk) 907-546-3321	Facility Inspected May 2005
City Machine Shop	City of St. George	Alvin Mercurief (Wk) 907-859-2263	Facility Inspected May 2005
Carpenter Shop	St. George Tanaq Corporation	Andronik Kashevarof (Wk) 907-859-2255	Facility Inspected May 2005

*In the event a migratory bird capture program is initiated, the availability of these facilities must be verified at that time.

400. Northern Fur Seals

401. General Considerations

A. Population and Distribution

The Pribilofs provide breeding grounds for approximately 60 percent of the world's population of northern fur seals. Hundreds of thousands of these animals return to the Pribilofs each summer to give birth and breed. The world population of the northern fur seal is estimated at 1.1 million. The U.S. population of northern fur seal has declined by over 60 percent in recent decades from over 2 million in the 1970s, to an estimated 722,000 in 2004. The species is currently listed as depleted under the Marine Mammal Protection Act. The Pribilof fur seal population has declined about 6 percent annually during the last decade.

Northern fur seals are highly migratory and range along a broad arc across the north Pacific from the Sea of Japan through the southern Bering Sea to the Channel Islands (i.e., San Miguel Islands) off southern California. With the exception of the San Miguel breeding population, the animals migrate north in the spring to several Bering Sea and North Pacific breeding islands. Each year, the majority of these animals use several discrete shoreline locations on the Pribilofs for mating, pupping, and non-breeding landing sites. Together these sites are referred to as rookeries.

Important rookeries on St. Paul Island are found from Zapadni Point to Tolstoi Point (i.e., English Bay rookeries), along the shoreline of the peninsula south of the City of St. Paul (i.e., Reef Point rookery) and an offshore rock (i.e., Sea Lion Rock rookery), from Black Bluffs to north of Lukanin Point (i.e., Kitovi and Lukanin Rookeries), along the eastern shoreline near Polovina Point (i.e., Polovina Rookeries), and along both shorelines of the northernmost tip of the island (i.e., Northeast Point Rookeries). St. George Island also has several important northern fur seal rookeries found along the north coast from First Bluffs to the City of St. George (i.e., Staraya Artil and North Rookeries), east of the city toward Tolstoi Point (i.e., East Rookeries), and along the southwest coast from the harbor directly south (i.e., Zapadni and South Rookeries). It should also be noted that non-breeding northern fur seals also land at Otter and Walrus Islands. See Environmental Sensitivity Index maps for rookery locations in the Pribilofs.

Large numbers of northern fur seals are found in nearshore waters of the Pribilofs during the periods in which the beaches are occupied. Pups are found along the shoreline and in tide pools as they are learning to swim. The boat harbor and adjacent Salt Lagoon on St. Paul Island may contain up to 1,000 northern fur seal pups and 50 male juvenile northern fur seals from September through November.

Adult male northern fur seals arrive at the breeding sites on the Pribilofs in mid-May. Adult males aggressively defend their territories from mid-May through August, and are likely to charge anyone entering the rookery. Adult females arrive in mid-June and are present on the rookeries until December. Adult female northern fur seals are aggressive and are also likely to charge if cornered. Juvenile northern fur seals arrive in mid-May and may be present in groups of 100 or less during December, and are gone by January. Juvenile northern fur seals and pups normally avoid humans on

land and in some cases will stampede towards the water, however, they are also likely to attack if cornered or handled.

While northern fur seals are no longer hunted commercially, they continue to be an important subsistence food source to the native Aleut communities on St. Paul and St. George Islands. Pribilof Island residents may harvest up to 1,800 sub-adult northern fur seals each summer.

B. Potential Oil Spill Impacts

In the event of an oil spill contacting either St. Paul or St. George Islands during the breeding period, a maximum of approximately 75 to 80 percent of the Pribilof fur seal population could be vulnerable. A significant oil spill during June through October could have major impacts to many of the animals feeding around the islands, as well as to those animals on or near rookeries. This assumption is reinforced by work conducted by Minerals Management Service for a March 1987 analysis of the potential effects of offshore oil production near the Pribilofs. One-twentieth of the potential loss from the oil spill simulation in the St. Paul scenario alone would be a major environmental incident (more than 1,200 fur seals killed) and would overwhelm any potential northern fur seal rehabilitation capabilities.

The thick pelage of northern fur seals constitutes the principle element of their thermoregulatory mechanism, which restricts heat loss to the surrounding environment. Oiling has been shown to increase the thermal conductance of the pelts 1.4 to 2.0 times. A light oiling (about 30 percent of the pelt surface) has been shown to result in an approximately 50 percent greater heat loss when the northern fur seals are immersed in water. The consequence of any loss of insulation will vary with individual animals. Newborn pups are generally the most vulnerable, particularly when the mother leaves the rookery typically for several days to forage. The physical condition of animals will also cause variable effects from any oiling. Young pups, breeding males just returning to sea, and lactating females probably have less fat for insulation than other segments of the population and therefore may be most susceptible to the negative effects of oiling.

From June to December, northern fur seals concentrate on the breeding grounds of the Pribilofs. Sub-adult animals, adult females, and non-breeding males all frequently return to the sea to feed during this period, and could be exposed to floating oil. By early September, all animals including pups regularly enter the water and would be potentially vulnerable to a marine spill. Fur seal pups often congregate in tidal pools and shallow nearshore waters where oil may become trapped or concentrated. The risk of nearshore oiling may therefore be greater to pups than adults.

Inhalation of petroleum product vapors may result in increased levels of hydrocarbons within blood and tissues of pinnipeds, including northern fur seals. The toxic effect of inhalation may be serious, particularly during the first few hours of a spill when volatile fractions are given off, or for spills of refined products (i.e., gasoline or diesel fuel), which contain higher percentages of these compounds. Possible effects include lethargy, sickness, and destruction of the central nervous system. Exposure to high concentrations of volatiles may result in the mortality of some northern fur seals.

Direct exposure to hydrocarbons has been observed to cause irritation to eyes and mucous membranes in pinnipeds. Ingestion of oil may also have deleterious effects, although it is not anticipated that this would be a significant concern for northern fur seals. However, of the potential oil spill impacts on northern fur seals, oiling of the pelage represents the most significant impact and is of primary concern versus other routes of exposure.

In the event that an oil spill approaches or contacts a rookery, clean up efforts may be directed to both nearshore and offshore regions. Disturbance to northern fur seals may result from the presence of oil-spill response workers and associated aircraft, vessel, and ground support vehicles. Northern fur seals may respond to human presence by immediate departure from the area. Prolonged or intense disturbance could result in abandonment of the site. Disturbance during the breeding season could result in increased mortality of fur seal pups due to disrupted nursing, early weaning, or crushing due to stampedes of frightened animals.

402. Response Strategies

A. Primary Response Strategies

Primary response measures are the most effective and realistic means of protecting and maintaining the Pribilof's northern fur seals. The National Marine Fisheries Service (NMFS) is currently researching various countermeasures to prevent spills from contacting pinnipeds, including northern fur seals, and their habitat and to remove hydrocarbons from contaminated beaches. Sorbent materials such as pads and sausage booms are effective when used on refined product spills, such as diesel and gasoline. These devices would be the first line of defense for spills in the St. Paul and St. George boat harbors and in Salt Lagoon on St. Paul Island. Heavier oils such as crude or Bunker C may be picked up with containment booms, oleophilic materials such as pom poms, and natural sorbent materials. A peat moss-based material, Sphag-sorb, was successfully used on a February 1997 oiled fur seal rookery in Uruguay and has now been stockpiled on St. Paul Island, as shown in Table 11.

High-volume, low pressure flushing with ambient temperature water may be the most effective means of oil removal from many Pribilof shorelines. High temperature/high pressure washing is discouraged, as it may change the substrate on a rookery beach and may also alter the ability of a fur seal to locate a rookery using its sense of smell.

The use of chemical shoreline cleaning agents has been shown to be only marginally effective, and introduces additional chemicals and odors onto the rookeries. Therefore, NMFS does not support the use of chemical shoreline cleaning agents on fur seal beaches.

As outlined in Section 301.B.1.a. of the *Alaska Guidelines*, field activities associated with oil spills have the potential for causing unnecessary and illegal disturbance to fur seals and their habitats. To reduce disturbance and improve the chances for fur seal survival, NMFS and/or ADF&G representatives (as appropriate) will reiterate, through the FAA and Federal OSC, the importance of abiding by existing notices to aircraft currently in place for the Pribilofs. Those advisories request pilots to remain at a certain distance from fur seal concentration areas and critical habitats, such as

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Table 11

Materials Stockpiled in the Pribilof Islands for Fur Seal Protection*

Location	Amount of Supplies	Owner	Contact Information
<p>St. Paul Island north of Garco Building in 20 foot connexes</p>	<p>1,400 30-pound bags of Sphag-sorb</p>	<p>National Marine Fisheries Service</p>	<p>Brad Smith National Marine Fisheries Service (Wk) 907-271-3023 (Hm) 907-248-4211</p> <p>OR</p> <p>Mike Williams National Marine Fisheries Service (Wk) 907-271-5117 (Hm) 907-333-0143</p> <p>OR</p> <p>Tom Gelatt National Marine Mammal Laboratory (Wk) 206-526-4045</p>

*NMFS purchased 6, 30-pound bags of Sphag-sorb and a self-contained spill response kit of Sphag-sorb to be stored on St. George Island. Currently located in Anchorage, the materials will be moved to St. George Island in 2008.

rookeries. Information on aircraft advisories for St. Paul and St. George Islands, respectively, may be found on Environmental Sensitivity Index maps for the islands.

In addition, NMFS and/or ADF&G representatives (as appropriate) will provide, through the Federal OSC, notices to mariners for areas affected by an oil spill. These advisories may request vessel operations to remain at a certain distance from fur seal concentration areas and critical habitats. See Appendix 9 of the *Alaska Guidelines* for an example of a vessel advisory.

Copies of any advisories will be sent by the Federal OSC to all federal and state agency and agency-contracted spill-response personnel. In addition, a news release will be prepared by NMFS and/or ADF&G representatives (as appropriate) on this subject for distribution by the Federal OSC to appropriate news media representatives (see Appendix 9 of the *Alaska Guidelines* for an example).

In addition, oiled debris – particularly contaminated food sources and dead, oiled fur seals – should be removed from the environment as soon as possible to prevent scavenging by other wildlife, which may result in secondary effects due to the ingestion of oil. See Section 301.B.2 and Section 302.B.2 of the *Alaska Guidelines* for information on the retrieval and disposition of dead oiled wildlife.

B. Secondary Response Strategies

It may be feasible to deter northern fur seals from a particular area in some situations. Spills within the St. Paul Island harbor and Village Cove area may put several hundred northern fur seals at risk, many of which are likely to be pups or juveniles. NMFS personnel or other designated individuals may use seal bombs to prevent these animals from entering oiled areas of the harbors.

Likewise, northern fur seals may be herded by small boats into the outer portions of Village Cove or into Salt Lagoon. It may also be possible to move animals off or to one portion of a beach or rookery to prevent oiling or to clean up oiled shorelines. However, this would not be feasible for territorial animals and would risk separating mother/pup pairs. Because pups in the harbor are not suckling, mother/pup reunions would not be disrupted during any deterrent efforts. Only on-site NMFS personnel would be authorized to initiate and direct any deterrent actions in order to avoid driving animals into oiled areas, causing stampedes or large flight reactions into the water, or increasing metabolic stress.

C. Tertiary Response Strategies

The *Alaska Guidelines* recognize that capture and cleaning of oiled northern fur seals is generally not feasible. Adult northern fur seals are aggressive by nature, particularly territorial males, and typically could not be safely approached while ashore. It is not presently known to what extent an adult fur seal would be affected by oiling, and most efforts to capture are likely to present greater risk to the animal. Tranquilization, for example, may itself cause the death of an animal even when administered by a veterinarian, and would certainly diminish an animal's resistance to the effects of oiling and exposure. In addition, transportation of animals across rough terrain to treatment centers would also be difficult or impossible, and very dangerous to personnel. Finally, many logistical

requirements for the treatment of northern fur seals, such as a large heated building, holding pens for large animals, and high-capacity hot water systems, cannot be met at this time on the Pribilofs.

Although fur seal pups could be captured during certain times of the year, such actions would rarely be justified. Seal pups are wholly dependent upon their mother's milk and cannot digest solid food. Pups removed from a rookery for several days may never reunite with their mothers and would likely die of starvation. If pups were transferred off-island for treatment, the mother/pup bond would be lost. During the 1997 T/V *San Jorge* spill in Uruguay, oiled fur seal pups left on site continued to receive attention and be suckled. If northern fur seal pups are oiled, their condition may improve after they molt in September and October.

Past attempts to rehabilitate oiled pinnipeds have been expensive and not very successful. When time, labor, and resources are limited, captive cleaning and rehabilitation would not only be of dubious value, but could detract from more humane or effective measures such as deterrence, booming, and oil recovery. Humane euthanasia under the supervision of a veterinarian should be followed to alleviate suffering for individual animals with no chance of survival.

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