

Public Review Draft

Bristol Bay Critical Habitat Areas
(Egegik, Pilot Point, Cinder River, Port Heiden, and Port Moller)
Management Plan

by
Division of Habitat
and
Division of Wildlife Conservation

Draft- April 12 , 2011

Alaska Department of Fish and Game

Divisions of Habitat and Wildlife Conservation



Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the *Système International d'Unités* (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, and Special Publications. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)		General		Measures (fisheries)	
centimeter	cm	Alaska Administrative Code	AAC	fork length	FL
deciliter	dL	all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.	mid-eye-to-fork	MEF
gram	g	all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.	mid-eye-to-tail-fork	METF
hectare	ha	at	@	standard length	SL
kilogram	kg	compass directions:		total length	TL
kilometer	km	east	E		
liter	L	north	N	Mathematics, statistics	
meter	m	south	S	<i>all standard mathematical signs, symbols and abbreviations</i>	
milliliter	mL	west	W	alternate hypothesis	H _A
millimeter	mm	copyright	©	base of natural logarithm	<i>e</i>
		corporate suffixes:		catch per unit effort	CPUE
Weights and measures (English)		Company	Co.	coefficient of variation	CV
cubic feet per second	ft ³ /s	Corporation	Corp.	common test statistics	(F, t, χ^2 , etc.)
foot	ft	Incorporated	Inc.	confidence interval	CI
gallon	gal	Limited	Ltd.	correlation coefficient (multiple)	R
inch	in	District of Columbia	D.C.	correlation coefficient (simple)	r
mile	mi	et alii (and others)	et al.	covariance	cov
nautical mile	nmi	et cetera (and so forth)	etc.	degree (angular)	°
ounce	oz	exempli gratia (for example)	e.g.	degrees of freedom	df
pound	lb	Federal Information Code	FIC	expected value	<i>E</i>
quart	qt	id est (that is)	i.e.	greater than	>
yard	yd	latitude or longitude	lat. or long.	greater than or equal to	≥
		monetary symbols (U.S.)	\$, ¢	harvest per unit effort	HPUE
Time and temperature		months (tables and figures): first three letters	Jan, ..., Dec	less than	<
day	d	registered trademark	®	less than or equal to	≤
degrees Celsius	°C	trademark	™	logarithm (natural)	ln
degrees Fahrenheit	°F	United States (adjective)	U.S.	logarithm (base 10)	log
degrees Kelvin	K	United States of America (noun)	USA	logarithm (specify base)	log ₂ , etc.
hour	h	U.S.C.	United States Code	minute (angular)	'
hour	h	U.S. state	use two-letter abbreviations (e.g., AK, WA)	not significant	NS
minute	min			null hypothesis	H ₀
second	s			percent	%
				probability	P
Physics and chemistry				probability of a type I error (rejection of the null hypothesis when true)	α
all atomic symbols				probability of a type II error (acceptance of the null hypothesis when false)	β
alternating current	AC			second (angular)	"
ampere	A			standard deviation	SD
calorie	cal			standard error	SE
direct current	DC			variance	
hertz	Hz			population	Var
horsepower	hp			sample	var
hydrogen ion activity (negative log of)	pH				
parts per million	ppm				
parts per thousand	ppt, ‰				
volts	V				
watts	W				

***BRISTOL BAY CRITICAL HABITAT AREAS
MANAGEMENT PLAN
PUBLIC REVIEW DRAFT***

Prepared by

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DRAFT April 12, 2011

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Alaska Department of Fish and Game
Anchorage, Alaska

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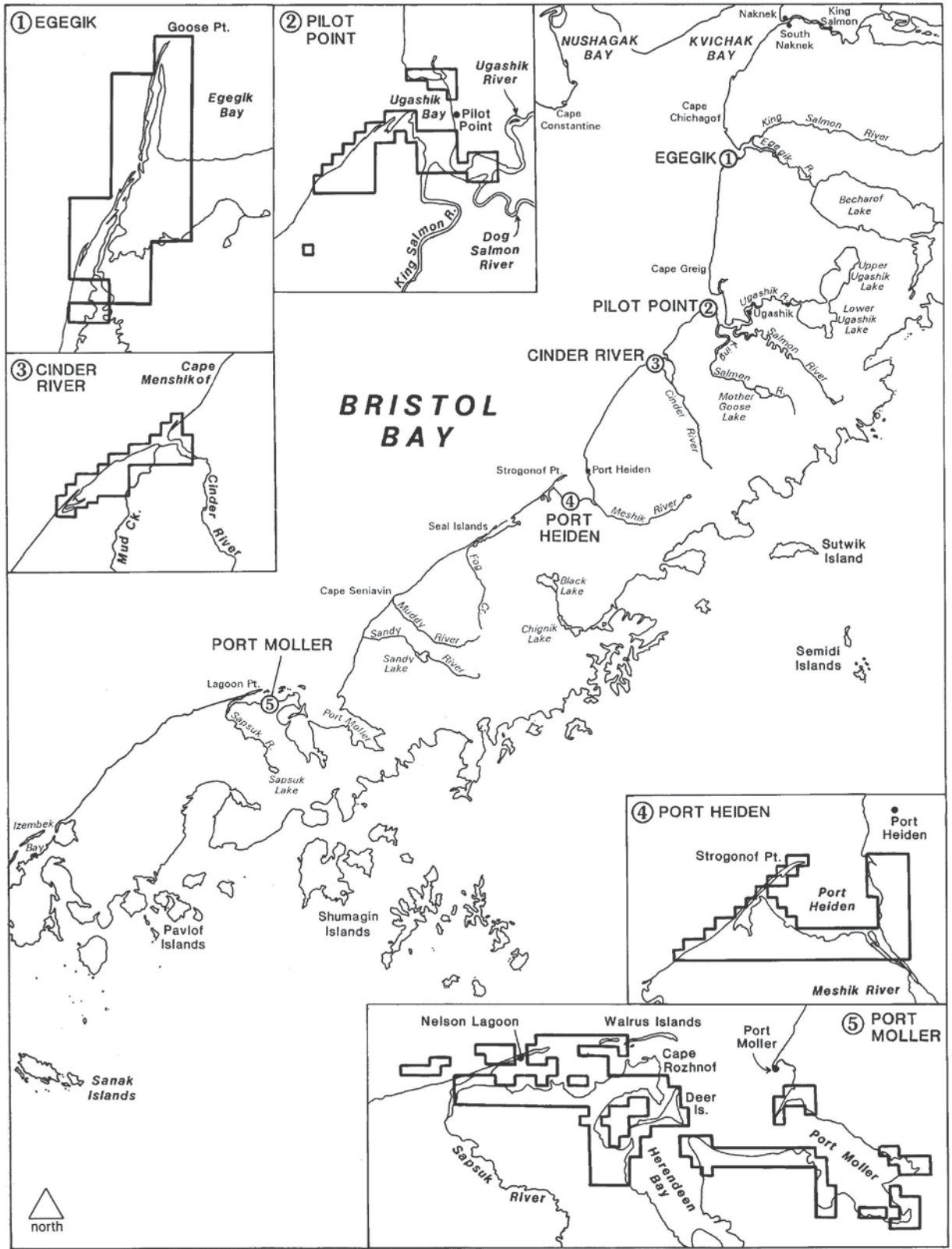


Figure 1.—Map of Bristol Bay Critical Habitat Areas.

INTRODUCTION

In 1972 (§ 2 ch 140 SLA 1972) the Alaska Legislature established five state Critical Habitat Areas (CHAs) at major estuaries along the southern shore of Bristol Bay to protect natural habitat and game populations, especially waterfowl and shorebirds. From north to south along the Alaska Peninsula, they are as follows: the Egegik CHA at the mouth of Egegik River; the Pilot Point CHA at the mouths of King Salmon and Ugashik Rivers; the Cinder River CHA at the mouth of Cinder River and Mud Creek; the Port Heiden CHA at the mouth of Meshik River; and the Port Moller CHA in Port Moller itself and near the mouth of the Sapsuk River. Together, the Bristol Bay CHAs encompass approximately 284,050 acres, including the state lands, waters, and tide and submerged lands.

At the Left and Right Heads of Port Moller the boundary of the Port Moller CHA overlaps with the boundary of the Alaska Peninsula National Wildlife Refuge. In the Cinder River and Port Heiden CHAs, several small islands and a narrow area along the coast are included in the Alaska Maritime National Wildlife Refuge. Both of these National Wildlife Refuges are managed by the U.S. Fish and Wildlife Service (USFWS). The dividing line between state and federal jurisdiction is generally the line of mean high tide. Private lands, including lands owned by native corporations, also lie within the boundaries of some of the CHAs.

The Bristol Bay CHAs are co-managed by the Alaska Department of Fish and Game (ADF&G) in accordance with Alaska Statute 16.20.520-530, and the Alaska Department of Natural Resources (DNR) per AS 38.05. The purpose of the *Bristol Bay Critical Habitat Areas Management Plan* is to provide consistent, long-range guidance to ADF&G in managing the five CHAs. ADF&G has undertaken this comprehensive planning process in order to establish guidelines, policies, and regulations for management of fish and wildlife, habitat, and current and future activities that affect them on the CHAs.

This draft plan presents management goals for the CHAs and their resources, and identifies policies to be used in determining whether proposed activities are compatible with the protection of fish and wildlife, their habitats, and public use of the CHAs. The goals and policies of this plan are adopted as regulation.

This draft plan affects state lands and waters and private lands. Federal lands within the boundaries of the CHAs are not subject to CHA authority. Furthermore, the plan does not address hunting or fishing regulations, which are the authority of the Alaska Boards of Fisheries and Game.

THE PLANNING PROCESS

This plan is the result of a public planning process led by ADF&G. It was developed by a collaborative planning team representing the following state, federal, borough, and municipal entities: the State of Alaska Departments of Fish and Game and Natural Resources; the USFWS, the National Marine Fisheries Service (NMFS); the Lake and Peninsula Borough, the Aleutians East Borough; and the City of Egegik. Prior to the development of a second Public Review Draft Plan, we contacted potentially affected private landowners requesting participation in the planning process. The private landowners included the four village corporations owning the surface estate; Becharof Corporation, Pilot Point Native Corporation, Alaska Peninsula Corporation, and Nelson Lagoon Corporation; and the two regional corporations owning the

subsurface estate; Bristol Bay Native Corporation and the Aleut Corporation. In addition, we solicited input from approximately 16 native allottees.

At the beginning of the planning process, ADF&G held public scoping meetings in King Salmon, Egegik, Pilot Point, Port Heiden, Nelson Lagoon, and Anchorage to explain the planning process and solicit citizen's issues, interests, and concerns for the Bristol Bay CHAs. The planning team used public input from these meetings to formulate a list of issues to be addressed in the plan. At the same time, resource information on the BBCHAs' fish and wildlife populations and their habitats, other natural resources, existing land use and land ownership was being collected and synthesized. This information, presented in both map and narrative form, comprises the plan's Resource Inventory (Appendices A and F).

Management goals and policies for the BBCHAs were developed by the planning team to address the identified issues. All policies were developed with consideration of their ability to meet the formulated management goals. In some cases, alternative policies were developed. Each alternative policy was analyzed according to its ability to meet the plan's management goals. In addition, other applicable laws and the Public Trust Doctrine were considered.

This review draft is distributed widely to solicit comments and suggestions that will strengthen the plan and make it useful to the department and the public. A final plan will be prepared using the comments received during the public review process. Once revised, the Commissioner of the Alaska Department of Fish and Game will adopt the plan and corresponding regulations for use by the department in managing the CHAs. At that point, the plan can be implemented by ADF&G.

IMPLEMENTATION

ADF&G will implement the adopted plan in several ways. Research programs, public use facilities, and other department projects will be consistent with the goals and policies presented in this plan. Similarly, future land use activities within the Critical Habitat Areas, including those proposed by private individuals, companies or federal, local or state agencies, will be approved, conditioned, or denied on the basis of their consistency with the goals and policies provided in the management plan and any applicable state statutes and regulations.

A Special Areas Permit is required for any activity that may affect fish and wildlife habitat, including any construction activity, or any activity which disturbs fish or wildlife other than lawful hunting, trapping, fishing, and viewing in a designated state Critical Habitat Area (5 AAC 95). A Special Areas Permit application form can be obtained from any ADF&G office or the department Web site (<http://www.adfg.state.gov/>); the completed application should be submitted to the Division of Habitat Office in Anchorage.

Other state, federal, and local agencies and private landowners have management responsibilities that affect the BBCHAs as well. Many uses, including lease or disposal of resources on state land in the BBCHAs require DNR authorization. Activities affecting air or water quality may require authorization from the Alaska Department of Environmental Conservation (DEC). The U.S. Army Corps of Engineers evaluates applications for permits which authorize activities affecting navigable waters and for the discharge of dredged and fill material in waters of the United States, including wetlands. Various federal and state agencies, along with local governments, review proposals for federal permits, pursuant to the Fish and Wildlife Coordination Act (16 USC 661-667 et. seq.), Coastal Zone Management Act, and the Alaska

Coastal Management Program. The Aleutians East Borough and the Lake and Peninsula Borough may review and provide recommendations on all permit proposals within or affecting the coastal zone, including proposals for activities in the Bristol Bay CHAs. Any land uses or activities on private lands within the boundaries of the CHAs require approval from the private landowner (native corporation or allottee).

This plan will be reviewed and updated, as appropriate and necessary. Public participation will be solicited during the update process.

STATUTES

Alaska statutes that specifically pertain to the establishment and management of the five Bristol Bay Critical Habitats Areas are codified at 16.20. The management direction for all state critical habitats, AS 16.20.500, became law in 1972 (§ 2 ch 140 SLA 1972). The enabling legislation for the five state critical habitat areas in Bristol Bay became law in 1972 (§ 2 ch 140 SLA 1972).

Sec. 16.20.500. Purpose. The purpose of AS 16.20.500 – 16.20.690 is to protect and preserve habitat areas especially crucial to the perpetuation of fish and wildlife, and to restrict all other uses not compatible with that primary purpose.

Sec. 16.20.510. Regulations. The Board of Fisheries and the Board of Game, where appropriate, shall adopt regulations they consider advisable for conservation and protection purposes governing the taking of fish and game in state fish and game critical habitat areas.

Sec. 16.20.520. Multiple land use. Before the use, lease, or other disposal of land under private ownership or state jurisdiction and control, within state fish and game critical habitat areas created under AS 16.20.500 – 16.20.690, the person or responsible state department or agency shall notify the commissioner of fish and game. The commissioner shall acknowledge receipt of notice by return mail.

Sec. 16.20.530. Submission of plans and specifications. (a) When a board determines that the following information is required, it shall instruct the commissioner, in the letter of acknowledgment required under AS 16.20.520, to require the person or governmental agency to submit:

- (1) full plans for the anticipated use;
- (2) full plans and specifications of proposed construction work;
- (3) complete plans and specifications for the proper protection of fish and game; and
- (4) the approximate date when the construction or work is to commence.

(b) The board shall require the person or governmental agency to obtain the written approval of the commissioner as to the sufficiency of the plans or specifications before construction is commenced.

Sec. 16.20.550. Port Moller Critical Habitat Area established.

The following described area is established as the Port Moller Critical Habitat Area:

- (1) Township 50 South, Range 71 West, Seward Meridian
Sections 7 - 8
Section 14 (not tide or submerged land)
Sections 15 - 17
Sections 21 - 23
Section 32;
- (2) Township 51 South, Range 71 West, Seward Meridian
Section 3 (not tide or submerged land)
Sections 4 - 5

Section 7
Sections 9 - 10
Sections 15 - 17;

(3) Township 49 South, Range 73 West, Seward Meridian
Sections 10 - 11
Section 12 (not tide or submerged land)
Sections 13 - 16
Section 21
Section 24
Section 28;

(4) Township 51 South, Range 72 West, Seward Meridian
Sections 5 - 8
Sections 11 - 12;

(5) Township 50 South, Range 72 West, Seward Meridian
Sections 18 - 19
Sections 30 - 32;

(6) Township 50 South, Range 73 West, Seward Meridian
Sections 7 - 13
Sections 14 - 17 (not tide or submerged land)
Section 18;

(7) Township 50 South, Range 74 West, Seward Meridian
Sections 5 - 7
Section 8 (not tide or submerged land)
Sections 9 - 13
Sections 14 - 16 (not tide or submerged land)
Sections 17 - 18
Section 20;

(8) Township 50 South, Range 75 West, Seward Meridian
Section 1
Sections 6 - 7;

(9) Township 49 South, Range 75 West, Seward Meridian
Section 3
Sections 4 - 6 (not tide or submerged land)
Sections 7 - 11
Sections 14 - 16
Sections 21 - 32;

(10) Township 48 South, Range 75 West, Seward Meridian
Sections 15 - 18
Section 22
Sections 29 - 30
Section 31 (not tide or submerged land)
Section 32;

(11) Township 48 South, Range 76 West, Seward Meridian
Sections 13 - 17
Sections 19 - 23
Sections 25 - 27
Sections 29 - 30
Sections 34 - 35
Section 36 (not tide or submerged land);

(12) Township 50 South, Range 76 West, Seward Meridian
Section 1
Section 3
Section 4 (not tide or submerged land)
Section 9 (not tide or submerged land)
Sections 10 - 13
Sections 14 - 16 (not tide or submerged land)
Sections 21 - 23 (not tide or submerged land)
Sections 24 - 25
Sections 26 - 28 (not tide or submerged land);

(13) Township 49 South, Range 76 West, Seward Meridian
Sections 1 - 4
Sections 7 - 9
Sections 10 - 11 (not tide or submerged land)
Sections 12 - 14
Sections 15 - 16 (not tide or submerged land)
Sections 17 - 18
Section 21 (not tide or submerged land)
Section 22
Sections 28 - 29
Sections 33 - 34;

(14) Township 49 South, Range 77 West, Seward Meridian
Sections 1 - 2
Sections 4 - 5
Sections 7 - 12
Sections 13 - 18 (not tide or submerged land);

(15) Township 48 South, Range 77 West, Seward Meridian
Sections 20 - 23
Sections 26 - 28;

(16) Township 48 South, Range 78 West, Seward Meridian
Sections 26 - 27
Sections 31 - 34;

(17) Township 49 South, Range 78 West, Seward Meridian
Sections 2 - 5
Sections 8 - 12
Sections 13 - 16 (not tide or submerged land)
Section 17.

Sec. 16.20.555. Port Heiden Critical Habitat Area established.

The following described area is established as the Port Heiden Critical Habitat Area:

(1) Township 38 South, Range 59 West, Seward Meridian
Sections 13 - 15 (not tide or submerged land)
Section 16
Section 21
Sections 22 - 27 (not tide or submerged land)
Section 28
Sections 33 - 34
Sections 35 - 36 (not tide or submerged land);

(2) Township 38 South, Range 60 West, Seward Meridian
Sections 17 - 19;

(3) Township 38 South, Range 61 West, Seward Meridian
Sections 24 - 26
Section 34;

(4) Township 39 South, Range 59 West, Seward Meridian
Sections 1 - 2 (not tide or submerged land)
Section 3
Sections 10 - 14 (not tide or submerged land)
Section 15
Sections 19 - 22
Sections 26 - 29
Sections 30 - 33 (not tide or submerged land)
Sections 34 - 36;

(5) Township 39 South, Range 60 West, Seward Meridian
Sections 18 - 24
Section 25 (not tide or submerged land)
Sections 26 - 27
Sections 28 - 36 (not tide or submerged land);

(6) Township 39 South, Range 61 West, Seward Meridian
Sections 2 - 4
Sections 8 - 9
Section 10 (not tide or submerged land)
Sections 11 - 13
Sections 14 - 15 (not tide or submerged land)
Sections 16 - 18
Sections 19 - 20 (not tide or submerged land)
Section 21
Sections 22 - 36 (not tide or submerged land);

(7) Township 39 South, Range 62 West, Seward Meridian
Section 13
Sections 23 - 28
Sections 32 - 34
Sections 35 - 36 (not tide or submerged land).

Sec. 16.20.560. Cinder River Critical Habitat Area established.

The following described area is established as the Cinder River Critical Habitat Area:

(1) Township 32 South, Range 54 West, Seward Meridian
Section 29
Sections 31 - 32;

(2) Township 33 South, Range 55 West, Seward Meridian
Sections 1 - 4
Sections 7 - 13
Sections 14 - 17 (not tide or submerged land)
Section 18;

(3) Township 33 South, Range 56 West, Seward Meridian
Sections 13 - 14
Sections 22 - 23
Sections 24 - 26 (not tide or submerged land)
Sections 27 - 29
Sections 31 - 32
Sections 33 - 36 (not tide or submerged land);

(4) Township 34 South, Range 56 West, Seward Meridian
Sections 5 - 7
Section 4 N 1/2;

(5) Township 34 South, Range 57 West, Seward Meridian
Section 1
Section 12.

Sec. 16.20.565. Egegik Critical Habitat Area established.

The following described area is established as the Egegik Critical Habitat Area:

(1) Township 24 South, Range 51 West, Seward Meridian
Sections 1 - 2
Section 11 S 1/2
Section 12 N 1/2;

(2) Township 23 South, Range 51 West, Seward Meridian
Section 13
Sections 24 - 25
Sections 35 - 36;

(3) Township 23 South, Range 50 West, Seward Meridian
Section 7
Sections 18 - 19
Section 30
Section 31 (not tide or submerged land).

Sec. 16.20.570. Pilot Point Critical Habitat Area established.

The following described area is established as the Pilot Point Critical Habitat Area:

(1) Township 30 South, Range 52 West, Seward Meridian (protracted)
Sections 1 - 3
Section 12;

(2) Township 30 South, Range 51 West, Seward Meridian (protracted)
Sections 5 - 8
Section 17;

(3) Township 31 South, Range 51 West, Seward Meridian (protracted)
Sections 5 - 8
Sections 13 - 15
Sections 17 - 27;

(4) Township 30 South, Range 52 West, Seward Meridian (protracted)
Sections 27 - 29
Sections 31 - 34;

(5) Township 31 South, Range 52 West, Seward Meridian (protracted)
Sections 1 - 3
Sections 5 - 6
Sections 11 - 14
Sections 23 - 24;

(6) Township 30 South, Range 53 West, Seward Meridian (protracted)
Section 36;

(7) Township 31 South, Range 53 West, Seward Meridian (protracted)
Sections 1 - 2
Sections 10 - 11
Sections 12 - 14 (not tide or submerged land)
Sections 15 - 16
Sections 20 - 21
Sections 22 - 28 (not tide or submerged land)
Sections 29 - 31
Sections 32 - 36 (not tide or submerged land);

(8) Township 32 South, Range 54 West, Seward Meridian (protracted)
Section 36.

GOALS

Activities occurring within the five Bristol Bay Critical Habitat Areas will be consistent with the following goals in accordance with the purpose for which the areas were established (AS 16.20.500). All department management decisions in the Bristol Bay CHAs, whether affecting activities undertaken by the department, other agencies, or the public, will be in accordance with these goals.

Goal I. Fish and Wildlife Populations and Their Habitats

- A. Manage the Bristol Bay Critical Habitat Areas to maintain and protect naturally occurring resident and migrant fish and wildlife populations and their natural habitats.
- B. If appropriate, enhance or restore the quality and quantity of habitat for naturally occurring resident and migrant fish and wildlife.
- C. Minimize unnecessary/harmful disturbance to fish and wildlife.
- D. Maintain water quality and quantity, natural substrates, and water circulation patterns sufficient for the growth and propagation of fish and wildlife in fresh, estuarine, and marine waters.
- E. Recognize the potential for cumulative impacts when considering effects of small incremental activities and actions affecting critical habitat area resources, including high frequency public use activities on state lands. (Public use means commercial and public, non-agency use.)

Goal II. Public Access and Use

- A. Maintain or improve public access on state lands within the Bristol Bay Critical Habitat Areas consistent with the other goals and policies of this management plan. Acknowledge private landowners' discretion in controlling access to their lands within the CHA boundaries.
- B. Allow public uses when the uses are compatible with the management goals and policies identified in this plan.
- C. Make information about the critical habitat areas available to the public.
- D. Maintain and improve opportunities for hunting; trapping; fishing; and harvest of aquatic plants within the critical habitat areas.
- E. Maintain or improve opportunities for wildlife viewing, photography, study of fish and wildlife, and other forms of recreation consistent with the goals and policies of this management plan.

Goal III. Management, Research, and Other Activities

- A. Encourage and support research, monitoring, and enforcement activities necessary to achieve the goals and policies of the Bristol Bay Critical Habitat Areas Management Plan, as funding allows.
- B. Foster cooperation and coordination between resource agencies and private landowners within the critical habitat areas to assist in implementation of this management plan.
- C. Use the most appropriate methods and means consistent with resource and habitat protection to accomplish management, research, and other activities.
- D. Manage other uses in the critical habitat areas in a manner compatible with the primary purpose of preserving fish and wildlife populations and their habitats consistent with the goals of this management plan.

PROPOSED POLICIES

The policies provided in this plan will be used to guide ADF&G decisions on management activities and Special Area Permits for activities on state and private lands and water within the Egegik, Pilot Point, Cinder River, Port Heiden, and Port Moller CHAs. When reviewing a proposed activity to determine whether a Special Area Permit will be issued, the proposed activity must be evaluated against the applicable goals and policies of the management plan. The compatibility policy is always used to evaluate whether a proposed activity is compatible with the purposes for which the critical habitat area was established. Proposed activities on private land will be subject to private landowner approval as well as ADF&G authorization under a Special Area Permit.

With respect to private lands within the CHA boundaries, ADF&G has developed policies to evaluate many activities on a case-by-case basis, which may be authorized by Special Area Permit. Examples of activities that may be authorized by Special Area Permit on private lands include the construction and use of commercial facilities, roads, and oil and gas exploration and development. The department has also developed policies which will allow certain activities on private lands without a permit or by a General Permit, thereby allowing private landowners to conduct certain activities on their lands without going through the permitting process. Such activities would include non-commercial camping, off-road vehicle use, construction of fish racks, and construction of cabins.

The policies have been evaluated for their ability to meet CHA management goals, their effect on major CHA uses and activities, and impact on department management responsibilities. The evaluation of the effects of each policy includes the types and degrees of effect that could reasonably be expected to occur under each policy. Through proper management and use of mitigation measures, negative effects can be minimized. The evaluation of proposed policies includes consideration of eight criteria:

Habitat - Will implementation of this proposed policy enhance, damage, or have no effect on habitat values? Will implementation of this policy alter the potential for habitat damage?

Fish and Wildlife Populations - Will implementation of this proposed policy increase, decrease, or not change the potential to maintain species diversity and abundance of fish and/or wildlife, especially waterfowl?

Fish and Wildlife Harvest - Will implementation of this proposed policy increase, decrease, or not change the number of user days, type of harvest, season of use, or quality of use that occurs within the CHAs?

Non-consumptive Use of Fish and Wildlife - Will implementation of this proposed policy increase, decrease, or have no effect on the number of user days, type of use, season of use, or quality of non-consumptive use that occurs within the CHAs?

Public Access - Will implementation of this proposed policy increase, decrease, or not change the number of user days, type of public access, season of use, or quality of public access that occurs within the CHAs?

Public Use, Recreation, and Safety - Will implementation of this proposed policy increase, decrease, or have no effect on public use and public safety on CHA lands and waters?

Management Responsibilities - Will implementation of this proposed policy increase, decrease, or not change monitoring requirements, enforcement requirements, and administrative requirements of managing the CHAs?

User Conflicts - Will implementation of this proposed policy increase, decrease, or have no effect on user conflicts on CHA lands and waters?

COMPATIBILITY

Issue: Develop a policy requiring that all activities to be authorized within the five Bristol Bay CHAs must be conducted in a manner that is compatible with the statutory purposes for which the areas were created and with the goals and policies of the management plan.

Background: Permitting decisions are made within the context of enabling legislation and other applicable statutes, the Alaska Constitution, regulations, and policies. Permitting decisions are also guided by the goals and policies of the management plan. The department proposes this Compatibility policy that would apply to all plan policies. (Ensures that goals do not need to be reinforced in every policy)

The statutory purpose is “to protect and preserve habitat areas especially crucial to the perpetuation of fish and wildlife, and to restrict all other uses not compatible with the primary purpose” 16.20.500.

Proposed Policy: Uses and activities may be allowed in the critical habitat areas when the uses and activities are compatible with the purposes for which the critical habitat areas were established and with the goals and policies of the management plan. Uses and activities will be restricted as necessary to: (1) protect and preserve naturally occurring fish and wildlife populations and their habitats; (2) minimize unnecessary or harmful disturbance to fish and wildlife; and (3) maintain or improve public access to resources on state land within the critical habitat areas. Authorizations should recognize the potential for and discourage trespass on private lands.

Evaluation: The policy is intended to ensure that any type of land or water use activity is only allowed if it can be conducted in a manner that protects fish and wildlife populations, their habitats, and public uses of those resources. Some proposed land use activities may have the potential for a localized harmful disturbance to fish or wildlife or their habitats. This policy is intended to avoid or minimize disturbance, assuming there would not be adverse impacts to fish and wildlife populations. Impacts to public use of fish and wildlife resources on state lands, including hunting, fishing, and gathering, would also be minimized under this proposed policy. Department management responsibilities may increase to ensure implementation of this policy, through project review, permitting, and monitoring activities. In addition, the department will need to coordinate with private landowners when evaluating proposed activities on private lands.

ACCESS

Issue: Identify legal and appropriate public access to the CHAs and develop a policy that will guide development and management of public access within the CHAs. Address access to private lands within the CHAs.

Background: Access to the Bristol Bay CHAs is primarily by boat or aircraft. There are no improved airstrips. Unimproved boat launches are located in Pilot Point and Port Heiden. There are off-road vehicle trails into Egegik, Pilot Point, and Port Heiden. Locals from Nelson Lagoon or Port Moller access Port Moller CHA via ORVs, along the beach, and by boat.

Proposed Policy: The department will allow public access for continued public use on state lands in the critical habitat areas. The department may allow improvements to public access within the critical habitat areas under terms and conditions of a Special Area Permit. With the

exception of dedicated public access easements, the department will not manage public access across private lands and will coordinate access to state lands with adjacent landowners.

Evaluation: Current public access is low and has minor impacts to the critical habitat area resources. This policy would maintain public access for existing patterns of public use, including fish and wildlife harvest and does not propose any specific restrictions on future improvements of existing access. Therefore, habitat values would be maintained and user conflicts should be negligible. Fish and wildlife populations should not be affected by this policy. Any proposed access improvements would only be allowed if compatible with the purposes for which the critical habitat areas were established and the goals and policies of the plan.

MOTORIZED VEHICLES

Issue: Develop a policy identifying appropriate off-road use of motorized vehicles, landing and taking off of aircraft, and boat use on the CHAs and the terms and conditions under which use may be authorized.

Background: Currently, the off-road use of wheeled or tracked vehicles in the Bristol Bay CHAs requires an individual special area permit from the department. If appropriate, the department could issue a general permit for off-road use of motorized vehicles in the CHAs under terms and conditions including specified seasons or specified corridors to minimize impacts to fish and wildlife and habitat.

Wheeled or tracked vehicles

Currently, residents of the local communities, and some nonresidents working in Bristol Bay, use off-road use of wheeled or tracked vehicles in the Bristol Bay CHAs for beach combing, in support of set net sites and hunting, and as a general mode of transportation for recreation. Off-road vehicles (ORV) are the primary mode of travel on land in Egegik. There is at least one established vehicle trail in Egegik CHA and Port Heiden CHA. Locals sometimes use snow machines whether there is snow or not. Snow machines are used to access inland hunting areas in the winter. It is not known whether the current motorized vehicle use is causing any disturbance to wildlife. Restrictions on vehicle access less than current levels may be viewed as overly restrictive by the public.

Aircraft

Although not quantified, aircraft activity over the CHAs is thought to be relatively low. There are airports near the Pilot Point and Port Heiden CHAs, and the Nelson Lagoon airport is within the Port Moller CHA. A nearby lodge uses Port Moller and the airstrip there to shuttle clients into the lodge. Aircraft fly along the coast during some times of the year. Although the use of aircraft is not allowed during the salmon fisheries, some fisherman will use private aircraft to look for salmon outside of the district during closures. Aircraft are also used for beachcombing for ivory and to support guided hunting (based from local lodges). There is guided bear hunting on the Egegik Spit but no sport fishing. One fish processor uses a helicopter. There may be some aircraft use at Cinder River as there is a boat stored there. Fish and wildlife resource agencies, including ADF&G, NOAA, USFWS, and the U.S. Geological Survey conduct low level flight surveys; for research and management needs; this should not be restricted.

The Federal Aviation Administration (FAA) controls the airspace over the CHAs. The FAA can provide aviator advisories to remain above a minimum altitude to avoid wildlife disturbance. ADF&G only has jurisdiction over landings and takeoffs within the CHAs. Studies have documented aircraft generated disturbance of waterfowl in nearby Izembek Lagoon. ADF&G could recommend aircraft over flight advisories to FAA to reduce disturbance to hauled-out marine mammals and large flocks of waterfowl that are sensitive to aircraft noise, including emperor geese, Steller's eiders, brant, and Canada geese (e.g., above ground level altitude minimums, horizontal distance).

Boats

Boats are a primary mode of transportation for the coastal communities adjacent to the Bristol Bay CHAs. Large numbers of boats operate in Egegik and Ugashik Bays, Port Heiden, and Port Moller during the commercial fishing seasons. Disturbance to marine mammals by motorized vehicles generally depends on the specific life stage at the time of the motorized activity. Most marine mammal haul outs occur at low tide when there is little boat traffic. The commercial fishery in Egegik does not appear to be affecting the CHA. At higher tides, there is interaction among seals and fishing boats. Increased boating activity during spring, fall, or winter staging areas for waterfowl or shorebirds could disturb or displace birds.

There is a limited use of personal watercraft, air-cushion vehicles, or airboats in the Bristol Bay CHAs. There is a small hovercraft in Nelson Lagoon. There did not appear to be any airboats in the Egegik, Pilot Point, or Nelson Lagoon areas. A small number of jet skis are in King Salmon/Naknek and Sand Point.

Proposed Policy: The use of motorized vessels within the critical habitat areas is generally allowed. The off-road use of wheeled, tracked, or other ground effect motorized vehicle requires a Special Area permit. The department may, in its discretion, issue a General Permit for the use of off-road vehicles on state lands, including beaches or specified trails in ice free months and/or in other areas within the critical habitat areas when adequate snow and/or ground frost conditions exist to protect soils and vegetation from damage. The department will issue a General Permit, in consultation with affected private landowners, for the use of off-road vehicles on private lands within the critical habitat areas, when conditions exist to protect soils and vegetation from damage. When necessary to protect fish and wildlife habitat, prevent unnecessary disturbance or displacement of fish and wildlife populations, or the maintenance of compatible public recreation, motorized access may be restricted.

The use of fixed-wing aircraft in the critical habitat areas is generally allowed. All helicopter landings within the critical habitat area require a Special Area permit. Helicopter landings in the critical habitat areas may be authorized only if the use is for research or management or for an activity for which there is no feasible alternative. When necessary to protect fish and wildlife habitat, prevent unnecessary disturbance or displacement of fish and wildlife populations (particularly during the spring waterfowl migration period), and to maintain compatible public recreation, aircraft use may be restricted.

Evaluation: This policy would prevent uncontrolled use of off-road vehicles, to minimize disturbance of fish and wildlife populations and their habitats. The policy would maintain public access for existing patterns of public use, including fish and wildlife harvest and non-consumptive uses. Department management responsibilities could increase in an effort to inform the public and to enforce the seasonal off-road vehicle restrictions.

INFORMATION, EDUCATION, AND OUTREACH

Issue: Develop a policy which will address the need for public information and education regarding the CHAs and their fish and wildlife resources.

Background: Currently there are no signs identifying any of the five Bristol Bay CHAs. The department has produced an informational brochure about the five units. Additional information can be obtained at the Alaska Department of Fish and Game office in Anchorage. The department maintains a website with very basic information on the CHAs:

http://www.wildlife.alaska.gov/index.cfm?adfg=refuge.bristol_bay. Improvements to the website have yet to be implemented. Local knowledge of boundaries and permit requirements is limited.

Potential interpretive display sites could include airport(s), community building(s), ADF&G Office in King Salmon and near refuge boundaries.

Proposed Policy: The department will provide information to critical habitat area users, adjacent private landowners, and the general public regarding critical habitat area resources, activities, and use restrictions. The department will encourage education projects involving critical habitat area resources and their uses.

Evaluation: An outreach program would require increased effort in the development of information, but could help to reduce management problems by fostering an informed user public, less likely to damage resources or violate critical habitat area rules. Information on species of concern could promote compliance with necessary harvest restrictions and closures. The public may also be able to assist in monitoring and reporting non-compliance with rules of the area.

An information/outreach program would increase public awareness of opportunities in the critical habitat areas, which could result in increased public use. Increased public use could impact fish and wildlife populations and habitats.

SCIENTIFIC RESEARCH

Issue: Increased knowledge can improve the management and appreciation of the resources in the CHAs. They may attract more research interest than surrounding areas due to the exceptional resources or protected status of CHAs. This use of the CHA for research may need to be evaluated differently than other activities.

Background: There is a low level of research currently in the CHAs but future researchers may need access and to install or monitor equipment. Helicopter and low level flights are used to reach sites as well as to conduct surveys. NOAA has an interest in getting better habitat delineations of nursery habitat for various species, including sole, cod, and forage fish. Aerial salmon surveys are flown by ADF&G, primarily upstream of the Egegik, Pilot Point, Cinder River, Port Heiden, and Port Moller CHAs for management of the commercial salmon fisheries. Annual low-level bird and marine mammal surveys are flown over the entire Alaska Peninsula, including the Bristol Bay CHAs, by FWS, USGS, and NOAA. Research activities have the potential to disturb or displace fish and wildlife. However, any impact would be short-term, and would be outweighed by the benefits for management.

Proposed Policy: The department will encourage compatible scientific research of fish, wildlife, habitat, and other resources in the critical habitat areas to facilitate management.

Evaluation: Improved understanding of critical habitat area resources would lead to more effective management of fish and wildlife populations and their habitats. Research results may illustrate the effects of local harvest and other mortality factors on population levels. Information from research projects can enhance the public understanding of local ecology and biology of fish and wildlife species. Management effort, including project review and issuing permits, would fluctuate based on level of interest from research groups or affected public.

RECREATIONAL AND HARVEST ACTIVITIES

Issue: Develop a policy providing guidance in determining appropriate types and levels of recreational and harvest activities in the critical habitat area.

Background: Hunting, fishing, and gathering of wild resources occur in the Bristol Bay CHAs. Beachcombing is a popular activity for both residents and visitors. Visitors generally land small planes on the beaches. Occasionally others are dropped off by commercial guides while not hunting. It is unknown whether beachcombing for profit is currently an issue. The possibility of commercial operation is conceivable, though it would only be profitable on a large scale. Large scale commercial beach combing (e.g., 30 people) may pose a problem. Some people now sell found items in a very small scale unofficial way.

Proposed Policy: The department will allow lawful recreational activities, including hiking and wildlife viewing; and harvest activities, including fishing, hunting, and gathering of wild resources within the critical habitat areas. Use levels on state land may be managed through the issuance of Special Area Permits, if necessary, to avoid adverse impacts to fish and wildlife populations and their habitats. Activities for which Special Area Permits may be required to manage use levels include, but are not limited to, access and camping.

Evaluation: The policy should not affect public opportunities to hunt, fish, and gather wild resources. If properly administered, this policy would avoid impacts to fish and wildlife habitat. Management responsibilities will increase if the number of users increases to the level where additional permitting and regulations are required.

CULTURAL, HISTORIC, AND ARCHEOLOGICAL RESOURCES

Issue: Develop a policy addressing the research on and protection of archæological, historical, and cultural resources in the critical habitat areas.

Background: Although a comprehensive inventory of the critical habitat areas has never been undertaken, numerous archæological sites have been identified on the Alaska Peninsula. Historic sites include villages and cabins used for hunting, trapping and fishing. Ancient sites generally represent habitation sites. Cultural sites may be found anywhere. Sites are commonly found at stream confluences and outlets, on dry river terraces, as well as in beach berm systems and on peninsulas projecting into bays. Historic cemeteries are also known in the region, including locations where graves have been exposed through beach erosion.

The Alaska Historic Preservation Act (AS 41.35) preserves and protects the historic, prehistoric and archæological resources of Alaska from loss, desecration and destruction. The investigation, excavation, gathering or removal from the natural state, of any historic, prehistoric or

archaeological resources requires a permit from the DNR Office of History and Archaeology and may also require a special area permit.

Proposed policy: The department will protect cultural, archaeological, and historic resources located on state land within the critical habitat areas, in coordination with the Department of Natural Resources, State Historic Preservation Office. Where appropriate, the department will allow investigation of cultural, archeological, and historic resources on state land through a Special Area Permit.

Evaluation: The policy should not affect fish and wildlife populations or their habitats. General public access to and use of the CHAs should not be affected, except for temporary restrictions in areas under active investigation. Any temporary restrictions would be minimized through the permitting process. Reporting of archaeological results would enhance visitor appreciation of local culture and history. There could be an increase in management responsibilities relating to issuance of Special Area Permits for archaeological investigations.

INTRODUCTION OF EXOTIC SPECIES (OR ECOSYSTEM INTEGRITY)

Issue: Develop a policy to address protection and maintenance of the integrity of the ecosystems of the CHAs. Invasive species can introduce disease, compete for habitat and resources, and prey on natural populations.

Background: The Bristol Bay CHAs support a remote, productive and unaltered natural ecosystem relatively free of introduced species and the perturbations of human impact. Alteration of this natural state would represent an irreversible loss of a valuable Alaskan resource. Prior to 1923, the Bureau of Indian Affairs established reindeer stations at Ugashik and Egegik to provide sources of income and food to local populations devastated by the 1918-1919 Influenza epidemic. These were patterned after efforts on the Seward Peninsula to establish reindeer herds owned by Natives that had been trained by Laplanders and Sami. These eventually disappeared having been absorbed by migrating caribou herds, consumed by wolves, or they became feral due to lack of active herding. Long-lived populations of reindeer on Bering Sea islands have been identified as causing range damage by overgrazing slow growing lichens and forbs and by causing erosion. (Ebbert and Byrd 2002) In the late 1990's, the Northern Alaska Peninsula caribou herd was identified as having Bovine Respiratory Viral Disease Complex, lung worm pneumonia, and high levels of the parasites, esp. Ostertagia. These diseases are also present in domestic cattle and reindeer, though the source in this population is unidentified. "Test results on the levels of essential trace minerals in the blood of the caribou reveal that they are not ingesting sufficient selenium and copper to maintain a healthy immune system compared to other caribou herds. This nutritional deficiency may contribute to their increased susceptibility to disease and parasites":(<http://alaska.fws.gov/fisheries/invasive/index.htm>).

Invasive species can be unknowingly introduced in coastal areas via ballast water discharges from vessels. Invasive plants (seeds) can be introduced via equipment imported from other areas, or within seed mixes imported in for use in .re-seeding/stabilizing exposed soils. The only potential for mariculture mentioned thus far in the area is planting juvenile king crabs. The department has previously opposed fish farming in state waters.

Proposed policy: The introduction of exotic plant or animal species, whether wild or feral, will not be allowed in the critical habitat areas. Domestic species may be allowed on private lands provided the animals are precluded from entering state land within the critical habitat areas.

Evaluation: The policy would minimize changes to the natural diversity and distribution of fish and wildlife and their habitats. There would be no affect on harvest and gathering activities, or to public access.

HABITAT AND POPULATION ENHANCEMENT

Issue: Develop a policy that gives guidance for appropriate fish and wildlife habitat enhancement on the Bristol Bay CHAs and identify the impacts to consider when reviewing enhancement projects.

Background: Enhancement projects generally involve increasing the quality or quantity of habitat to promote growth of a specific population to allow increased harvest. Habitat projects that help to restore a damaged habitat or depleted population would be better described as restoration. Habitat may also be created or expanded to mitigate for impacts from human development.

Public comment from Egegik suggested that the erosion of Egegik Spit has altered flow patterns in the bay and possibly negatively affect the community. The impacts to fish and wildlife resources are unknown at this time.

Proposed policy: The department will, as appropriate, allow enhancement of naturally occurring fish and wildlife species and their habitats when the enhancement restores or improves critical habitat area resource values (including diversity and abundance).

Evaluation: Enhancement of fish and wildlife habitats could result in increases in population numbers or densities that are the focus of enhancement efforts. Decreases or increases in some non-target species could also occur. Potential manipulation of habitat should be consistent with management objectives and evaluated for positive and negative effects. Implementation of enhancement activities could limit public access in the short-term, however, long-term public access should be maintained. Enhancement activities would require increased management effort for planning, implementing, and monitoring projects.

CABINS/STRUCTURES

Issue: Develop a policy addressing authorization of existing cabins, establishment of a public use cabin program, establishment of new cabins, and resolution of unauthorized structures in the critical habitat area.

Background: There are several cabins within the Bristol Bay CHAs. In Egegik CHA, there was one cabin (known locally as Oscar's cabin) on the end of spit that may have been removed during the winter 2008-09 ice storm. Another cabin is located on the middle of spit, and there is also a rundown cabin near the fish and game marker. The cabins were likely constructed originally as fish camp/ set net cabins. It was reported that there is only one cabin left on Egegik spit since the most recent storm/ high tide event in 2008-2009 pushed the sea ice in. There are set net cabins in the northern portion of Pilot Point CHA, with at least one identified as trespass. There is a cabin in Port Heiden CHA (T61W, R39S) that is reportedly used by guides and public, mostly bear hunters (trespass). There are two trespass cabins identified by DNR records in Cinder River CHA; both near water on the spits. However it is unclear whether the cabins are

still there. There are no known cabins in Port Moller CHA; however there are approximately 10-15 set net sites with cabins at Nelson Lagoon. In addition, there are old mail trail and trapper cabins in area, exact locations unknown. There are many set net cabins on south side of lagoon, but all are on Native Corp land. Egegik and Nelson Lagoon have fixed locations and support structures for set netters; at Pilot Point the sites move.

Should address different types of cabins, i.e. trespass cabins, unauthorized set net cabins, trapping cabins, etc. Most cabins in the Egegik area are private. Other lands are available nearby. Need to establish what is there before making policy. ADF&G does not currently have a public use cabin program.

Majority of input from public scoping meetings was to allow existing cabins to remain as they are helpful in emergencies and/or for stranded people, but not to allow the construction of any additional cabins. There are also several cabins within CHA boundaries built on Native Corporation Land or on allotments.

Proposed policy: To maintain public use opportunities and experiences, protect the critical habitat area resources, and preclude proprietary use of state land while allowing use on private lands within the critical habitat areas, the department may authorize, on a case-by-case basis, the construction and use of cabins, tent platforms, duck blinds, or similar structures under terms and conditions of a Special Area Permit. The department will:

- (A) not allow the construction of new private or personal use cabins on state lands within the critical habitat areas. The construction and use of cabins and associated structures may be allowed on private lands;
- (B) in its discretion, establish a public use cabin program, as appropriate, on state lands within the critical habitat areas using existing (unclaimed) cabins or new public use cabins in the critical habitat areas;
- (C) not allow the private or commercial, proprietary use of existing (unclaimed) cabins, other than commercial set net cabins, on state lands within the critical habitat areas.
- (D) allow only commercial set net cabin leases on state lands which are essential for the purposes of operating set nets authorized under a commercial fisheries limited entry permit and a shore fisheries lease. A lease will be limited to the minimum acreage necessary to accommodate the facility and associated uses;
- (E) in its discretion, allow administrative cabins and/or trapping cabins;
- (F) allow only temporary tent platforms on state land that do not significantly preclude existing public use of the critical habitat areas. Permanent tent platforms will not be allowed on state land, unless for administrative or public use. Temporary use on state land does not convey any future or exclusive rights and may not exceed one season's use. Temporary or permanent tent platforms may be allowed on private lands;
- (G) allow only temporary, portable duck blinds on state land within the critical habitat areas, except that the department, in its discretion, may establish permanent duck blinds for public use. Temporary use on state land does not convey any future or exclusive rights and may not exceed one season's use. Temporary or permanent duck blinds may be allowed on private lands; and
- (H) in its discretion, allow other structures for personal or recreational use, if compatible.

For the purposes of this policy, “temporary” means “is used only for the term of the permit or the authorized duration of activity or use.”

Evaluation: Public use of existing authorized structures would be maintained; use of unauthorized structures would be restricted. Increased monitoring and enforcement activities would be required to assure that unauthorized structures are not allowed and that authorized structures are operated in compliance with terms of their permits. Development of a public use program would increase management responsibilities.

CAMPING

Issue: Develop a policy that provides guidance for determining where and under what terms and conditions camping may be allowed.

Background: There is little information on camping use in the CHAs. Birders and researchers may camp in the CHAs. Camping use is low at Cinder River, primarily by people based on boats. Commercial guide camps can be addressed in this issue, but those also require DNR Land Use permits.

Scoping meeting input indicated that some people camp overnight, but no one camps long-term.

Proposed policy: Camping will be managed in the critical habitat areas to afford parties camping opportunities of up to two weeks in duration, with certain exceptions. Restrictions to camping may include provisions for location of camps and associated activities, types of structures, number of camp occupants, access points, period(s) of use, and number of authorized camps within a particular area.

Non-commercial camping for up to 14 consecutive days will be allowed on state lands within the critical habitat areas without a Special Area Permit. Establishment of a non-commercial camp on state land for more than 14 consecutive days at any one location, or relocating a camp on state lands within a two-mile radius of the original campsites requires authorization through a Special Area Permit.

Non-commercial camping, of an unlimited duration, on private lands is generally allowed without a Special Area Permit.

Commercial camping on state and private lands within the critical habitat areas may be allowed under terms and conditions of a Special Area Permit.

Solid waste disposal is not allowed on state land within the critical habitat areas. Solid waste disposal on private lands may be authorized under terms and conditions of a Special Area Permit and in accordance with the Department of Environmental Conservation (DEC) regulations. Food and garbage must be stored in a manner that prevents it from being an attractant to bears and other wildlife. Methods to isolate food and garbage may include the use of bear-resistant containers, electric fences, or food caches located at least 15 feet above ground, or within a lockable and hard-sided section of a vehicle, vessel, or aircraft. All garbage must be removed from state land within the critical habitat areas. Human waste disposal must be done in accordance with DEC requirements (18 AAC 60).

If impacts to fish and wildlife resources are attributed to camping activities in sensitive locations on state land within the critical habitat areas, specific campsites should be established and camping activity limited to established sites.

Camping Policy Definitions

For the purposes of implementing the camping policy:

“Commercial camping” means the activity is associated with the provision of assistance for compensation, or with the intent to receive compensation, to persons who camp in the critical habitat area.

“Solid waste” means garbage, refuse, abandoned or other discarded solid or semi-solid material, regardless of whether subject to decomposition, originating from any source.

Evaluation: Public access for camping opportunities in the CHAs would be maintained. The policy would help to reduce user conflicts for preferred camp sites. Appropriately sited camps, which isolate food and garbage should avoid impacts to fish and wildlife populations. Restrictions to public camping could be implemented should future impacts occur. Management responsibilities could increase to assure implementation of the policy.

LONG-TERM ANCHORAGE, BOAT STORAGE, AND MAINTENANCE

Issue: Develop a policy to guide management of boat and gear storage and maintenance in the critical habitat areas.

Background: The Bristol Bay CHAs support significant commercial fisheries, resulting in large vessel use, which requires some boat maintenance activities. Boat maintenance may consist of minor activities (e.g., untangling debris or gear from a propeller) to major hull work (e.g., sandblasting off paint). Boats are generally stored outside of the CHAs during the off-seasons for fishing. In the Port Heiden CHA, boats are grounded in the lagoon during commercial fishing seasons, south of the Meshik town site. Only the entrance to the small lagoon is within the boundary of the CHA.

Proposed Policy: Anchorage or placement of a vessel or structure for longer than 14 days in the critical habitat areas requires authorization under a Special Area Permit. A general permit may be issued under appropriate terms and conditions for the long-term anchoring of vessels in the vicinity of the Nelson Lagoon or other mooring locations supporting public use of the critical habitat areas. Float structures, except when specifically allowed by other policies in this plan, will not be allowed on public lands and waters in the critical habitat areas. Derelict or abandoned boats may not be left on public lands or waters in the critical habitat areas. Intertidal boat maintenance that could result in a discharge to the critical habitat areas may be authorized on private tidelands, or on public tidelands when there is no feasible alternative, under terms and conditions of a Special Area Permit that would preclude a discharge to the critical habitat areas.

For the purpose of this policy, “discharge” means release of non-biological substances generally associated with boat maintenance, including but not limited to paint, hull preservatives, sand from sandblasting activities, and fiberglass.

Evaluation: This policy would allow for boat storage while protecting CHA resources and uses of those resources, namely by preventing established, exclusive use of any particular area. There

may be restrictions to public use of the CHA for boat maintenance activities to protect fish and wildlife habitat from potential contaminants and displacement.

DOCKS AND BOAT RAMPS

Issue: Develop a policy to provide guidance in permitting docks and boat ramps in the critical habitat areas.

Background: There are public docks at Nelson Lagoon (public dock constructed in 1993, permit to AEB funded by Aleutian Pribilof Island Community Development Association through DCCED) and Port Moller (maintained by the cannery) near the entrance channel to Port Moller. Entrance channel is marked in non-winter months.

Boat launches and/or a dock near Dago Creek in Pilot Point CHA receive major use during commercial fishing season. At Port Heiden, boats are launched off the beach in the lagoon south of town. The CHA boundary line runs through the middle of lagoon, and the activity may or may not be in CHA. Public scoping comments from Port Heiden indicated that a dock would be infeasible because of the sedimentation and frequent movement of deeper channels.

All communities in or adjacent to the Bristol Bay CHAs are dependent on marine transport/fishing. It is necessary to have docks/boat access. Heavy seasonal ice conditions necessitate either heavy duty dock construction or seasonal docks, which limits the number built and increases the costs such that there are no private docks.

Proposed Policy: Harbors, docks, piers, boat ramps, and associated structures may be allowed for the purpose of maintaining or improving public access to Egegik Bay, Ugashik Bay, Cinder River Estuary, Port Heiden, and Port Moller, including Nelson Lagoon, and Herendeen Bay; or where adjacent upland landowners require access to their property. Siting, design, construction, and maintenance of these facilities will, to the maximum extent possible, avoid impacts to habitat, fish, wildlife, and navigation and public use and enjoyment of the critical habitat areas, including existing fisheries. Community dock development, seasonal docks, mooring buoys, and running lines will be encouraged over individual private permanent docks, whenever possible. Solid fill docks will be avoided, to the maximum extent possible, if the facility will impact productive habitat; interfere with natural coastal processes including tidal action, circulation, erosion, and deposition patterns; or interfere with public use of the critical habitat areas. Piling or floating docks will be used, whenever possible. The size of a structure will be kept to the minimum necessary to accommodate the proposed activity. Any project involving critical habitat area lands or waters will require a Special Area Permit, and impacts associated with these improvements would need to be fully mitigated including, if appropriate, rehabilitation and restoration.

Evaluation: Public access to the CHA would be maintained or improved, while minimizing unnecessary impacts to fish and wildlife habitats. Impacts to public uses within the CHA would be minimized, but could include temporary restrictions during the construction of new docks or boat ramps. Given the anticipated low level of public need for docks and associated structures, changes to management activities would not be significant.

COMMERCIAL/INDUSTRIAL FACILITIES

Issue: Develop a policy providing guidance in determining where, and under what terms and conditions, should commercial guide/outfitter facilities, resource development facilities, outfalls, or structures, including floating structures, be allowed.

Background: Floating processors have operated within or adjacent to some of the Bristol Bay CHAs. A fish processing plant is located in Port Moller adjacent to the Port Moller CHA. Nelson Lagoon is currently requesting bids for developing a salmon processing facility, and Pilot Point is looking into a fish processing plant, potentially near Dago Creek. There may be a need to identify locations where facilities may be acceptable and areas where development of facilities should be avoided. There are currently no commercial guiding facilities (lodges) in the vicinity. The nearest lodge is at Bear Lake, east of Port Moller. In addition, interest in alternative energy projects is increasing in southwest Alaska (e.g., wind turbines), and communities adjacent to the CHAs may advocate for such projects.

There are several floating processors operating in accordance with an Environmental Protection Agency general permit in the vicinity of the CHAs; DEC is taking over the NPDES permitting from EPA and the discharge permits are now under state authority. These include:

Big Creek Fisheries Egegik Plant -AKG520166

Icicle Seafoods Inc Egegik Plant-AKG520048

Coffee Point Seafoods Egegik Plant-AKG520536

Peter Pan Seafoods Port Moller Cannery- AKG520014

Alaska Peninsula Fisherman's Cooperative

Sewage outfalls should not be allowed near subsistence use areas. The Lake and Peninsula Borough is working on mapping subsistence areas near villages. Infrastructure is limited in villages; too many restrictions may not be viable.

Proposed policy: The department may authorize, on a case-by-case basis, the construction and use of a temporary or permanent commercial or industrial facility or other related structure (e.g., resource development facility, wind farm, outfall, floating structure) on state or private lands within the critical habitat areas, under terms and conditions of a Special Area Permit. The department will not allow a permanent commercial facility on state land within the critical habitat areas unless it meets a public need which cannot otherwise be met on adjacent public or private lands, and which does not displace other established use.

Evaluation: This policy would assure that any structure is appropriately sited, constructed, and operated to avoid impacts to fish and wildlife populations and their habitats, and public use of fish and wildlife. Conflicts between a commercial facility/structure and established non-commercial uses would be avoided. Where authorized, a commercial facility or structure could increase the level of harvest activities and/or non-consumptive uses of fish and wildlife. Public use could increase under this policy. There would be no significant change in management

responsibilities for permitting, monitoring, and enforcement. Prohibitions on permanent commercial facilities on state land, except for those that meet a public need and cannot be located outside of state land in the critical habitat areas, will help to avoid conflicts among CHA users.

PIPELINES AND UTILITIES

Issue: Develop a policy on where utility corridors can be established, and what form the lines could take.

Background: The Lake and Peninsula Borough is looking into wind power in many places; and there are not many suitable locations for turbines, so is likely that power transmission lines would be needed. O&G potential will increase needs for transmission lines and/or possible pipelines for natural gas or oil. The Department of Natural Resources (DNR), Division of Oil and Gas (DO&G) considers the Port Moller-Herenden Bay area as the most prospective for oil and gas exploration and for an offshore-onshore gas pipeline servicing the entire Bristol Bay-North Aleutian Basin region. In addition, Herenden Bay to Balboa, Port Heiden to Kujulik Bay, and Pilot Point to Wide Bay are the three trans-peninsula transportation corridors identified in the DNR Bristol Bay Area Plan. Fiber optic lines and water pipelines are both parts of projects in the conceivable future.

Proposed policy: The department will not allow construction of a new utility line or pipeline in tide and submerged lands in the critical habitat areas. Construction of a new utility line or pipeline on state-owned uplands within the critical habitat areas may be authorized where there is no feasible alternative outside of the critical habitat areas. The department may allow construction of a new utility line or pipeline on private lands within the critical habitat areas under terms and conditions of a Special Area Permit. A permitted utility line or pipeline shall be sited within an existing corridor, wherever possible. Any easement issued on state lands within the critical habitat areas will be for non-exclusive use only. A permitted utility line or pipeline will be located below ground, except that the department may authorize, on a case-by-case basis, an above-ground utility line or pipeline if below ground installation is not feasible due to site-specific conditions.

Evaluation: This policy would assure that any authorized pipeline or utility is appropriately sited, constructed, and operated to minimize disturbance or displacement of fish and wildlife populations and impacts to their habitats. Collocation of lines and use of non-CHA lands will minimize habitat damage. Public access and use may be temporarily restricted during construction of pipelines or utilities. Public access may also be increased by new pipeline or utility corridors. There would be an increase in management responsibilities for monitoring restoration of corridors to pre-project conditions and monitoring use of corridors, if necessary.

OIL AND GAS

Issue: Develop a policy providing guidance on the conditions under which oil and gas exploration, development and production may be allowed in Bristol Bay Critical Habitat Areas.

Background: There is little seismic information for the area, and what does exist is old. Since 1906, there have been 26 wells drilled on the Alaska Peninsula. The latest onshore well, the Amoco Becharof #1 was drilled in 1985. One offshore stratigraphic test well, the ARCO North Aleutian COST Well #1 was drilled in 1983. Test results from three wells drilled in the Port Moller area indicated potential oil reserves (e.g., Pan American Petroleum Corporation David

River #1, Gulf Sandy River #1, and Pan American Petroleum Corporation Hoodoo #1). Results from the Amoco Becharof #1 well indicated potential natural gas. No wells to date have flowed commercial quantities of oil. The Department of Natural Resources (DNR), Division of Oil and Gas (DO&G) considers the Port Moller-Herenden Bay area as the most prospective for oil and gas exploration and for an offshore-onshore gas pipeline servicing the entire Bristol Bay-North Aleutian Basin region. In addition, Herenden Bay to Balboa, Port Heiden to Kujulik Bay, and Pilot Point to Wide Bay are the three trans-peninsula transportation corridors identified in the DNR Bristol Bay Area Plan. There are active surface seeps of natural gas onshore. There is a general opinion that little oil and gas potential exists near the Egegik CHA. The potential for additional exploration activities will likely be influenced by federal lease activities.

The federal Bureau of Ocean and Energy Management, Regulation, and Enforcement (BOEMRE), formerly known as the Mineral Management Service), was preparing to offer the North Aleutian Basin in an Outer Continental Shelf Lease Sale (Lease Sale 214) in 2011, with a draft EIS due in 2010. This sale was delayed following an April 17, 2009 federal appeals court ruling that the environmental impacts of BOEMRE Beaufort Sea, Bering Sea, and Chukchi Sea oil and gas lease sales were not adequately analyzed. On March 31, 2010, President Obama issued a memorandum for the Secretary of the Interior withdrawing the Bristol Bay area of the North Aleutian Basin in Alaska from disposition by leasing through June 30, 2017. The Secretary of the Interior's April 2010 Preliminary Decision deferred the entire North Aleutian Basin from the 2007-2012 Five-Year OCS Oil and Gas Leasing Program indicating the decision was based on the determination that the potential risks from a Bristol Bay sale, particularly to the commercial fishing industry, outweighed the potential for discovery of oil and gas. The North Aleutian Basin sale area is located entirely offshore and extends from Unimak Island to a point north of the town of Port Moller. This area was originally offered for sale by the Mineral Management Service in 1988 (MMS 85-0052). Twenty-three leases were issued but no wells were drilled due to Presidential and Congressional moratoria on oil and gas activities in 1989 and a subsequent federal buyback of the leases.

DO&G has been conducting lease sales for the Alaska Peninsula since 2005. In 2008, Shell Oil relinquished leases for 33 tracts obtained earlier in the Port Moller area. In October 2010, Hewitt Mineral Corporation relinquished five tracts they had acquired in earlier leasing. No bids have been received on annual Alaska Peninsula lease offerings since 2008. ADF&G developed mitigation measures for the BBCHAs which are included in the 2005 Alaska Peninsula Areawide Oil and Gas Lease Sale, Final Finding of the Director (Alaska Peninsula Best Interest Finding). The Best Interest Finding must be re-written every ten years, and therefore the next Best Interest Finding must be completed no later than 2015.

Egegik CHA and portions of Pilot Point CHA are included in the Bristol Bay Fisheries Reserve.

AS 38.05.140 (f) states that, "The submerged and shoreland lying north of 57 degrees, 30 minutes, North latitude and east of 159 degrees, 49 minutes, West longitude within the Bristol Bay drainage are designated as the Bristol Bay Fisheries Reserve. Within the Bristol Bay Fisheries Reserve, a surface entry permit to develop an oil or gas lease or an exploration license under [AS 38.05.131](#) - 38.05.134 may not be issued on state owned or controlled land until the legislature by appropriate resolution specifically finds that the entry will not constitute danger to the fishery." Further, the Alaska Peninsula Best Interest Finding states in Chapter 7, Mitigation Measure 4, "The siting of temporary or permanent facilities will be prohibited within the Bristol Bay Fisheries Reserve."

The DO&G has worked with the Aleutians East Borough, the Bristol Bay Borough, and the Lake & Peninsula Borough to address petroleum resource development on state lands. All three boroughs signed a 2004 memorandum of agreement (MOA) that establishes the mutual interests of all parties in facilitating and achieving responsible oil and gas development in the area. A new five-year MOA to continue that agreement was signed by all parties in early 2010 and remains in effect.

The Bristol Bay CHAs are relatively small areas. Surface entry below mean high water is currently prohibited by the state. It may be reasonable to directionally drill from adjacent sites outside of the CHAs. For purposes of exploration, seismic methods would likely be used, requiring ship-borne or surface-based force generation and recording equipment for a period of a few weeks. Offshore seismic exploration activities have the potential to interfere with commercial fishing and may result in disturbance of birds, fish (including juveniles/ crab larvae), and marine mammals. The use of marine mammal observers, operational timing windows, and other mitigation measures incorporated into permit stipulations may minimize or preclude such conflicts.

In addition to CHA-specific mitigation measures, the DO&G Alaska Peninsula Best Interest Finding includes mitigation measures to address potential impacts to fish and wildlife resources within the entire lease sale area, including, a measure that prohibits facilities other than docks, roads, utility or pipeline corridors, or terminal facilities within ½-mile of the coast and various rivers and streams; and within 500 feet of all fish-bearing waters.

Proposed Policy: The department will not allow surface occupancy for oil and gas exploration, development, or production activities on state lands within ½ mile from the coast or within ½ mile of the Ugashik, King Salmon (tributary to Ugashik River), Cinder, Meshik, and Nelson Rivers; and on tide and submerged lands in the critical habitat areas, with the exception of seismic surveys or oil and gas pipelines and utility lines allowed by other policies. The department may allow seismic surveys associated with oil and gas activities in the critical habitat areas, by Special Area Permit.

The department may allow oil and gas exploration, development, and production activities in the remainder of state land in the critical habitat areas, by Special Area Permit, if it meets a public need which cannot be otherwise met on adjacent public or private lands, and which does not displace other established use.

The department may allow oil and gas exploration and development activities on private lands within the critical habitat areas, on a case-by-case basis, under terms and conditions of a Special Area Permit. Terms and conditions for oil and gas activity will be based upon applicable state oil and gas lease mitigation measures for the Alaska Peninsula and on the goals and policies of the management plan. It is not the intent of this policy to limit development of new stipulations based upon improved information and technology.

Evaluation: This policy would avoid impacts to tide and submerged habitats and minimize impacts to upland habitats through appropriate siting, design, and construction during permit review. Seismic surveys are transitory activities rather than permanent facilities, and will be conditioned by permit reviews. Impacts to fish and wildlife populations, including displacement and mortality from spills, would be minimized. Public access and use of the CHA for fish and wildlife harvest and non-consumptive use could be restricted in the immediate vicinity of oil and

gas infrastructure. Management responsibilities may increase based on location and duration of oil and gas activity.

ROADS/ TRAILS

Issue: Develop a policy that provides guidance for permitting construction, use, and maintenance of roads and trails in the critical habitat areas.

Background: The towns (Egegik, Pilot Point, Port Heiden, and Nelson Lagoon) associated with the CHAs all have small local road systems and a trail of some sort accessing a portion of the CHA. There are no roads in the Egegik CHA. There is a road north along the coast from the City of Pilot Point to Dago Creek, a portion of which is in the CHA. On the Nelson Lagoon spit there is a road linking the airport to the village and trails, along the length of the spit accessing the beach, which are used by ORV's and street-sized vehicles. From the beach, old oil and gas development roads can be reached; these are still suitable for vehicle use.

Most other access is by boat, ORV trail, or snow machine when snow depth is sufficient. ORVs are also driven along beaches in the unvegetated areas. Egegik CHA is accessed by an ORV trail along the coast from town, along the uplands, although a portion is on the beach. There is no ORV trail within the state-owned portion of the Egegik CHA. There are rutted upland trails near Pilot Point and Port Heiden. There is also community support for trail improvements in Egegik and Pilot Point CHAs. Trail maintenance may be the best way to minimize damage. Use of ORV's on unvegetated beaches is generally less damaging to habitat than on upland trails.

With potential oil and gas exploration nearby and known coal reserves off Herendeen Bay, new roads may become an issue. Should oil and/or gas be discovered, there would likely be a need for a transportation corridor to be constructed for the movement of materials and product to the southern side of the Alaska Peninsula. Transportation corridors potentially affecting the CHAs have been included in DNR's Bristol Bay Area Plan, including Herendeen Bay to Balboa, Port Heiden to Kujulik Bay, and Pilot Point to Wide Bay. There is also a proposal to build a road to Egegik's South Spit. There are significant areas within the boundaries of the CHAs which are private (e.g., native corporation land). Access to private property will need to be addressed.

Some roads from earlier O&G exploration continue to function as roads. O&G plan approval process may include requirements for road restoration.

Proposed policy: The department will not allow construction of new permanent roads or trails for motorized use on state land within the critical habitat areas, except that the department may authorize, on a case-by-case basis, a new road or trail to access a private in-holding by Special Area Permit. The department may, in its discretion, allow construction of a temporary road, or maintenance or improvement to an existing road or trail on state land within the critical habitat areas by Special Area Permit, if the temporary road or maintenance or improvement to an existing road fulfills a demonstrable need for which there is no feasible alternative.

The department may allow construction of a temporary or permanent road or trail; or maintenance or improvement to an existing road or trail on private lands within the critical habitat areas under terms and conditions of a Special Area Permit.

Evaluation: This policy would avoid impacts to fish and wildlife habitats on state land from new road construction. Disturbance or displacement of fish and wildlife populations would be minimized through design and timing of any maintenance or improvement activities. Impacts to

fish and wildlife harvest and gathering of wild resources would be avoided. Public access may be improved through maintenance or improvements of existing trails, but no current legal access activity is being restricted. This policy would minimize impacts to fish and wildlife habitats and harvest activities on private lands from new road construction. There would be no significant change in management responsibilities for permitting, monitoring, and enforcement.

AIRSTRIPS

Issue: Develop a policy that provides guidance for permitting construction, use, and maintenance of airstrips in the critical habitat areas.

Background: Egegik airstrip is public and owned by the City of Egegik. Nelson Lagoon, Pilot Point, Port Heiden all have rural airports maintained by ADOT&PF. Ugashik has a BLM owned public airstrip. The Port Moller airstrip is owned by the Aleutians East Borough. Small wheeled planes commonly land on the beaches of spits and barrier islands. Only Nelson Lagoon's airport is within the CHA boundaries; it is also within a ADOT Right of way. Airstrips at Egegik and Pilot Point are outside the CHAs. Additional airstrips may not be needed inside the areas since there are sites nearby, outside of CHAs.

Proposed policy: The department will not allow construction of new airstrips on state land within the critical habitat areas. The department may allow construction of a new airstrip on private lands and allow use, maintenance, and/or improvements to existing airstrips on state and private lands within the critical habitat areas under terms and conditions of a Special Area Permit.

Evaluation: This policy would avoid additional impacts to fish and wildlife habitats and fish and wildlife populations from airstrip construction and subsequent use. Impacts to fish and wildlife harvest and gathering of wild resources would be avoided. Public access may be improved through maintenance or improvements of existing airstrips. Impacts from maintenance activities would be minimized through appropriate design and timing of maintenance work. There would be no significant change in management responsibilities for permitting, monitoring, and enforcement.

MINING

Issue: Develop a policy that sets forth the terms and conditions under which mining could be permitted on valid existing claims.

Background: There were a series of state mining claims along Birthday Creek near Port Heiden; however, the state mining claims were closed in 2004 as the lands were only state selected, not patented. In addition, there was a beach mining operation for metal bearing sands near Port Heiden (7th Sea Holding Co., although they haven't operated in a few years. The state mining claims were closed in 2009. Metal bearing sands (titanium, gold, etc.) have been identified in the Port Moller area. Mining techniques can include suction dredging, heavy equipment, hand equipment, sluice boxes, gold pans, magnetic/chemical processing, and/or settling impoundments. There would be a concern with erosion from beach mining, and the Lake and Peninsula Borough already monitors project permits for this.

There are known coal reserves near Nelson Lagoon CHA. Coal mining and exploration is regulated by DNR under the Alaska Surface Mining Control and Reclamation Act (ASMCRA). ASMCRA has its own set of standards and review process.

The Commissioner of DNR has the authority to open or close land within the CHAs to new mineral entry under AS 38.05.185 – 38.05.275. Although a Special Area Permit can condition mining activity, mining may occur within open areas in the CHAs. If these lands are not closed to future mineral entry and leasehold location, they will continue to be available to the public for staking. The Commissioner of DNR also has the authority to temporarily close 640 acres of state lands to mineral leasing and new mineral entry where it is determined that mining is incompatible with significant surface resources, in this case fish and wildlife habitat and populations, and public use and enjoyment of those resources. The legislature can permanently close state lands to new mineral entry.

Through a separate action, DNR can establish a Leasehold Location Order (LLO) for the refuge to allow mining operations in a manner that maintains critical habitat area values and is compatible with the purposes for which the CHAs were established. LLO's do not have a geographic size requirement or limitation; the DNR Commissioner may issue an LLO with or without an associated management plan. Absent a closing order or legislation, a LLO is an option for management of the Bristol Bay CHAs due to the potential incompatibility of mining activity.

An LLO would restrict mining in a specific CHA to terms of a lease. This may be desirable, because in Alaska, rights to locatable minerals on lands owned by the State of Alaska are obtained by making a mineral discovery, staking the boundaries of the location, and recording the certificate of location within a designated time period. In most areas, such a location is a "mining claim" that gives the owner an immediate property right to mine the deposits. However, in areas of the state that have been restricted to leasing, the location is a "leasehold location" rather than a mining claim. The leasehold location must be converted to an upland mining lease before mining begins. No mining of minerals on leasehold locations may take place, except for limited amount necessary for sampling or testing, until a mining lease has been obtained. The leasing process includes the exclusive right to convert the leasehold location to a noncompetitive lease. No lease sale or open bidding would occur.

Proposed policy: The department may allow mining of valid mining claims or leaseholds in the critical habitat areas under terms and conditions of a Special Area Permit. The department will not allow recreational mining on state land within the critical habitat areas. The department may allow commercial or recreational mining on private lands under terms and conditions of a Special Area Permit.

Evaluation: This policy conforms to existing state mining laws and would minimize impacts to fish and wildlife habitats through appropriate siting, design, and timing of mining activities; however, mining activity on existing claims has the potential to remove or alter productive habitat in the CHA. The prohibition on recreational mining would minimize habitat damage and disturbance or displacement of fish and populations; however, impacts could occur from operations on mining claims. Impacts to fish and wildlife harvest and gathering of wild resources would also be minimized. Public access could be restricted in the vicinity of mining claims. There would be no significant change in management responsibilities for permitting, monitoring, and enforcement.

The department would continue to work with DNR to identify LLO's or mineral closing orders for areas within the CHAs to preclude impacts to fish and wildlife populations and their habitats from future mining activities.

MATERIAL EXTRACTION

Issue: Develop a policy that provides guidance in determining where and under what conditions material extraction may be permitted to occur in the Bristol Bay critical habitat areas.

Background: Material removal from the intertidal areas occurred during early Dept. of Defense construction, which included the Port Heiden White Alice site.

Removal of material can alter water flow patterns, and decrease the “sediment budget” leading to changes in erosion and deposition. Many habitat types are based on substrate and water flow, barrier islands and spits, haulouts, and shallow intertidal areas. Erosion can also threaten infrastructure.

It is an issue in terms of effects on coastal erosion. Material extraction is also an issue to be addressed due to a lack of gravel in some communities. In Egegik, there are two schools of thought on the issue: one is to mine the gravel before it erodes away, the other is to not do anything that may speed up the spit erosion.

DNR may identify conflicts based on where the CHAs overlap with their identified potential gravel sources.

Definition for “material” in Sec. 38.05.965(10)- "material" includes sand, stone, gravel, pumice, and common clay.”

Proposed policy: The department will not allow material extraction (sand and gravel removal) on state land within the critical habitat areas, except that the department may authorize material extraction for purposes of maintenance, enhancement, restoration, or management of the critical habitat areas or in association with an authorized mining activity by Special Area Permit. The department may allow material extraction on private lands within the critical habitat areas under terms and conditions of a Special Area Permit. Impacts of material extraction activities, including activities on private lands, within the critical habitat areas will be fully mitigated including, rehabilitation and restoration, as appropriate.

Evaluation: This policy would protect fish and wildlife habitats, while allowing for material extraction for the purpose of maintaining, enhancing, or restoring fish and wildlife habitat. Disturbance or displacement of fish and wildlife populations would be avoided, except for possible short-term effects during material extraction for CHA purposes. The department does not foresee such activities in the near term. Impacts to fish and wildlife harvest, gathering of wild resources, and non-consumptive uses would be avoided. Public access would be maintained; however access could be improved if, for example, gravel is used to harden ORV trails. There would be no significant change in management responsibilities for permitting, monitoring, and enforcement. If material extraction for CHA purposes were proposed, the department would be closely involved in the design and planning of the project.

HAZARDOUS SUBSTANCES AND WASTE DISPOSAL

Issue: Develop a policy to address the placement of hazardous substances and waste in the critical habitat areas.

Background: AS 46.09.900 defines a hazardous substance as, (A) an element or compound that, when it enters into or on the surface or subsurface land or water of the state, presents an imminent and substantial danger to the public health or welfare, or to fish, animals, vegetation,

or any part of the natural habitat in which fish, animals, or wildlife may be found; or (B) a substance defined as a hazardous substance under 42 U.S.C. 9601 -- 9657 (Comprehensive Environmental Response, Compensation, and Liability Act of 1980); "hazardous substance" does not include uncontaminated crude oil or uncontaminated refined oil. There are no known fuel storage sites within the CHAs.

Port Heiden, Pilot Point, and Nelson Lagoon have beach loading facilities for community fuel tanks. There are also contaminated sites near Pilot Point Cannery (former fuel storage) and north of Port Heiden CHA (Formerly Used Defense Site).

Proposed policy: The department will not allow disposal of hazardous substances (as defined by AS 46.09.900) and petroleum-based fuels in the critical habitat areas. Storage of hazardous substances or fuel is not allowed unless required to conduct an activity authorized by Special Area Permit, under conditions identified by the department. Authorized fuel storage will only be permitted for the period of operation during which the fuel is required to conduct the activity. Fuel authorized for storage must be contained in a structure that holds 110% of the combined volume of all fuel containers, and the containment structure or fuel containers must not be susceptible to damage by bears. This policy does not apply to fuel on board vessels, vehicles or aircraft; or for fuel actively used in a camp; or for fuel contained within authorized structures.

Waste disposal is not allowed on state land within the critical habitat areas, with the exception of disposal associated with activities allowed by the Commercial/Industrial Facilities policy. Waste disposal on private lands may be authorized under terms and conditions of a Special Area Permit in accordance with Department of Environmental Conservation requirements (18 AAC 60 and 18 AAC 72).

Evaluation: This policy would help to preclude impacts to fish and wildlife populations and their habitats from pollution with waste and hazardous substances. Impacts to fish and wildlife harvest, gathering of wild resources, and non-consumptive uses would be avoided. This policy would maintain public access, since small amounts needed for transportation are not prohibited. There would likely be no significant change in management responsibilities for permitting, monitoring, and enforcement; however, with the remoteness of the CHAs, an increase in monitoring and enforcement could be warranted.

SHORELINE ALTERATION

Issue: Develop a policy to protect infrastructure, land loss, habitat loss, and natural processes.

Background: Eiders, sea otters, etc. depend on mussels and clams that grow in shallow intertidal, beach and tide flat areas are important habitat for many species, allow growth of eel grass in some areas. Changing climate pattern, such as increased storm frequency and intensity and/or reduced sea ice make existing coastlines more vulnerable.

Coastal erosion is prominent in several areas. e.g., the recently moved road in Pilot Point; erosion of South Spit at Egegik; exposed landfill at Port Heiden. Based on old USGS to current satellite images and National Hydrography Database the Cinder River Estuary has expanded to about 5 times its size 40 years ago.

This is a very large issue in Egegik; increasing erosion of the spit is causing increasing erosion near the town. Some bank stabilization projects have already been done near Nelson Lagoon; sediment socks were used on the beach and did not work very well. Generally, the department

does not advocate alterations of natural processes within a CHA unless a public resource is threatened. In the Kachemak Bay CHA, “shoreline alteration” is generally not allowed, but would require a permit if authorized. Tank farms exist near the coast in villages, and stabilization in these areas will be an issue.

Proposed policy: Except as provided in the *Docks and Boat Ramps*, and *Commercial/Industrial Facilities* policies, the department will not allow alteration of the natural shoreline of the critical habitat areas, unless the alteration will provide an overwhelming public benefit and there is no feasible upland alternative, or in the case where the proposed project is constructed entirely on privately owned land or tidelands for the purpose of private property protection. Shoreline alteration of public tidelands to protect private property will not be allowed. Shoreline alteration will, to the maximum extent practicable, follow the natural configuration of the shoreline and avoid impacts to fish and wildlife populations, their habitat, and public use and enjoyment of the critical habitat areas. Maintenance and clean-up of shore retention structures will be required of any shoreline alteration project.

Evaluation: This policy would minimize impacts to tidelands through careful evaluation of shoreline alteration alternatives. Disturbance or displacement of fish and wildlife populations would be minimized through design and timing of installation. Habitat lost to bank armoring and hardened structures would only occur if the public benefit outweighs the impact to the CHA. Fish and wildlife harvest, gathering of wild resources, and non-consumptive uses would be avoided. There could be short-term limitations to public access during installation of shoreline alterations. There would be no significant change in management responsibilities for permitting, monitoring, and enforcement.

WATER QUALITY

Issue: Develop a policy addressing water quality in the Bristol Bay Critical Habitat Areas.

Background: Water quality has a direct tie to fisheries, and the region/villages are dependent on fisheries. Water quality is also important to wildlife populations.

Proposed policy: Water quality in the critical habitat areas shall meet or exceed state water quality standards for the growth and propagation of fish, shellfish and other aquatic life, and wildlife. Cumulative effects of waste discharges shall be considered when determining whether to allow multiple activities within the critical habitat areas that meet the above specified standards.

Evaluation: This policy would help to avoid impacts to fish and wildlife habitats from activities that could impact water quality. Good water quality is an important component of high quality habitat. Impacts to fish and wildlife harvest, gathering of wild resources, and non-consumptive uses would be avoided. This policy would maintain public access. There would likely be no significant change in management responsibilities for permitting, monitoring, and enforcement; however, with the remoteness of the CHAs, an increase in monitoring and enforcement could be warranted. The department would work closely with the Alaska Department of Environmental Conservation and the U.S. Environmental Protection Agency to assure water quality is maintained.

IMPLEMENTATION

The *Bristol Bay Critical Habitat Areas Management Plan* will be implemented by the Alaska Department of Fish and Game through its day-to-day management activities, through its annual budgetary process, and through Special Area Permits issued for land use activities in the Critical Habitat Areas.

SPECIAL AREA PERMITS: A Special Area Permit is required for any habitat altering activity, including construction, or any activity which disturbs fish or wildlife other than lawful hunting, trapping, and fishing in the five Bristol Bay Critical Habitat Areas. Project reviews are conducted by habitat biologists in coordination with other division staff. Department biologists use available supporting scientific data and best professional judgment to determine if a proposed activity will be compatible with the statutory purpose of the refuge and the goals and policies identified in the management plan; and hence should be permitted. The permitting biologist often reviews similar previously issued permits to maintain consistency. Permitting decisions may be appealed through the elevation process (5 AAC 95.920 and AS 46.62.330-630).

A Special Area Permit application form can be obtained from any Alaska Department of Fish and Game office or from the department's website at <http://adfg.alaska.gov/>. The completed application should be submitted to the Division of Habitat office in Anchorage (5 AAC 95).

LOCAL KNOWLEDGE: Department staff will continue to work with users of the area to apply local information and knowledge to management of the CHAs. The Department will seek cooperation with Native Corporation land managers to promote compatible policy and development decisions for privately owned adjacent lands and private lands within the legislative boundaries.

Department staff will work to disseminate CHA information to local users.

PUBLIC ACCESS: The department will coordinate with the Federal Aviation Administration to encourage and request pilots to maintain a minimum altitude of 1,000 feet above the surface of the critical habitat areas due to large concentrations of migratory waterfowl. The minimum altitude advisory would not apply to aerial surveys conducted for fish and wildlife management and research.

BOUNDARY CORRECTIONS: The department will coordinate with DNR to prepare a recommendation to the legislature to amend statutory boundary descriptions to correct existing inaccuracies. The boundaries described in the original designating statutes for the Port Moller, Pilot Point, and Egegik Critical Habitat Areas contain several typographical and map interpretation mistakes that have resulted in the legal boundaries being shifted from the logical locations. Port Moller is the most problematic example, in that all sections in Township 48 South are shifted one range to the west; possibly due to a range labeling mistake on the U.S. Geological Survey Topological map used to write the boundary description when the bill was introduced to the legislature in 1972. The correction will incorporate barrier islands into the CHA rather than areas of open ocean.

MINING CLAIMS AND LEASEHOLD LOCATIONS: The department will work with DNR to prepare mineral leasehold location orders for the Bristol Bay CHAs and also recommend that DNR not offer offshore prospecting permits or leases within the CHAs. The department will recommend that the legislature close the CHAs to new locatable mineral entry, mineral prospecting, and mineral leasing under AS 38.05.185-38.05.300.

ACTIONS OF FEDERAL, OTHER STATE, AND LOCAL AGENCIES: This plan will also be used by other state, federal, and local decision-makers in planning for and making decisions for the CHAs under their respective statutory authorities.

PROPOSED CHANGES TO 5 AAC 95

Amend 5 AAC 95 by adding a new section to read:

5 AAC 95.62X. Bristol Bay Critical Habitat Areas Management Plan. The goals and policies stated in the Bristol Bay Critical Habitat Areas Management Plan dated ___ are adopted by reference. The plan presents management goals and policies for Egegik, Pilot Point, Cinder River, Port Heiden, and Port Moller critical habitat areas and their resources that the department will use in determining whether proposed activities in the critical habitat areas are compatible with the protection of fish, wildlife, their habitats, and public use of the critical habitat areas. Under 5 AAC 95.420, a special area permit is required for certain activities occurring in a designated state critical habitat area. The department will review each special area permit application for consistency with the goals and policies of the management plan adopted by reference in this section. A special area permit for an activity in the Egegik Critical Habitat Area, Pilot Point Critical Habitat Area, Cinder River Critical Habitat Area, Port Heiden Critical Habitat Area, or the Port Moller Critical Habitat Area will be approved, conditioned, or denied based on the criteria set out in the goals and policies stated in the Bristol Bay Critical Habitat Areas Management Plan and on the standards contained elsewhere in this chapter. (Eff. __, Register __; __/__/2010, Register _____)

Authority: AS 16.05.020	AS 16.20.550
AS 16.05.050	AS 16.20.555
AS 16.20.500	AS 16.20.560
AS 16.20.520	AS 16.20.565
AS 16.20.530	AS 16.20.570

Amend 5 AAC 95 by adding a new section to read:

5 AAC 95.62X. Bristol Bay Critical Habitat Areas. (a) The following conditions apply to activities in the Egegik Critical Habitat Area, Pilot Point Critical Habitat Area, Cinder River Critical Habitat Area, Port Heiden Critical Habitat Area, or Port Moller Critical Habitat Area (critical habitat area):

(1) Off-road use of wheeled, tracked, or other ground-effect motorized vehicles: The off-road use of wheeled, tracked, or other ground-effect motorized vehicles is prohibited within the critical habitat area, except that:

(A) the department will, in its discretion, issue a general permit under 5 AAC 95.770 for the off-road use of a wheeled, tracked, or other ground-effect motorized vehicle of less than 1,000 pounds dry vehicle weight as follows:

- (i) on beaches or specified trails in ice free months; and
- (ii) on all critical habitat area land when there is adequate snow and/or ground frost conditions as described in the general permit;

(B) the department may issue an individual special area permit, on a case-by-case basis, for the off-road use of a wheeled, tracked, or other ground-effect motorized vehicle within the critical habitat area not covered under (A) of this paragraph if the use is consistent with the goals and policies of the management plan under this section; and consistent with the purpose for which the critical habitat area was established;

(C) a person must obtain a special area permit before operating an off-road vehicle in the critical habitat area, unless a general permit is issued under (A) of this paragraph.

(2) Aircraft Access. A person must obtain a special area permit before the landing and taking off of a helicopter in the critical habitat area.

(3) Structures. A person may not construct a structure, including duck blinds, navigation aids, or other hardened structure, within the critical habitat area without first obtaining a special area permit.

(4) Camping. The following restrictions apply to camping activities within the critical habitat area:

(A) a person may not engage in non-commercial camping on state land within the critical habitat area for more than 14 consecutive days at one location unless authorized by a special area permit issued before the camping activity begins;

(B) a person may not provide commercial camping services within the critical habitat area unless authorized by a special area permit issued before providing the services;

(C) the following requirements apply to all camping activities within the critical habitat area:

(i) a person may not place, deposit, or leave any solid waste, including garbage and litter, on state land within the critical habitat area; all waste must be removed at the time the camping activity ends;

(ii) a person may not place, deposit, or leave any solid waste on private lands within the critical habitat area unless authorized by a special area permit issued before the camping activity begins;

(5) Boat Storage and Maintenance. The following restrictions apply to boat storage or boat maintenance with the critical habitat area:

(A) a person must obtain a special area permit before placing or anchoring a vessel within the critical habitat area for more than 14 consecutive days, unless a general permit is issued under (B) of this paragraph;

(B) the department may, in its discretion, issue a general permit under 5 AAC 95.770 for the anchorage of vessels for more than 14 consecutive days in the critical habitat area if the use is consistent with the goals and policies of the management plan under this section; and consistent with the purpose for which the critical habitat area was established;

(C) a person may not conduct boat maintenance activities that may result in a discharge within the critical habitat area unless authorized by special area permit issued before maintenance activities begin.

(6) Mining. A person may not engage in mining activities within the critical habitat area unless authorized by a special area permit issued before the mining activity begins.

(7) Fuel Storage and hazardous substances: the following restrictions apply to fuel storage and the handling of hazardous substances within the critical habitat area:

(A) a person may not release or dispose of a hazardous substance as defined by AS 46.09.900, or petroleum-based fuel in the critical habitat area;

(B) a person may not store fuel in the critical habitat area unless authorized by a special area permit issued before the activity begins; this prohibition does not apply to

(i) fuel contained in fuel tanks on board vessels, vehicles, or aircraft;

(ii) fuel actively used in a camp; and

(iii) fuel contained within permitted structures.

(b) In this section,

(1) "commercial camping service" means the provision of assistance for compensation, or with the intent to receive compensation, to persons who camp in the critical habitat area;

(2) "solid waste" means garbage, refuse, abandoned, or other discarded solid or semisolid material, regardless of whether subject to decomposition, originating from any source. (Eff. __, Register __; __/__/2010, Register _____)

Authority: AS 16.05.020

AS 16.05.050

AS 16.20.500

AS 16.20.520

AS 16.20.530

AS 16.20.550

AS 16.20.555

AS 16.20.560

AS 16.20.565

AS 16.20.570

APPENDIX A: RESOURCE INVENTORY

Public Review Draft

**Bristol Bay Critical Habitat Areas
(Egegik, Pilot Point, Cinder River, Port Heiden, and Port Moller)
Management Plan**

APPENDIX A

Resource Inventory

by
Division of Habitat
and
Division of Wildlife Conservation



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INTRODUCTION

In 1972 (§ 2 ch SLA 1972) the Alaska Legislature established five state critical habitat areas (CHAs) at major estuaries along the southern shore of Bristol Bay to protect natural habitat and game populations, especially waterfowl and shorebirds. From north to south along the Alaska Peninsula, they are as follows: the Egegik CHA at the mouth of Egegik River; the Pilot Point CHA at the mouths of King Salmon and Ugashik Rivers; the Cinder River CHA at the mouth of Cinder River and Mud Creek; the Port Heiden CHA at the mouth of Meshik River; and the Port Moller CHA in Port Moller itself and near the mouth of the Sapsuk River. Together, the Bristol Bay CHAs encompass approximately 284,050 acres, including the state lands, waters, and tide and submerged lands.

The Bristol Bay CHAs support a diverse array of wildlife, commercially important marine resources, and ecologically significant marine organisms. More than 30 species of groundfish and shellfish depend upon the area for critical phases of their life history. King and tanner crabs, as well as shrimp, halibut, yellowfin sole, and herring are only a few of the commercially important fish and shellfish harvested in the area.

The unique habitats of the CHAs attract large numbers of resident and migratory birds, particularly waterfowl and shorebirds. Several species of waterfowl have an absolute dependency on one or more of the CHAs, and many species stop on the critical habitat areas during migrations between Asia and North America.

Killer and gray whales, harbor seals, sea lions, sea otters, and Pacific walruses are present in the offshore waters of the CHAs and the surrounding Bering Sea and Bristol Bay.

The high primary productivity of the general area is generated by the exchange of nutrients and physical dynamics between the Bering Sea and freshwater and terrestrial habitats.

Human activities include hiking, wildlife viewing and photography, recreational boating, sport and commercial fishing, hunting, marine transportation, and scientific research.

GENERAL AREA DESCRIPTION

The Alaska Peninsula is about 400 miles long, 100 miles across at its base tapering down to 3 miles across at the southwestern terminus; it extends from the mainland of Alaska towards the Aleutian Islands and separates Bristol Bay and the Bering Sea from the Northern Pacific Ocean. The southern (Pacific) side of the Alaska Peninsula is steep and rocky, with a shoreline formed by many glacial fjords. The Aleutian Range forms a spine of mountains and volcanoes 4,500 ft to 8,500 ft in elevation, running the length of the Peninsula. The Bristol Bay Lowlands extend from the Aleutian Range north towards the Bristol Bay coastline. This coastal plain area is characterized by low relief terrain, broad meandering streams and rivers, and many small lakes and ponds. The water table is high and the soil is typically poorly drained with a thick organic moss and sedge peat, interspersed with thin layers of volcanic ash.

Each of the five Bristol Bay CHAs is located on the northern coast of the Alaska Peninsula near a major freshwater input to the Bering Sea. These estuarine areas typically have unconsolidated sand, gravel or silt substrates; barrier island and spits are composed of coarser substrates, while extensive mudflats are exposed inside the lagoons and bays at low tides. The CHAs support an abundance and variety of waterfowl, shorebirds, fish, and marine mammals.

HYDROGRAPHY AND OCEANOGRAPHY

The East Bering Sea region is an area of high biological productivity, enabling it to support globally significant commercial fisheries, as well as large seabird, waterfowl, and marine mammal populations. The marine productivity of the region is driven by several physical factors including water temperature, wind mixing, influx of nutrients across the shallow continental shelf, and circulation patterns. The eastern portion of Bristol Bay is a broad shallow continental shelf (Stabeno et al. 2005). The inner shelf area lies adjacent to all the CHAs, extending from the shoreline to the 50 m bathymetry line, but can vary by tens of kilometers. The Bering Coastal Current originates from Gulf of Alaska waters flowing through Unimak Pass, travels northeasterly parallel to the Alaska Peninsula coast along the 50 m bathymetry line, and continues through the Bering Strait. This relatively weak current along with tidal flows drives marine transport in the vicinity of the CHAs. The inner shelf (< 30 m deep) is characterized by an unstratified water column caused by tidal mixing. The mean tidal ranges along the Alaska Peninsula are high (7.6 ft at Entrance Point in Port Moller to 13.8 ft at Egegik River), and there is considerable variation due to specific locality, season, and storm conditions. (COOPS 2009)

CLIMATE AND WEATHER

Subject to interannual variation, the southern extent of sea ice in the winter reaches into the region, directly affecting marine mammal and bird distribution and local weather conditions. The sea ice edge area itself is a biologically productive area due to the lowered salinity, water column stability, and to ice front structure. A large proportion of the annual primary productivity in the Bering Shelf region is derived from the spring phytoplankton bloom that accompanies ice retreat (Alexander and Niebur 1981). Additionally, the sea ice edge serves as a foraging platform for marine mammals and seabirds attracted by lower trophic level production.

The four northern BBCHAs are considered to be part of the transitional zone between the continental zone to the north and east and the maritime zone which includes the Aleutian Chain and the Alaska Peninsula on the Pacific (windward) side of the Aleutian Range. Weather in this region is typified by high summer temperatures in the lower 60's, relatively mild winters in the 20's, and overcast skies. High winds and storms regularly produce storm surges, during which low lying coastal areas are inundated by waves at high tides. Port Moller CHA lies just within the boundary of the maritime climate zone, which tends to be windier, rainier (33" annually), and has a lower range of annual average temperatures than northern areas (25° – 50°F) (DCCED Community Database 2004). Winter on the Bristol Bay side of the Alaska Peninsula is characterized by more frequent storms with high winds (Piatt and Springer 2007).

PRE-HISTORY AND HISTORY

The Alaska Peninsula is a very dynamic environment: climatic, volcanic and seismic factors have strongly influenced the landscape, and how humans have used that landscape. During the late Wisconsin glaciation, the shoreline of the northern Alaska Peninsula was deglaciated and exposed by low sea levels, (USGS Earth Surface and Processes Team 2006). It was during this time of lower sea levels that the Alaska Peninsula was first colonized by humans.

Explosive volcanic eruptions produce ashfall, pyroclastic flows, tsunamis, lahars (flooding and mudflows from snow and glacier melt) jökulhlaups (the draining of glacial and caldera lakes), seismic activity, and atmospheric effects, such as poisonous gasses and acid rains. This explosive

volcanism has periodically restarted the revegetation process across the Alaska Peninsula, leaving it a patchwork of vegetation types (Heusser 1983). Catastrophic volcanic eruptions between 4,000 and 3,500 years ago caused a massive zone of low biological productivity on the central Alaska Peninsula, probably resulting in the separation and differentiation of Eskimo and Aleut populations (VanderHoek and Nelson 2007). Volcanism continues to disrupt biological populations on the peninsula. In the recent past, the acidity of Mother Goose Lake and the King Salmon River was raised for several years by volcanic activity at Mt. Chiginigak, disrupting salmon runs in the Ugashik system (Morstad et al. 2009).

The Alaska Peninsula has been a mixing ground of cultures throughout the last 10,000 years, with the lower peninsula generally populated by groups affiliated with people in the Aleutians, and the upper peninsula most influenced by populations from Kodiak and northwest Alaska. During the late prehistoric period the central peninsula was the boundary between the Unangan (Aleut) in the south, the Alutiiq in the northeast and the Yupik (Eskimo) in the northwest.

Russian fur traders initialized western contact in the late eighteenth century, bringing western technology as well as forced servitude and disease. In the late 19th century, saltery and cannery operations began and introduced commercial fishing throughout the Bristol Bay region. This influx of cannery workers, fishermen, and commercial facilities changed the landscape of the region as settlements were established around canneries. Commercial fishing and subsistence activities continue to be the mainstays of the local economy.

Although a comprehensive inventory of the critical habitat areas has never been undertaken, numerous archaeological sites have been identified on the Alaska Peninsula. Historic sites include villages and cabins used for hunting, trapping and fishing. Ancient sites generally represent habitation sites. Cultural sites may be found anywhere. Sites are commonly found at stream confluences and outlets, on dry river terraces, as well as in beach berm systems and on peninsulas projecting into bays. Historic cemeteries are also known in the region, including locations where graves have been exposed through beach erosion.

MINERAL RESOURCES

There were a series of state mining claims along Birthday Creek near Port Heiden; however, the state mining claims were closed in 2004 as the lands were only state selected, not patented. In addition, there has been a beach mining operation proposed for metal bearing sands near Port Heiden (7th Sea Holding Co., although they haven't operated in a few years). The state mining claims were closed in 2009. Metal bearing sands (titanium, gold, etc.) have been identified in the Port Moller area and at beaches south of Egegik CHA. Mining techniques can include suction dredging, heavy equipment, hand equipment, sluice boxes, gold pans, magnetic/chemical processing, and/or settling impoundments. There would be a concern with erosion from beach mining, and the Lake and Peninsula Borough already monitors project permits for this.

There are known coal reserves (Herendeen coal field) near Port Moller CHA.

A Mineral Closing Order (570) is in effect for 3,840 acres in the Nelson Lagoon area adjacent to the CHA (ADNR 2005).

Oil and Gas Exploration Activity and Potential Hydrocarbon Resources

The Bristol Bay CHAs are located within and near areas of interest to petroleum geologists and oil and gas exploration interests. There is little seismic information for the area, and what does

exist is old. Since 1906, there have been 26 wells drilled on the Alaska Peninsula. The latest onshore well, the Amoco Becharof #1 was drilled in 1985. One offshore stratigraphic test well, the ARCO North Aleutian COST Well #1 was drilled in 1983. Test results from three wells drilled in the Port Moller area indicated potential oil reserves (e.g., Pan American Petroleum Corporation David River #1, Gulf Sandy River #1, and Pan American Petroleum Corporation Hoodoo #1). Results from the Amoco Becharof #1 well indicated potential natural gas. No wells to date have flowed commercial quantities of oil. The Department of Natural Resources (DNR), Division of Oil and Gas (DO&G) considers the Port Moller-Herenden Bay area as the most prospective for oil and gas exploration and for an offshore-onshore gas pipeline servicing the entire Bristol Bay-North Aleutian Basin region. In addition, Herenden Bay to Balboa, Port Heiden to Kujulik Bay, and Pilot Point to Wide Bay are the three trans-peninsula transportation corridors identified in the DNR Bristol Bay Area Plan. There are active surface seeps of natural gas onshore. There is a general opinion that little oil and gas potential exists near the Egegik CHA. The potential for additional exploration activities will likely be influenced by federal lease activities.

HABITAT TYPES

Nearshore

Submerged aquatic vegetation in nearshore areas provides many important habitat functions as shelter and attachment substrate for invertebrates and juvenile fish. The vegetation itself is a nutrient source for zooplankton and waterfowl and the supported community attracts higher trophic level predators such as sea ducks, and marine mammals. Eelgrass (*Zostera marina*), grows in low intertidal and shallow subtidal areas on sand and mud substrates. Kelp (*Laminaria* sp.) typically grows in deeper water on rocky substrates; both are perennial plants.

Unvegetated mud and sand flats, which are exposed by low tides, support clam beds containing infaunal bivalves such as mussels (*Mytilus edulis*) and balthica macoma (*Macoma balthica*), clams, cockles, scallops and polychaete worms. (Petersen 1985) Invertebrates living below the substrate are consumed by foraging shorebirds. Exposed flats may also be used by marine mammals for hauling out.

Rocky shorelines are found in limited areas in Port Moller. Cliffs and rocky islands provide habitat for some sea bird colonies above tidal influence and submerged cobble substrates are preferred by some fish species, such as juvenile gadids and salmon (Thedinga *et al.* 2008).

Barrier islands and spits create shallow water lagoon areas protected from the Bering Sea. Sandy shorelines are used for overnight roosting, preening, and as a source of grit by waterfowl, especially brant (Schroeder 1984). Beaches serve as foraging areas and travel corridors for terrestrial mammals and haul outs for marine mammals. Seabirds and bald eagles may build ground or burrow nests on dunes, spits, or when tree and cliff habitat is unavailable, or the isolation of the island provides protection from terrestrial predators and disturbance. The backshore zone is the vegetated area, often with beach rye grass, above intertidal that is infrequently inundated by storm surges.

Terrestrial Vegetation

The two northernmost CHAs are located in the Bristol Bay- Nushagak Lowlands Ecoregion. A tentative ecoregion boundary has been proposed near Cinder River which would place the three southern CHAs in the Bristol Bay Lowlands Ecoregion (Tande and Michaelson 2001). Both these areas are similar, except the Bristol Bay Lowlands are characterized by a steeper coastal

plain and fewer lakes. The southeastern most portions of the Port Moller CHA lie partially in the Alaska Peninsula Mountains Ecoregion (Nowacki *et al.* 2001).

The wet tundra areas lower on the Peninsula typically support palustrine emergent wetlands, consisting of various sedges (e.g. *Eriophorum* sp.) and grasses (e.g. *Calamagrostis canadensis*) with a smaller component of bulrush *Scirpus* sp., horsetail, and/or low shrub (e.g. *Vaccinum* sp.). Areas higher in elevation, such as dunes, glacial moraines, or stream formed terraces have better drained soils with a higher content of sand and volcanic material; these areas support more woody vegetation, such as alder and shrub-scrub willow and dwarf birch (Selkregg 1974).

Aquatic Resources

All of the Bristol Bay CHAs are located at the mouths of one or more large rivers that support major salmon runs; several smaller streams supporting anadromous fish also occur in CHAs (Table A1).

Upland areas of the CHAs are thickly interspersed with small freshwater ponds, both isolated and connected to stream systems. A very limited survey of the Bristol Bay lowlands ponds north of Egegik CHA indicates that even small, shallow ponds can support Alaska blackfish, three and nine spine stickleback, long nose sucker, rainbow smelt, and northern pike and that these fish populations may be utilized by loons, grebes, and mergansers (Hildreth 2008). Pondweed (*Potamogeton* spp.) and water milfoil (*Myriophyllum* spp.) and other freshwater aquatic vegetation grow in these ponds and lakes and provide forage for herbivorous waterfowl. Freshwater marshes can be found adjacent to lakes.

INDIVIDUAL AREA DESCRIPTIONS

Egegik

The Egegik CHA encompasses estuarine, marine, and upland habitat at the mouth of Egegik Bay. The intertidal and submerged lands within the CHA boundaries, at low tide, are less than one fathom deep in most areas. The upland areas of Egegik CHA are tundra with many small isolated ponds. The most prominent feature of the CHA is South Spit which extends approximately 2.5 miles northward from the southern head of Egegik Bay across the mouth of the estuary. The width and length of the spit and associated barrier islands varies as they are eroded by storm events and costal currents. In recent history, there has been considerable erosion such that the spit is now bisected halfway along its length by a small channel. The spit itself is very narrow and consists of fine gravel and sand near the base and grades to coarse gravel and pebbles toward the end. Vegetation on the spit is limited to beach rye grass (*Elymus arenarius*) and some reed bent grass (*Calamagrostis canadensis*) towards the base of the spit. There are extensive mud flats located at the base of the spit, on the inshore side. These mudflats are only inundated at high tides and provide roosting habitat for shorebirds, especially dunlin, and waterfowl. Near the tip of the spit, shallow intertidal areas support large mussel beds, where waterbirds forage. There has been recent discussion within the community of Egegik on whether to influence erosion activity of the South Spit, so as to preclude erosion near town and to protect coastal infrastructure.

The City of Egegik (pop. 100 permanent; 2,000 seasonally) is located approximately seven miles northeast on the shore of Egegik Bay. The city-owned gravel strip provides air access and several dock facilities service the village and canneries. Overland access to the CHA from Egegik crosses native corporation lands, via an undeveloped 17(b) 25 –foot trail easement along

the shore. The Egegik CHA boundary includes 8,253 acres; 1,504 acres of which are privately owned by Becharof Native Corporation.

The Egegik River, which drains Becharof Lake, and the King Salmon River empty into Egegik Bay. These systems support one of the largest sockeye salmon runs in the Bristol Bay fishery.

Cinder River

The Cinder River CHA encompasses the portions of the lagoon and barrier island complex formed at the mouths of Cinder River and Mud Creek. Uplands areas are low lying mudflat or coastal sedge and grass flats, interspersed with many small lakes and ponds. Much of the original (since establishment of the CHA) land area has been inundated by expansion of the lagoon. Comparisons of old USGS maps to current satellite images and the National Hydrography Database suggest the Cinder River estuary has expanded to about five times its size 40 years ago. The Cinder River CHA boundary includes 25,773 acres; all land area is state owned. The closest inhabited area is Pilot Point to the north. Coastal grass flats around the mouth of Cinder River and south of the estuary are a critical spring feeding area for bears. (BBCMP 1987)

Pilot Point

The Pilot Point CHA is located around the shoreline of Ugashik Bay, and encompasses the mouths of the Ugashik, Dog Salmon and King Salmon Rivers, Dago Creek, and the coastline south of Ugashik Bay to Cape Menshikof. Like the Egegik CHA, though to a much lesser extent, a spit has formed at the southern head of the bay as a result of the longshore current moving sediment northwards. The village of Ugashik is located approximately three miles east of the eastern boundary of the CHA. The Pilot Point CHA boundary includes 46,551 acres; within the boundary, 21,912 acres are patented by the Pilot Point Native Corporation and two Native Allotments total 240 acres. The shoreline and uplands adjacent to the City of Pilot Point are not within the CHA. Access to the Pilot Point CHA is by boat or small plane. There is a ADOTPF maintained airstrip in Pilot Point; and unpaved road collocated in a RS2477 and 17(b) easement running north from town to the mouth of Dago Creek. There is a dock at Dago Creek and the area is used as a harbor, especially during summer months.

The area may have been used originally as a seasonal fish camp, but the permanent settlement developed around a saltery in 1889 and also housed river pilots to guide boats to the cannery upriver at Ugashik. By the time the 1918 influenza epidemic reached "Pilot Station," the Alaska Packer's Association was operating a cannery at the current Pilot Point town site. Cannery operations continued until the 1970s and some of the associated structures remain in place. There are also contaminated sites near Pilot Point Cannery (*i.e.* former fuel storage). Reindeer were introduced to the area after 1918, but eventually became feral or died-off when herding efforts failed. In more recent history, Pilot Point (76 residents) has become more populous and active than Ugashik (pop. 10).

Port Heiden

The Port Heiden CHA is located just south of the city of Port Heiden and adjacent to the old Meshik village site, and continues around the mouth of the Meshik River, the southern shore of the bay and adjacent wet tundra, and includes the vegetated spit extending from the southern head of the bay towards Strogonof Point. The inner waters of Port Heiden are very shallow, with the exception of deeper channels at the mouth of the bay and along the coast near the village. Low tides expose extensive mudflats. Uplands east of Yellow Bluff Creek are owned by the Port

Heiden Native Corporation, two privately held parcels total 240 acres, and the remainder of the 72,144 acres in the refuge is state-owned land.

In 1942, Ft. Morrow was constructed north of the old village site and approximately 5,000 people were stationed there. After World War II, the Army Air Corps Base was abandoned by the military except for a relatively small parcel retained by the Air Force for an eventual White Alice Communications Systems site and a Radio Relay Site. Remediation and removal of debris and contaminated soils associated with this site by the US Army Corps of Engineers was initiated in 1985 and has continued through 2009.

Meshik River is the primary freshwater system draining into Port Heiden. It supports a relatively small sockeye salmon run; Chinook and coho salmon, and anadromous Dolly Varden spawn in upstream reaches (Wagner and Lanigan 1988).

Port Moller

The Port Moller CHA encompasses portions of the largest estuarine embayment on the Bristol Bay side of the Alaska Peninsula. This estuary is separated into four distinct areas: Nelson Lagoon, Mud Bay, Herendeen Bay, and Moller Bay. Nelson Lagoon and Mud Bay are both shallow areas with mudflats that are dewatered at low tides and part of a barrier island/ spit complex. The Nelson Lagoon Spit is a approximately ten miles long, low laying sand spit vegetated above the intertidal area with beach rye. A number of barrier islands (the Kudobin Islands) extends towards the east from the spit and support several seabird colonies and marine mammal haulouts. The two more southern bays have very different characteristics. Although the lower areas of both bays contain mudflats at low tides; they also have deep channels and shelf regions. (McGurk 1996). Port Moller is the only one of the BBCHAs where rocky shorelines are found. There is also a fault near Left Head of Port Moller, trending parallel to the Alaska Peninsula (Wilson 1995).

Uplands in the Port Moller CHA in the Left Head and Right Head of Port Moller itself are part of the USFWS Alaska Peninsula National Wildlife Refuge. Other federal lands include one section near Mud Bay and 45 acres at the Hot Springs site. Eighteen Native Allotments within the CHA boundaries total 9,586 acres, and another 15,929 acres are held by the Nelson Lagoon Corporation.

The village of Nelson Lagoon lies on the spit on the southwest side of the CHA, and Port Moller lies on the northeastern side. Both communities have airstrips; the one in Nelson Lagoon is a DOT maintained public airstrip. Nelson Lagoon is an unincorporated community based on commercial and subsistence fishing. Port Moller is only seasonally inhabited; the majority of the population is associated with the Peter Pan Seafoods cannery operations during the summer. There is also an ADF&G office located at Port Moller.

Coastal erosion is a concern and some bank stabilization projects have already occurred near Nelson Lagoon; sediment socks were used on the beach and did not work very well.

AMPHIBIANS AND REPTILES

Amphibians and reptiles are not known to occur in the Bristol Bay CHAs. However, the CHAs lie within the range of the leatherback sea turtle (*Dermochelys coriacea*), which is also a federally listed endangered species (MacDonald 2003). This wide-ranging species typically forages in temperate waters, but non-breeding turtles seem to be more cold-tolerant and have

been seen in higher latitudes. Between 1960 and 2007, at least 19 leatherback sea turtles were observed between Southeast Alaska and the Alaska Peninsula (MacDonald 2003; ADF&G 2003). Leatherback sea turtles are an ESA listed endangered species. Wood frogs (*Rana sylvatica*) have been documented in southeast and central Alaska, north above the Arctic Circle, and to the base of the Alaska Peninsula. Wood frog surveys have not been conducted in the vicinity of the Bristol Bay CHAs.

BIRDS

Passerine, shorebird and waterfowl concentrations abound throughout the vicinity of the Bristol Bay critical habitat areas. The northern coast of the Alaska Peninsula is widely recognized as valuable habitat for many species of migrating, breeding, and wintering birds (Arneson 1980, Gill et al. 1981, King and Dau 1981, Petersen et al. 1994), with seasonal bird densities in some locations exceeding 1000 birds/km² (Gill et al. 1981). Large numbers of king eiders, black scoters, white-winged scoters, Steller's eiders, long-tailed ducks, and emperors geese are seen each year during late summer through fall in the shoals and estuaries of Bristol Bay. Here birds molt and feed on the rich benthic invertebrate resources until sea ice displaces the birds further south. Individual and population viability is dependent on these areas and the rich nutrients available here to prepare the birds for breeding, overwintering, or migration.

WATERFOWL

Numerous species of waterfowl are known to utilize the northern side of the Alaska Peninsula in the area of the Bristol Bay CHAs. Of these approximately 31 species are known to occur within the CHAs. (Table A2). Most are seasonal residents, although some species remain in the area year-round. The largest concentrations of ducks, geese, swans, and cranes occur during spring migration, molting and fall migrations. Estuaries, lagoons, river deltas, tidal flats, lowland ponds and adjacent uplands provide critical waterfowl habitats for spring and fall staging, molting, and nesting within each of the BBCHAs at Egegik Bay, Ugashik Bay, Cinder River Lagoon, Port Heiden and Port Moller.

Migratory ducks begin arriving in the Bristol Bay region during mid to late April and May. The timing of nesting varies, but most nest building and brood rearing occurs from approximately June through August.

Prior to leaving the Bristol Bay region, migratory ducks molt and build up fat reserves for the long flight south. Some of the diving ducks, such as scoter and long tailed ducks molt at sea, often near estuaries. Scaup and several other species molt on large inland lakes. Dabbling ducks, such as pintail, molt and stage in estuaries, river deltas, lagoons, and other similar coastal habitats. Males generally molt earlier than females, and are flightless for a 3 – 4 week period from about late June to early August. The tidal flats in Egegik Bay, Ugashik Bay, and Cinder River also support high densities of staging ducks during fall (Mallek and Dau 2008).

Migratory ducks depart from the Bristol Bay region at various times, depending on the species. Most have left the area by early to mid-October; however, some sea ducks may remain late into the fall and throughout the winter. Limited numbers of some species, particularly scoter and long-tailed ducks, winter along the Bristol Bay coast. Port Moller and Nelson Lagoon are also important wintering areas for black scoters and long-tailed ducks.

Several varieties of geese seasonally inhabit Bristol Bay and the Alaska Peninsula. Species most common in the CHAs include: emperor goose, cackling goose, Canada goose, greater white-fronted goose, and Pacific brant. Similar to ducks, the largest concentrations of geese occur during the spring and fall migrations. Coastal wetlands also support nesting populations, particularly breeding pairs of greater white-fronted geese.

Geese generally congregate in spring staging areas during April and May. Important staging habitats include all of the BBCHAs. A majority of the geese move northward to nest, although some remain in the Bristol Bay regions to raise their young. The most prevalent nesting species is probably the greater white-fronted goose. Specific data are not available, but an estimated 4,000 pairs of white-fronts nest throughout the Bristol Bay lowlands (ADF&G 1983).

Estuaries, lagoons, river deltas, marshes, and tidelands again support large numbers of geese during the fall migration. The spring staging areas noted above are also important fall staging habitats. The greatest fall concentrations of geese in these areas typically occur during September and October.

Black Scoters

Although little is known about this sea duck, recent satellite telemetry studies have provided insight into their annual movements and habitat preferences. During the winter the Pacific population of black scoters can be found in near-shore marine and estuarine areas along the Pacific coast from the Aleutian Islands to Baja, California (SDJV 2003) and are common within the BBCHAs. In April, black scoters migrate through the BBCHAs headed for their tundra nesting grounds on the north-central Alaska Peninsula, Bristol Bay lowlands, Yukon-Kuskokwim Delta, and to a lesser extent Kotzebue Sound and the Alaska North Slope. Important spring and fall staging areas include Ugashik Bay, Port Heiden, Seal Islands Lagoon and Port Moller/Nelson Lagoon. Egegik Bay is an important spring and fall staging area as birds migrate through the Becharof Lake corridor on their way to and from the Northern Gulf of Alaska (D. Rosenberg, ADF&G, unpubl data). Males remain with females until eggs are laid, then depart to molting sites in marine and estuarine areas where they assemble in rafts of thousands to undergo the annual wing molt. Females stay with their broods for at least 4 weeks and then begin the molt. The wing molt for black scoters lasts for 3 – 4 weeks during July and August, at which time the birds are flightless. The Kuskokwim shoals and Kvichak Bay appear to be the most frequently used molting locations, however, molting concentrations are known to occur within the BBCHAs. Fall migration back to wintering areas begins in September and last through November. Maximum numbers of black scoters observed during various spring and fall surveys within the BBCHAs are included in Table A3.

Black scoters usually feed in depths less than 10 m; their diet consists primarily of mussels and clams but will also include crustaceans, limpets, barnacles, and vegetation (SDJV 2003).

Accurate population estimates for black scoters are lacking, crude estimates for the Pacific population are around 200,000 birds (SDJV 2008). The population estimate for 2004 to 2005 was 108,100 black scoters. The total population, including non-breeding birds, may approach 200,000. Based on similar surveys flown 7 to 15 years prior to 2004, the population has declined at an average annual change of -3.1%. Less intensive Waterfowl Breeding Population and Habitat Surveys indicate a 50% decline from 1956 to 2006.

Steller's Eider

Steller's eiders are sea ducks that spend the majority of the year in nearshore coastal marine waters where they dive for a variety of benthic invertebrates and submerged vegetation that are often associated with eelgrass beds. Three breeding populations of Steller's eiders are recognized, two in Arctic Russia (Atlantic and Pacific) and one in Alaska (USFWS 2002). The Steller's eider is the least abundant eider in Alaska. The Alaska breeding population, which nests primarily in the Barrow area of the western Arctic Coastal Plain of Alaska, was listed as threatened in 1997 (Federal Register 62(112): 31748-31757). The Alaska breeding population may number as few as 1,000 individuals, mostly in the vicinity of Barrow (Quakenbush et al. 2004), though more recent estimates indicate there may now be fewer than 600 breeding birds in Alaska (D. Rosenberg, pers. comm.). Specific causes of decline in Alaska are not known, but may include poor productivity from predation, lead poisoning, and an unknown level of subsistence harvest (Flint and Herzog 1999).

Lagoons and bays within the BBCHAs provide important habitat for staging and molting. The majority of the Pacific population of Steller's eiders (both Arctic Russian and Alaskan segments) utilizes the Bristol Bay coast of the Alaska Peninsula during spring and fall migration. The numbers of birds using these areas varies by year and survey timing (see Larned 1992 to 2008, Dau and Mallek 2003 to 2009, Mallek and Dau 2003 to 2008). However, there is a high degree of site fidelity to principal spring and fall staging areas in Egegik Bay, Ugashik Bay, Cinder River Lagoon, Port Heiden, Seal Islands Lagoon, and Port Moller/Nelson Lagoon (Flint et al. 2000). An average of 18,000 Steller's eiders wintered within the Port Moller CHA from 1991-95 (C. Dau pers. comm.).

Larned (2008) estimated that there are approximately 70,000 Steller's eiders migrating north from the Alaska Peninsula in early April to breeding grounds in Russia and Alaska. This included birds in the Cinder River estuary (91), Port Heiden (8,826), Port Heiden to Port Moller (2,450), Seal Islands Lagoon (725), and Port Moller/Nelson Lagoon (7,582). Individually marked Steller's eiders from the Alaska breeding population were found to utilize Port Heiden, Seal Islands Lagoon, Cinder River, and Nelson Lagoon/Port Moller CHAs for spring and fall staging, molting, and wintering (P. Martin USFWS, unpubl. data). Documented use, based on telemetry, has occurred in Port Heiden in the spring (7 March – 22 April), and fall (29 November), Seal Island Lagoon in fall (27 August – 9 October), Cinder River in spring (17 March – 16 April) and fall (25 October – 3 November) and Nelson Lagoon/Port Moller from 12 August through 22 April. Aerial survey data suggests Steller's eiders are present in the Port Moller CHA year-round with population peaks during spring and fall staging, molting and winter (Petersen 1980; C. Dau pers. comm.).

Individually marked Steller's eiders from the Russian breeding population used Egegik Bay, Ugashik Bay, Port Heiden, and Seal Islands Lagoon for spring staging during their northward migration. Median arrival dates ranged from 7 – 23 April from 2004 – 2006 with the earliest spring arrival on 26 March (D. Rosenberg, ADF&G, unpubl. data). Birds remained in the area for up to 39 days with the average duration varying from 8.5 days in 2004 to 25 days in 2006.

Survey data since 1992 indicates a 2.6 percent average annual decline in the number of Steller's eiders using this migration corridor, but since 2002 the population has been relatively stable (Larned 2008). Molting populations in these areas have not been adequately monitored but the

trend at Nelson Lagoon, within the Port Moller CHA, indicates a 2.4 average annual increase since 1980 (C. Dau pers. comm.).

In late summer and fall, most of the world population of Steller's eiders crosses the Bering Sea from Arctic nesting grounds to molt on the north side of the Alaska Peninsula from Port Heiden to Izembek lagoon (Petersen 1981; Dau et al. 2000). Molting Steller's eiders have been reported at Cinder River and presence at Egegik/Ugashik is undetermined. Birds arrived on molting areas in Bristol Bay CHA's from 18 July – 14 September with males preceding females. Birds used molting areas in Nelson Lagoon, Seal Islands Lagoon, and Port Heiden (D. Rosenberg, ADF&G, unpubl data). Birds in the federally listed population used molting areas in Seal Islands Lagoon and Nelson Lagoon (P. Martin USFWS, unpubl. data). During the molt, Steller's eiders simultaneously lose their flight feathers and are flightless for about three weeks from July to October with males generally preceding females. Flightless birds congregate in large concentrations in shallow, protected estuaries. In these estuaries, the Steller's eiders rely heavily on crustaceans, mollusks, and other marine invertebrates.

Flocks exceeding 40,000 Steller's eiders have been documented near Port Moller (Gill et al. 1981) where most subadult Steller's eiders are thought to molt (Petersen 1980, 1981). Steller's eiders also molt in Seal Islands Lagoon, Port Heiden, and Cinder River. During fall 2007 surveys for emperor geese, which also documented molting eiders, 80,102 Steller's eiders were observed along the north side of the Alaska Peninsula. 39,288 Steller's eiders (49%) were observed in Nelson Lagoon and Port Moller, 10,103 birds (12.6%) were observed in Port Heiden, and 50 birds (0.1%) in Egegik Bay (Mallek and Dau 2007).

After molting, a portion of the Steller's eider population remains for the winter in shallow, nearshore marine waters along the western Alaska Peninsula, including Izembek Lagoon, Kinzarof Lagoon, Hook Bay, Nelson Lagoon, and Port Heiden. Many birds disperse to the eastern Aleutian Islands, the southside of the Alaska Peninsula, Kodiak and Cook Inlet (USFWS 2002). In mild winters some birds may remain in these areas.

Steller's eider critical habitat was designated by the U.S. Fish and Wildlife Service in 2001. The designated habitat includes Seal Islands and Nelson Lagoon, on the north side of the Alaska Peninsula and a portion of the Port Moller CHA (USFWS 2001). Federally designated critical habitat in the Port Moller CHA is defined as nearshore waters up to 9 meters (30 feet) deep, the underlying marine benthic community, and eelgrass beds, where present, and associated flora and fauna. Steller's eider use this designated area for spring staging, molting, and wintering in concentrations of tens of thousands of birds. It is used by both the unlisted birds from Russia and the threatened Alaska-breeding population.

Nelson Lagoon is an important site for Steller's eider research, focusing on vital aspects of their ecology during molt and winter, surveys to document annual distribution, and banding and recapture to estimate survival rates. Other research has focused on aspects of reproduction, mortality, migration, and behavior (Flint *et al.* 2000).

Cackling Geese

Cackling geese were previously classified as a subspecies of Canada geese, *Branta canadensis minima*. Recently, genetic analysis prompted reclassification of the small Aleutian, cackling, and Taverner's subspecies in a new species *Branta hutchinsii* under the English name "cackling

goose”, while retaining the name Canada goose, *B. canadensis* for larger subspecies to the east (Banks *et al.* 2004).

Cackling geese (*Branta hutchinsii minima*) nest on the Yukon-Kuskokwim (Y-K) Delta and winter primarily in the lower Willamette Valley in Washington and Oregon (Pacific Flyway 1999). Prior to the late 1980’s, the Central Valley of California was the primary wintering area (Sedinger and Bollinger 1987; Pacific Flyway 1999). During the spring migration, birds travel through the Copper River Delta and the intertidal marshes of Cook Inlet in Alaska prior to arriving at their coastal nesting grounds on the Y-K Delta (Pacific Flyway 1999). Cacklers utilize coastal lagoons and adjacent uplands on the north side of the Alaska Peninsula for fall staging in September and October (Nelson and Hansen 1959, cited in Pacific Flyway Council 1999; Sedinger and Bollinger 1987; Pacific Flyway Council 1999). The population experienced a significant decline in the late 1960’s through the 1980’s, reaching a peak count of less than 20,000 birds in 1984 and 1985. Numbers have increased steadily since 1986, reaching a fall index count of 205,000 in the 1997 (Pacific Flyway Council 1999). The Y-K Delta Goose Management Plan was instrumental in helping to restore the population through harvest strategies and conservation measures.

In the mid-1980’s, nearly the entire population of cackling geese staged in October in two areas, Ugashik Bay and the mouth of the Cinder River; using the intertidal marshes and coastal wetlands for feeding and roosting prior to the fall migration (Bollinger and Sedinger 1985, Sedinger and Bollinger 1987, Gill *et al.* 1997; Pacific Flyway Council 1999). Shallow ponds and inland lakes were used for roosting at night and some foraging during daylight hours. Most geese foraged on the extensive mud flat along the Ugashik River (Bollinger and Sedinger 1985). Cacklers feed on *Puccinella phryganodes* and *Triglochin palustris*. found along pond shorelines and also forage on tide flats where *Puccinellia* and *Hippuris* species dominate (Pacific Flyway Council 1999).

A significant portion of the Ugashik Bay area used by cackling geese is within the Pilot Point CHA. Portions of the fall staging habitat is in the Cinder River CHA. These feeding and roosting areas are important to cackling geese based on the high proportion of the population that stages during the fall, apparently for building reserves for migration (Bollinger and Sedinger 1985; Pacific Flyway 1999). Ugashik Bay and Cinder River are the last stopover for cackling geese prior to a long overwater migration to British Columbia, Oregon and California.

Emperor Geese

The emperor goose is strongly dependent on nearshore marine habitats through most of the year. Birds winter throughout the Aleutian Islands, in bays and on islands south of the Alaska Peninsula and on the Kodiak Archipelago from early October into mid-April; the duration is based on the specific wintering area (Hupp *et al.* 2008). In mild winters some birds remain in Alaska Peninsula estuaries if ice free habitat exists (Palmer 1976; Hupp *et al.* 2001, 2004). Wintering birds forage on eelgrass, algae, mussels, and invertebrates in the lagoons and crowberries (*Empetrum nigrum*) in the uplands (Taylor and Sowl 2008, Hupp *et al.* 2008).

Emperor geese begin migrating from wintering sites to staging areas on the Alaska Peninsula as early as March (Byrd *et al.* 1974, Byrd 1988) and remain until early May, before migrating to more northerly breeding areas (Hupp *et al.* 2001, 2004). Most breeding occurs in coastal lowland areas of the Yukon-Kuskokwim Delta (Y-K Delta) with smaller numbers breeding on St. Lawrence Island and in northeast Russia (Pacific Flyway Council 2006).

In the fall, breeding geese migrate to molting sites in Alaska and Russia before migrating to staging areas in southwest Alaska (Petersen *et al.* 1994; Izembek NWR files). Molt migrants begin arriving in early to mid-August followed by the arrival of successful breeders by late September (Hupp *et al.* 2001, 2004). By November, most emperor geese disperse from fall staging areas to wintering sites.

Virtually the entire world's population of emperor geese stage in spring and fall on the Alaska Peninsula (Dau and Mallek 2008, Mallek and Dau 2007). Emperor geese exhibit strong fidelity to staging lagoons within and among seasons and remain at single sites for more than one month (Schmutz 1992). Over 80 percent of the population in spring and fall stage from Cinder River Lagoon to Nelson Lagoon. Other important locations along the Alaska Peninsula include the Seal Islands and Port Heiden.

These key Alaska Peninsula lagoons provide nutrients for several months in spring and fall that are critical to the long-term viability of the species. In fall birds bolster nutrient reserves for maintaining high rates of adult winter survival and in spring for reproductive success (Johnson *et al.* 1985).

The emperor geese population during the 2009 spring survey was estimated at 91,948 birds, which was 41% above the long-term average (1981-2008) and the second highest count since surveys began (Dau and Mallek 2009). In spring 2009, numbers of emperor geese staging in the vicinity of the five CHAs were: Nelson Lagoon/Port Moller (37,711), Port Heiden (23,591), Cinder River Estuary (3,572), Ugashik Bay/Pilot Point (1,892) and Egegik Bay (776) (Dau and Mallek 2009).

The 2007 fall survey resulted in an estimated population size of 73,531 geese. Numbers of emperor geese at the primary staging sites were: Nelson Lagoon/Port Moller (20,678); Port Heiden (11,238), Cinder River Estuary (16,256); Ugashik Bay (908); and Egegik Bay (1,716) (Mallek and Dau 2007). The fall emperor goose population was estimated at 150,000 to 200,000 birds in the late-1960's (King and Lensink 1971, Eisenhauer and Kirkpatrick 1971). By 1981 when regular spring aerial surveys were begun, the population was about 100,000 and declined to about 50,000 by the late 1980's (Pacific Flyway Council 2006).

In 1985, the Yukon-Kuskokwim Delta Goose Management Plan, a cooperative agreement with Federal, State and native organizations, was established to address the dramatic declines in the emperor geese population. In 1986, the hunting season was closed (Pacific Flyway Council 1994). The Y-K Delta Goose Management Plan also called for conservation programs and increased research. Predation on the breeding grounds, low winter survival of juvenile birds, and continued harvest has prevented restoration. Since 1986, the population has fluctuated between 50,000 and 80,000, but has not shown a consistent improvement until recently. The goal of the Pacific Flyway Council is to maintain a minimum population of 150,000 birds to reflect historical levels (Pacific Flyway Council 2006).

Tundra Swans

The entire North American population of tundra swans exceeded 200,000 individuals in 2001. The Western Population of the North American tundra swans has been increasing since the 1950's and averaged over 80,600 over the 1990's. The Bristol Bay nesting portion of the population was estimated at 18% of the Western Population of tundra swans (Pacific Flyway

Council 2001). This constituted an estimated 4,000–6,000 individuals inhabiting the Northern Alaska Peninsula in 1988.

Tundra swans begin to arrive on the Alaska Peninsula in early spring, generally from March to May. River deltas and outlets, as well as lagoons and estuaries, are intensively used spring staging areas. Use is affected by tidal stage and the availability of pondweed (*Potamogeton spp.*) for foraging. Initiation of nesting appears to be closely related to the timing of snow melt. During warm years, swans may begin nesting around late April; during colder years nesting may begin in May. Hatching dates are approximately 40–50 days after the peak in arriving spring migrants. Wet meadow areas interspersed with many shallow lakes with littoral emergent vegetation have the highest nesting densities (Wilk 1988). They exhibit a strong fidelity for traditional nesting sites, and frequently return to the same nesting areas year after year (ADF&G 1983).

In late August, following the nesting period and annual molt, swans again congregate in coastal and riverine habitats to stage. Migratory swans generally leave the Bristol Bay region from mid-September to early October (ADF&G 1983). Tundra swans are harvested for subsistence in both spring and fall hunts, and eggs are collected. Non-subsistence harvest occurs in the western US during the winter (Pacific Flyway Council 2001).

A small number of tundra swans overwinter in the southern portion of the Alaska Peninsula. The majority are found on Unimak Island and near Izembek Lagoon, but in addition to providing nesting and staging habitat, two swan overwintering areas near Mother Goose Lake have been identified (ADF&G 1983). Swans are especially vulnerable to disturbance in these areas because of the large concentrations of swans are present and the sensitive life functions that take place at these locations.

Sandhill Cranes

The lesser sandhill crane (*Grus canadensis canadensis*) is yet another migratory species that is seasonally common in the Bristol Bay region. Along with sandhill cranes in the Cook Inlet region they are considered the Pacific Flyway Population (PFP) and managed separately from cranes in other areas of Alaska. Current estimates for the size of the PFP are not precise, but are believed to number from between 20–25 thousand birds. Since 1999, an average of approximately 4,100 cranes has annually summered in the Bristol Bay region with the highest recorded breeding count occurring in 2008 (7,700 cranes; Mallek and Groves 2008).

Cranes generally begin to arrive on the Alaska Peninsula in late April, with peak numbers occurring from late April to mid-May. Coastal habitats around Egegik Bay, Ugashik Bay, Cinder River, and Port Moller are especially important staging areas.

Precise nesting chronology data are not available for the area, although cranes are believed to initiate nest building activities around early May. Cranes remain relatively close to their nesting territories until the colts are fledged in August. Nest sites are generally dispersed throughout marshy areas and in sedge/grass meadows. Crane nests may be present in these areas throughout the Bristol Bay Lowlands.

Sandhill cranes are omnivorous and feed on insects, rodents, seeds, tubers, and occasionally frogs and marine organisms.

Fall staging begins around late August, with cranes congregating in the same areas as during the spring staging period. Most cranes generally leave the Bristol Bay region by mid-September, and pass through Cook Inlet before moving south to their wintering grounds in the central valley of California (Petrula and Rothe 2005).

SEABIRDS

Thirty species of seabirds have been documented within or near the five Bristol Bay CHAs including 13 species of alcids; 13 species of gulls, terns and jaegers; 3 species of cormorants; and 5 species of tubenoses (Table A2). While most of these species occur throughout Bristol Bay, they are most abundant in the northwestern portion of the bay where colonies of nesting seabirds number into the hundreds-of-thousands, such as in the Walrus Islands and Capes Newenham and Peirce (Reeves *et al.* 2009). Large numbers are also found in the southwestern portion of Bristol Bay but colonies in that region typically number less than 15,000 birds (Denlinger 2006).

Colonies within or near the five critical habitat areas, and along the entire northern Alaska Peninsula coast from the Port Moller CHA north, are relatively dispersed and small in size in comparison to other coastal areas in Alaska. The most common seabirds that nest within or near the CHAs, in decreasing relative abundance, include glaucous-winged gulls, black-legged kittiwakes, double-crested and pelagic cormorants, mew gulls, tufted puffins, pigeon guillemots and horned puffins (Tables A4 and A5). Arctic and Aleutian terns also nest in several colonies within or near the CHAs.

While relatively small breeding colonies exist along the entire coastline within and between the five CHAs and there are no breeding colonies in or near several of the CHAs (Egegik and Cinder River), these CHAs or their nearby waters are frequented at times by large numbers of seabird species (Dau, unpubl. data). Several species of gulls have been documented during incidental spring and fall aerial surveys in relatively large concentrations in all 5 CHAs, at times with peak numbers ranging from 15,000 to 20,000 individuals in Port Moller and several thousand individuals in the other 4 CHAs.

While black-legged kittiwakes have been documented in all 5 CHAs during these incidental aerial surveys, they were most abundant in Port Moller where they typically numbered less than 1,000 individuals. Likewise, cormorant species have been documented in all 5 CHAs but were most abundant in Port Moller and most observations there were under 100 individuals.

While Port Moller and Port Heiden support nesting colonies of arctic and Aleutian terns, these species have been documented in all 5 CHAs during incidental aerial surveys. In some years, several hundred individuals have been documented in each CHA during the incidental aerial surveys. Long-tailed and parasitic jaegers are commonly found in spring and summer in low numbers (pairs or individual birds) and have been documented in all 5 CHAs.

Marbled murrelets have been documented in or near all 5 CHAs and Kittlitz's murrelets have been documented in Port Moller. These seabirds are known or suspected breeders in or near these CHAs. While the marbled murrelet nests in trees in old growth throughout much of its range, they nest on the ground in treeless regions such as the Alaska Peninsula. The Kittlitz's murrelet is known to nest solely on the ground, often on talus slopes at higher elevations, throughout its range. Kittlitz's murrelets have been listed by the USFWS as a candidate species under the ESA in 2004 due to their limited population size and observed population declines.

Both species are listed on the National Audubon Society's "watch list" due to conservation concerns of the species.

SHOREBIRDS

As many as 30-35 species of shorebirds are likely to occur in the BBCHAs (Table A2). Most are seasonal residents, although some species may be present year-round. Bristol Bay lagoons and estuaries provide critical staging areas for both local breeding populations and shorebirds that nest to the north. The highest concentrations of shorebirds occur during the fall migration, when spectacular numbers of birds stage along the Peninsula.

In the fall survey by Gill *et al.* (1994), more than 300,000 shorebirds were seen, with nearly 90% occurring in Nelson Lagoon/Mud Bay, Egegik Bay, Cinder-Hook Lagoon, Kvichak Bay, and Port Heiden. Egegik Bay merits special protection in the fall for hosting one third of the breeding Alaskan population of bar-tailed godwits (Gill and Sarvis 1999). Port Heiden, Cinder River-Hook Lagoon, and Ugashik Bay are potential sites of "Hemispheric Importance" based on criteria of the Western Hemisphere Shorebird Reserve. This designation is given to the most important shorebird sites in the world (Gill *et al.* 1994).

Although spring migration spans from early April through late June, most migrants move through the area between late April and mid-May. A few species, such as plovers and godwit, extensively use intertidal areas of Bristol Bay (Gibson and Kessel 1989). Sandpipers, yellowlegs, and a few other species concentrate in lagoons and estuaries. Most shorebirds move relatively quickly to their nesting grounds, however, and do not spend a great deal of time staging during spring.

The Alaska Peninsula hosts a small (probably <3,000 birds), highly disjunct breeding population of marbled godwits that are sufficiently different morphologically to warrant subspecific designation (*Limosa fedoa beringiae*) (Gibson and Kessel 1989). The marbled godwit is listed as a species of high concern within the U.S. and Alaska Shorebird conservation plans (Alaska Shorebird Working Group 2008). This ranking reflects a declining population, and threats on breeding and non-breeding grounds. The species occurs on the USFWS (2002b) national "Bird of Conservation Concern" list and lists in Regions 1, 3, 4, 5, 6, and 7 (Rothe 2003). The marbled godwit breeding range appears to be concentrated in the Ugashik area and may extend to the south to Port Heiden; the northern extent of the breeding range lies north of Ugashik village, though no breeding godwits were found in the Cinder River drainage during the same 2007 survey. During low tides, over 1,000 staging godwits were observed on the intertidal mudflats at Hook Lagoon, Cinder Lagoon, and Ugashik (Gill *et al.* 2008).

The Bristol Bay region provides nesting habitat for eight primary species of shorebirds including: greater yellowlegs, red-necked phalarope, Wilson's snipe, short-billed dowitcher, dunlin, Pacific golden plover, black bellied plover, semi-palmated plover, and least, rock, and western sandpipers. Nesting typically occurs from early May through late July. Lowland meadows generally support the greatest densities and diversity of nesting species; but other habitats, such as rocky shorelines, bogs, streamsides and lakeshores, are also utilized as nesting areas.

Following the nesting period, shorebirds move to the coast to stage prior to migrating south. Some arrive at fall staging areas as early as June, and staging extends through mid-October. The duration of their stay along the coast varies with each species; those that molt before migrating

stay the longest. The lagoons and estuaries of Ugashik and Egegik Bays and Cinder River provide critical fall staging habitats. During the fall, the staging birds are dependent on invertebrate food sources in the littoral and supralittoral areas to prepare for migration and molt. Bar-tailed godwits, short billed dowitchers, western sandpipers, rock sandpipers, and dunlin may be particularly susceptible to disturbance (Gill and Handel 1981).

Due to harsh climatic conditions, only a few species of shorebirds winter in Bristol Bay. The rock sandpiper is the most common winter inhabitant, though some migrate to other areas of the state to overwinter. Early research (Gill 1977) on the Alaska Peninsula indicated that populations of rock sandpipers are specific to the lagoon used through the summer molt and into the late fall. Sanderling may also overwinter in ice free areas.

RAPTORS

Eighteen species of raptors have been reported to occur in the Bristol Bay region. Many or all of these species may be found in the BBCHAs. At least thirteen of them have been observed within the BBCHAs (Table A2).

Bald eagles are present on the Alaska Peninsula year-round. Eagles are closely associated with habitats along the land/water interface, and nearly all nests occur within several hundred meters of the coastline or along rivers and large lakes. While forested areas near major water bodies constitute preferred nesting habitat, bald eagles are often found nesting on barrier island, tundra bluffs, and rocky cliffs within the BBCHA area when trees and cliffs are not available. Nesting activities generally extend from May through August (Hehnke 1973). Adult eagles are likely to remain near their nesting areas all year, but may travel considerable distances seasonally in search of food.

Other common raptors that may occur in the BBCHAs include the northern harrier (marshhawk), short-eared owl, rough-legged hawk, peregrine falcon, and the gyrfalcon.

MAMMALS

TERRESTRIAL MAMMALS

Caribou

Caribou occupying the Alaska Peninsula in the vicinity of the BBCHAs are divided into or managed as two herds: the Northern Alaska Peninsula (NAP) herd and the Southern Alaska Peninsula (SAP) herd. The NAP herd ranges throughout Game Management subunits 9C and 9E from Port Moller north to the Naknek River utilizing portions of the Egegik, Pilot Point, Cinder River and Port Heiden CHAs. The Southern Alaska Peninsula (SAP) herd ranges through Game Management subunit 9D from the Port Moller area south to False Pass utilizing portions of the Port Moller CHA. Bristol Bay caribou utilize a variety of habitats, although arctic and alpine tundra and wet sedge areas are particularly important.

The NAP caribou herd's primary calving grounds are located in two areas on the Bristol Bay lowlands from the King Salmon River near Port Moller northward to north of the Cinder River portions of which fall within both the Port Heiden and Cinder River CHAs (Maps 17 and 24) (McDonald 2003; Squib 2003). Within the Port Heiden CHA these calving grounds are primarily located on private uplands within the CHA boundary. Caribou calving grounds within the Cinder River CHA are located on state owned lands to be managed under the BBCHA plan.

Calving peaks between late May and mid-June. Caribou disperse throughout much of the upper Alaska Peninsula during summer, but concentrations of several hundred can occur on the lowlands throughout summer (Squib 2003). During fall, most of the NAP herd migrates northeast along the Bristol Bay lowlands to winter between the Ugashik and Naknek Rivers; in some years large numbers move north across the Naknek River (Butler 2007; McDonald 2003; Squib 2003). The NAP herd is currently in decline, reduced to fewer than 2,500 animals as of 2005, after a peak of about 20,000 during 1983-1989. Legal hunting was discontinued in 2005 in an effort to assist the herd in recovering.

The SAP herd's primary calving grounds are in the Caribou River flats and Black Hills/Trader Mountain areas west of the Port Moller CHA (Map 31, Squib 2003). Approximately 25% of the herd calves in the Caribou River flats area. Many of these animals are relatively sedentary and remain in the area throughout the winter. The eastern extent of this calving area occurs on state owned lands within the Port Moller CHA to be managed under the Bristol Bay CHAs plan. The remainder of the herd calves in the Black Hills/Trader Mountain area and winters around Cold Bay (Butler 2007). Calving peaks during the first two weeks of June. Annual movements of SAP caribou tend to be 50 miles or less. Historically, the size of the SAP herd has varied widely, ranging from 500 to more than 10,000 (Butler 2007). Following a peak of more than 10,000 caribou in 1983 the SAP herd went into a decline and by 1993 the herd was below 2500, at which time all hunting was closed. Between the mid 1990's and 2002 the herd size appeared to stabilize and grew slowly to an estimated 4100 caribou in 2002. Between 2003 and 2007 the SAP herd again declined dramatically with an estimated size of 600 in spring 2007 (ADF&G 2009a). Low calf survival due to predation was a contributing factor. In an effort to help the declining herd hunting was again discontinued in 2005 and a predator management program was initiated in the area of the SAP herd calving grounds in June of 2008. Between spring of 2008 and August 2009 calf survival increased to 73% and the SAP herd increased to 700 caribou (ADF&G 2009b).

Bears

The Alaska Peninsula Game Management Unit (GMU) 9 supports one of the highest brown bear densities in Alaska (McDonald 2003). Precise data on the distribution, movements and densities of brown bears in the western portion of GMU 9E where the BBCHAs are located is not available. Densities, however, are considered to be lower in this Bristol Bay coastal plain area than within the remainder of GMU 9. Within GMU 9 bear densities increased throughout the 80's and 90's following being depressed in the mid 1970's due to over hunting and low salmon returns. Recent estimates from line transect surveys flown between 1999 and 2005 suggest that the overall bear density in GMU 9 is about 1 bear/3.5 miles². However, this estimate is biased low because of the lack of current information in unit 9E and the southern part of 9B (Butler 2007a).

Because of the areas relatively easy access and high quality large trophy bears the area has also developed into a premier trophy hunting area for brown bears, with DFG management objectives to maintain a high bear density capable of sustaining trophy harvest for large males (Butler 2007a).

Brown bears typically den from October until April or May. Most den sites are located on hillsides or mountain slopes at elevations of less than 2,000 feet. On the Alaska Peninsula, dens usually occur in alder, willow or grass zones. Cubs are born in the den during January or February, and litters commonly include from one to four young. Denning habitat plays an

important role in maintaining local bear populations, particularly with respect to reproduction (ADF&G 1983).

After emerging from their dens in spring, brown bears move to coastal grass flats where they feed on early growing herbaceous plants such as sedges. The same grass flats are used year after year, and provide the only reliable, high quality food source during spring when bears are generally in their poorest condition. Consequently, these grass flats are considered to be critical brown bear habitat. Coastal flats heavily used by concentrations of bears in the spring occur along the coastal fringe south of Egegik Bay CHA, around the Cinder River CHA and the coastal fringes around Port Heiden CHA. Carrion and marine mammal carcasses also provide important spring food sources as do moose calves and caribou calves in early summer. Bears begin feeding on salmon along rivers as the summer progresses. Similar to spring feeding areas, rivers and streams within the CHAs that support anadromous fish populations constitute an extremely important food source and habitat for brown bear (Maps 3,10, 17, 24, and 31).

Moose

Moose were largely absent from the area prior to the mid 1900's when the moose population began to expand and spread southward. Moose densities increased during the 1950's and into the 1960's at which time the moose population and the condition of range indicated that the area was overbrowsed (especially willow stands). Hunting was liberalized through the early 1970s to slow population growth and to allow range recovery. Moose densities subsequently decreased during the 1970's. In 1973 hunting restrictions were implemented in response to population declines. This was especially evident in GMU 9E, inclusive of BBCHAs, where a 1983 census estimated a density of 2,500, 60% below the earlier peak levels. While recent data acquisition does not allow for a population estimate within subunit 9E; data from line transect surveys, bull to cow ratios, calf ratios and harvest data indicate that the population within Unit 9E has been relatively stable but at low levels (2,500) since the 1980's (Butler 2008).

Moose habitat on the Alaska Peninsula is primarily limited to the lower slopes and valleys of the Aleutian Range. Within the BBCHAs willow stands and shrublands along the major watercourses provide moose habitat westward toward the Bristol Bay coast. Sedge, horsetail, freshwater aquatic vegetation, and grasses are preferred food sources during the spring, birch, willow and aspen leaves, forbs, and freshwater aquatic vegetation in the summer, and birch, willow and aspen twigs in the fall in winter.

Riparian habitat along stretches of certain Alaska Peninsula rivers supports winter concentrations of moose. Within or near the CHAs, winter moose concentrations occur within the Lefthead River and Peterson Creek drainages (near Port Moller CHA), the Meshik River drainage (near Port Heiden CHA), the upper Cinder River drainage (near Cinder River CHA), and the King Salmon River drainage (south of Pilot Point CHA) (Squibb 2003). Moose inhabiting these drainages migrate down to the river bottoms during winter, and disperse to somewhat higher elevations in summer. These winter ranges are considered to be critical habitat because browse is limited during this time of year and winter food supplies are essential in maintaining local populations. Additionally, moose are most susceptible to disturbance within these wintering areas because they are seasonally concentrated in these habitats and have low energy reserves.

Wolves

Wolves (*Canis lupus*) are found throughout the Alaska Peninsula and occur within the BBCHAs. Specific abundance data are lacking. However, since the federal wolf control program in the 1950's the population has increased primarily influenced by prey abundance and periodic outbreaks of rabies. There is an estimated 350 wolves in GMU 9 and 10 (Unimak Island) (Butler 2006). In 2008, the DFG began intensive management efforts in the form of wolf control on caribou calving grounds in the area of the PMCHA in an effort to arrest the decline in the caribou herd (Hilderbrand pers. comm.).

Wolves are highly social animals, usually living in packs. They normally breed in February and March with litters of about five pups being born in May or early June. Primary food sources include moose and caribou as well as other smaller prey at times.

Furbearers

The BBCHAs are home to a number of furbearing species. Furbearers known to occur within the BBCHAs or adjacent lands (Table A6) include beaver, coyote, gray wolves, red fox, lynx, mink, muskrat, river otter, and wolverine. While these species primarily inhabit upland areas, most make extensive use of the beaches, tide and submerged lands by foraging for carrion, small mammals and waterfowl. Weasels, red fox, mink, coyote and gray wolf are known to use the coastal tideland areas and water bodies searching for small mammals, carrion or other prey. They are found in nearly all habitat types, but most species favor coastal, riparian, wetland, or forested areas. Specific distributions and abundance data are lacking. Pelt sealing, which provides the most accurate harvest information, is only required for beaver, lynx, otter and wolverine. Information on general abundance and trends is estimated from returns of trapper questionnaires (Butler 2007b).

Beavers are found in habitat with a dependable supply of water and adjacent willow, aspen, cottonwood, or birch vegetation. Abundance trends are estimated from trapper questionnaires which have indicated that the species is abundant and increasing since the late 1990's (Butler, 2007b).

Wolves (*Canis lupus*) are found throughout the Alaska Peninsula and occur within the BBCHAs. Wolves are highly social animals, usually living in packs. They normally breed in February and March with litters of about five pups being born in May or early June. Primary food sources include carrion, caribou, moose, and small game. Specific abundance data are lacking. However, since the federal wolf control program in the 1950's the population has increased primarily influenced by prey abundance and periodic outbreaks of rabies. There is an estimated 350 wolves in GMU 9 and 10 (Unimak Island) (Butler, 2006). In 2008, the DFG began intensive management efforts in the form of wolf control on caribou calving grounds in the area of the Port Moller CHA in an effort to arrest the decline in the caribou herd (Hilderbrand pers. comm.).

Coyotes range as far south as Cold Bay on the Alaska Peninsula. They are relatively uncommon, however based on trapper returns they appear to be increasing (Butler 2007b and pers. comm.). Interspecific competition with wolves may be a limiting factor in their abundance. Coyotes generally make use of a wide variety of habitats and may be present on the BBCHA's.

Both red fox and Arctic fox occur in the area of the BBCHAs. The red fox is the most common furbearer present in the area based on trapper ratings since 2000. Red foxes are abundant and seen year-round along beaches, the tundra, and in the adjacent uplands. Arctic fox occur along the marine coast and on open tundra. Species abundance is affected by periodic rabies, mange, and distemper epidemics. (ADF&G 2003) The relative abundance index declined during 2003-2005 (Butler 2007b). Primary prey species include nesting birds, small rodents, and beached carrion.

Lynx occur in the portion of GMU 9E north of Port Heiden. The BBCHAs are on the fringe of the range for lynx. Lynx primarily feed on snowshoe hare and are primarily a boreal species; they can be found venturing out on to the tundra in search of other small prey such as arctic hares, lemmings, ptarmigan, squirrels, and microtine rodents when prey is scarce (Butler 2007b).

Mink and river otters inhabit a variety of coastal marine and freshwater habitats throughout the Alaska Peninsula mainland near the BBCHAs. Mink are found in association with riparian habitats of lake shores, marshes, streams and marine beaches (Banfield 1974 & Lariviere 1999 in MacDonald & Cook 2009). River otter are usually associated with riparian habitats of freshwater streams and lakes, but are also often found in coastal lagoons and tidelands along the Alaska Peninsula (Murie 1959; MacDonald & Cook 2009). Detailed information on distribution and abundance of river otter and mink within the BBCHAs is unavailable. However, within GMU 9, mink abundance was generally reported as moderate with some increase and river otter abundance was reported as moderately high and increasing during 2000-2007 (Butler 2007b).

Muskrat are uncommon on the Alaska Peninsula and very rarely occur within the BBCHAs.

Wolverine range throughout the mainland of the Alaska Peninsula across a wide variety of habitats types from tideland beaches to mountain tops. While there are no specific observations of wolverine within the BBCHAs they do inhabit portions of the peninsula in the area of the BBCHAs and are known to scavenge along coastal beaches elsewhere on the Alaska Peninsula. Wolverine densities are typically lower than other furbearers in the region because of their large territorial requirements and low reproductive rates. Within GMU 9 and 10 trappers reported that wolverine has been relatively scarce but in stable numbers since 2000(Butler 2007).

Small Mammals

Small mammals known to occur within the BBCHAs or the surrounding area include porcupine, Alaskan hare (tundra hare), snowshoe hare, ermine, least weasel, Arctic ground squirrel and a number of microtine species (Table A6). Detailed abundance and distribution information is not available for these species.

While little is known about their specific distribution and abundance, porcupines are found in a wide variety of habitats throughout the Alaska Peninsula (Murie 1926; MacDonald & Cook 2009). In the coastal tundra around the BBCHAs porcupine most likely utilized shrub habitats in riparian areas and other sheltered areas of the open tundra. Use of the tidelands may also occur. In 1925, Wetmore observed that one had used the beach south of Port Moller CHA, evidently looking for kelp bunches at Izembek NWR (Murie 1926).

Both Alaska hare and snowshoe hare are assumed to inhabit portions of the Alaska Peninsula near the BBCHAs. Snowshoe hare are known to use the shrubby woodlands and riparian areas of the northern portion of the peninsula, typically not extending beyond the limits of the tree cover in the area. Snowshoe hares have been found as far south as Mother Goose Lake, 25 miles

east of the Cinder River CHA (MacDonald & Cook 2009; Savage pers. comm.). According to MacDonald and Cook (2009), Alaska hare are present throughout the Alaska Peninsula with specimens having been taken as far south as the tip of the peninsula. They are likely to be found inhabiting a variety of coastal tundra and riparian shrub communities in upland areas.

Two weasel species, ermine (short-tailed weasel) and least weasel, range throughout the Alaska Peninsula in the area of the BBCHAs (Murie 1959, MacDonald & Wood 2009). These species inhabit a wide range of habitats but favor fringe habitats along meadows, streams, lakeshores, coastal shorelines, and marshes.

Arctic ground squirrels range throughout the Alaska Peninsula (MacDonald & Wood 2009). Inhabiting areas with loose friable soils in tundra, riverbank, lakeshore, and meadow uplands within the BBCHAs they provide an important food resource for foxes, eagles, brown bears, and other wildlife species.

A number of small rodents and insectivore species range throughout the Alaska Peninsula and are known to use the BBCHAs and surrounding areas (Table A6). These include Cinereus (masked) shrew, Montane (dusky) shrew, and tundra shrew as well as northern red-backed vole, tundra vole and meadow jumping mouse. These species provide an important food source for many larger mammals and birds. Complete distribution, life history, and habitat requirement information for these species within the BBCHAs do not exist. However, small mammal trapping within the BBCHA boundaries and adjacent areas of the Alaska Peninsula / Becharof NWRs, Katmai National Park and Izembek NWR indicate that these species are present within the BBCHAs (Wilk *et. al* 1986, Savage 2004 & 2005, UAM 2009, Gill *et. al.* 1985). Many of these species forage within the tidelands which provide a renewable source of marine invertebrates and other prey with each tide cycle. At Izembek NWR and SGR, Brown (1996) observed that shrews were the most common and widespread small mammals, were found in the majority of habitat types, and usually in the greatest numbers in coastal areas. The highest concentrations of masked and dusky shrews were found near intertidal areas; and the dominant species on the barrier islands of Izembek Lagoon is the tundra vole.

MARINE MAMMALS

Bristol Bay is an extremely productive marine and estuarine area and marine mammals use this rich and diverse area for feeding and rearing their young. Marine mammals in the region primarily include whales (beluga, killer, and gray), seals (harbor and spotted), Pacific walruses, Steller sea lions, and sea otters; however other species such as Cuvier's beaked whale, minke whale, sei whale, harbor porpoise, Dall's porpoise, Pacific white-sided dolphin, Northern fur seal, ribbon seal, ringed seal, and bearded seal may also use the area. (Table A6)

Beluga Whale

Beluga whales live within Bristol Bay year round and current population estimates from aerial surveys estimate that the population is ~2,000 belugas and is growing at 4.8% per year (Lowry *et al.* 2008). Satellite tagging studies conducted by the Alaska Beluga Whale Committee, the Alaska Department of Fish and Game and the National Marine Fisheries Service between 2002 and 2009 show that beluga whales travel back and forth between Kvichak and Nushagak Bay using near shore, shallow estuarine waters and river habitats in spring and summer. In winter, beluga whales tend to use areas farther from shore within Bristol Bay. One tagged whale entered

Egegik Bay in November and belugas are seen there in spring. Tagged whales also spent some time offshore of Egegik in February–April.

In Bristol Bay, beluga whales are known to eat rainbow smelt, salmon smolt and adult salmon, cod, rock sole, isopods, crab, and shrimp. Many females with new calves are seen in the Nushagak River upstream from Dillingham in May and some are seen in the Kvichak River as well. Beluga whales are harvested by many coastal and some upriver villages in this region for food.

Harbor Seal

Harbor seals are year-round residents of Bristol Bay. This species is primarily a coastal inhabitant, but seals have been observed up to 87 miles offshore and in coastal rivers and lakes (Lowry *et al.* 2001; ADF&G 1983). Along the north coast of the Alaska Peninsula, seals congregate on shoals and sandbars, with particularly high densities occurring during low tides.

Aerial surveys conducted in the Bristol Bay region in the mid-1970's, identified Cinder River, Port Heiden, and Port Moller as the three most heavily used harbor seal haulouts. As of 2005, Port Heiden and Port Moller continue to host the largest numbers of seals (4,000-5,000), followed by Ugashik Bay with approximately 2,000 seals. Groups of seals can be seen during low tides on near shore islands in the bays and lagoons of the Alaska Peninsula from Port Moller to Egegik River. Seals are also common in the lower parts of rivers during the salmon runs (Squibb 2003).

Haulout areas and rookeries are critical to the maintenance of Bristol Bay harbor seal populations because there are a limited number of suitable sites and, consequently, these sites are generally used by large numbers of animals. Rookeries are especially vulnerable to disturbance, because disruption of pupping activities can result in abandonment and loss of pups, and ultimately cause declines in local populations (ADF&G 2003).

Harbor seals generally give birth to a single pup between late May and mid-July, with most young born during the first three weeks of June. Although one pup is the norm, there are occasional twins. Pups are usually weaned after three or four weeks. Within two weeks after females have stopped nursing mating occurs, primarily from late June to late July. From August to October harbor seals molt and haulout in large numbers.

Spotted Seal

Spotted seals are difficult to distinguish from harbor seals and the two species overlap in their distribution in the Bristol Bay area. Spotted seals are more sea ice adapted and have their pups on sea ice in April. It is likely that seals seen in Bristol Bay in winter are spotted seals. In summer, spotted seals will haul out on mud flats and river bars and it is not known which haulouts contain harbor seals and which contain spotted seals.

Killer Whale

Two ecotypes of killer whales are seen in Bristol Bay; the fish eaters, or residents, and the marine mammal eaters, or transients. Transient killer whales have been observed killing seals and beluga whales in Bristol Bay and chasing walruses and sea lions near Round Island, while the resident killer whales have been observed eating salmon and other fish. Shallow water habitats (too shallow for killer whales) are thought to be important escape habitat for beluga whales in this area.

Sea Otter

The southwest Alaska stock of the northern sea otter is listed as threatened under the U.S. Endangered Species Act. Within Bristol Bay, sea otters typically occur along the Alaska Peninsula as far north as Egegik. Within this range, their distribution in Bristol Bay is primarily determined by water depth and sea ice extent. Otters feed on benthic invertebrates, and although they are capable of diving to depths of up to 100m, the majority of their foraging activity occurs in waters up to 40 m in depth (Bodkin *et al.* 2004). The presence of seasonal sea ice can reduce the availability of nearshore waters to feeding otters. Although the ecology of sea otters in Bristol Bay is not well understood, it is believed that otters move south and west along the Peninsula to maintain access to open water in severe ice years (Schneider and Faro 1975; Burn and Doroff 2005).

The current size of the sea otter population within the CHA vicinity is unknown. A decline in sea otter numbers of approximately 40-60% occurred along the North Alaska Peninsula from 1986-2000 (Burn and Doroff 2005). The eastern extent of the most recent Bristol Bay sea otter aerial survey in May 2000 was Cape Seniavin. At that time, the population was estimated to be approximately 5,000 otters (Burn and Doroff 2005). Within that area, the area with the highest concentrations of sea otters has been Port Moller and Herendeen Bay, where several thousand otters have been observed on multiple occasions (Burn and Doroff 2005, U.S. Fish and Wildlife Service unpublished information). In October 2009, the U.S. Fish and Wildlife Service designated critical habitat for the southwest Alaska population of sea otters, which includes Port Moller and Herendeen Bay.

Gray Whale

Gray whales (*Eschrichtius robustus*) from the eastern North Pacific stock migrate annually from the coastal waters of California to feed throughout the summer in continental shelf waters of the Bering, Chukchi, and Beaufort Seas before returning to the Pacific Ocean in the fall (Angliss and Allen 2008). Gray whales travel to Alaska primarily to take advantage of the extensive benthic prey fields found throughout these high productive shallow-water marine ecosystems (Springer and McRoy 1993; Grebmeier *et al.* 2006), especially dense beds of amphipod infauna.

The coastal waters of Bristol Bay are an important migration corridor for gray whales traveling northward during the ice-free season to important feeding areas in Alaska (Frost *et al.* 1982). After passing through Unimak Pass in the spring (April-May), thousands of gray whales likely move through the coastal waters of Bristol Bay as they continue to migrate north.

Most records of gray whales in southern Bristol Bay are opportunistic and incidental. At monitored coastal locations in northern Bristol Bay, gray whales are commonly observed during May-June (MacDonald and McClaran 2000; MacDonald 2001, 2003). Additionally, several gray whale carcasses are recorded along the Bristol Bay coast annually indicating a high use by gray whales (MacDonald 2003). The majority of the whales observed in the spring travel along the coastal zone the length of the Bristol Bay shoreline – from the Alaska Peninsula to Cape Newenham. Whales have been observed foraging along the Bristol Bay coast between at least Salt Water Lagoon southwest of Nelson Lagoon and Clark's Point on the north side of the bay. During spring coastal surveys for waterfowl between 1992 and 2009 gray whales were observed off the coast of the all five Bristol Bay CHAs (Dau 2009 unpub. data, Larned 2009 unpub. data). Whales leave Bristol Bay and migrate northwest toward Saint Lawrence Island, and then into

relatively shallow waters of the northern Bering Sea, the Chukchi, and the Beaufort Seas (Frost *et al.* 1982).

Gray whales begin their southward migration around mid-October and travel further offshore than in the spring. Little is known about the route they travel during fall but they are rarely documented in Bristol Bay at that time (Frost *et al.* 1982).

Several factors influence coastal use by gray whales, including prey abundance and distribution, predator abundance and distribution (*i.e.* killer whales), and the frequency and/or types of ship traffic in nearshore waters.

After a period of heavy commercial exploitation during the 19th and early 20th centuries, the eastern North Pacific gray whale population had dramatically declined and protection measures were put in place, including an endangered listing under the Endangered Species Act. Subsequently, the population size of the eastern North Pacific gray whale increased and is now estimated at over 26,000 individuals (Rugh *et al.* 1999), at or near their historical pre-exploitation level (Angliss and Allen 2008). As a result of the current population trend, gray whales were delisted under the Endangered Species Act.

Pacific Walrus

Pacific walrus (*Odobenus rosmarus divergens*) distribution seasonally encompasses the continental shelf of the Bering and Chukchi seas. Walruses primarily exploit the heterogeneous benthic prey field found throughout these high productive shallow-water marine ecosystems (Springer and McRoy 1993; Grebmeier *et al.* 2006). Walruses are highly social animals and will forage and rest in large groups throughout their range (Fay 1982; Taggart 1987). The entire walrus population overwinters in the Bering Sea. During the winter breeding period (January-March), walruses congregate in two main areas - northern and southeastern Bering Sea (Fay 1982).

Bristol Bay is recognized as the most important area for adult male walrus in Alaska during the ice-free season. After the breeding season, most females and subadults remain associated with sea ice and travel northward to the Chukchi Sea while most males remain in the Bering Sea (Fay 1982; Ray *et al.* 2005). Thousands of male walruses arrive to Bristol Bay during spring and occupy Bristol Bay throughout the summer and into the fall. Many of these animals are thought to come from the nearby breeding aggregation in the southeastern Bering Sea.

Male walruses utilize Bristol Bay during spring, summer, and early fall to restore important fat reserves lost during the winter breeding season through fasting (Fay 1982). The importance of Bristol Bay as a feeding area has been confirmed by foraging marks recorded in the sediments (Bornhold *et al.* 2005), stomach contents of harvested animals (Fay *et al.* 1981; Fay 1982; Hills *et al.* 1991; Sheffield 1997), foraging behavior observed during aerial surveys (Fay and Lowry 1981) and determined through satellite telemetry (Jay and Hills 2005). In Bristol Bay and the southeastern Bering Sea, walruses consume many types of prey taxa including, but not limited to: clams, snails, anemones, sea cucumbers, tunicates, and many types of large worms (Fay *et al.* 1981; Fay 1982; Hills *et al.* 1991; Sheffield 1997; Sheffield and Grebmeier 2009).

Historically, major walrus haulout sites within Bristol Bay include: Amak Island, Port Moller, Cape Seniavin (located between Port Moller and Port Heiden), Cape Pierce, Cape Newenham, and two islands within the Walrus Island State Game Sanctuary (Round and Big Twin) (Frost *et al.* 1982). The southwestern shoreline of Hagemester Island has also recently emerged as a

significant walrus haulout in this region (MacDonald and Winfree 2008). Between feeding bouts, walrus in Bristol Bay repetitively utilize only these few specific sites to rest. The parameters that define a specific haulout sites for walrus versus all available coastal locations within Bristol Bay are not well understood but may be influenced by prey abundance and distribution, walrus densities, physical terrain, or remoteness from disturbances.

During periods of extreme walrus population decline due to heavy commercial exploitation, walrus abandoned all Alaskan haulouts except for Round Island in Bristol Bay (Fay *et al.* 1984; Fay *et al.* 1989). With protective harvest measures in place by the 1960's, walrus numbers increased and walrus began re-occupying traditional haulout sites in Bristol Bay during the 1980's, including Amak Island and Port Moller (Frost 1982, Fay *et al.* 1984). Individuals and/or groups of up to 4,000 walrus have been observed hauled out at these locations within these Bristol Bay CHAs primarily during the summer months, but have been reported as early as January at Port Moller and as late as October at Amak Island (Fay 1982, Frost *et al.* 1982). Walrus haulout use within the Cinder River, Pilot Point, and Egegik BBCHAs has not been well documented. Factors that could influence use of BBCHAs as walrus haulouts in the future include changes in prey abundance and distribution, walrus numbers, physical terrain of a haulout, and frequency of disturbances at haulout sites.

Currently, the total number and status of the Pacific walrus population is unknown. A 2006 joint survey by U.S. and Russian scientists collected population data using thermal imaging systems and satellite transmitters. The researchers reported a minimum population of 129,000 walrus (95% CI: 55,000-507,000) (Specking *et al.* 2010). During 2008, the Center for Biological Diversity filed a petition with the U.S. Fish and Wildlife Service (USFWS) to list Pacific walrus as threatened or endangered under the Endangered Species Act (ESA) and to designate critical habitat. Recently, USFWS initiated a detailed Status Review to determine if listing walrus under the ESA is warranted. By late January 2011, USFWS will provide a final determination that ESA listing is warranted, not warranted, or warranted but precluded by pending proposals for other higher priority species.

Cape Seniavin is the only major haulout in southern Bristol Bay and the only major walrus haulout in Alaska not protected by a state or federal land designation. Cape Seniavin was proposed as a State Game Sanctuary in 1982, but has yet to be designated by the state legislature. The department is currently re-evaluating a sanctuary proposal.

FISH

FINFISH

The estuaries and rivers of Egegik and Ugashik Bays, Cinder River Lagoon, Port Heiden, and Port Moller support a wide variety of marine and freshwater fishes (Table A1). At least 77 species of fish have been observed in one or more of the CHAs or adjacent marine waters (Table A7). Primary species of economic or local importance include sockeye, pink, chum, coho (silver), and Chinook salmon, rainbow smelt, and whitefish.

Salmon/Anadromous Fish

There are five major salmon-producing river systems-- Egegik, Ugashik, Cinder, Meshik and Nelson (Sapsuk) Rivers and 26 catalogued water bodies in or adjacent to the Bristol Bay CHAs (Table A1). Known anadromous fish water bodies are identified in the Catalog and Atlas of

Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes at the Alaska Department of Fish and Game.

Sockeye salmon is by far the most abundant, but all five species of Pacific salmon are present in CHA waters in considerable numbers. Egegik and Ugashik rivers are two of the seven major sockeye systems in the Bristol Bay Management Area. Between 2004 and 2008, the average estimated annual escapement was nearly 1.4 million sockeye salmon for Egegik River (Jones *et al.* 2009). The average estimated annual escapement of sockeye salmon for Ugashik River was 1.1 million fish. Estimated escapements for salmon species in the Egegik and Ugashik river systems are presented in Table A9.

Although not as productive as Egegik and Ugashik rivers, lower Alaska Peninsula rivers and streams also support large numbers of sockeye salmon, with smaller numbers of coho, chum, Chinook and pink salmon. One of the largest sockeye systems is Nelson Lagoon followed by Cinder River and Meshik River. In 2008, the estimated sockeye salmon escapements for these rivers were 178,000 fish (Nelson Lagoon), 61,250 fish (Meshik River), and 129,800 fish (Cinder River) (Murphy and Hartill 2008). Estimated 2008 escapements for rivers draining into Cinder River, Port Heiden, and Port Moller/Nelson Lagoon are presented in Table A10.

The timing of salmon runs varies by species and region. On the Alaska Peninsula, run timing for Chinook salmon extends from early June to August 1. Sockeye salmon appear in early June and are present through September. The chum salmon run extends from about July through August, while coho salmon run from mid-August into October. Spawning for the various salmon species generally occurs from mid-July to the end of December. Sockeye and chum salmon are the first species to begin spawning, and coho salmon spawning extends latest in the season.

Other important anadromous species within or adjacent to the Bristol Bay CHAs include Dolly Varden, steelhead (anadromous rainbow trout), and humpback whitefish. Dolly Varden spawn and overwinter in freshwater and move into marine feeding areas during the summer. Spawning generally takes place from the end of July to the beginning of December. Lakes, deep river pools, and spring-fed streams provide overwintering habitat. Mature Dolly Varden (2-5 years old) generally migrate into marine waters around break-up. They spend from several weeks to seven months in marine areas before returning to freshwater systems.

Steelhead have been documented in Nelson (Sapsuk) River, and the run extends from late April to mid May, and again in October. Spawning takes place in the spring. Juveniles remain in freshwater from one to four years before migrating to marine waters. Steelhead move out of freshwater systems from April through June, and spend several months to four years at sea before returning to their natal streams.

Anadromous humpback whitefish spawn during fall in shallow stretches of rivers and rocky reef areas of lakes. Adults overwinter in lakes, large rivers, or the nearshore marine environment. In spring, young of-the-year migrate to coastal waters where they summer and perhaps winter. Whitefish reach sexual maturity, and begin spawning, when five to seven years of age.

Smelt are also present in the Bristol Bay CHAs, including Ugashik River and Dog Salmon River (Fall *et al.* 1996).

Resident Fish

Grayling, rainbow trout, lake trout, burbot, northern pike, and resident humpback whitefish are the most common resident species in the vicinity of the Bristol Bay CHAs. Arctic grayling are found north of Port Heiden and generally spawn during May. Although confined to freshwater systems, grayling migrate considerable distances between spawning, feeding, and overwintering areas.

Rainbow trout are irregularly distributed in the Bristol Bay and Alaska Peninsula region. Some rainbow trout inhabit river and streams on a year-round basis, while others move between streams and lakes. Stream dwelling rainbow trout move only limited distances within a river or stream. They overwinter in deep river holes, often in the lower stretches of rivers. After ice break-up, they disperse throughout the river system, frequently moving upstream. Lake dwelling rainbow trout have highly variable migrational patterns. Generally, adults overwinter in lakes, spawn in rivers and streams, and return to the lakes during summer and fall. Rainbow trout typically spawn at the same time and in the same type of aquatic habitat as steelhead. Lake trout are predominately found in cold, clear, deep lakes, although populations also occur in large clear rivers, glacial lakes, and shallow tundra ponds and are common in the Bristol Bay region. Lake trout move between seasonal feeding areas and spawning grounds, and distances traveled increase with age. Generally, lake trout inhabit relatively deep waters during summer, and move into shallower areas to overwinter. Spawning takes place in late summer or fall over rock substrates where water depth is less than 40 feet (ADF&G 1983, ADF&G 2003).

Similar to lake trout, burbot prefer cool deep lakes, but are also found in rivers. During summer they inhabit waters that may be 660 feet or more in depth, but at night, individuals often move inshore to feed. Burbot also utilize nearshore areas of lakes to spawn, which primarily occurs in January and February. Following spawning, large numbers of burbot move into tributaries, presumably to feed, before returning to deep lake waters.

Northern pike is another major freshwater species in the Bristol Bay region. Pike overwinter in lakes and rivers, and spawn in marshes and shallow bays. They begin moving to traditional spawning areas about the time of ice break-up, and reproduce in spring. During summer and fall, northern pike reside in the relatively warm, slow moving waters of sloughs, meandering rivers, ponds, and the shallows of lakes. Prior to freezeup, they return to their wintering areas in the deeper portions of rivers and lakes (ADF&G 2003).

Other resident fish found in the area include coastrange sculpin (*Cottus aleuticus*), threespine (*Gasterosteus aculeatus*) and ninespine (*Pungitius pungitius*) stickleback, Alaska blackfish (*Dallia pectoralis*); and starry flounder (*Platichthys stellatus*) (Wagner and Lanigan 1988; Meckenburg *et al.* 2002).

Herring

Major concentrations of herring have been documented along the Bering Sea coast from Adak to Cape Seniavin (Jackson 2008). Aerial surveys conducted by ADF&G have documented Pacific herring in Port Heiden and Port Moller, including Herendeen Bay. However, the surveys have provided limited information on herring distribution and abundance due to lack of staff and suitable aircraft, reduced survey coverage, inclement weather conditions, and water turbidity.

Herring spawn on nearshore kelp beds. These eggs-on-kelp are very sensitive to environmental contaminants. Spawning occurs from late April through July in shallow, vegetated areas in the

intertidal and subtidal zones (Jackson 2007, ADF&G 2003). Herring eggs are adhesive, and survival is better for those eggs that stick to intertidal vegetation than for those which fall to the bottom. Milt released by the males drifts among the eggs and fertilizes them. The eggs hatch in about two weeks, depending on the temperature of the water. Larvae are present in nearshore areas from late April to September (ADF&G 2003).

Forage fish

Forage fish are an important food source for marine mammals, seabirds, diving waterfowl, and other fish species. Small schooling fish such as herring, capelin, rainbow smelt, eulachon, Pacific sand lance, and juvenile walleye pollock use coastal regions and the continental inner shelf area. The coastal region along the Alaska Peninsula is used for summer feeding by Pacific cod and herring. Late juvenile Rock sole (*Lepidopsetta spp*) may be found in Port Moller and Port Heiden (NOAA 2005). Capelin spawning takes place in the spring in coarse sand and fine gravel intertidal areas; capelin are only near shore in the Bristol Bay during spawning but are a major food source for marine mammals and seabirds. Rainbow smelt can be either resident freshwater or anadromous; if anadromous they remain nearshore throughout their lives. Concentrations of rainbow smelt have been observed near the Ugashik River and outside Port Heiden and Port Moller. Rainbow smelt and eulachon also spawn in the early spring. (Fritz *et al.* 1993)

MARINE INVERTEBRATES

Juvenile red king crab habitat areas are located in shallow water in high relief bottom terrain where rich epifaunal communities provide shelter and food. A survey of Port Moller for juvenile red king crab conducted in 1992 by Wainright *et al.* found the most juveniles in the intertidal area (Akley and Witherell 1999). Major occurrences of small crabs in National Marine Fisheries Service trawl surveys occur within 30 miles of estuarine areas on northern side of the Alaska Peninsula (Stevens 1990, cited in Akley and Witherell 1999). The adult crabs are found in deeper offshore waters except for the spring and winter spawning period, during which they migrated to the shallow nearshore area. (Takeshita *et al.* 1990, cited in Akley and Witherell 1999).

Of the five crab species that inhabit the Bering Sea, only Dungeness crab (*Cancer magister*) inhabit shallow bays and estuaries as adults. They typically prefer areas with mud and sand bottoms in less than 15 fathoms of water. (ADF&G 2003)

Soft bottomed sediments north of the Alaska Peninsula support a variety of mollusks, sponges, anemones, ascidians, polychaetes, barnacles, mussels, urchins, sea stars, scallops, sea cucumbers, shrimp, and octopuses.

THREATENED AND ENDANGERED SPECIES

There are several federally listed threatened or endangered species that are known to occur in the Bristol Bay CHA vicinity. In addition, the state Endangered Species Act (AS 16.20.190) establishes criteria for listing state endangered species, but the act does not include “threatened” or other categories. Of the 13 federally or state listed endangered species that have historically ranged in Alaska (Table A8), the short-tailed albatross (*Diomedea albatrus*), western stock of Steller sea lion (*Eumetopias jubatus*), humpback whale (*Megaptera novaeangliae*), and leatherback sea turtle could occur in the vicinity of the Bristol Bay CHAs. There are seven

federally listed threatened species that occur in Alaska. Steller's eider (*Polysticta stelleri*) seasonally utilize the nearshore areas of the five CHAs (Maps 7, 14, 21, 28, and 34). The northern sea otter (*Enhydra lutris*) is also found in or adjacent to the five CHAs, with greatest numbers occurring in the Port Moller area.

The U.S. Fish and Wildlife Service designated critical habitat for southwest distinct population of northern sea otters in October 2009, including Port Moller and Herendeen Bay (FWS-R7-ES-2008-0105; 50 CFR Part 17). The FWS designated critical habitat for Steller's eider in February 2001 (66 FR 8850), which includes portions of Port Moller and Nelson Lagoon.

SPECIES OF SPECIAL CONCERN

In Alaska, sensitive species are administratively designated by the Commissioner as Species of Special Concern (SSC). A Species of Special Concern is any species or subspecies of fish or wildlife or population of mammal or bird native to Alaska that has entered a long-term decline in abundance or is vulnerable to a significant decline due to low numbers, restricted distribution, dependence on limited habitat resources, or sensitivity to environmental disturbance. Because the state Endangered Species Act does not have threatened or candidate categories, such species may be included on the SSC list .

The Bristol Bay CHAs lie within the distribution of several Species of Special Concern (see Table A8), including the American peregrine falcon (*Falco peregrinus anatum*), Arctic peregrine falcon (*Falco peregrinus tundrius*), and harbor seal (*Phoca vitulina*). Steller's eider, the western stock of Steller sea lion, and northern sea otter are also on the SSC list. The Aleutian cackling goose (*Branta hutchinsii leucopareia*) is now recovered and abundant; it was delisted under the federal ESA in 2001 and will be removed from the state SSC list.

COMPREHENSIVE WILDLIFE CONSERVATION STRATEGY

Alaska's Comprehensive Wildlife Conservation Strategy (CWCS) was developed by ADF&G with input from many governmental, academic, professional scientist, and public interest representatives in 2003-2005. This strategy identifies a list of 97 mammalian, avian, invertebrate, amphibian, and fish species in Alaska which are designated "featured species." These featured species are those considered to be in greatest need of conservation efforts, those that serve as indicator species of ecosystems health, or those that have declining or small populations, with an emphasis on non-game species. The CWCS provides detailed information pertaining to the management and research needs of the featured species and their important habitats. The CWCS is implemented through federal State Wildlife Grants and partnering programs that are intended to supplement existing management efforts. Many of the species that utilize the BBCHAs have been identified as featured species of the CWCS (53 of 149 avian species, 10 of 47 mammal species, 12 of 79 fish species) (ADF&G 2006).

HUMAN USE

Fish and wildlife populations in the Bristol Bay region are harvested extensively, and contribute significantly to both the local and State economies. In addition to hunting, fishing, and gathering of wild resources in the vicinity of the Bristol Bay CHAs, beachcombing is a popular activity for both residents and visitors. Visitors generally land small planes on the beaches. Occasionally others are dropped off by commercial guides while not hunting. Beachcombing is best in spring

after the winter storms have deposited walrus ivory, glass balls, etc. It is unknown whether beachcombing for profit is currently an issue. The possibility of commercial operation is conceivable, though it would only be profitable on a large scale. Large scale commercial beachcombing (*e.g.*, 30 people) may pose a problem. Some people now sell found items in a very small scale unofficial way.

The Bristol Bay CHAs support significant commercial fisheries, resulting in large vessel use, which requires some boat maintenance activities. Boat maintenance may consist of minor activities (*e.g.*, untangling debris or gear from a propeller) to major hull work (*e.g.*, sandblasting off paint). Boats are generally stored outside of the CHAs during the off-seasons for fishing. In the Port Heiden CHA, boats are grounded in the lagoon during commercial fishing seasons, south of the Meshik town site. Only the entrance to the small lagoon is within the boundary of the CHA.

There is little information on camping use in the CHAs. In addition to camping associated with harvest activities, birders and researchers may also establish camps. Camping use is low at Cinder River CHA, and primarily by people based on boats.

RECREATIONAL HARVEST ACTIVITIES

Fish and wildlife populations in the Bristol Bay region provide excellent hunting and fishing opportunities. A wide variety of species are taken by local and non-local State residents, as well as individuals from the contiguous United States and foreign countries. Nonresidents that hunt and fish on the Alaska Peninsula frequently obtain the services of a professional guide, as do many non-local residents.

Sport Fishing

Sport fishing in the Bristol Bay CHA vicinity is light; with the effort generally facilitated by guides or lodges, both locally and from communities nearby (*e.g.*, King Salmon and Cold Bay). Species targeted include salmon, arctic char, and grayling, but other anadromous and resident species are also taken (ADF&G 1983, Sepez *et al.* 2005). Most sport fishing takes place in rivers and streams outside of the CHAs; however, some fishing may occur within Port Heiden CHA (on the Meshik River) and Cinder River CHA and in the vicinity of the Port Moller CHA. Pilot Point has at least one business providing freshwater fishing services (Sepez *et al.* 2005). See also local harvest as described in the subsistence section. The department has not developed estimated sport fish harvest numbers for Alaska Peninsula streams within or adjacent to the Bristol Bay CHAs given the dispersed and low angler effort and the methodology for estimating harvest from public surveys.

Hunting

The five critical habitat areas in Bristol Bay are located in GMU 9. The demarcation between GMU 9D and 9E falls in Port Moller; all of the CHAs but a portion of Port Moller CHA are in 9E. Caribou, brown bear, and moose are the major big game species harvested in the area. Between 1997 and 2005, the reported annual caribou harvest from the North Alaska Peninsula herd ranged from 34 to 490 animals (Butler 2005, Butler 2007c). An average of 165 moose from GMU 9 were reported to be taken each year from 2000-2006 (Butler 2008). Annual brown bear harvests in GMU 9, with an allowable harvest of one bear every four regulatory years, exceeded 558 bears every other year between 1997 and 2006 (Sellers 2003, Butler 2007a). Wolves are also harvested by hunters in Bristol Bay CHAs vicinity (Table A11).

Waterfowl is the primary wildlife resource harvested in the Bristol Bay CHAs. The Ugashik Bay-Pilot Point area is one of the region's most heavily used waterfowl harvest areas (ADF&G 1983). Harvest of waterfowl by local residents is further described in the subsistence harvest section. Interest in commercial guiding for waterfowl hunting is increasing in the Port Moller CHA (Tables A23-A25).

Trapping

Trapping is important to the local communities on the Alaska Peninsula. Residents of the local communities have taken 89% of the reported harvest since 2000 within GMU 9 (Butler 2007b). Furbearer harvests in GMU 9 were low and relatively stable during the 2000-2006 period. The harvest in 2002-03 was the highest on record since 1994-95. Probable reasons for the low harvest include large refugia in national parks, difficult travel conditions, and low fur prices.

GMU 9 includes drainages east of False Pass, through the Kvichak/Naknek river drainages, Katmai National Park and Preserve, and Lake Clark National Park and Preserve. However, the five Bristol Bay CHAs lie almost entirely with GMU subunit 9E. The communities of Egegik, Pilot Point, Ugashik, Port Heiden, and Nelson Lagoon harvest furbearers.

Reported harvest of beaver, lynx, land otter, wolverine, and wolf for 9E and 9D is shown in Table A11. From 2004 through 2009, an average of 20 beavers were harvested annually in 9E. Wolves are harvested by hunters and trappers. From 2004-2009, an annual average of 28 wolves was reported harvested (trapped/hunted) in GMU 9D and 9E.

Harvest occurs September through April, with the majority of animals harvested during the December through February period (Butler 2006). The most important harvest months are typically January and February. Modes of travel for beaver, lynx, otter, and wolverine trappers include snow machines and all-terrain vehicles.

The department assesses harvest information from pelt sealing records and from trapper questionnaires for species where sealing is not required. Information gathered for unsealed species (coyote, red fox, arctic fox, and mink) provides a rough, qualitative index to trends in populations of furbearers and trends in key prey species, rather than a census of species' occurrence. The reported harvest and number of trappers is for the entire GMU sub-units 9D and 9E and are not specific to the critical habitat areas.

COMMERCIAL FISHING

Salmon

Sockeye salmon produced in river drainages of the upper Alaska Peninsula and inner Bristol Bay provide the basis for the major commercial salmon harvest activities (Jones *et al.* 2009, Murphy and Hartill 2009). The marine waters of Egegik and Ugashik Bays are included in the Egegik and Ugashik Districts within the Bristol Bay Management Area. Marine waters near Cinder River and in Port Moller and Port Heiden are included in the Northern District within the Northern Alaska Peninsula Management Area.

The largest sockeye salmon harvest in the vicinity of the BBCHAs occurs in the Egegik District. Since 1997, approximately 2.3 million to 10.2 million sockeyes have been harvested from this district annually (Jones *et al.* 2009). In the Ugashik District, from 0.4 million to 5.0 million sockeye salmon were harvested annually, since 1996. Chinook, coho, pink, and chum salmon are also taken in all the fishing districts; chum salmon is the second most numerous species

harvested. Tables A12 and A13 present approximate salmon commercial catch figures for all five species of Pacific salmon in the Egegik and Ugashik Districts. Legal gear for the salmon fishery includes drift gillnet and set gillnet; drift gillnet permits are the most numerous.

Fishing sections within the Northern District encompassing marine areas within or adjacent to the BBCHAs include the Cinder River Section, Outer and Inner Port Heiden Sections, Port Moller Bight, Herendeen-Moller Section, and the Nelson Lagoon Section. The sockeye salmon harvest is the largest within the Northern District. The average harvest of sockeye salmon from 1998-2007 was 1.9 million fish (Murphy and Hartill 2009). Chum salmon is the second most numerous salmon species harvested. Chinook, coho, and pink salmon are also harvested. Commercial catch estimates for sockeye, Chinook, chum, and coho salmon in the Northern District, by section, are found in Tables A14 through A17. Legal gear for the salmon fishery in the Northern District includes purse seine, set gillnet, and drift gillnet. The drift gillnet is the most widely used gear. The use of the purse seine has diminished (Shaul and Dinnocenzo 2002 cited in Murphy and Hartill 2009).

Herring

The Port Moller and Port Heiden Districts of the North Alaska Peninsula Management Area encompass the marine areas of the Port Moller and Port Heiden Critical Habitat Areas. A commercial sac-roe herring fishery has occurred periodically since 1982 (Jackson 2008); the department has not opened a food and bait fishery in the North Alaska Peninsula Management Area. Prior to 1982, fishing vessels from the Togiak commercial herring sac roe fishery surveyed for herring in the waters along the North Alaska Peninsula. An average of 52 purse seine vessels fished the Port Moller District from 1986 to 1988 (Schwarz 1988 cited in Jackson 2008). The fishery historically ran from late May through mid to late June. Beginning in 1986, fishing boats targeted the earlier (May) herring biomass. ADF&G delayed the start-up of the fishery until May 30, in 1989 and 1990, to shift the harvest pressure to the later and more abundant herring stocks (Shaul *et al.* 1991 cited in Jackson 2008). In years of sufficient herring biomass, the department has opened the sac-roe fishery in Port Moller earlier than May 30.

Since 1995, there has only been harvest from two years commercial herring fishery, likely due to low industry interest (Jackson 2007; Jackson 2008). Historically, herring sac roe primarily have been harvested from the Herendeen Bay and Port Moller Bay sections. Herring were last harvested in the Port Heiden District in 1992. The most recent sac roe fishery in the Port Moller District occurred in 2009 when 2,840 tons were harvested (Murphy pers. comm. 2009).

The commercial herring sac roe fishery extends from April 15 through July 15. The actual harvest has occurred generally from mid-May to early/mid June. Historical harvests since 1990 for herring sac roe fisheries are presented in Table A18.

SUBSISTENCE HARVEST (FISHING, HUNTING, AND GATHERING)

Residents from the communities in Bristol Bay and the Alaska Peninsula, including King Cove, Cold Bay, Nelson Lagoon, Port Heiden, Pilot Point, Ugashik, and Egegik utilize at least portions of the CHAs for subsistence hunting and fishing (Hartill 2009; Jones *et al.* 2009). Maps 36 through 40 depict fish and wildlife harvest activities for various communities. Under state regulation, all Alaska residents are eligible to participate in subsistence harvest and gathering activities on all lands and waters in Alaska, except where superseded by federal law (*i.e.*, where federal lands are closed to the non-federally eligible residents, or federal lands are closed to all

take). Hence, subsistence users from other areas of the state may also rely on fish and wildlife resources in the vicinity of the Bristol Bay CHAs.

Salmon and caribou are the most important subsistence resources of the CHAs, in terms of quantities harvested. Subsistence fishing for salmon is permitted in commercial districts during commercial openings. Subsistence fishing may be opened by Emergency Order during extended commercial closures. Tables A19 and A20 present the amount of salmon harvested annually in the Egegik and Ugashik districts from 1997 to 2008 (Jones *et al.* 2009). Subsistence salmon harvest for the communities of Port Heiden and Nelson Lagoon/Port Moller residents are presented in Tables A21 and A22 (Hartill 2009).

Moose and waterfowl are also of major importance to local subsistence users, and a wide variety of other species, including migratory birds, ptarmigan, and non-salmon freshwater fish, are frequently harvested (Paige and Wolfe 1997; Fall *et al.* 1996; ADF&G 1983). Communities on the Alaska Peninsula harvest ducks, geese, and seabirds (both adults and eggs) (Fall *et al.* 1998; Paige and Wolfe Draft; Seim and Wentworth 1996). Migratory bird harvests are presented in Tables A23 through A25. Non-salmon freshwater fish harvested include arctic grayling, Dolly Varden, lake trout, northern pike, rainbow trout, whitefish, and smelt. It is important to recognize, however, that there are major differences in the types and quantities of resources utilized by different communities. In addition, there is annual variation in resource use within each community, depending on a number of factors such as species abundance and distribution. Specific information on the villages and communities in the engaged in subsistence activities in the vicinity of the Bristol Bay CHAs can be found in the Community Profile Database, maintained by ADF&G, Division of Subsistence.

INFRASTRUCTURE

Cabins

There are several cabins within the Bristol Bay CHAs. In Egegik CHA, there was one cabin, known locally as Oscar's cabin, on the end of spit. Another cabin is located on the middle of spit, and there is also a rundown cabin near the ADF&G commercial fisheries district marker. The cabins were likely constructed originally as fish camp/ set net cabins. It was reported that there is only one cabin left on Egegik spit since the storm/ high tide event in 2008-2009 pushed the sea ice in. There are set net cabins in the northern portion of Pilot Point CHA, with at least one identified as trespass. There is a cabin in Port Heiden CHA (T61W, R39S) that is reportedly used by guides and the public, mostly bear hunters (trespass). There are two trespass cabins identified by DNR records in Cinder River CHA; both near water on the spits. There are no known cabins in Port Moller CHA; however there are approximately 10-15 set net sites with cabins at Nelson Lagoon. In addition, there are old mail trail and trapper cabins in area, exact locations unknown. There are many set net cabins on south side of the lagoon, but all are on Native Corporation land. Egegik and Nelson Lagoon have fixed locations and support structures for set netters; at Pilot Point the sites move. There are also several cabins within CHA boundaries built on native corporation land or on native allotments.

A majority of public comment from the scoping meetings suggested that the department should allow existing cabins to remain as they are helpful in emergencies and/or for stranded people, but not to allow the construction of any additional cabins.

Docks and Boat Ramps

There are public docks at Nelson Lagoon (public dock constructed in 1993, permit to AEB funded by Aleutian Pribilof Island Community Development Association through DCCED) and Port Moller (maintained by the cannery) near the entrance channel to Port Moller. The entrance channel is marked in non-winter months.

Boat launches and/or a dock, located near Dago Creek in Pilot Point CHA, receive major use during the commercial fishing season. At Port Heiden, boats are launched off the beach in the lagoon south of town. The CHA boundary line runs through the middle of lagoon, and the activity may or may not be in CHA. Public scoping comments from Port Heiden indicated that a dock would be infeasible because of the sedimentation and frequent movement of deeper channels.

All communities in or adjacent to the Bristol Bay CHAs are dependent on marine transport/fishing. It is necessary to have docks/boat access. Heavy seasonal ice conditions necessitate either heavy duty dock construction or seasonal docks, which limits the number built and increases the costs such that there are no private docks.

Roads, Trails, and Airstrips

The towns (Egegik, Pilot Point, Port Heiden, and Nelson Lagoon) associated with the CHAs all have small local road systems and a trail of some sort accessing a portion of the CHA. There are no roads in the Egegik CHA. There is a road north along the coast from the City of Pilot Point to Dago Creek, a portion of which is in the CHA. On the Nelson Lagoon spit there is a road linking the airport to the village and trails, along the length of the spit accessing the beach, which are used by off-road vehicles (ORV) and street-sized vehicles. From the beach, roads from earlier oil and gas exploration can be reached; these are still suitable for vehicle use. O&G plan approval process may include requirements for road restoration. There are airports near or within the CHAs.

Most other access is by boat, ORV trail, or snow machine when snow depth is sufficient. ORVs are also driven along beaches in the unvegetated areas. Egegik CHA is accessed by an ORV trail along the coast from town, along the uplands, although a portion is on the beach. There is no ORV trail within the state-owned portion of the Egegik CHA. There are rutted upland trails near Pilot Point and Port Heiden. There is also community support for trail improvements in Egegik and Pilot Point CHAs. Trail maintenance may be the best way to minimize damage. Use of ORVs on unvegetated beaches is generally less damaging to habitat than on upland trails.

With potential oil and gas exploration nearby and known coal reserves off Herendeen Bay, new roads may become an issue. Should oil and/or gas be discovered, there would likely be a need for a transportation corridor to be constructed for the movement of materials and product to the southern side of the Alaska Peninsula. Transportation corridors potentially affecting the CHAs have been included in DNR's Bristol Bay Area Plan, including Herendeen Bay to Balboa, Port Heiden to Kujulik Bay, and Pilot Point to Wide Bay. There is also a proposal to build a road to Egegik's South Spit. There are significant areas within the boundaries of the CHAs which are private (*e.g.*, native corporation land). Access to private property will need to be addressed.

The Egegik airstrip is public and owned by the City of Egegik. Nelson Lagoon, Pilot Point, Port Heiden all have rural airports maintained by ADOT&PF. Ugashik and Port Moller have BLM owned public airstrips. Small wheeled planes commonly land on the beaches of spits and barrier

islands. Only Nelson Lagoon's airport is within the CHA boundaries; it is also within a ADOT Right of way. Airstrips at Egegik and Pilot Point are outside the CHAs. Additional airstrips may not be needed inside the areas since there are sites nearby, outside of CHAs.

Commercial Facilities and Structures

Floating processors have operated within or adjacent to some of the Bristol Bay CHAs. A fish processing plant is located in Port Moller adjacent to the Port Moller CHA. Nelson Lagoon is currently requesting bids for developing a salmon processing facility, and Pilot Point is looking into a fish processing plant, potentially near Dago Creek. There may be a need to identify locations where facilities may be acceptable and areas where development of facilities should be avoided. There are currently no commercial guiding facilities (lodges) in the vicinity. The nearest lodge is at Bear Lake, east of Port Moller. In addition, alternative energy projects are beginning to show up (*e.g.*, wind turbines).

There are several floating processors operating in accordance with an Environmental Protection Agency general permit in the vicinity of the CHAs; DEC is taking over the NPDES permitting from EPA and the discharge permits are now under state authority. These include:

Big Creek Fisheries Egegik Plant -AKG520166
Icicle Seafoods Inc Egegik Plant-AKG520048
Coffee Point Seafoods Egegik Plant-AKG520536
Peter Pan Seafoods Port Moller Cold Bay Cannery- AKG520014

There are currently no utility or pipelines in the CHAs. The Lake and Peninsula Borough is evaluating wind power generation; however there are not many suitable locations for turbines. It is likely that power transmission lines would be needed. If oil and gas potential is realized, there may be a need for transmission lines and/or possible pipelines for natural gas or oil. The Department of Natural Resources (DNR), Division of Oil and Gas (DO&G) considers the Port Moller-Herenden Bay area as the most prospective for oil and gas exploration and for an offshore-onshore gas pipeline servicing the entire Bristol Bay-North Aleutian Basin region. In addition, Herenden Bay to Balboa, Port Heiden to Kujulik Bay, and Pilot Point to Wide Bay are the three trans-peninsula transportation corridors identified in the DNR Bristol Bay Area Plan. Fiber optic lines and water pipelines are both parts of projects in the conceivable future.

ACCESS TO BRISTOL BAY CRITICAL HABITAT AREAS

Residents of the local communities, and some nonresidents working in Bristol Bay, use off-road use of wheeled or tracked vehicles in the Bristol Bay CHAs for beach combing, in support of set net sites and hunting, and as a general mode of transportation for recreation. Off-road vehicles (ORV) are the primary mode of travel on land in Egegik. There is at least one established vehicle trail in Egegik CHA and Port Heiden CHA. Locals sometimes use snow machines whether there is snow or not. Snow machines are used to access inland hunting areas in the winter. It is not known whether the current motorized vehicle use is causing any disturbance to wildlife.

Although not quantified, aircraft activity over the CHAs is thought to be relatively low. A nearby lodge uses Port Moller and the airstrip there to shuttle clients into the lodge. Aircraft likely fly along the coast during some times of the year. Although the use of aircraft is not

allowed during the salmon fisheries, some fisherman will use private aircraft to look for salmon outside of the district during closures. Aircraft are also used for beachcombing for ivory and to support guided hunting (based from local lodges). There is guided bear hunting on the Egegik Spit but no sport fishing. One fish processor uses a helicopter. There may be some aircraft use at Cinder River as there is a boat stored there. Fish and wildlife resource agencies, including ADF&G, NOAA, USFWS, and the U.S. Geological Survey conduct low level flight surveys; for research and management needs; this should not be restricted.

The Federal Aviation Administration (FAA) controls the airspace over the CHAs. The FAA can provide aviator advisories to remain above a minimum altitude to avoid wildlife disturbance. ADF&G only has jurisdiction over landings and takeoffs within the CHAs. Studies have documented aircraft generated disturbance of waterfowl in nearby Izembek Lagoon. ADF&G could recommend aircraft over flight advisories to FAA to reduce disturbance to hauled-out marine mammals and large flocks of waterfowl that are sensitive to aircraft noise, including emperor geese, Steller's eiders, brant, and Canada geese (*e.g.*, above ground level altitude minimums, horizontal distance).

Boats are a primary mode of transportation for the coastal communities adjacent to the Bristol Bay CHAs. Large numbers of boats operate in Egegik and Ugashik Bays, Port Heiden, and Port Moller during the commercial fishing seasons. Disturbance to marine mammals by motorized vehicles generally depends on the specific life stage at the time of the motorized activity. Most marine mammal haul outs occur at low tide when there is little boat traffic. The commercial fishery in Egegik does not appear to be affecting the CHA. At higher tides, there is interaction among seals and fishing boats. Increased boating activity during spring, fall, or winter staging areas for waterfowl or shorebirds could disturb or displace birds.

There is a limited use of personal watercraft, air-cushion vehicles, or airboats in the Bristol Bay CHAs. There is a small hovercraft in Nelson Lagoon. There did not appear to be any airboats in the Egegik, Pilot Point, or Nelson Lagoon areas. A small number of jet skis are in King Salmon/Naknek and Sand Point.

LAND STATUS AND MANAGEMENT

The five critical habitat areas (CHA) in Bristol Bay; Egegik, Pilot Point, Cinder River, Port Heiden, and Port Moller encompass state uplands, tide, submerged lands, and estuaries, as well as private lands (*e.g.*, Native corporation and native allotments). A small portion of the Alaska Peninsula Wildlife Refuge lies within the boundary of Port Moller CHA. There are a few areas of land located in Cinder River CHA that lie within the Alaska Maritime National Wildlife Refuge (see Appendix E Bristol Bay Inholdings). Approximately 6.5 acres of tidelands encompassing the dock area at Nelson Lagoon in the Port Moller CHA were conveyed to the Aleutians East Borough.

The State of Alaska manages state land and water within the five CHAs to protect and preserve habitat areas especially crucial to the perpetuation of fish and wildlife, and to restrict all other uses not compatible with that primary purpose. Uses of state CHA lands are managed to prevent habitat changes that would be harmful to the wildlife or habitat, or degrade existing public use. Hunting, fishing, trapping, and recreational activities are encouraged so long as they are in keeping with the primary purposes for establishing the CHAs. Due to the overlapping boundaries with federal and private lands, management is coordinated whenever necessary.

Federal and private lands within the CHAs are not subject to CHA authority, but would, if acquired, become part of the CHAs as provided in statute.

Map 1 depicts the relative locations of Egegik, Pilot Point, Cinder River, Port Heiden, and Port Moller CHAs. Maps 2, 9, 16, 23, and 30 show the land status of the five CHAs as of August 2009. Native corporations own significant acreage within the boundaries of the CHAs (see also section on Area Descriptions). Corporations include the Becharof Corporation (Egegik CHA); Bristol Bay Native Corporation and Pilot Point Native Corporation (Pilot Point CHA); Alaska Peninsula Corporation (Port Heiden CHA); and Nelson Lagoon Corporation (Port Moller CHA). In addition, there are native allotments in three of the five CHAs. There are two native allotments in Pilot Point CHA totaling approximately 240 acres. In Port Heiden CHA, there are two native allotments totaling approximately 240 acres. There are 15 native allotments totaling approximately 1,714 acres in Port Moller CHA.

There are eight 17b easements located in the Bristol Bay CHAs which allow travel by foot, dogsled, animals, snowmobiles, two- and three-wheel vehicles, and small all-terrain vehicles (ATVs) less than 3,000 lbs. gross vehicle weight through private land to access public land. There are four 17b easements in Port Moller CHA, one in Port Heiden CHA, two in Pilot Point CHA, and one in Egegik CHA. There are also numerous shore fishery leases within the CHAs, including 14 leases in Port Moller, 29 leases in Pilot Point CHA, and four leases in Port Heiden CHA.

All five areas are recognized as Important Bird Areas on a global level by the National Audubon Society.

Bristol Bay Fisheries Reserve

Several river drainages emptying into Ugashik Bay and Egegik Bay are located within the Bristol Bay Fisheries Reserve. This reserve was established by the State legislature under AS 38.05.140(f). The reserve includes submerged and shoreland lying north of 57 degrees, 30 minutes, North latitude and east of 159 degrees, 49 minutes, West longitude within the Bristol Bay drainage. Surface entry to develop an oil or gas lease on state-owned land is not permitted within the reserve unless the legislature specifically finds that surface entry will not constitute a danger to local fisheries. Egegik CHA and portions of Pilot Point CHA are included in the Bristol Bay Fisheries Reserve.

Oil and Gas Leasing

There is little seismic information for the area, and what does exist is old. Since 1906, there have been 26 wells drilled on the Alaska Peninsula. The latest onshore well, the Amoco Becharof #1 was drilled in 1985. One offshore stratigraphic test well, the ARCO North Aleutian COST Well #1 was drilled in 1983. Test results from three wells drilled in the Port Moller area indicated potential oil reserves (*e.g.*, Pan American Petroleum Corporation David River #1, Gulf Sandy River #1, and Pan American Petroleum Corporation Hoodoo #1). Results from the Amoco Becharof #1 well indicated potential natural gas. No wells to date have flowed commercial quantities of oil. The Department of Natural Resources (DNR), Division of Oil and Gas (DO&G) considers the Port Moller-Herenden Bay area as the most prospective for oil and gas exploration and for an offshore-onshore gas pipeline servicing the entire Bristol Bay-North Aleutian Basin region. In addition, Herenden Bay to Balboa, Port Heiden to Kujulik Bay, and Pilot Point to Wide Bay are the three trans-peninsula transportation corridors identified in the DNR Bristol Bay Area Plan. There are active

surface seeps of natural gas onshore. There is a general opinion that little oil and gas potential exists near the Egegik CHA. The potential for additional exploration activities will likely be influenced by federal lease activities.

The DNR, Division of Oil and Gas has been conducting lease sales for the Alaska Peninsula since 2005; no bids were received in the 2008 and 2009 offerings. Shell Oil relinquished leases for 33 tracts in the Port Moller area in 2008. Hewitt Mineral Corporation holds 5 tracts under lease, the only remaining oil and gas leases in the area. Tracts are typically 5,600 acres apiece. ADF&G developed mitigation measures for the BBCHAs which are included in the 2005 Alaska Peninsula Areawide Oil and Gas Lease Sale, Final Finding of the Director (Alaska Peninsula Best Interest Finding). Measures restrict surface entry for drilling and above ground lease-related structures in tide and submerged lands in the CHAs; surface entry for seismic surveys may be allowed, consistent with Special Area regulations.

In addition to CHA-specific mitigation measures, the DO&G Alaska Peninsula Best Interest Finding includes other measures to address potential impacts to fish and wildlife resources, including, a measure that prohibits facilities other than docks, roads, utility or pipeline corridors, or terminal facilities within ½-mile of the coast and various rivers and streams; and within 500 feet of all fish-bearing waters. The siting of temporary or permanent facilities will be prohibited within the Bristol Bay Fisheries Reserve. The Best Interest Finding must be re-written every ten years, and therefore the next Best Interest Finding must be completed no later than 2015.

The federal Mineral Management Service (MMS) was preparing to offer the North Aleutian Basin in an Outer Continental Shelf Lease Sale (Lease Sale 214) in 2011, with a draft EIS due in 2010. This sale has been indefinitely delayed due to a federal appeals court ruling (April 17, 2009) that the environmental impacts of MMS Alaska oil and gas lease sales were not adequately analyzed. The North Aleutian Basin sale area is located entirely offshore and extends from Unimak Island to a point north of the town of Port Moller. This area was originally offered for sale by MMS in 1988 (MMS 85-0052). Twenty-three leases were issued but no wells were drilled due to Presidential and Congressional moratoria on oil and gas activities in 1989 and a subsequent federal buyback of the leases. In April, 2010, the North Aleutian Basin Lease Sale was deferred indefinitely by MMS.

The Aleutians East Borough (AEB) has worked with MMS (offshore) and DO&G (state lands) for planning and mitigation of petroleum resource development. In 2004, a memorandum of agreement (MOA) between the AEB, the Bristol Bay Borough, the Lake & Peninsula Borough, and DNR was signed that establishes the mutual interests of all parties in facilitating and achieving responsible oil and gas development in the area. A new MOA to continue that agreement was signed in 2009 and in effect through 2014.

The Bristol Bay CHAs are relatively small areas. Surface entry below mean high water is currently prohibited by the state. It may be reasonable to directional drill from adjacent sites outside of the CHAs. For purposes of exploration, seismic methods would likely be used, requiring ship-borne or surface-based force generation and recording equipment for a period of a few weeks. Marine mammal observers and avoidance measures are routinely required for offshore programs. Considerations for offshore exploration activity may include potential interference with commercial fishing and potential effects to birds, fish (including juveniles/ crab larvae), and marine mammals.

Mining

A Mineral Closing Order (570) is in effect for 3,840 acres in the Nelson Lagoon area adjacent to the CHA (DNR 2005).

There are known coal reserves near Port Moller CHA. Coal mining and exploration is regulated by DNR under the Alaska Surface Mining Control and Reclamation Act (ASMCRA). ASMCRA has its own set of standards and review process.

There were a series of state mining claims along Birthday Creek near Port Heiden; however, the state mining claims were closed in 2004 as the lands were only state selected, not patented. In addition, there was a beach mining operation for metal bearing sands near Port Heiden (7th Sea Holding Co., although they haven't operated in a few years. The state mining claims were closed in 2009. Metal bearing sands (titanium, gold, etc.) have been identified in the Port Moller area. Mining techniques can include suction dredging, heavy equipment, hand equipment, sluice boxes, gold pans, magnetic/chemical processing, and/or settling impoundments. There would be a concern with erosion from beach mining, and the Lake and Peninsula Borough already monitors project permits for this.

The Commissioner of DNR has the authority to open or close land within the CHAs to new mineral entry under AS 38.05.185 – 38.05.275. Although a Special Area Permit can condition mining activity, mining may occur within open areas in the CHAs. If these lands are not closed to future mineral entry and leasehold location, they will continue to be available to the public for staking. The Commissioner of DNR also has the authority to temporarily close 640 acres of state lands to mineral leasing and new mineral entry where it is determined that mining is incompatible with significant surface resources, in this case fish and wildlife habitat and populations, and public use and enjoyment of those resources. The legislature can permanently close state lands to new mineral entry.

Through a separate action, DNR can establish a Leasehold Location Order (LLO) for the refuge to allow mining operations in a manner that maintains critical habitat area values and is compatible with the purposes for which the CHAs were established. LLO's do not have a geographic size requirement or limitation; the DNR Commissioner may issue an LLO with or without an associated management plan. Absent a closing order or legislation, a LLO is an option for management of the Bristol Bay CHAs due to the potential incompatibility of mining activity.

An LLO would restrict mining in a specific CHA to terms of a lease. This may be desirable, because in Alaska, rights to locatable minerals on lands owned by the State of Alaska are obtained by making a mineral discovery, staking the boundaries of the location, and recording the certificate of location within a designated time period. In most areas, such a location is a "mining claim" that gives the owner an immediate property right to mine the deposits. However, in areas of the state that have been restricted to leasing, the location is a "leasehold location" rather than a mining claim. The leasehold location must be converted to an upland mining lease before mining begins. No mining of minerals on leasehold locations may take place, except for limited amount necessary for sampling or testing, until a mining lease has been obtained. The leasing process includes the exclusive right to convert the leasehold location to a noncompetitive lease. No lease sale or open bidding would occur.

Marine Protected Areas

The North Pacific Fishery Management Council established three marine protected areas (MPA) in the Bering Sea, where groundfish trawling and scallop dredging has been closed. The Nearshore Bristol Bay MPA covers 65,170 square kilometers (19,000 square nautical miles) and prohibits all trawling (bottom trawling and pelagic trawling) in all of Bristol Bay east of longitude 162° W in an effort to preclude potential adverse impacts to king crabs and fish and crab habitat. There is an exception to the closure in one small area within this MPA, bounded by longitude 159° to 160° W and latitude 58° to 58° 43'N, in which non-state waters remain open to trawling during the period 1 April to 15 June each year (Witherall and Woodby 2005, W. Donaldson pers. comm. 2009). The Zone 1 (512) Closure to Trawl Gear and the Scallop Closed Area- Eastern Bering Sea overlap with the Nearshore Bristol Bay MPA and the BBCHAs.

Endangered Species Act- Critical Habitat Designations

Geographically, critical habitat designations made by both the state and federal governments overlap in some areas of the BBCHAs. However, the state DF&G and the federal FWS manage activities in these areas pursuant to their own, separate authorities and distinct purposes. Where the critical habitat areas overlap, the FWS will review federal nexus activities for impacts to habitat essential for a specific species list under the Endangered Species Act and the department will review any habitat altering activity through the Special Area permit process and pursuant to the policies in this management plan. Authorization from both agencies may be required for some activities.

Introduction of Exotic Species

The Bristol Bay CHAs support a remote, productive and unaltered natural ecosystem relatively free of introduced species and the perturbations of human impact. Alteration of this natural state would represent an irreversible loss of a valuable Alaskan resource. Prior to 1923, the Bureau of Indian Affairs established reindeer stations at Ugashik and Egegik to provide sources of income and food to local populations devastated by the 1918-1919 Influenza epidemic. These were patterned after efforts on the Seward Peninsula to establish reindeer herds owned by Natives that had been trained by Laplanders and Sami. These eventually disappeared having been absorbed by migrating caribou herds, consumed by wolves, or they became feral due to lack of active herding. Long-lived populations of reindeer on Bering Sea islands have been identified as causing range damage by overgrazing slow growing lichens and forbs and by causing erosion. (Ebbert and Byrd 2002) In the late 1990's, the Northern Alaska Peninsula caribou herd was identified as having Bovine Respiratory Viral Disease Complex, lung worm pneumonia, and high levels of the parasites, esp. *Ostertagia*. These diseases are also present in domestic cattle and reindeer, though the source in this population is unidentified. "Test results on the levels of essential trace minerals in the blood of the caribou reveal that they are not ingesting sufficient selenium and copper to maintain a healthy immune system compared to other caribou herds. This nutritional deficiency may contribute to their increased susceptibility to disease and parasites. (<http://alaska.fws.gov/fisheries/invasive/index.htm>)

Invasive species can be unknowingly introduced in coastal areas via ballast water discharges from vessels. Invasive plants (seeds) can be introduced via equipment imported from other areas, or within seed mixes imported in for use in .re-seeding/stabilizing exposed soils. The only potential for mariculture mentioned thus far in the area is planting juvenile king crabs. The department has previously opposed fish farming in state waters.

Cultural, Archaeological, and Historic Resources

The Alaska Historic Preservation Act (AS 41.35) preserves and protects the historic, prehistoric and archaeological resources of Alaska from loss, desecration and destruction. The investigation, excavation, gathering or removal from the natural state, of any historic, prehistoric or archaeological resources requires a permit from the DNR, State Historic Preservation Office (SHPO) under AS 41.35.070, and may also require a Special Area Permit from ADF&G. If human remains are discovered, the Alaska State Troopers and SHPO must be notified to comply with AS 12.65.005 and AS 11.46.482(a)(3).

INFORMATION NEEDS

- 1) Distribution, abundance, seasonal phenology and population trends for waterfowl; better understanding of these factors will allow more precise and effective management of public use and development.
- 2) The magnitude and seasonal timing of wildlife harvest for subsistence, sport and commercial purposes should continue to be expanded where data are lacking.
- 3) Inventory and monitor eelgrass resources and marine invertebrates that support waterfowl, shorebird, seabird, marine mammal, and fish populations.

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Table A1.—Anadromous Fish Streams

Critical habitat area	Stream no.	Stream name	Species
Egegik	322-10-10080	Egegik River	CH, CO, K, P, S, DV
Pilot Point	321-10-10010	Dago Creek	CO
Pilot Point	321-10-10020	Ugashik River	CH,CO,K,P,S,OM, DV
Pilot Point	321-10-10020-2020	Dog Salmon River	CH,CO,K,P,S,DV
Pilot Point	321-10-10030	King Salmon River	CH,CO,K,P,S,AC
Cinder River	318-20-10610	Cinder River	CH,CO,K,S
Cinder River	318-20-10200	Mud Creek	CH,CO,K,S
Cinder River	318-20-10150	Cinder River	S
Port Heiden	317-20-10900	Barabara Creek	CH, CO
Port Heiden	317-20-10800	Birthday Creek	CH,CO,K,S
Port Heiden	317-20-10700	Meshik River	CH,CO,K,S
Port Heiden	317-20-10700-2013	Meshik R, M Creek	CH,S
Port Heiden	317-20-10700-2008	Highland Creek	CH,K,S
Port Heiden	317-20-10420	Yellow Bluff Creek	CH,CO,K,S
Port Heiden	317-20-10200	Charles Creek	CH,CO,K,S
Port Moller	314-30-1120	Unnamed	CH
Port Moller	314-30-11100	Unnamed	CH
Port Moller	314-30-11000	Left Head Creek	CH,CO
Port Moller	314-30-10950	Unnamed	Ch
Port Moller	314-30-10900	Unnamed	CH,CO,P,S
Port Moller	314-30-10900-2020	Unnamed	CO,P,S
Port Moller	314-30-10700	Right Head Creek	CH,CO
Port Moller	314-30-10500	Mud Bay	CH CO
Port Moller	314-30-10400	Mud Bay	CH,CO,P,S
Port Moller	314-20-10900	Coal Creek	CH,CO,P
Port Moller	313-30-10140	Caribou River	CH,CO,K,P,S,SH

Species Codes S=sockeye, K=Chinook, CO=coho, P=pink, CH=chum, DV=Dolly Varden, OM=rainbow smelt, AC=Arctic char, SH=steelhead

Source: *Catalog of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes 2008*

Table A2.–Bird species in the Bristol Bay critical habitat areas.

Common name	Scientific name	Egegik	Pilot Point	Cinder River	Port Heiden	Port Moller	Type / Residence
Bean Goose	<i>Anser fabalis</i>		24				Accidental
Greater White-fronted Goose	<i>Anser albifrons</i>	3, 5	3, 7, 10, 11, 5	31, 7, 3, 5 2, 3, 8, 5, 22,	2, 3, 5	12	Breeder
Emperor goose	<i>Chen canagica</i>	2, 3, 5, 19	2, 3, 10, 5, 22	31	2, 3, 5	2, 3, 5	Migration/Near shore
Lesser snow goose	<i>Chen caerulescens caerulescens</i>	33	10, 22	22			Migration
Brant	<i>Branta bernicla</i>	3	10, 3, 22	8	3, 5	12, 3, 5	Migration
Cackling goose (Ridgeway, Taverner's & Aleutian sub-sp.)	<i>Branta hutchinsii (minima, taverneri, leucopareia)</i>	2, 3,	2, 6, 10 2, 3, 6, 7, 10, 11,	2	2	2	
Tundra (whistling) swan	<i>Cygnus columbianus</i>	2, 3, 5	22	2, 3, 8, 7	1, 3, 7	1, 3, 5	Breeder/Winter
Gadwall	<i>Anas strepera</i>	3	10, 3, 5, 22	3, 5	1, 3	12, 3, 5	Breeder
Eurasian Wigeon	<i>Anas penelope</i>		10 6, 7, 10, 11, 3, 5,	31		31	Migration
American wigeon	<i>Anas americana</i>		22	2, 7, 5	1, 6, 3, 5, 7	12, 3, 5	Breeder
Mallard	<i>Anas platyrhynchos</i>	2, 3, 5	2, 6, 7, 10, 11, 3, 5, 22	2, 3, 8, 7, 5, 22	1, 2, 3, 7	1, 2, 3, 5	Breeder
Northern shoveler	<i>Anas cylpeata</i>	3	2, 10, 3, 22 2, 3, 7, 10, 11, 5,		3, 5	12, 3, 5	Breeder
Northern pintail	<i>Anas acuta</i>	2, 3, 5	22	2, 3, 8, 5, 22	1, 2, 3, 5	2, 3, 5	Breeder
Green-winged teal	<i>Anas crecca</i>	2, 3, 5	2, 3, 7, 10, 11, 22	8, 3, 22	1, 3	1, 3	Breeder
Canvasback	<i>Aythya valisineria</i>	3				5	Migration
Redhead	<i>Aythya americana</i>		22				Migration
Greater scaup	<i>Aythya marila</i>	3, 5	3, 7, 11, 5, 22	3, 8, 7, 5 2, 8, 3, 5, 22,	1, 3, 5	3, 5	Breeder/Winter
Steller's eider	<i>Polysticta stelleri</i>	3, 5	3, 5, 22	30	2, 3, 5	2, 3, 5	Migration/Winter
Spectacled Eider	<i>Somateria fischeri</i>	5		30			Near shore
King eider	<i>Somateria spectabilis</i>	3, 5	3, 5	8, 3, 5	2, 3, 5	2, 3, 5	Migration/Winter
Common eider	<i>Somateria mollissima</i>	3, 5	3, 5	8, 3, 5	1, 2, 3, 5	2, 3, 5	Migration/Breeder/Winter
Harlequin duck	<i>Histrionicus histrionicus</i>	5	5	8, 3, 5	1, 3, 5	1, 3, 5	Breeder/Resident
Surf scoter	<i>Melanitta perspicillata</i>	5	3, 5	8	2, 3, 5	12, 5	Migration/Winter

-continued-

Table A2.–Page 2 of 5.

Common name	Scientific name	Egegik	Pilot Point	Cinder River	Port Heiden	Port Moller	Type / Residence
White-winged scoter	<i>Melanitta fusca</i>	3, 5	2, 11, 3, 5, 22	3, 8, 5	2, 3, 5	1, 2, 3, 5	Migration/Winter
Black scoter	<i>Melanitta nigra</i>	2, 3, 5	2, 3, 7, 5, 22	2, 3, 8, 7, 5	2, 3, 5, 7	2, 3, 5	Breeder/Resident
Long tailed duck	<i>Clangula hyemalis</i>	3, 5	3, 5, 22	8, 3, 5	3, 5	12, 3, 5	Breeder
Bufflehead	<i>Bucephala albeola</i>	3	3	5	5	12, 5	Winter/Breeder
Common goldeneye	<i>Bucephala clangula</i>	3, 5	3, 11, 5	8, 3	3	12, 3, 5	Winter/Breeder/Resident
Barrow's Goldeneye	<i>Bucephala islandica</i>		11				Migration
Common merganser	<i>Mergus merganser</i>	3, 5	11, 5	8, 3, 5	1, 3	12	Winter/Breeder/Resident
Red-breasted merganser	<i>Mergus serrator</i>	2, 3, 5	7, 10, 3, 5, 22	3, 8, 7, 5, 22	1, 3, 5, 7	1, 2, 3, 5	Breeder
Willow ptarmigan	<i>Lagopus lagopus</i>	33	7, 10, 11	7	1, 7	1	Breeder
Red-throated loon	<i>Gavia stellata</i>	3, 5	2, 3, 5, 22	3, 8, 5	3, 5	12, 3, 5	Breeder
Pacific loon	<i>Gavia pacifica</i>	3, 5	3, 5		3, 5	12, 3, 5	Breeder/Winter 1
Common loon	<i>Gavia immer</i>	5	11, 5	8, 3	3, 5	12, 3, 5	Breeder
Yellow-billed Loon	<i>Gavia adamsii</i>						Migration
Horned grebe	<i>Podiceps auritus</i>		7			12	Breeder?
Red-necked grebe	<i>Podiceps grisegena</i>	3, 5	7, 11, 3, 5, 22		1, 3	12, 3, 5	Winter/Breeder?
Northern Fulmar	<i>Fulmarus glacialis</i>					12	Near shore
Sooty shearwater	<i>Puffinus griseus</i>					12	Migration/Near shore
Short-tailed shearwater	<i>Puffinus tenuirostris</i>	26				12, 14	Migration/Near shore
Fork-tailed storm-petrel	<i>Oceanodroma furcata</i>		26			12	Migration/Near shore
Leach's Storm-Petrel	<i>Oceanodroma leucorhoa</i>		26				Migration/Near shore
Double-crested cormorant	<i>Phalacrocorax auritus</i>	32	22	8		12, 4, 32	Breeder
Red-faced cormorant	<i>Phalacrocorax urile</i>					12	Breeder/Winter
Pelagic cormorant	<i>Phalacrocorax pelagicus</i>		4		3	1, 2, 3, 4	Breeder/Winter
Osprey	<i>Pandion haliaetus</i>			30 2, 3, 8, 7, 5,			Marginal Breeder
Bald eagle	<i>Haliaeetus leucocephalus</i>	3	3, 7, 10, 11, 5, 22	22	1, 3, 5, 7	1, 2, 3, 5	Breeder/Resident
Northern harrier (marsh hawk)	<i>Circus cyaneus</i>		2, 7, 10, 11, 22	7, 22	1, 7	12	
Northern Goshawk	<i>Accipiter gentilis</i>		7, 11				Breeder
Rough-legged hawk	<i>Buteo lagopus</i>		11, 22			1, 12	Breeder
Golden eagle	<i>Aquila chrysaetos</i>			7		1	Breeder/Resident
Merlin	<i>Falco columbarius</i>						
Gyr Falcon	<i>Falco rusticolus</i>	19	22			1, 12	Breeder
Peregrine falcon	<i>Falco peregrinus</i>		22			12	Breeder

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Table A2.-Page 3 of 5.

Common name	Scientific name	Egegik	Pilot Point	Cinder River	Port Heiden	Port Moller	Type / Residence
Sandhill crane	<i>Grus canadensis</i>	3	7, 10, 11	8, 7, 3	1, 3, 7	12, 3, 5	Breeder
Black bellied plover	<i>Pluvialis squatarola</i>	19, 3	13, 7, 3, 22	8, 7, 3	7	12	Breeder
American Golden-Plover	<i>Pluvialis dominica</i>	13	7	8		12	Migration
Pacific golden plover	<i>Pacifica fulva</i>		7, 22	7	7	12	Breeder?
Semipalmated plover	<i>Charadrius semipalmatus</i>		7	8, 7,13	1, 7,13	1	Breeder
Black Oystercatcher	<i>Haematopus bachmani</i>						Breeder/Resident
Spotted Sandpiper	<i>Actitis macularia</i>			8	1		Breeder
Wandering tattler	<i>Heteroscelus incanus</i>			30		30	Migration
Greater yellowlegs	<i>Tringa melanoleuca</i>	19	7, 10, 11, 22	8, 7, 22	1, 7	1	Breeder
Lesser yellowlegs	<i>Tringa flavipes</i>		7		1	12	Migration
Whimbrel	<i>Numenius phaeopus</i>		7	7	7	13, 12	Breeder
Bristle-thighed Curlew	<i>Numenius tahitiensis</i>			30	30		Migration
Hudsonian Godwit	<i>Limosa haemastica</i>		27			12	Migration
Bar-tailed godwit	<i>Limosa lapponica</i>	19, 34	22	8, 13	13	12	Migration
Marbled godwit	<i>Limosa fedoa</i>	34	6, 7, 11, 22	6, 8, 7	6, 7		Breeder
Ruddy turnstone	<i>Arenaria interpres</i>		22	8,13	13	1, 12	Migration
Black turnstone	<i>Arenaria melanocephala</i>			8	33	12	Breeder
Surf bird	<i>Aphriza virgata</i>	19		30		12	Breeder
Red knot	<i>Calidris canutus</i>	19		30			Migration
Sanderling	<i>Calidris alba</i>			8	13	12,13	Migration
Western sandpiper	<i>Calidris mauri</i>		10, 22	8, 22		1	Breeder
Least sandpiper	<i>Calidris minutilla</i>	13	7, 10, 11	13, 8, 7	1, 7	1	Breeder
Pectoral sandpiper	<i>Calidris melanotos</i>		22		1	12	Migration
Sharp-tailed sandpiper	<i>Calidris acuminata</i>		10, 22			12	Migration
Rock sandpiper	<i>Calidris ptilocnemis</i>	19	7, 22	8, 7	7	1,12	Breeder
Dunlin	<i>Calidris alpina</i>	19	7, 10, 22	8, 7	1, 7	12	Breeder
Solitary Sandpiper	<i>Tringa solitaria</i>						Migration-juveniles
Buff-breasted Sandpiper	<i>Tryngites subruficollis</i>					12	Migration
Short-billed dowitcher	<i>Limnodromus griseus</i>	13	13, 7, 11, 22	13, 8, 7	1, 7	12	Breeder
Long-billed dowitcher	<i>Limnodromus scolopaceus</i>		10, 22	13	13	12, 13	Migration
Wilson's snipe	<i>Gallinago gallinago</i>		7, 10, 11	7	1, 7	1, 12	Breeder
Red-necked (northern) phalarope	<i>Phalaropus lobatus</i>	13	7, 11, 22	7	1, 7	1,12	Breeder

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Table A2.–Page 4 of 5.

Common name	Scientific name	Egegik	Pilot Point	Cinder River	Port Heiden	Port Moller	Type / Residence
Red phalarope	<i>Phalaropus fulicaria</i>	13	22			12	Migration
Black-legged kittiwake	<i>Rissa tridactyla</i>	3, 4	2, 4, 5, 22	2, 8, 3, 4, 5	3, 4, 5	1, 2, 3, 4, 5, 12	Breeder
Sabine's gull	<i>Xema sabini</i>	32, 5	32, 5	3, 5, 32	32, 3, 5	12, 3, 5	Transient
Bonaparte's gull	<i>Larus philadelphia</i>	32	32, 10, 22	8, 4, 22		1, 4	Breeder ?
Mew gull	<i>Larus canus</i>	3, 4	3, 7, 10, 11, 4, 22	3, 8, 7, 4, 22	1, 4, 7	1, 3, 4	Breeder
Herring Gull	<i>Larus argentatus</i>			8		12	Transient
Glaucous-winged gull	<i>Larus glaucescens</i>	19, 3, 5	7, 10, 11, 5, 22	8, 5	5, 7	1, 5, 12	Breeder
Glaucous gull	<i>Larus hyperboreus</i>	4, 5	4, 5	8, 4, 5	4, 5	12, 4, 5	Migration/Winter
Aleutian tern	<i>Sterna aleutica</i>				32	12, 32	Breeder
Arctic tern	<i>Sterna paradisaea</i>	3, 5	3, 7, 11, 5, 22	3, 8, 5	1, 3, 5	1, 3, 5, 12	Breeder
Pomarine jaeger	<i>Stercorarius pomarinus</i>					12, 4	Migration
Parasitic jaeger	<i>Stercorarius parasiticus</i>	32, 3*	32, 7, 11, 3	32, 8, 7, 3*	1, 3, 4*, 7	12, 3*, 4*	Breeder
Long-tailed jaeger	<i>Stercorarius longicaudus</i>	3*	7, 3*	8, 7, 3*	3*, 4*, 7	12, 3*, 4*	Breeder
Common murre	<i>Uria aalge</i>			3	3	12	Breeder
Thick-billed murre	<i>Uria lomvia</i>					12	Breeder
Pigeon guillemot	<i>Cephus columba</i>					1, 3, 12, 32	Breeder
Marbled murrelet	<i>Brachyramphus marmoratus</i>	32	32	32	32	1, 12, 32	Breeder
Kittlitz's murrelet	<i>Brachyramphus brevirostris</i>					1, 12	
Ancient murrelet	<i>Synthliboramphus antiquus</i>					12	Near shore
Parakeet Auklet	<i>Aethia psittacula</i>						Near shore
Crested auklet	<i>Aethia cristatella</i>					12	
Horned puffin	<i>Fratercula corniculata</i>					1, 12	Breeder
Tufted puffin	<i>Fratercula cirrhata</i>					12, 32	Breeder
Great Horned Owl	<i>Bubo virginianus</i>					12	Breeder/Resident
Snowy owl	<i>Nyctea scandiaca</i>					12	WIN/Transient
Short-eared owl	<i>Asio flammeus</i>	19	10, 22	8	1	12	Breeder/Resident
Northern Saw-whet Owl	<i>Aegolius acadicus</i>						Breeder/Resident?
Rufous Hummingbird	<i>Selasphorus rufus</i>						Transient
Belted Kingfisher	<i>Ceryle alcyon</i>				1	1, 12	Breeder
Alder Flycatcher	<i>Empidonax alnorum</i>						Breeder
Northern shrike	<i>Lanius excubitor</i>		10, 22		1	1, 12	Breeder

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Table A2.–Page 5 of 5.

Common name	Scientific name	Egegik	Pilot Point	Cinder River	Port Heiden	Port Moller	Type / Residence
Black-billed magpie	<i>Pica pica</i>		7		1	1,12	Breeder/Resident
Common raven	<i>Corvus corax</i>	22	7, 10, 11, 3, 22	3, 8, 22	1, 3, 7	2, 3, 12	Breeder/Resident
Tree swallow	<i>Tachycineta bicolor</i>		11		1	1,12	Breeder
Violet Green Swallow	<i>Tachycineta thalassina</i>			30	1		Breeder
Bank swallow	<i>Riparia riparia</i>	28			1	1, 12	Breeder
Cliff Swallow	<i>Hirundo pyrrhonota</i>		29		1		Breeder
Barn Swallow	<i>Hirundo rustica</i>		28, 29				Breeder
Black-capped chickadee	<i>Parus atricapillus</i>		7		1	12	Breeder
American dipper	<i>Cinclus mexicanus</i>	33			1		Breeder
Gray-cheeked thrush	<i>Catharus minimus</i>				1		Breeder
Hermit thrush	<i>Catharus guttatus</i>		11, 7		7	1, 12, 28	Breeder
American robin	<i>Turdus migratorius</i>		11, 7		1, 7		Breeder
Yellow Wagtail	<i>Motacilla flava</i>					1, 12	Breeder?
American pipit	<i>Anthus rubescens</i>		7, 18		7	12	Breeder
Water Pipit	<i>Anthus spinoletta</i>				1	1, 12	
Orange-crowned warbler	<i>Vermivora celata</i>		11		1	1,12	Breeder
Yellow warbler	<i>Dendroica petechia</i>		11		1	1	Breeder
Wilson's warbler	<i>Wilsonia pusilla</i>		11		1	1	Breeder
American tree sparrow	<i>Passerculus sandwichensis</i>		11, 7		1, 7		Breeder
Savannah sparrow	<i>Passerculus sandwinchensis</i>	33	10, 11, 7, 22		1, 7	1	Breeder
Fox sparrow	<i>Passerella iliaca</i>		7, 22, 26		1, 7	1, 12	Breeder
White-crowned sparrow	<i>Zonotrichia leucophrys</i>		11, 7		1, 7	12	Breeder
Golden-crowned sparrow	<i>Zonotrichia atricapilla</i>		11, 7		1, 7	1, 12	Breeder
Lapland longspur	<i>Calcarius lapponicus</i>	33, 26	10, 11, 7, 22	8, 22	1, 7	1, 12	Breeder
Snow bunting	<i>Plectrophenax nivalis</i>	33	22	22	1	1	Breeder
McKay's bunting	<i>Plectrophenax hyperboreus</i>						Winter
Gray-crowned Rosy-Finch	<i>Leucosticte tephrocotis</i>						
Common redpoll	<i>Carduelis flammea</i>		11, 7	8	7	1, 12	Breeder
Hoary redpoll	<i>Carduelis hornemanni</i>					12	Migration/Winter

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* Listed species occur throughout Bristol Bay and general area of Bristol Bay CHA's. Species with numerical cites or "X" are known to occur within the CHA noted. See Table A26 for source references.

Table A3.—Select waterfowl observed within BBCHAs during USFWS Emperor Geese and Steller’s Eider Surveys.

	Year	Emperor Geese		Canada Goose ³		Steller Eider		Black scoter		White-winged scoter		Long-tailed duck		Greater Scaup		Mallard		Northern Pintail	
		Spring ¹	Fall ¹	Spring ¹	Fall ¹	Spring ²	Fall ¹	Spring ²	Fall ¹	Spring ¹	Fall ¹	Spring ²	Fall ¹	Spring ¹	Fall ¹	Spring ¹	Fall ¹	Spring ¹	Fall ¹
Egegik	1992 -2004 Maximum	1642	2313	175	485	1136	600	4627	30781	3007	3453	8805	270	1422	1545	311	2250	1834	8195
Egegik	1992 -2004 Average	913	1230	15	139	389	91	1791	4226	264	431	1555	32	591	277	30	767	244	2809
Egegik	2005	2171	2629	40	675	0	650	15	1205	1	1110	1221	3	438	0	2	2413	334	19659
Egegik	2006	2874	951	0	2142				3107	0	846		0	760	210	8	2224	108	5360
Egegik	2007	686	1716	0	0	1044	50	97	2675	2	349	280	0	26	150	0	1203	29	2962
Egegik	2008	1209	1780	2	1884	974	0	766	1064	16	11	299	0	253	0	188	875	708	2688
Egegik	2009	776	2292	4	273	0	950	7	561	14	0	10	0	515	0	0	2850	46	5995
Pilot Point	1992 -2004 Maximum	4275	1568	188	4713	1	670	11527	4659	57	100	5390	1240	1773	370	57	7487	2177	6905
Pilot Point	1992 -2004 Average	1792	756	20	684	0	55	3373	950	11	14	1876	128	363	42	7	1669	471	2113
Pilot Point	2005	2228	1686	0	40	0	0	280	1810	5	15	915	0	480	2	0	530	460	8128
Pilot Point	2006	3431	536	0	1020				16	1	160		0	899	335	2	501	2804	5838
Pilot Point	2007	2942	908	0	55	1	0	0	159	0	26	0	0	67	1	0	605	50	7556
Pilot Point	2008	2444	398	100	1		0	9	85	0	73	73	0	395	0	26	2007	75	4459
Pilot Point	2009	1892	428	0	0	475	0	24	2000	0	134	141	50	116	0	0	507	42	2631
Cinder River	1992 -2004 Maximum	13825	30349	1	990	2685	5000	2027	500	12	500	380	1	150	100	200	2715	1600	8673
Cinder River	1992 -2004 Average	6808	16727	0	215	687	1328	601	114	1	54	157	0	35	9	24	652	236	2422
Cinder River	2005	10641	17540	0	475	908	750	1659	0	2	2	596	0	150	0	0	840	920	1585
Cinder River	2006	8612	20798	0	0		405		0	0	15		0	1	0	2	5	1562	6355
Cinder River	2007	5229	15256	0	50	495	0	291	0	0	0	283	0	115	0	2	410	22	1200
Cinder River	2008	1826	11132	0	5240	91	125	13	0	1	0	249	0	131	0	25	1425	710	6135
Cinder River	2009	3572	11139	0	2	0	575	0	0	20	2	2	0	29	0	5	290	7	5990

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Table A3.–Page 2 of 2.

	Year	Emperor Geese		Canada Goose ³		Steller Eider		Black scoter		White-winged scoter		Long-tailed duck		Greater Scaup		Mallard		Northern Pintail	
		Spring ¹	Fall ¹	Spring ¹	Fall ¹	Spring ²	Fall ¹	Spring ²	Fall ¹	Spring ¹	Fall ¹	Spring ²	Fall ¹	Spring ¹	Fall ¹	Spring ¹	Fall ¹	Spring ¹	Fall ¹
Port Heiden	1992 -2004																		
Port Heiden	Maximum	33187	15282	70	7107	26820	24313	14148	8870	13	1476	992	50	859	395	5	2920	2606	26232
Port Heiden	1992 -2004																		
Port Heiden	Average	19394	9051	6	1205	10380	11438	2564	2505	1	183	226	5	305	88	1	839	504	9195
Port Heiden	2005	20125	5677	0	520	17358	4700	799	668	0	435	150	0	84	240	0	125	195	15825
Port Heiden	2006	27822	7390	5	835		3550		1520	3	31		0	302	275	225	56	4950	12270
Port Heiden	2007	19227	11238	0	180	15419	10103	2656	3579	1	50	40	0	9	100	0	0	277	10098
Port Heiden	2008	15295	7922	0	703	8826	170	44	0	7	0	857	0	972	0	20	1750	2569	8885
Port Heiden	2009	23591	12090	0	115	15220	4800	367	65	8	250	397	0	127	375	0	1150	110	13420
Port Moller	1992 -2004																		
Port Moller	Maximum	28088	33569	350	433	42212	74125	16950	31082	1413	3406	4704	450	1600	2770	50	1446	1545	6700
Port Moller	1992 -2004																		
Port Moller	Average	16169	24661	27	132	18143	38099	10609	9892	123	491	1317	48	417	574	9	290	385	3385
Port Moller	2005	12319	17533	0	30	15740	18343	9430	9263	13	55	10771	0	1573	155	0	295	887	11577
Port Moller	2006	13964	25510	0	0		39411		6353	0	396		0	255	32	90	75	1944	2610
Port Moller	2007	25494	20678	0	215	13665	39288	5929	8376	4	159	21	0	430	120	60	580	1255	10458
Port Moller	2008	32012	19023	0	300	15450	17040	27067	3286	10	411	15750	0	1304	0	0	53	700	9850
Port Moller	2009	37711	18177	0	0	20162	35650	4237	5813	1	65	965	0	105	0	0	367	22	6998

* = Observed numbers of select waterfowl species recorded during spring or fall surveys targeting Emperor Geese and Steller's Eiders, in survey segments within or adjacent to BBCHA's. See Dau & Mallek 1992 - 2008, Mallek & Dau 1992 - 2008 and Larned 1992 - 2008. Numbers reflect waterfowl opportunistically observed and recorded during surveys targeting Emperor Geese and Steller's Eiders and therefore may not include all birds present during the survey nor fully represent usage of the BBCHA's by these or other species. Numbers presented may also include some birds outside of BBCHA's as survey segments do not directly correspond to CHA boundaries,

¹ = Data derived from Dau and Mallek published and unpublished spring and fall Emperor Goose Surveys.

² = Data derived from Larned published and unpublished spring Steller Eider Surveys.

³ = Includes all subforms of Canada Geese

Table A4.—Number of individuals in nesting seabird colonies in or near Bristol Bay critical habitat areas.

Critical habitat area	Colony	Species (number of individuals in colony).										
		Cormorant			Gaucous-winged gull	Mew gull	Black-legged kittiwake	Arctic tern	Aleutian tern	Pigeon guillemot	Horned puffin	Tufted puffin
		Double-crested	Pelagic	Total cormorant species								
Egegik	none											
Pilot Point	Lake 65*	50		50	P							
Cinder River	none											
Port Heiden	Chistiakof Island*	P		50	5,500			30	130			
	Meshik*											
	Crescent Island*	12		12	P							
	Seal Islands*				1,500							
	Total for CHA	12		62	7,000			30	130			
Port Moller	Entrance Point*							400/600#	600/1,000			
	Left Triangle*	150		150	50		224			12		100
	Unnamed Island	60/150		60/150	200		450					
	Gull Island*				100		50/225			30/60	22/50	
	Walrus Island*							80				
	Kudobin Island				P			P				
	Unnamed - East of Lagoon Point	20		20	12,000			100				30
	Lagoon Point							1,000				
	Cannery Islands				400							
	Dowitcher Island					200/300		126				
	Tern Island*								225			
	Total for CHA	230/320		230/320	12,750	200/300	724/899	1,706/1,906	825/1,225	42/72	22/50	130

* - colony located near, but outside boundary, of CHA

P - species present but no data available.

- indicates different counts in different years

Table A5.—Seabirds breeding in the Bristol Bay critical habitat areas.

Common name	Scientific name	Nests in CHA				
		Egegik	Pilot Point	Cinder River	Port Heiden	Port Moller
Double -crested cormorant	<i>Phalacrocorax auritus</i>	X			X	X
Parasitic jaeger	<i>Stercorarius parasiticus</i>	X	X	X	X	X
Bonaparte's gull*	<i>Laus philadelphia</i>	X	X			
Mew gull	<i>Larus canus</i>					X
Glaucous-winged gull	<i>Larus glaucescens</i>				X	X
Sabine's gull*	<i>Xema sabini</i>	X	X	X	X	X
Black-legged kittiwake	<i>Rissa tridactyla</i>				X	X
Arctic tern	<i>Sterna paradisaea</i>				X	X
Aleutian tern	<i>Sterna aleutica</i>				X	X
Pigeon guillemot	<i>Cepphus columba</i> <i>Brachyramphus</i>					X
Marbled murrelet*	<i>marmoratus</i>	X	X	X	X	X
Tufted puffin	<i>Fratercula cirrhata</i>					X

Source: Denlinger, L.M. 2006. Alaska Seabird Information Series. Unpublished Report U.S. Fish and Wildlife Service, Migratory Bird Management, Nongame Program, Anchorage, AK.

*BBCHAs fall within range of breeding birds rather than nests present in CHA.

Table A6.–Mammals in the Bristol Bay critical habitat areas.

Common name	Scientific name	Egegik	Pilot Point	Cinder River	Port Heiden	Port Moller	Type / Residence
Montane (dusky) shrew	<i>Sorex monticolus</i>	20	20, 21	20	20	1, 20, 21, 23	Resident
Cinereus shrew	<i>Sorex cinereus</i>	20	20, 21, 22	20, 21	1, 20, 21, 23	1, 20, 21, 23	Resident
Tundra shrew	<i>Sorex tundrensis</i>	20	20	20		23	Resident
Little brown bat	<i>Myotis lucifugas</i>						Marginal Breeder?
Lynx	<i>Lynx canadensis</i>						Resident
Arctic fox	<i>Alopex lagopus</i>						Marginal Resident
Red fox	<i>Vulpes vulpes</i>	3	10, 3, 22	22	1, 3, 23	1, 3, 23	Resident
Coyote	<i>Canis latrans</i>						Resident
Gray wolf	<i>Canis lupus</i>	20	7, 20	20	1, 7, 20	20, 23	Resident
Brown bear	<i>Ursus arctos</i>		6, 10, 11, 7, 22	6, 3, 21, 22	1, 6, 3, 7	1, 6, 3, 21	Resident
Wolverine	<i>Gulo gulo</i>	20	20	20	1, 20	20	Resident
Short tailed weasel	<i>Mustela erminea</i>						Resident
Least weasel	<i>Mustela nivalis</i>	20	20	20	1,20	20	Resident
Mink	<i>Neovison vison</i>				1	1	Resident
River otter	<i>Lutra canadensis</i>		22, 23		1		Resident
Moose	<i>Alces alces</i>		6, 11, 7		1, 6, 7	6	Resident
Caribou	<i>Rangifer tarandus</i>	3, 4, 5	6, 10, 11, 4, 7, 22	6, 4	1, 6, 4, 7	6, 3, 4	Resident
Hoary marmot	<i>Marmota caligata</i>						Resident
Arctic ground squirrel	<i>Spermophilus paryii</i>		7, 23		1, 7, 23	23	Resident
Porcupine	<i>Erethizon dorsatum</i>	18	10, 11,18, 22	18	1, 18, 7	18	Resident
Beaver	<i>Castor canadensis</i>		11, 7, 23		1, 7, 23	, 23	Resident
Meadow jumping mouse	<i>Zapus hudsonius</i>	18	18, 21	18	18	1, 18, 21, 23	Resident
Brown lemming	<i>Lemmus trimucronatus</i>	6				23	Resident
Northern (collared) lemming	<i>Dicrostonyx groeniandicus</i>					23	Resident
Northern bog lemming	<i>Synaptomys borealis</i>						Resident
Meadow vole	<i>Microtus pennsylvanicus</i>						Marginal Resident?
Tundra vole	<i>Microtus oeconomus</i>	15	15, 21			21	Resident
Northern red-backed vole	<i>Myodes rutilus</i>		21, 23	21	1, 21, 23	21	Resident

-continued-

Table A6.-Page 2 of 2.

Common name	Scientific name	Egegik	Pilot Point	Cinder River	Port Heiden	Port Moller	Type / Residence
Muskrat	<i>Ondatra zibethacus</i>		10				Marginal Resident?
Snowshoe hare	<i>Lepus americanus</i>	20	20	20	1		Resident
Alaskan hare	<i>Lepus othus</i>	16, 20	16, 20	16, 20	16, 20	16, 20	Resident
Sea otter	<i>Enhydra lutris</i>	3, 5, 20	6, 3, 5, 20, 21	2, 3, 6, 5, 20, 21	3, 6, 5, 20, 21	2, 3, 6, 5, 20, 21	Resident
Pacific walrus	<i>Odobenus rosmarus</i>	21	3, 21	21	3		Near shore
Northern fur seal	<i>Callorhinus ursinus</i>						Transient
Steller's sea lion	<i>Eumetopias jubatus</i>			5	3, 5	3, 5	Resident
Spotted seal**	<i>Phoca largha</i>	20, 21	20	20, 21	20	20	
Harbor seal	<i>Phoca vitulina</i>	6, 3, 5, 20, 21	3, 6, 5, 20, 21, 22	2, 3, 6, 5, 20, 21	3, 6, 5, 20, 21	2, 3, 6, 5, 20, 21	Resident
N. Pacific right whale	<i>Eubalaena glacialis</i>						Near shore
Humpback whale	<i>Megaptera novaeangliae</i>						Near shore
Gray whale	<i>Eschrichtius robustus</i>	6, 3, 5, 17,	6, 3, 5, 17, 22	2, 3, 6, 5, 17, 22	3, 6, 5, 17,	3, 5, 17,	Near shore
Pilot whale	<i>Globicephala sp.</i>						Near shore
Pacific white- sided dolphin	<i>Lagenorhynchus obliquidens</i>						Near shore
Killer whale	<i>Orcinus orca</i>					3	Near shore
Beluga	<i>Delphinapterus leucas</i>	3,6	10,22				Near shore
Harbor porpoise	<i>Phocoena phocoena</i>	3,5,21	3,5		3,5	3	Near shore
Dall porpoise	<i>Phocoenoides dalli</i>						Near shore

**Sympatric with harbor seal in this region.

See Table A26 for source references.

Table A7.-Finfish in the Bristol Bay critical habitat areas.

Scientific name	Common name	Habitat notes	Egegik	Pilot Point	Cinder River	Port Heiden	Port Moller
<i>Oncorhynchus gorbuscha</i>	pink salmon		X	X			X
<i>O. keta</i>	chum salmon		X	X	X	X	X
<i>O. kisutch</i>	coho salmon		X	X	X	X	X
<i>O. nerka</i>	sockeye salmon		X	X	X	X	X
<i>O. tshawytscha</i>	Chinook salmon		X	X	X	X	X
<i>O. mykiss</i>	rainbow trout/ steelhead	Port Moller S. extent of distribution S to Port Heiden- resident/anadromous?			X	X	X
<i>Salvelinus alpinus</i>	arctic char	Scalon, 2000 Becharof Lake?	X	X	X	X	
<i>Salvelinus malma</i>	Dolly Varden	all-anadromous/ freshwater	X	X	X	X	X
<i>Salvelinus namaycush</i>	lake trout	all- but generally absent from lowlands? Only Egegik and Ugashik drainages-	X	X	X	X	X
<i>Thymallus arcticus</i>	grayling	freshwater	X	X			
<i>Esox lucius</i>	northern pike	all-freshwater	X	X	X	X	X
<i>Dallis pectoralis</i>	blackfish	all-freshwater	X	X	X	X	X
<i>Lota lota</i>	burbot	all-freshwater	X	X	X	X	X
<i>Corgonus pidschian</i>	humpback whitefish	Coastal anadromous	X	X		X	X
<i>Prosopium coulteri</i>	pygmy whitefish	deep lakes, cold streams	X			X	
<i>Prosopium cylindraceum</i>	round whitefish	all-freshwater	X	X	X	X	X
<i>Gasterosteus aculeatus</i>	threespine stickleback	all	X	X	X	X	X
<i>Pungitius pungitius</i>	ninespine stickleback	all	X	X	X	X	X
<i>Lampetra camtschatica</i>	arctic lamprey	all	X	X	X	X	X
<i>Lampetra tridentata</i>	Pacific lamprey	all	X	X	X	X	X
<i>Lampetra alaskense</i>	Alaskan brook lamprey	Ugashik and Egegik-freshwater	X	X			
<i>Clupea harengus pallasii</i>	Pacific herring	all	X	X	X	X	X
<i>Thaleichthys pacificus</i>	eulachon	all-anadromous	X	X	X	X	X
<i>Mallotus villosus</i>	capelin	all	X	X	X	X	X
<i>Osmerus mordax</i>	rainbow smelt	all- anadromous	X	X	X	X	X
<i>Hypomesus olidus</i>	pond smelt	all - freshwater	X	X	X	X	X
<i>Liopsetta glacialis</i>	arctic flounder	all-shallow brackish bays and estuaries	X	X	X	X	X
<i>Platichthys stellatus</i>	starry flounder	all- intertidal and off shore	X	X	X	X	X
<i>Lepidopsetta polyxystra</i>	northern rock sole	all- on continental shelf? Port Moller- lower intertidal soft	X	X	X	X	X
<i>Parophrys vetulus</i>	English sole	bottom					X
<i>Isopsetta isolepis</i>	butter sole	all-muddy bottom	X	X	X	X	X
<i>Catostomus catostomus</i>	longnose sucker	all-freshwater	X	X	X	X	X

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Table A7.-Page 2 of 3

Scientific name	Common name	Habitat notes	Egegik	Pilot Point	Cinder River	Port Heiden	Port Moller
<i>Hippoglossus stenolepis</i>	Pacific halibut	all	X	X	X	X	X
<i>Psettichthys melanostictus</i>	sand sole	Port Moller, Port Heiden ?					
<i>Hippoglossus elassodon</i>	flathead sole	all- nearshore	X	X	X	X	X
<i>Pleuronectes quadrituberculatus</i>	Alaska plaice	all- nearshore	X	X	X	X	X
<i>Boreogadus saida</i>	Arctic cod	all	X	X	X	X	X
<i>Microgadus proximus</i>	Pacific tomcod	all	X	X	X	X	X
<i>Theragra calcogramma</i>	walleye pollock	all - juveniles nearshore	X	X	X	X	X
<i>Gadus macrocephalus</i>	Pacific cod	all-Any nearshore?	X	X	X	X	X
<i>Anoplopoma fimbria</i>	sablefish	all-Any nearshore?	X	X	X	X	X
<i>Hexagrammos octogrammus</i>	masked greenling	all- rocky nearshore	X	X	X	X	X
<i>Hexagrammos stelleri</i>	white-spotted greenling	all-kelp beds, reefs intertidal	X	X	X	X	X
<i>Pleurogrammus monopterygius</i>	Atka mackerel	all- juveniles/spawning nearshore	X	X	X	X	X
<i>Triglops pingelii</i>	ribbed sculpin	N extent through Port Moller, deeper water- all bottom types					X
<i>Hemilepidotus papilio</i>	butterfly sculpin	all- intertidal and tide pools	X	X	X	X	X
<i>Hemilepidotus hemilepidotus</i>	red Irish lord	N extent through Port Heiden				X	X
<i>Hemilepidotus jordani</i>	yellow Irish lord	N extent through Port Moller					X
<i>Icelinus borealis</i>	northern sculpin	all-deeper areas	X	X	X	X	X
<i>Gymnocanthus pistilliger</i>	threaded sculpin	all-soft bottoms, shallow water	X	X	X	X	X
<i>Leptocottus armatus</i>	Pacific staghorn sculpin	N extent through Port Moller-intertidal, soft bottom, eelgrass beds, freshwater tolerant					X
<i>Cottus cognatus</i>	slimy sculpin	all- freshwater	X	X	X	X	X
<i>Cottus aleuticus</i>	coast range sculpin	all- fresh and brackish waters	X	X	X	X	X
<i>Enophrys lucasi</i>	leister sculpin	all- shallow water nearshore rocky bottom	X	X	X	X	X
<i>Megalocottus platycephalus</i>	belligerent sculpin	all- coastal brackish waters	X	X	X	X	X
<i>Myoxocephalus jaok</i>	plain sculpin	all -sand and mud bottom	X	X	X	X	X
<i>Myoxocephalus polyacanthocephalus</i>	great sculpin	all -sand and mud bottom	X	X	X	X	X
<i>Microcottus stellaris</i>	brightbelly sculpin	all-coastal areas, brackish water	X	X	X	X	X
<i>Blepsias bilobus</i>	crested sculpin	all-rocky and sandy bottoms shallow	X	X	X	X	X
<i>Blepsias cirrhosus</i>	silverspotted sculpin	Port Moller, Port Heiden- nearshore seaweed and rocks				X	X

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Table A7.-Page 3 of 3.

Scientific name	Common name	Habitat notes	Egegik	Pilot Point	Cinder River	Port Heiden	Port Moller
<i>Agonus acipenserinus</i>	sturgeon poacher	all -soft bottoms	X	X	X	X	X
<i>Ocella dodecaedron</i>	Bering poacher	all-sandy or muddy bottom	X	X	X	X	X
<i>Pallasina barbata</i>	tubenose poacher	all -intertidal eelgrass and algae over sand and gravel	X	X	X	X	X
<i>Chesnonia verrucosa</i>	warty poacher	one incidence in Herndeen Bay					X
<i>Bathyagonus infraspinatus</i>	spinycheek starsnout	all -sand and mud bottoms	X	X	X	X	X
<i>Aspidophoroides monopterygius</i>	alligatorfish	all -sand and mud bottoms	X	X	X	X	X
<i>Liparis cyclopus</i>	ribbon snailfish	all-rocky tidepools and shallow water	X	X	X	X	X
<i>Stichaeus punctatus</i>	Arctic shanny	all-shallow subtidal rocky to sandy areas	X	X	X	X	X
<i>Liparis callyodon</i>	spotted snailfish	all	X	X	X	X	X
<i>Ronquilus jordani</i>	northern ronquil	Port Moller-rocky areas					X
<i>leptoclinus maculatus</i>	daubed shanny	Port Moller					X
<i>Anisarchus medius</i>	stout eelblenny	all	X	X	X	X	X
<i>Lumpenus fabricii</i>	slender eelblenny	all	X	X	X	X	X
<i>Lumpenus sagitta</i>	snake prickleback	all	X	X	X	X	X
<i>Rhodymenichthys dolichogaster</i>	stippled gunnel	all- rocky intertidal	X	X	X	X	X
<i>Pholis laeta</i>	crescent gunnel	Port Moller Port Heiden -vegetated intertidal				X	X
<i>Trichodon trichodon</i>	Pacific sandfish	all-intertidal to depth, sand and mud bottoms	X	X	X	X	X
<i>Ammodytes hexapterus</i>	Pacific sand lance	all- intertidal	X	X	X	X	X

Source: Mecklenburg, C.W., T.A. Mecklenburg, and L. K. Thorsteinson. 2002. *Fishes of Alaska*. Pp1037 American Fisheries Society, Bethesda Maryland.
R. Murphy Personal Communication 2009

Table A8.—Species listed as endangered or threatened under state or federal law, and ADF&G Species of Special Concern.

Federally Endangered (as of Oct 2009)	State Endangered (effective 11/1993)
Short-tailed albatross <i>Diomedea albatrus</i>	Short-tailed albatross <i>Diomedea albatrus</i>
Eskimo curlew <i>Numenius borealis</i>	Eskimo curlew <i>Numenius borealis</i>
Humpback whale <i>Megaptera novaengliae</i>	Blue whale <i>Balaenoptera musculus</i>
North Pacific right whale <i>Eubalena glacialis</i>	Humpback whale <i>Megaptera novaengliae</i>
Aleutian shield fern <i>Polystichum aleuticum</i>	Right whale <i>Eubalena glacialis</i>
Steller sea lion <i>Eumetopias jubatus</i> (west of 144°)	
Bowhead whale <i>Balaena mysticetus</i>	
Fin whale <i>Balaenoptera physalus</i>	
Leatherback turtle <i>Dermochelys coriacea</i>	
Cook Inlet beluga whale <i>Delphinapterus leucas</i>	
Blue whale <i>Balaenoptera musculus</i>	
Sei whale <i>Balaenoptera borealis</i>	
Sperm whales <i>Physeter macrocephalus</i>	
Federally Threatened (as of October 2009)	State Species of Special Concern (effective 11/1998)
Spectacled eider <i>Somateria fischeri</i>	Spectacled eider <i>Somateria fischeri</i>
Steller's eider <i>Polysticta stelleri</i>	Steller sea lion <i>Eumetopias jubatus</i>
Northern sea otter (SW AK pop.) <i>Enhydra lutris kenyoni</i>	Harbor seal <i>Phoca vitulina</i>
Steller sea lion (east of 144°) <i>Eumetopias jubatus</i>	Chinook salmon (fall run, Snake River) <i>Oncorhynchus tshawytscha</i>
Polar bear <i>Ursus maritimus</i>	Aleutian cackling goose <i>Branta hutchinsii leucopareia</i>
Loggerhead turtle <i>Caretta caretta</i>	Cook Inlet beluga whale <i>Delphinapterus leucas</i>
Green turtle <i>Chelonia mydas</i>	American peregrine falcon <i>Falco peregrinus anatum</i>
Olive ridley turtle <i>Lepidochelys olivacea</i>	Arctic peregrine falcon <i>Falco peregrinus tundrius</i>
	Northern goshawk (Southeast AK) <i>Accipiter gentilis laingi</i>
	Olive-sided flycatcher <i>Contopus cooperi</i>
	Gray-cheeked thrush <i>Catharus minimus</i>
	Townsend's warbler <i>Dendroica townsendi</i>
	Blackpoll warbler <i>Dendroica striata</i>
	Kenai brown bear <i>Ursus arctos horribilis</i>
	Bowhead whale <i>Balaena mysticetus</i>

Table A9.—Sockeye salmon escapement in the Egegik and Ugashik Districts, by river system, in numbers of fish, Bristol Bay, 1997–2008.

Year	Egegik District			Ugashik District			
	Egegik River ^a	King Salmon River ^b	Total	Ugashik River ^a	King Salmon River ^b	Dog Salmon River	Total
1997	1,103,964	40	1,104,004	618,396	27,645	10,600	656,641
1998	1,110,882	50	1,110,932	890,508	27,425	6,920	924,853
1999	1,727,772	625	1,728,397	1,651,572	6,350	4,120	1,662,042
2000	1,032,138		1,032,138	620,040	12,900	5,480	638,420
2001	968,862		968,862	833,628	22,940	9,800	866,368
2002	1,036,092		1,036,092	892,104	11,460	2,020	905,584
2003	1,152,030	90	1,152,120	758,532	27,620	4,000	790,152
2004	1,290,144		1,290,144	776,364	22,850	15,890	815,104
2005	1,621,584		1,621,584	779,172	0 ^d	20,440	799,612
2006	1,465,128		1,465,128	978,718	0 ^d	24,440	1,003,158
2007	1,432,500	1,500	1,434,000	2,523,686	5,420	70,020	2,599,126
1998-2007							
Average	1,283,713	566	1,284,279	1,070,432	13,697	16,313	1,100,442
2008	1,259,568	250	1,259,818	588,632 ^c	0 ^d	7,700	596,332

^aTower count.

^bAerial survey.

^cIncludes 20,000 sockeye salmon at Lower Ugashik Lake outlet from postseason aerial survey.

^dKing salmon system impacted by effects from Mt. Chiginigak incident.

Source: Jones, M., T. Sands, S. Morstad, P. Salomone, T. Baker, G. Buck, and F. West. 2009. 2008 Bristol Bay area annual management report. Alaska Department of Fish and Game, Fishery Management Report No. 09-30, Anchorage

Table A10.—Estimated total escapement for Chinook, sockeye, pink, and chum salmon and peak escapement counts for coho salmon in the Nelson Lagoon, Herendeen-Moller Bay, Inner Port Heiden, and Cinder River Sections, Northern District, North Alaska Peninsula, 2008.

Stream No.	Stream Name	Number of Salmon ^a				
		Chinook	Sockeye	Coho	Pink	Chum
NELSON LAGOON SECTION						
313-30.01	David's R. (early)		12,000	1,000		
313-30.01 & .04	David's R. (late)					
313-30.02	Caribou River		25,000	12,000		
313-30.03	Nelson (Sapsuk) River	5,012	141,600	24,000		3,139
Nelson Lagoon total		5,012	178,600	37,000	0	3,139
HERENDEEN-MOLLER BAY SECTION						
314-20.02	Buck Valley					600
314-20.03	Doe Valley					20,010
314-20.04	Deer Valley			2,000	15,000	22,000
314-20.05	Portage Valley		20			500
314-20.06	Grass Valley		1,200	2,000		22,000
314-20.07	Lawrence Valley			3,000	3,000	21,000
314-20.08	Mine Harbor					200
314-20.09	Coal Creek				10,000	54,000
Herendeen Bay total		0	1,220	7,000	28,000	140,310
314-30-.04	Mud Bay, West					
314-30.05	Mud Bay, East					2,000
314-30.07	Head Cr., Rt Head					1,500
314-30.09	Right Head Cr.			4,000	2,500	7,000
314-30.10	Left Head Cr.			8,000	1,500	5,000
Moller Bay total		0		12,000	4,000	15,500
Total Herendeen-Moller Bay Section		0	1,220	19,000	32,000	155,810
INNER PORT HEIDEN SECTION						
317-20.02	Charles Creek		2,000		5,000	
317-20.04 A&B	Red & Yellow bluff Creeks	1,200	22,000			3,000
317-20.06	Highland Creek		1,000			
West Port Heiden Bay total		1,200	25,000	0	5,000	3,000
317-20.07 A	Meshik River, main stem	1,800	12,500	27,000		4,000
317-20.07 B	Braided Creek	800	2,000			1,200
317-20.07 C	Landlocked Creek		9,000			
317-20.07 D	Bluff Creek		7,000			
317-20.07 E	Blue Violet Creek	1,000	8,000			
317-20.07 F	Wolf Creek		1,500			300
317-20.07 G	Unnamed					500
317-20.07 H	Shoe Creek	700	300			4,000
317-20.07 J	Unnamed		50			300
317-20.07 K	Unnamed	2,000	4,000			
317-20.07 L	Unnamed	800	4,000			2,000
317-20.07 M	Unnamed		300			3,000
317-20.07 N	Unnamed		6,000			
317-20.07 O	Plenty Bear Creek	1,200	3,000			4,000
317-20.07 O-A	Paddle Creek					
317-20.07 P	Waterfall Creek		600			500
317-20.07 R	Rainbow Creek	1,700	3,000			4,000
317-20.07 T	Cub Creek					800

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Table A10. Page 2 of 2.

Stream No.	Stream Name	Number of Salmon ^a				
		Chinook	Sockeye	Coho	Pink	Chum
Meshik River total		10,000	61,250	27,000	0	24,600
317-20.08						
317-20.09						
Total Inner Port Heiden Section		11,200	86,250	27,000	5,000	30,300
OUTER PORT HEIDEN SECTION						
318-10.01	Reindeer Creek					
Total Outer Port Heiden Section		0	0	0	0	0
CINDER RIVER SECTION						
318-20.01	Unnamed			22,000		
318-20.04	Mud Creek		33,000	500		
318-20.06 A	Cinder River, main stem	3,500	33,000			18,000
318-20.06 B	Unnamed	300				2,000
318-20.06 C	Unnamed		1,800			1,200
318-20.06 D	Lava Creek		44,000			
318-20.06 E	High Creek		4,000			
318-20.06 H	Meloy Creek	4,000	6,800			
318-20.06 J	Wiggly Creek	5,000	5,000			
318-20.06 K	Ray Creek		2,200			
318-20.06 L	Unnamed					2,000
Cinder River total		12,800	129,800	22,500	0	23,200
Total Cinder River Section		12,800	129,800	22,500	0	23,200

^a Chinook, sockeye, pink, and chum salmon numbers are estimated total escapements.

Coho salmon numbers are peak counts and based on limited data.

Source: Murphy, R.L. and T.G. Hartill. 2009. North Alaska Peninsula commercial salmon annual management report, 2008 Alaska Department of Fish and Game, Fishery Management Report No. 09-36, Anchorage.

Table A11.—Game Management Unit 9D and 9E reported harvest for beaver, lynx, land otter, wolf, and wolverine, 2000-2008.

Regulatory Year		Beaver		Lynx		Land Otter			Wolverine			Wolf		
		9E	Total	9E	Total	9D	9E	Total	9D	9E	Total	9D	9E	Total
2000-01	harvest	19	19	24	24		11	11	1	15	16		7	7
	no. trappers	3	3	3	3		4	4	1	4	5		6	6
2001-02	harvest	36	36	19	19		13	13		11	11	3	20	23
	no. trappers	5	5	3	3		5	5		8	8	3	13	16
2002-03	harvest	62	62	31	31		42	42		15	15	1	2	3
	no. trappers	5	5	3	3		6	6		4	4	1	1	2
2003-04	harvest	28	28	29	29	12	16	28	3	11	14	2	30	32
	no. trappers	5	5	6	6	3	5	8	1	6	7	2	25	27
2004-05	harvest	28	28	22	22	44	26	70		5	5	5	4	9
	no. trappers	3	3	3	3	6	6	12		5	5	3	3	6
2005-06	harvest	26	26	14	14	37	25	62		17	17	6	46	52
	no. trappers	5	5	4	4	4	5	9		7	7	6	38	44
2006-07	harvest	20	20	14	14	16	26	42		9	9	1	6	7
	no. trappers	5	5	4	4	5	7	12		5	5	1	6	7
2007-08	harvest	16	16			16	5	21	2	7	9	23	35	58
	no. trappers	2	2			5	3	8	1	2	3	7	29	36
2008-09	harvest	11	11			7	38	45		13	13	9	8	17
	no. trappers	1	1			2	5	7		5	5	4	4	8

Sources: Butler, L.B. 2006. Unit 9 and 10 wolf management report. Pages 65-68 in P. Harper, editor. Wolf management report of survey and inventory activities 1 July 2002—30 June 2005. Alaska Department of Fish and Game. Project 14.0. Juneau, Alaska.

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Alaska Department of Fish and Game, Wildlife Database, 2009.

Table A12.—Commercial salmon catch in the Egegik District, Bristol Bay Management Area, 1997-2008.

Year	sockeye	Chinook	chum	pink	coho	Total
1997	7,517,389	2,143	59,139	2	35,470	7,614,143
1998	3,528,845	760	29,405	674	29,856	3,589,540
1999	7,388,080	712	74,890	0	11,464	7,475,146
2000	7,029,397	1,061	38,777	32	13,166	7,082,433
2001	2,872,662	950	33,579	0	12,603	2,919,794
2002	4,610,374	268	23,516	1	7,099	4,641,258
2003	2,291,502	131	37,116	0	40,577	2,369,326
2004	10,209,227	1,589	75,061	0	2,324	10,288,201
2005	8,015,950	485	62,029	0	20,611	8,099,075
2006	7,408,983	915	153,777	700	26,788	7,591,163
2007	6,495,908	514	157,991	9	18,111	6,672,533
1997-2006						
Average	5,985,093					
1998-2007						
Average		739	68,614	281	18,260	
2008	7,448,175	390	93,360	1,033	29,675	7,572,633

Source: Jones, M., T. Sands, S. Morstad, P. Salomone, T. Baker, G. Buck, and F. West. 2009. 2008 Bristol Bay area annual management report. Alaska Department of Fish and Game, Fishery Management Report No. 09-30, Anchorage.

Table A13.—Commercial salmon catch in the Ugashik District, Bristol Bay Management Area, 1997-2008.

Year	sockeye	Chinook	chum	pink	coho	Total
1997	1,402,690	1,096	16,903	2	7,156	1,427,847
1998	730,274	346	8,088	247	13,007	751,962
1999	2,256,007	1,638	68,004	3	2,289	2,327,941
2000	1,538,790	893	36,349	4	1,269	1,577,305
2001	480,509	989	43,394	0	976	525,868
2002	1,573,234	612	35,792	1	464	1,610,103
2003	1,748,934	409	52,908	0	994	1,803,245
2004	3,139,229	863	49,358	187	4,744	3,194,381
2005	2,216,635	1,815	39,513	1	8,162	2,266,126
2006	2,429,637	2,608	168,428	0	3,087	2,603,760
2007	5,026,615	1,465	242,025	2	1,954	5,272,061
1997-2006						
Average	2,113,986					
1998-2007						
Average		1,164	74,386	88	3,695	
2008	2,322,030	1,172	137,207	15	2,280	2,462,704

Source: Jones, M., T. Sands, S. Morstad, P. Salomone, T. Baker, G. Buck, and F. West. 2009. 2008 Bristol Bay area annual management report. Alaska Department of Fish and Game, Fishery Management Report No. 09-30, Anchorage.

Table A14.—Sockeye salmon catch in the Northern District, by section, Alaska Peninsula Management Area, 1997–2008.

Year	Cinder River Section	Outer Port Heiden Section ^a	Inner Port Heiden Section	Port Moller Bight, Herendeen and Port Moller Bays Sections	Nelson Lagoon Section
1997	8,342	0	2,222	8,693	384,370
1998	8,321	0	249	799	161,441
1999	19,004	0	877	2,397	237,293
2000	7,984	0	68	4,090	193,694
2001	5,482	0	0	1,975	174,363
2002	1,588	0	111	1,022	325,904
2003	2,775	0	0	44	373,252
2004	0	0	0	0	527,637
2005	116	0	1,835	12	334,702
2006	0	0	1,151	0	255,265
2007	0	387,786	842	206	337,556
1998-2007					
Average	4,523	38,779	513	1,055	292,111
2008	0	168	1,574	128	183,330

^a Outer Port Heiden catches occurred only between 1986 and 1989. This section was closed between 1990 and 2006.

Source: Murphy, R.L. and T.G. Hartill. 2009. North Alaska Peninsula commercial salmon annual management report, 2008. Alaska Department of Fish and Game, Fishery Management Report 09-36, Anchorage.

Table A15.—Chinook salmon catch in the Northern District, by section, Alaska Peninsula Management Area, 1997 - 2008.

Year	Cinder River Section	Outer Port Heiden Section ^a	Inner Port Heiden Section	Port Moller Bight, Herendeen and Port Moller Bays Sections	Nelson Lagoon Section ^b
1997	340	0	3,678	8	3,164
1998	410	0	1,342	43	2,715
1999	205	0	279	17	1,925
2000	56	0	0	44	1,387
2001	573	0	0	0	2,164
2002	76	0	0	8	1,312
2003	0	0	0	0	1,082
2004	0	0	0	0	3,016
2005	231	0	261	0	2,887
2006	0	0	1,057	0	3,020
2007	0	970	0	0	1,372
1998-2007					
Average	155	97	294	11	2,088
2008	0	168	0	0	881

^a Outer Port Heiden catches occurred only between 1986 and 1989. This section was closed between 1990 and 2006.

^b Entire Nelson Lagoon watershed.

Source: Murphy, R.L. and T.G. Hartill. 2009. North Alaska Peninsula commercial salmon annual management report, 2008. Alaska Department of Fish and Game, Fishery Management Report 09-36, Anchorage.

Table A16.—Chum salmon catch in the Northern District, by section, Alaska Peninsula Management Area, 1997–2008.

Year	Cinder River Section	Outer Port Heiden Section ^a	Inner Port Heiden Section	Port Moller Bight, Herendeen and Port Moller Bays Sections	Nelson Lagoon Section
1997	72	0	5	4,454	3,828
1998	993	0	24	260	9,085
1999	19	0	0	166	5,093
2000	0	0	0	55	5,255
2001	90	0	0	13,518	5,343
2002	0	0	104	110	6,849
2003	0	0	0	1	7,320
2004	0	0	0	0	2,810
2005	0	0	0	0	3,770
2006	0	0	2	0	7,702
2007	0	7,560	0	41	8,123
1998-2007					
Average	102	756	13	1,917	6,135
2008	0	2,594	0	40,722	3,321

^a Outer Port Heiden catches occurred only between 1986 and 1989. This section was closed between 1990 and 2006.

Note: Catch numbers do not include test fish harvest or fish retained for personal use.

Source: Murphy, R.L. and T.G. Hartill. 2009. *North Alaska Peninsula commercial salmon annual management report, 2008*. Alaska Department of Fish and Game, Fishery Management Report 09-36, Anchorage.

Table A17.—Coho salmon catch in the Northern District, by section, Alaska Peninsula Management Area, 1997–2008.

Year	Cinder River Section	Outer Port Heiden Section ^a	Inner Port Heiden Section	Port Moller Bight, Herendeen and Port Moller Bays Sections	Nelson Lagoon Section
1998	50,903	0	5,705	78	33,700
1999	992	0	835	297	8,536
2000	12,784	0	11,623	19	25,017
2001	1,439	0	0	42	2,918
2002	320	0	0	29	6,712
2003	2,072	0	0	7	30,620
2004	334	0	0	0	29,879
2005	2,122	0	0	0	46,486
2006	0	0	0	0	66,874
2007	0	628	0	41	47,647
1998-2007					
Average	7,097	63	1,816	51	29,839
2008	0	19	0	1	54,282

^a Outer Port Heiden catches occurred only between 1986 and 1989. This section was closed between 1990 and 2006.

Note: Catch numbers do not include test fish harvest or fish retained for personal use.

Source: Murphy, R.L. and T.G. Hartill. 2009. *North Alaska Peninsula commercial salmon annual management report, 2008*. Alaska Department of Fish and Game, Fishery Management Report 09-36, Anchorage.

Table A18.—North Alaska Peninsula commercial herring sac roe fishery harvest in tons, by section, 1990-2006.

Year	Port Moller District				Port Heiden District	
	Deer Island Mud Bay Section	Herendeen Bay Section	Port Moller Bay Section	Bear River Coast Section	Port Heiden Section	Total
1990	0	156	117	0	0	273
1991	156	167	690	300	0	1,313
1992	18	0	2,351	0	1,600	3,969
1993	0	107	371	58	0	536
1994	7	0	83	0	0	90
1995	3	146	188	0	0	337
1996	0 ^c	^a	^a	0 ^c	0 ^c	^a
1997	^c	^c	^c	^c	^c	^c
1998	0	0	^a	^a	0	^a
1999-2004	^c	^c	^c	^c	^c	^c
2005	0	0	351	0	0	351
2006	^c	^c	^c	^c	^c	^c
1996-2005 Average	0	7	40	4	0	52

^a This information cannot be released due to confidentiality requirements.

^b At least 11 tons were harvested in the Deer Island-Mud Bay Section

^c Fishery was closed

Source: Jackson, J.V. 2008. *Alaska Peninsula-Aleutian Islands Management Area herring sac roe and food and bait fisheries annual management report, 2006*. Alaska Department of Fish and Game, Fishery Management Report No. 08-60, Anchorage.

Table A19.—Subsistence salmon harvest, by species, in the Egegik District, Bristol Bay Management Area, 1997-2008.

Year ^a	Permits Issued	sockeye	Chinook	chum	pink	coho	Total
1997	34	2,438	101	21	5	740	3,305
1998	36	1,795	44	33	52	389	2,313
1999	42	2,434	106	35	2	806	3,383
2000	31	842	16	11	0	262	1,131
2001	57	2,493	111	105	16	928	3,653
2002	53	1,892	65	34	12	356	2,359
2003	62	3,240	84	32	10	297	3,663
2004	46	2,618	169	410	91	1,423	4,711
2005	45	2,267	81	231	2	526	3,107
2006	41	1,641	94	34	7	641	2,417
2007	28	980	165	72	26	334	1,577
1998-2007							
Average	44	2,020	93	100	32 ^c	596	2,841
2008 ^b	44	2,149	119	156	27	644	3,095

^a Estimates from 1989 to the present are based on the area fished, as first recorded on the permit. Prior to 1989, permit and harvest estimates are based on the community where the permit was issued.

^b A five-year average was used, as data was not available at the time of publishing.

^c Includes even years only.

Source: Jones, M., T. Sands, S. Morstad, P. Salomone, T. Baker, G. Buck, and F. West. 2009. *2008 Bristol Bay area annual management report*. Alaska Department of Fish and Game, Fishery Management Report No. 09-30, Anchorage.

Table A 20.—Subsistence salmon harvest, by species, in the Ugashik District, Bristol Bay Management Area, 1997-2008.

Year ^a	Permits Issued	sockeye	Chinook	chum	pink	coho	Total
1997	28	2,785	169	39	23	311	3,327
1998	27	1,241	59	75	82	485	1,942
1999	25	1,365	35	5	0	271	1,676
2000	31	1,927	51	34	1	467	2,480
2001	24	1,197	61	8	2	357	1,625
2002	23	1,294	51	14	2	460	1,821
2003	23	1,113	31	30	0	392	1,566
2004	21	804	64	9	4	234	1,115
2005	22	818	27	18	2	249	1,114
2006	25	962	41	6	16	339	1,364
2007	17	1,056	43	88	79	281	1,547
1998-2007							
Average	24	1,178	46	29	21 ^c	353	1,606
2008 ^b	22	951	41	30	20	299	1,341

^a Estimates from 1989 to the present are based on the area fished, as first recorded on the permit. Prior to 1989, permit and harvest estimates are based on the community where the permit was issued.

^b A five-year average was used, as data was not available at the time of publishing.

^c Includes even years only.

Source: Jones, M., T. Sands, S. Morstad, P. Salomone, T. Baker, G. Buck, and F. West. 2009. 2008 Bristol Bay area annual management report. Alaska Department of Fish and Game, Fishery Management Report No. 09-30, Anchorage.

Table A21.—Estimated subsistence salmon harvest, by species, in number of fish, by Port Heiden local residents, 1997-2008.

Year ^a	Permits Issued	sockeye	Chinook	chum	pink	coho	Total
1997	4	24	2	0	0	40	66
1998	3	100	26	0	0	100	226
1999	3	245	25	0	0	60	330
2000	3	0	6	0	0	21	27
2001	3	132	64	10	0	50	256
2002	3	34	120	6	0	50	210
2003	3	7	101	6	0	40	154
2004	3	80	60	0	0	0	140
2005	3	375	0	0	0	0	375
2006	2	0	0	0	0	30	30
2007	0	0	0	0	0	0	0
1998-2007							
Average	2	92	32	1	0	14	139
2008 ^b	28	1,023	182	62	33	813	2,113

Note: The total number of salmon harvested are extrapolated from returned permits.

Source: Hartill, T. 2009. Annual summary of the commercial, subsistence, and personal use salmon fisheries and salmon escapements in the Alaska Peninsula, Aleutian Islands, and Atka-Amlia Islands Management Areas, 2008. Alaska Department of Fish and Game, Fishery Management Report No. 09-33, Anchorage.

Table A22.—Estimated subsistence salmon harvest, by species, in number of fish, by Nelson Lagoon and Port Moller local residents, Northern District, Alaska Peninsula Management Area, 1997-2008.

Year ^a	Permits Issued	sockeye	Chinook	chum	pink	coho	Total
1997	8	287	16	36	5	147	491
1998	13	473	3	14	14	295	799
1999	10	389	4	0	4	58	455
2000	7	507	10	0	0	85	602
2001	6	392	22	6	0	46	466
2002	3	140	5	0	0	71	216
2003	3	118	3	0	0	90	211
2004	4	105	7	0	0	140	252
2005	7	257	2	0	0	58	317
2006	7	579	8	0	0	3	590
2007	6	508	0	0	0	0	508
1998-2007							
Average	5	313	4	0	0	58	375
2008 ^b	3	750	0	0	0	0	750

Note: The total number of salmon harvested are extrapolated from returned permits.

Source: Hartill, T. 2009. *Annual summary of the commercial, subsistence, and personal use salmon fisheries and salmon escapements in the Alaska Peninsula, Aleutian Islands, and Atka-Amlia Islands Management Areas, 2008.* Alaska Department of Fish and Game, Fishery Management Report No. 09-33, Anchorage.

Table A23.—Estimated geese, swan, and crane harvest by rural Alaska community adjusted to 1996 community population (number of birds).

Community	Geese						Total geese	Total swans	Total cranes
	Brant	Cackling Canada goose	Lesser Canada (Taverner's/B.h. parvipese)	Emperor goose	Snow goose	White-fronted goose			
Nelson Lagoon	4	0	0	293	0	0	297	0	0
Ugashik	0	1	2	5	0	3	11	1	5
North Alaska Peninsula*	132	152	61	25	16	7	393	0	4

* Includes Egegik, Pilot Point, and Port Heiden

Sources: Paige, A. and R. Wolfe. DRAFT. *The Subsistence harvest of migratory birds in Alaska - 1996 update.* Alaska Department of Fish and Game, Prepared for USFWS, Cooperative Agreement No. 1448-70181-98-JO85, Anchorage.

Fall, J.A., A. Paige, V. Vanek, and L. Brown. 1998. *Subsistence harvests and uses of birds and eggs in four communities of the Aleutian Islands area: Akutan, False Pass, Nelson Lagoon, and Nikolski.* Alaska Department of Fish and Game, Technical Paper No. 243, Anchorage

Table A24.—Estimated number of ducks harvested by rural Alaska community adjusted to 1996 community population (number of birds).

Community	Bufflehead	Canvasback	Goldeneye	Mallard	Merganser	Long-tailed					Total ducks
						duck	Pintail	Shoveler	Teal	Wigeon	
Nelson Lagoon	0	14	108	115	0	0	0	0	150	0	387
Ugashik	0	0	0	12	0	0	15	0	24	6	67
North Alaska Peninsula*	2	0	0	95	17	13	221	2	202	38	590

* Includes Egegik, Pilot Point, and Port Heiden

Sources: Paige, A. and R. Wolfe. DRAFT. *The Subsistence harvest of migratory birds in Alaska - 1996 update.* Alaska Department of Fish and Game, Prepared for USFWS, Cooperative Agreement No. 1448-70181-98-JO85, Anchorage.

Fall, J.A., A. Paige, V. Vanek, and L. Brown. 1998. *Subsistence harvests and uses of birds and eggs in four communities of the Aleutian Islands area: Akutan, False Pass, Nelson Lagoon, and Nikolski.* Alaska Department of Fish and Game, Technical Paper No. 243, Anchorage.

Table A25.—Estimated number of bird eggs harvested by rural Alaska community adjusted to 1995 community population.

Community	Geese eggs	Duck eggs	Crane eggs	Swan eggs	Shorebird eggs	Seabird eggs	Total eggs	Source for Survey
Ugashik	0	50	5	0	0	67	117	Survey 1987
North Alaska Peninsula*	2	0	0	0	0	280	282	Survey 1995

* Includes Egegik, Pilot Point, and Port Heiden

Source: Paige, A. and R. Wolfe. 1997. *The Subsistence harvest of migratory birds in Alaska-Compendium and 1995 update.* Alaska Department of Fish and Game, Technical Paper No. 228, Anchorage.

Table A26.–Bird (Table A2) and wildlife (Table A6) species lists source references.

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-continued-

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**APPENDIX B: PUBLIC SCOPING MEETINGS FOR
BRISTOL BAY CRITICAL HABITAT AREAS
MANAGEMENT PLAN**

Summary of Public Scoping Comments

Public scoping meetings were held in 2008 in the following communities: Egegik (Nov. 5), Pilot Point (Nov. 6), King Salmon (Nov. 7), Port Heiden (Nov. 12), Nelson Lagoon (Nov. 13), and Anchorage (Nov. 18). These meetings were designed to inform Critical habitat area (CHA) users about the planning process and to solicit their input on 1) how they use the CHA; 2) what they value about the CHA resources; and 3) what concerns they might have about future CHA management. The meetings were sparsely attended with between one and seven members of the public participating.

Each meeting began with a short introduction by ADF&G staff explaining the Special Areas Program, the management planning process, and what information we would like the public to share with us. The floor was then opened for public comments. All statements were paraphrased and recorded onto a large tablet visible to the entire group, as the meeting progressed. Staff facilitated discussion by introducing topics for comments.

Written questionnaires were distributed to meeting participants, and extra copies left with a community representative for those unable to attend the meeting. Written and verbal comments from the public scoping meetings, as well as verbal comments from local residents outside the meeting session, were transcribed with minor edits for clarity and brevity; then sorted by the issue and CHA to which they pertain. This list is included below.

Appendix B.–Summary of public scoping comments

Area	Issue	Comment
Cinder River	Access	Just leave it alone for hunting and fishing
Egegik	Access	The is more non-local use of the CHA in the summer, but it is mostly locals.
Egegik	Access	can't use skiffs in fall weather (alternate access is needed)
Nelson Lagoon	Access	There should be no restrictions on boat access to the lagoon.
Nelson Lagoon	Access	Old oil company roads are used as trails. The same trails are used consistently
Nelson Lagoon	Access	Access by snow machine in the winter, ATV and skiff other times. In swampy areas, the only time vehicles can get in is during the winter when they are frozen.
Nelson Lagoon	Access	ATVs are also used on the Bering Sea side of the beach.
Pilot Point	Access	Muddy point trails from town to inland lakes for hunting
Pilot Point	Access	Trail already existing ok.
Port Heiden	Access	Existing ATV Trails East and South of town. Some would be happier with one established, designated trail
Port Heiden	Access	People access the upstream reaches of the Meshik with skiffs to go hunting.
Port Heiden	Access	ATV trail from town ends at Meshik River...ATV's can't cross River.
Port Heiden	Access	ATV -along inside of spit on mud and grass
Port Heiden	Access	ATV access should be allowed in a way that limits impacts but do not want it prohibited.
All CHAs	Administrative	There is too much plan writing going on, not enough coordination or work.
All CHAs	Administrative	CHAs should be locally controlled
All CHAs	Administrative	Plan should have a set revision or expiration date.
Pilot Point	Administrative	"We don't want to lose our animals because the habitat is being compromised; however, we are hesitant to see regulations be enforced that could take away people's land and or homes."
Pilot Point	Administrative	Hold meetings that are planned (not last minute) so we can be more informed to make better decisions.
Egegik	Aircraft	Plane landings occur on the spit year round, mostly beach combers, walrus ivory washes up a lot.
Egegik	Aircraft	More beachcombing goes on in the spring hence there are more planes landing during the spring migration
Pilot Point	Aircraft	Airplanes- landings occur on beach. -There is an airstrip near the cabin. Want to maintain existing
Pilot Point	Aircraft	Most pilots naturally avoid dense bird areas due to safety considerations.
Port Heiden	Aircraft	Aircraft landings-possible spring restriction for bird-possible fall restriction for birds, would not want to interfere with hunting. Landings on beaches.
Cinder River	ATV	ATV's use beach there
Egegik	ATV	ATVs are used more because walking in difficult. There is an upland trail to the CHA and then the trail goes down onto the beach.
Egegik	ATV	ATV- haven't seen impacts to marine mammals
Egegik	ATV	need to use ATV's to get to clamming and waterfowl hunting in the Fall

-continued-

Appendix B–Summary of public scoping comments, Page 2 of 8.

Area	Issue	Comment
Egegik	ATV	ATV use is all near or on Spit
Pilot Point	ATV	Four wheelers are used both on and off of the beach. There are rutted trails on Native Corps land in northern section of CHA.
Pilot Point	ATV	More signs would help.
Pilot Point	ATV	Trails are mostly on higher ground and don't get too torn up.
Pilot Point	ATV	ATVs use beach on South Spit.
Egegik	Boats	There is increasing boat traffic through the hole in the spit
Egegik	Boundary	Should get a legislative fix for the boundary
All CHAs	Cabins	New cabins should be allowed.
Cinder River	Cabins	Set net cabins
Egegik	Cabins	Cabins were used by set netters originally, used by others . The furthest one is going to be moved.
Egegik	Cabins	People conducting bird studies used the other.
Egegik	Cabins	cabins are from fish camps (built by Jake and Gregory Meyers)
Egegik	Cabins	cabins shouldn't be destroyed they are helpful for stranded people
Egegik	Cabins	No new cabins
Nelson Lagoon	Cabins	Several old cabins exist in the area, old overland mail route cabins and trapping cabin, not used anymore
Nelson Lagoon	Cabins	All the newer cabins are on corporation land or native allotments. The ones on corporation land have to meet a strict set of criteria. New trapping cabins would be okay, emergency cabins are a benefit to the community.
Pilot Point	Cabins	There are set net cabins in Northern portion of CHA
Pilot Point	Cabins	Hunting cabins- one historic near slough on east side of spit, still used by many duck hunters.
Pilot Point	Cabins	One fishing cabin on slough on west side of spit.
Pilot Point	Cabins	Cabins-keep current structures but do not allow new ones.
Pilot Point	Cabins	There should be public use cabins.
Pilot Point	Cabins	Cabins should be grandfathered into the critical habitat area.
Pilot Point	Cabins	"cabins should <u>not</u> be torn down that are currently in these habitats because that would be wasteful and potentially more harmful than letting them stand as is. These cabins should not become property of the government unless the owner makes a fair sale by <u>choice</u> to the government. Government interference needs to be regulated. There should be a balance between preserving the habitat and imposing more laws."
Pilot Point	Cabins	Grandfather in the existing cabins.
Port Heiden	Cabins	Cabin indentified on map has been there many years; currently used by guides and the public, mostly bear hunters

-continued-

Appendix B–Summary of public scoping comments, Page 3 of 8.

Area	Issue	Comment
Port Heiden	Cabins	Cabins-one near end of spit, used by public. It's good to have cabins around for emergencies
Port Heiden	Cabins	No new cabins
Port Heiden	Cabins	King Brothers guide from Scotty's cabin.
Port Heiden	Camping	There is lots of camping in the CHA but it is not long term camping.
Port Heiden	Camping	Main use of the area is for hunting, camping, and egg gathering, beachcombing
All CHAs	Commercial Facilities	threatened and Endangered bird habitat areas should not be open to development
Egegik	Commercial Facilities	Commercial activities could endanger wildlife and subsistence
Nelson Lagoon	Commercial Facilities	Want seafood processing facility near dock to be allowed under regulation. It would also involve an outfall line and a pellet plant.
Pilot Point	Commercial Facilities	Community is currently pursuing building a fish processing plant at Smokey Point.
Pilot Point	Commercial Facilities	Location was chosen because of seawater depth and freshwater availability at Cape Grieg. (test well for water currently being drilled)
Pilot Point	Commercial Facilities	Plant would need dock, structures, crew quarters, road (and bridge), freshwater pipeline, and outfall?.
Pilot Point	Commercial Facilities	Road would cross CHA, suggested land trade
Pilot Point	Commercial Facilities	Fish processing plant is not economically feasible, and the environmental impacts are unknown where would the waste go with the currents and water depths
Pilot Point	Commercial Facilities	Daniel Kingsley's idea food a processing plant should be allowed.
Pilot Point	Commercial Facilities	we would like to see more options for places to build a processing plant that would least impact the critical habitat areas
Pilot Point	Commercial Facilities	A processing plant would be good for the community. What options are there to have one without heavy impact on habitat?
Pilot Point	Commercial Facilities	"Try to keep both. The jobs and safe habitat."
Pilot Point	Commercial Facilities	"Let the process plant be at Smokey Point."
Egegik	Erosion	Can anything be done about erosions? –spit acts as a breakwater. The plan should allow enhancement and/ or restoration of the spit.
Egegik	Erosion	Keeping the spit in place is a priority for the town...they would be fine with the use of sheet pile for the public benefit. Would plugging the hole in the spit help?
Egegik	Erosion	Are interested in an erosion study of island
Egegik	Erosion	Bank stabilization should be allowed on spit to protect village
Egegik	Erosion	breach in spit started 18-20 years ago and keeps getting bigger
Pilot Point	Erosion	Beach erosion is ongoing south of Dago Creek and north of Swamp Lake.
Pilot Point	Erosion	Erosion Control should only be allowed for public benefit.

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Appendix B–Summary of public scoping comments, Page 4 of 8.

Area	Issue	Comment
Port Heiden	Erosion	During White Alice site construction gravel was mined and stockpiled in the lagoon area...possibility that erosion could be attributed to this.
Nelson Lagoon	Fishing	50% of the local income comes from commercial fishing in during the summer.
Nelson Lagoon	Fishing	Traditional fishing methods such as stake nets and set nets in the lagoon shouldn't be restricted either.
Nelson Lagoon	Fishing	The inside of the lagoon is fished heavily.
Nelson Lagoon	Fishing	Do not want to see any increases in sport fishing such that regulations would be enacted to restrict commercial fishing to preserve sport fishing.
Port Heiden	Fishing	Area m line was moved north of Port Heiden. non-local fishermen outside of lagoon now mostly. Many locals go up to Ugashik/Egegik to do their fishing
Port Heiden	Fishing	Mostly silvers in streams and a few kings. Local fishing focuses on smaller west side rivers
Port Heiden	Fishing	Run of silvers in Barbara Creek.
Port Heiden	Fishing	Runs appear to have been dropping off in recent years but fishing pressure has dropped even more.
All CHAs	Fuel Storage	Fuel storage shouldn't be allowed.
Port Heiden	Fuel storage	Smaller amounts of fuel storage okay, consider larger amounts on a case by case basis.
Egegik	History	trading place for travelers
Egegik	History	old village site
Nelson Lagoon	History	Hot Springs is also an archaeological cultural site.
Port Heiden	History	Concern that outsiders remove artifacts
Pilot Point	Hunting	The area has good duck hunting, but not really at Cape Menshikoff.
Pilot Point	Hunting	The amount of geese shot a day should be brought back up to two again.
Pilot Point	Hunting	"I think that we should shoot one of everything so you don't kill all of them."
Pilot Point	Hunting	Bring back up the amount of geese shot a day back up to two.
Pilot Point	Hunting	"In Pilot Point we are allowed to shot 2 or less in King Salmon you get shoot many more. They are the same caribou. Should be the same on both sides."
Egegik	Material extraction	Would like to be able to use spit as gravel source.
Egegik	Material extraction	Gravel mining is not good, might contribute to erosion near town
Nelson Lagoon	Material extraction	Interest in developing a gravel source. The location being considered is near the CHA but not in the CHA. It would be a pit blasted out of the bluff, with a crusher/sorter onsite and barge.
Pilot Point	Material extraction	There are other good gravel sources inland, no need to mine gravel.
Pilot Point	Material extraction	no gravel extraction or mining
Nelson Lagoon	Mining	Coal and Mineral mining-not on a large scale. But do not want permanent prohibition, in case fishing industry crashes in future. Smaller scale, personal mining might be okay.
Nelson Lagoon	Mining	Want community to have input on whether any mine is developed.

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Appendix B–Summary of public scoping comments, Page 5 of 8.

Area	Issue	Comment
Pilot Point	Mining	Mining should be restricted
Port Heiden	Mining	Black Sands Mining-general frustration with not being able to control Seven Seas operation, want mining restricted but not closed
Egegik	Oil and Gas	Don't see any impending threats, the oil and gas prospects are further south
Nelson Lagoon	Oil and Gas	There is a natural gas source near the Hot Springs, as well as geothermal resources.
Nelson Lagoon	Oil and Gas	Oil and Gas-Shell and MMS held meetings in village we should check their mitigation measures. Believe it could be done in a controlled environment.
Nelson Lagoon	Oil and Gas	Hewitt purchased O&G leases near Herndeen Bay
Nelson Lagoon	Oil and Gas	MMS isn't doing enough studies for their lease sales
Nelson Lagoon	Oil and Gas	Oil and Gas development should not be allowed...oil industry not well enough regulated and there is no way that habitat would not be damaged and not recover from a catastrophe/ oil spill.
Pilot Point	Oil and Gas	Try to enforce no drilling
Pilot Point	Oil and Gas	No oil and gas or infrastructure
Pilot Point	Oil and Gas	No oil drilling.
Port Heiden	Oil and Gas	No Oil and Gas, no surface entry for oil and gas.
All CHAs	Other	Don't stop development. Jobs, people, economics, etc. are more important than wildlife.
All CHAs	Other	"I think we should have lots of captive breeding for caribou and moose."
Egegik	Other	valuable hunting area
Egegik	Other	There are bigger storms and less ice in the winter now. River doesn't freeze as much
Nelson Lagoon	Other	Sapsuk River Lodge operates in area.
Nelson Lagoon	Other	Village is currently pursuing wind power. Believe that it is not a threat to waterfowl. Or is an acceptable impact to waterfowl. Especially at right height and location.
Nelson Lagoon	Other	Fully support use of alternative energy sources
Nelson Lagoon	Other	Tourism-encouraged for non-consumptive uses.
Nelson Lagoon	Other	Commercial activities- discourage commercial guided waterfowl hunts
Nelson Lagoon	Other	Dump Lake 7 miles east of Nelson Lagoon. 1,500 barrels left by surveyors... said they were state's...that Feds had another dump near there and that they had cleaned it up. Possibly Anderson construction company ...left barrels in landfill at Nelson Lagoon. Frank Wesser (sp?) at DEC possible contact.
Pilot Point	Other	Cannery site near town is contaminated, fuel, lead paint, asbestos. Boats need to be shallow draft to access any further upriver from the cannery.
Pilot Point	Other	The name "South Spit" refers to the coast north of Menshikoff.
Pilot Point	Other	Currently really low levels of use for the CHA, it dropped off in the '80's.

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Appendix B–Summary of public scoping comments, Page 6 of 8.

Area	Issue	Comment
Port Heiden	Other	Contaminated sites clean up ongoing the past several years (COE-Ron Flume DEC- Lewis Howard and J. Halverson)
Port Heiden	Other	There is a study currently ongoing for sea otters—Marine Mammal Council
Port Heiden	Other	Taballik (sp?) Creek is the creek at the base of the spit.
Port Heiden	Other	Wildman lodge also operates nearby
Port Heiden	Other	lots of hunters go there, tourism use should be monitored
Cinder River	Resources	Emperor geese use the inside beach near the river mouth
Cinder River	Resources	Good for coho, waterfowl, and bears
Egegik	Resources	Used to be mussels and butter clams (around 30 years ago) but there are a lot fewer now.
Egegik	Resources	Lots of seal haul outs on inside of spit on sand/gravel bars
Egegik	Resources	Lots of Belugas also pass through the area.
Egegik	Resources	"There are too many seals" (interfering with fishing)
Egegik	Resources	Arctic Tern eggs are gathered in area but are closer to town, more upland.
Egegik	Resources	largest bar tailed godwit fall staging area
Egegik	Resources	Emperor geese and ducks use the area too
Egegik	Resources	fewer harbor seals now than in the past
Egegik	Resources	old walruses stop on South Spit during migrations
Egegik	Resources	shellfish are harvested both sides of the spits, cockles on the outsides, others on the inside
Nelson Lagoon	Resources	Birds feed on berries in uplands around Port Moller
Nelson Lagoon	Resources	Sellers eiders, Emperor geese, and Black brant can be found here over winter. But the most birds occur in the spring and fall.
Nelson Lagoon	Resources	For waterfowl, the freshwater ducks are hunted, the sea ducks are valued more for bird watching.
Nelson Lagoon	Resources	Hunting-ducks in sloughs inland, geese on coast, caribou in the uplands, and bear and moose in the eastern areas (mostly guided)
Nelson Lagoon	Resources	Beachcombing is a popular use.
Pilot Point	Resources	Stated that there are not many birds on the point (Smokey), they are mostly inland at that location.
Pilot Point	Resources	The wetland areas not in the CHA west of the cape are good habitat.
Pilot Point	Resources	the best tasting moose came from Pilot Point
Pilot Point	Resources	lots of bird use south of town, esp. red throated loons, and cacklers and mallards
Pilot Point	Resources	Birds fish and land are all valuable resources
Pilot Point	Resources	"Try to find a balance between bringing in jobs without destroying habitat. Industry should not destroy habitat, but government regulations should not completely hinder cultural and/or traditional ways of living."

-continued-

Appendix B–Summary of public scoping comments, Page 7 of 8.

Area	Issue	Comment
Pilot Point	Resources	"Wildlife, wilderness area, and resources are good for asthetic value and health, however, we should be able to use the resources without abusing them. Many of the natural habitats have been abused- overhunted, wasted, trashed, and polluted."
Pilot Point	Resources	"I value being able to access the nature around me. Going ice fishing, enjoying a Honda ride, watching the whales from the beach are part of the joy of living in the AK bush. We also want to preserve the animals and wildlife though. Let's do it together without ruining one for the sake of the other."
Pilot Point	Resources	Caribou and geese and fish are threatened resources
Port Heiden	Resources	Sea otters- are a problem eating too many clams (cockles, razor and butter clams)-get trapped inland when ice blocks lagoon, heavy hunting pressure then, and are also scavenged by foxes, wolves, etc.
Port Heiden	Resources	Wolves in town are a big problem, attacking/eating dogs, not afraid of people. Caribou come into town to get some relief from predation
Port Heiden	Resources	Beachcombing is a big use.
Port Heiden	Resources	Increase in killer whales in past years,
Port Heiden	Resources	increase in harbor seals in the past 10 years.
Port Heiden	Resources	Gray whales migrate by
Port Heiden	Resources	but no belugas
Port Heiden	Resources	Seals use spit, and are hunted
Port Heiden	Resources	Clamming occurs mostly near village
Port Heiden	Resources	Concern about how commercial guides are regulated
Port Heiden	Resources	Reds mill around in bay and then leave again
Port Moller	Resources	calving area for Southern Peninsula caribou herd
Egegik	Roads	The village council has road money and wants to extend road towards spit. Should be used for beach combing and bird studies. It would follow a different route from the current ATV trail.
Egegik	Roads	No new roads, there is no need and no resources to maintain them
Port Heiden	Roads	No new roads. Ice roads would be okay (but not really feasible)
Port Heiden	Roads	"There is a need to extend a road corridor to Chignik Lagoon or around Black Lake to Chignk Lake and the Chignik Connector." "There is a need identify and perfect a trans Alaska Peninsula corridor at Port Heiden either up the Meshik River valley upon BBNC 14(h)(8) selections to be conveyed and then upon six to eight miles of the Alaska Peninsula Wildlife Refuge to Anchorage Bay upon Far West inc ANCSA land or over state land around Black Lake upon Chignik River ANCSA land at cornering sections"
Nelson Lagoon	Structures	Docks-believe existing structure is sufficient for community needs, may need to be extended at some point in time.

-continued-

Appendix B–Summary of public scoping comments, Page 8 of 8.

Area	Issue	Comment
Pilot Point	Structures	"We value that there are still animals around, they are a major part of our culture-providing us with food. They keep the environment healthy. We want to respect them because this is their land too. They are threatened because we are killing too many of them (than we need.) We are also building where they live. Only essentials should be built near those areas."
Pilot Point	Structures	"Build stuff only on your land, and don't try to get land from the state."
Port Heiden	Structures	No need for a hardened boat launch/ dock. There is lots of coastal erosion deposition, would be hard to find a good spot.
Egegik	Use	camping, beach combing, geese and bear hunting

**APPENDIX C:
SCOPING QUESTIONNAIRE**



BRISTOL BAY CRITICAL HABITAT AREA MANAGEMENT PLANNING

PUBLIC SCOPING COMMENTS

The Alaska Department of Fish and Game, Division of Habitat and Division of Wildlife Conservation invite the public to share information and concerns about the five state Critical Habitat Areas in the Bristol Bay area: Port Moller, Port Heiden, Cinder River, Pilot Point, and Egegik. This is the first step in ADF&G's year long planning process to write a Management Plan for the Bristol Bay Critical Habitat Areas (CHAs).

We would like to know how you use the area and its resources, and are looking for ideas on how to manage activities and public uses that are compatible with the CHA's mission to protect fish, wildlife, and their habitats. Some issues that have been addressed in other CHA Management Plans are: access, motorized vehicle use, roads, structures, commercial uses, public facilities, mining, and surface entry for oil and gas.

1) What are your concerns and interests about the future of the Bristol Bay Critical Habitat Areas? Are there other topics you feel we should consider?

Please circle which area(s) your answer applies to: Port Moller, Port Heiden, Cinder River, Pilot Point, and/or Egegik.

2) What actions would you like to see us consider taking to address the issues or to deal with other concerns you have about the Critical Habitat Areas?

Please circle which area(s) your answer applies to: Port Moller, Port Heiden, Cinder River, Pilot Point, and/or Egegik.

3) Finally, what is it about the Critical Habitat Areas, their resources and uses that you value the most? Are these values being protected or do you feel they are threatened?
Please circle which area(s) your answer applies to: Port Moller, Port Heiden, Cinder River, Pilot Point, and/or Egegik.

4) Do you have any other comments?

For more information contact:

Habitat Division –Mark Fink or Tammy Massie (907)-267-2342

http://www.wildlife.alaska.gov/index.cfm?adfg=refuge.bristol_bay

Please send comments by December 1, 2008:

Fax: 907-267-2499

Email: tammy.massie@alaska.gov

Or mail to: Habitat Division, ADF&G
333 Raspberry Rd.
Anchorage, AK 99518-1555

**APPENDIX D:
ADF&G SPECIAL AREA REGULATIONS**

Appendix D

ADF&G SPECIAL AREA REGULATIONS

Title 5 Alaska Administrative Code
Part 5, Protection of Fish and Game Habitat

Chapter 95, Fish and Game Habitat
Articles 4, 7, and 8

Article 4. Special Areas (5 AAC 95.400 – 5 AAC 95.440)
Article 7. Permit Procedures (5 AAC 95.700 – 5 AAC 95.770)
Article 8. General Provisions (5 AAC 95.900 – 5 AAC 95.990)

Note to Readers: As of Register 148, January 1999, textual cross-references and authority citations to the following statutes were changed as follows, to reflect renumbering of those statutes by the Revisor of Statutes: AS 16.20.120 was renumbered AS 16.20.094; AS 16.20.130 was renumbered AS 16.20.096; AS 16.20.170 was renumbered AS 16.20.162; AS 16.20.250 was renumbered AS 16.20.520; and AS 16.20.260 was renumbered AS 16.20.530.

This chapter is implemented by the Alaska Department of Fish and Game, Division of Habitat.

Points of contact in the Division of Habitat are:

Juneau (Douglas)

802 3rd Street, Juneau, Alaska 99824-5412; telephone: 907-465-4105

Anchorage

333 Raspberry Road, Anchorage, Alaska 99518-1565; telephone: 907-267-2342

Fairbanks

1300 College Road, Fairbanks, Alaska 99701-1551; telephone: 907-459-7289

~~~~~This material is not an official copy of these regulations. ~~~~~

**Article 4.**  
**Special Areas**

**Section**

- 400. Implementation of authority
- 410. Notice requirements
- 420. Activities requiring a special area permit
- 430. Conditioning, approval, or denial of special area permits
- 440. Limitations on special area permits

**5 AAC 95.400. Implementation of authority.** The commissioner will implement the authorities vested in AS16.20.050, 16.20.060, 16.20.094, 16.20.162, 16.20.520, and 16.20.530, excluding hunting, trapping, and fishing, in accordance with procedures established in this chapter. (Eff. 6/5/86, Register 98)

|                   |              |              |
|-------------------|--------------|--------------|
| <b>Authority:</b> | AS 16.05.020 | AS 16.20.060 |
|                   | AS 16.05.050 | AS 16.20.094 |
|                   | AS 16.05.251 | AS 16.20.162 |
|                   | AS 16.05.255 | AS 16.20.520 |
|                   | AS 16.05.270 | AS 16.20.530 |
|                   | AS 16.20.050 |              |

**5 AAC 95.410. Notice requirements.** (a) Before a lease or other disposal of land under state jurisdiction and control in a special area, or private land in a critical habitat area, the responsible state department or agency or private landowner shall notify the commissioner.

(b) No person or governmental agency may undertake an activity listed in 5 AAC 95.420(a) within a special area unless the commissioner has been notified and a permit for the activity has been issued by the commissioner under 5 AAC 95.700 - 5 AAC 95.760. (Eff. 6/5/86, Register 98)

|                   |              |              |
|-------------------|--------------|--------------|
| <b>Authority:</b> | AS 16.05.020 | AS 16.20.094 |
|                   | AS 16.05.050 | AS 16.20.096 |
|                   | AS 16.05.251 | AS 16.20.162 |
|                   | AS 16.05.255 | AS 16.20.520 |
|                   | AS 16.20.050 |              |

**5 AAC 95.420. Activities requiring a special area permit.** (a) No person or governmental agency may engage in the following uses or activities within a special area without first obtaining a special area permit following the procedures of 5 AAC 95.700 - 5 AAC 95.760:

- (1) construction, placement, or continuing use of any improvement, structure, or real property within a special area;

- (2) destruction of vegetation;
- (3) detonation of an explosive other than a firearm;
- (4) excavation, surface or shoreline altering activity, dredging, filling, draining, or flooding;
- (5) natural resource or energy exploration, development, production, or associated activities;
- (6) water diversion or withdrawal;
- (7) off-road use of wheeled or tracked equipment unless the commissioner has issued a general permit under 5 AAC 95.770;
- (8) waste disposal, placement, or use of a toxic substance;
- (9) grazing or animal husbandry; and
- (10) any other activity that is likely to have a significant effect on vegetation, drainage, water quality, soil stability, fish, wildlife, or their habitat, or which disturbs fish or wildlife other than lawful hunting, trapping, fishing, viewing, and photography.

(b) The commissioner makes the final determination as to whether a specific activity is subject to the provisions of this chapter. (Eff. 6/5/86, Register 98)

|                   |              |              |
|-------------------|--------------|--------------|
| <b>Authority:</b> | AS 16.05.020 | AS 16.20.094 |
|                   | AS 16.05.050 | AS 16.20.096 |
|                   | AS 16.05.251 | AS 16.20.162 |
|                   | AS 16.05.255 | AS 16.20.530 |
|                   | AS 16.20.060 |              |

**5 AAC 95.430. Conditioning, approval, or denial of special area permits.** If the procedural requirements of 5 AAC 95.700 - 5 AA 95.760 are met, the commissioner will permit a use or activity listed in 5 AAC 95.420 that meets or can be conditioned to meet the following standards:

- (1) the use or activity is consistent with the protection of fish and wildlife and their use, protection of fish and wildlife habitat, and the purpose for which the special area was established; and
- (2) the use or activity does not unduly restrict or interfere with the public use and enjoyment of the resource values for which the special area was established; and

(3) any adverse effect upon fish and wildlife, and their habitats, and any restriction or interference with public use, is mitigated in accordance with 5 AAC 95.900. (Eff. 6/5/86, Register 98)

|                   |              |              |
|-------------------|--------------|--------------|
| <b>Authority:</b> | AS 16.05.020 | AS 16.20.094 |
|                   | AS 16.05.050 | AS 16.20.096 |
|                   | AS 16.05.251 | AS 16.20.162 |
|                   | AS 16.05.255 | AS 16.20.530 |
|                   | AS 16.20.060 |              |

**5 AAC 95.440. Limitations on special area permits.** A permit issued under 5 AAC 95.700 - 5 AAC 95-760.

(1) does not convey an interest in state land or grant any preference right for the lease or purchase of state land; and

(2) does not allow the permittee to restrict or interfere with public access across or public use of a special area unless specified in the permit. (Eff. 6/5/86, Register 98)

|                   |              |              |
|-------------------|--------------|--------------|
| <b>Authority:</b> | AS 16.05.020 | AS 16.20.094 |
|                   | AS 16.05.050 | AS 16.20.096 |
|                   | AS 16.05.251 | AS 16.20.162 |
|                   | AS 16.05.255 | AS 16.20.530 |
|                   | AS 16.20.060 |              |

**Article 7.  
Permit Procedures**

**Section**

- 700. Application procedures
- 710. Permit decision
- 720. Permit conditions and assignments
- 730. Permit term
- 740. Amendments to the permit
- 750. Retention of permit; inspection of permit sites
- 760. Renewal of permit
- 770. General permits

**5 AAC 95.700. Application procedures.** (a) An applicant for a permit shall submit a completed application on a form or in a manner approved by the commissioner. The application must be correct and complete to the best of the applicant's knowledge and be signed and dated by the applicant or the applicant's designee. The submission of a completed application satisfies any related notification required by AS 16 and this chapter. An application form is available from the department's offices.

(b) The completed application must include the anticipated commencement date, duration, and area of proposed activity including a scaled map, identification of waterbodies at the site, description of type of activity, description of any proposed facility, the description of proposed access route and means and time of travel, and other information necessary for the commissioner to determine whether the activity will comply with the applicable provisions of this chapter.

(c) A completed application must be submitted to the department's habitat division office representing the region or area in which the proposed activity will occur. (Eff. 6/5/86, Register 98)

|                   |              |              |
|-------------------|--------------|--------------|
| <b>Authority:</b> | AS 16.05.020 | AS 16.20.094 |
|                   | AS 16.05.050 | AS 16.20.096 |
|                   | AS 16.05.251 | AS 16.20.162 |
|                   | AS 16.05.255 | AS 16.20.520 |
|                   | AS 16.20.050 | AS 16.20.530 |
|                   | AS 16.20.060 |              |

**5 AAC 95.710. Permit decision.** (a) The commissioner will issue a permit if he or she determines that the requirements of this chapter are met.

(b) The commissioner will notify an applicant in writing of any denial. The notice will include

- (1) the reason for the denial; and

(2) a statement that the applicant may appeal under 5 AAC 95.920 or submit new or additional information and ask for reconsideration under (c) of this section.

(c) The commissioner will, in his or her discretion, reconsider a denial of an application if the applicant submits, to the appropriate habitat division office, factual information which is new or additional to that supplied with the original application. An applicant may submit the new or additional information as an amendment to the original application, or the applicant may submit a new application. The procedures of 5 AAC 95.700 - 5 AAC 95.760 apply to reconsideration. (Eff. 6/5/86, Register 98)

|                   |              |              |
|-------------------|--------------|--------------|
| <b>Authority:</b> | AS 16.05.020 | AS 16.20.094 |
|                   | AS 16.05.050 | AS 16.20.096 |
|                   | AS 16.05.251 | AS 16.20.162 |
|                   | AS 16.05.255 | AS 16.20.520 |
|                   | AS 16.20.050 | AS 16.20.530 |
|                   | AS 16.20.060 |              |

**5 AAC 95.720. Permit conditions and assignment.** (a) To provide for the proper protection and management of fish and wildlife, and their habitats, the commissioner will consider and will, in his or her discretion, include as conditions of the permit

(1) the duration of the proposed activity, including any provision for changing the time period during which the permit is valid and any provision for changing the effective time period of the permit;

(2) any other seasonal use restrictions on a specific activity;

(3) limitation of the a real extent of the activity;

(4) any provision for the mitigation of damage to fish or wildlife, or their habitats;

(5) any provision to facilitate periodic monitoring of the proposed land or water use or activity by an authorized representative of the state, including inspection and sampling;

(6) reporting requirements;

(7) any provision for the posting of a performance bond or other surety as authorized in 5 AAC 95.950.necessary to insure compliance with the provisions of this chapter or conditions of the permit; and

(8) any other necessary condition.

(b) A permit may not be transferred but may be assigned upon written consent by the commissioner.



(c) The commissioner will, in his or her discretion, require a permit applicant to sign and date the permit before its validation as acknowledgement of the permittee's agreement to, and full understanding of, all conditions of the permit. (Eff. 6/5/86, Register 98)

|                   |              |              |
|-------------------|--------------|--------------|
| <b>Authority:</b> | AS 16.05.020 | AS 16.20.094 |
|                   | AS 16.05.050 | AS 16.20.096 |
|                   | AS 16.05.251 | AS 16.20.162 |
|                   | AS 16.05.255 | AS 16.20.530 |
|                   | AS 16.20.060 |              |

**5 AAC 95.730. Permit term.** (a) Except as provided in (b) and (c) of this section a permit will in the commissioner's discretion be issued for a fixed term not to exceed two years, subject to the provisions of this chapter.

(b) A permit for a personal use cabin issued concurrent with 11 AAC 65 will, in the commissioner's discretion, be issued for up to six years.

(c) A permit will, in the commissioner's discretion, be issued for a fixed term exceeding two years if the commissioner determines that the activity meets the purposes and requirements of this chapter and the activity is permanent in nature. (Eff. 6/5/86, Register 98)

|                   |              |              |
|-------------------|--------------|--------------|
| <b>Authority:</b> | AS 16.05.020 | AS 16.20.094 |
|                   | AS 16.05.050 | AS 16.20.096 |
|                   | AS 16.05.251 | AS 16.20.162 |
|                   | AS 16.05.255 | AS 16.20.530 |
|                   | AS 16.20.060 |              |

**5 AAC 95.740. Amendments to the permit.** (a) The commissioner will, in his or her discretion, initiate action to amend a permit to correct any condition or change any method authorized by the permit which was reasonably unforeseeable at the time of permit approval and which threatens to cause a substantially adverse effect upon

(1) fish or wildlife, or their habitat; or

(2) if the permit is a special area permit, the purpose for which the special area was established.

(b) Any action a permittee desires to take which increases the overall scope of the project or which negates, alters, or minimizes the intent or effectiveness of any condition contained in a permit, is a deviation from the approved plan and requires an amendment before initiation of the action.

(c) A permittee may request amendment of a permit by submitting, to the department's habitat division office where the permit was issued, a written statement explaining why the amendment is necessary, including the amended plan, the location, commencement time, duration, and type of activity requiring amendment.

(d) The commissioner will issue an amendment to the permit if he or she determines that the requirements of this chapter will be met. Review of a request for amendment after receipt of the written statement in the appropriate habitat division office will not exceed 30 days. The procedures of 5 AAC 95.700 - 5 AAC 95.760 apply to a request for amendment.

(e) An amendment approved by the commissioner becomes effective upon receipt by the permittee, or at a later date specified by the amendment. An amendment is valid for the duration of the permit or for a shorter specified period. (Eff. 6/5/86, Register 98)

|                   |              |              |
|-------------------|--------------|--------------|
| <b>Authority:</b> | AS 16.05.020 | AS 16.20.094 |
|                   | AS 16.05.050 | AS 16.20.096 |
|                   | AS 16.05.251 | AS 16.20.162 |
|                   | AS 16.05.255 | AS 16.20.530 |
|                   | AS 16.20.060 |              |

**5 AAC 95.750. Retention of permit; inspection of permit sites.** (a) A permittee shall keep a copy of the permit, including any amendments, at the work site until completion of the project, and shall make it available for inspection upon request by an authorized representative of the state.

(b) For the purpose of inspecting or monitoring compliance with any condition of the permit or the requirements of this chapter, a permittee shall give an authorized representative of the state free and unobstructed access, at safe and reasonable times, to the permit site. A permittee shall furnish whatever assistance and information as the authorized representative reasonably requires for monitoring and inspection purposes. (Eff. 6/5/86, Register 98)

|                   |              |              |
|-------------------|--------------|--------------|
| <b>Authority:</b> | AS 16.05.020 | AS 16.20.094 |
|                   | AS 16.05.050 | AS 16.20.096 |
|                   | AS 16.05.251 | AS 16.20.162 |
|                   | AS 16.05.255 | AS 16.20.530 |
|                   | AS 16.20.060 |              |

**5 AAC 95.760. Renewal of permit.** (a) A permittee may request renewal of an existing permit before the expiration of the current term of the permit. Procedures in this chapter apply to renewal, except that the filing of a new application under 5 AAC 95.700 is not required.

(b) If an existing permit expires or is revoked, a permittee may obtain a new permit only by filing a new completed application in accordance with 5 AAC 95.700. (Eff. 6/5/86, Register 98)

|                   |              |              |
|-------------------|--------------|--------------|
| <b>Authority:</b> | AS 16.05.020 | AS 16.20.094 |
|                   | AS 16.05.050 | AS 16.20.096 |
|                   | AS 16.05.251 | AS 16.20.162 |
|                   | AS 16.05.255 | AS 16.20.530 |
|                   | AS 16.20.060 |              |

**5 AAC 95.770. General permits.** Notwithstanding 5 AAC 95.700 and 5 AAC 95.750 - 5 AAC 95.760, the commissioner will, in his or her discretion, issue a permit to the public at large for a specific activity in a specific area. (Eff. 6/5/86, Register 98)

|                   |              |              |
|-------------------|--------------|--------------|
| <b>Authority:</b> | AS 16.05.020 | AS 16.20.094 |
|                   | AS 16.05.050 | AS 16.20.096 |
|                   | AS 16.05.251 | AS 16.20.162 |
|                   | AS 16.05.255 | AS 16.20.530 |
|                   | AS 16.20.060 |              |

## **Article 8. General Provisions**

### **Section**

- 900. Mitigation of damages.
- 910. Failure to adhere to standards.
- 920. Appeals.
- 930. Exclusion periods.
- 940. Exemption for emergency and police power activities.
- 950. Bonding or security.
- 990. Definitions.

**5 AAC 95.900. Mitigation of damages.** (a) Each permittee shall mitigate any adverse effect upon fish or wildlife, or their habitat, which the commissioner determines may be expected to result from, or which actually results from, the permittee's activity, or which was a direct result of the permittee's failure to

(1) comply with a permit condition or a provision of this chapter; or

(2) correct a condition or change a method foreseeably detrimental to fish or wildlife, or their habitat.

(b) Mitigation techniques must be employed in the following order of priority:

(1) avoid an impact altogether by not taking a certain action or parts of an action;

(2) minimize an impact by limiting the degree of magnitude of the action;

(3) rectify the impact by repairing, rehabilitating, or restoring the affected environment;

(4) reduce or eliminate the impact over time by preservation and maintenance operations during the life of the action;

(5) compensate for the impact by replacing or providing substitute resources or environments.

(c) The duty to mitigate in (a) of this section does not apply to unavoidable adverse effects upon fish or wildlife populations, or their habitat, arising from an overwhelming force of nature with consequences not preventable by due and reasonable precautions.

(d) The commissioner will, in his or her discretion, specify, by permit amendment, additional provisions for mitigating damage to fish and wildlife populations, and their habitat.

(e) Notwithstanding the expiration or revocation of a permit, a permittee is responsible for the obligations arising under the terms and conditions of the permit, and under the provisions of this chapter. (Eff. 6/5/86, Register 98)

|                   |              |              |
|-------------------|--------------|--------------|
| <b>Authority:</b> | AS 16.05.020 | AS 16.20.094 |
|                   | AS 16.05.050 | AS 16.20.096 |
|                   | AS 16.05.251 | AS 16.20.162 |
|                   | AS 16.05.255 | AS 16.20.530 |
|                   | AS 16.20.060 |              |

**5 AAC 95.910. Failure to adhere to standards.** The commissioner will in his or her discretion require in writing that a permittee correct a condition or remove a structure or installation constructed under permit by the permittee, which is not in accordance with a provision of the permit. (Eff. 6/5/86, Register 98)

|                   |              |              |
|-------------------|--------------|--------------|
| <b>Authority:</b> | AS 16.05.020 | AS 16.20.094 |
|                   | AS 16.05.050 | AS 16.20.096 |
|                   | AS 16.05.251 | AS 16.20.162 |
|                   | AS 16.05.255 | AS 16.20.530 |
|                   | AS 16.20.060 |              |

**5 AAC 95.920. Appeals.** An interested person may initiate an appeal of a decision made under this chapter in accordance with the provisions of AS 44.62.330 - 44.62.630 by requesting a hearing under AS 44.62.370. (Eff. 6/5/86, Register 98)

|                   |              |              |
|-------------------|--------------|--------------|
| <b>Authority:</b> | AS 16.05.020 | AS 16.20.094 |
|                   | AS 16.05.050 | AS 16.20.096 |
|                   | AS 16.05.251 | AS 16.20.162 |
|                   | AS 16.05.255 | AS 16.20.530 |
|                   | AS 16.20.060 |              |

**5 AAC 95.930. Exclusion periods.** (a) The commissioner will notify a permittee that the term of the permit is, or will be, interrupted for a period of time if the commissioner determines that

(1) a temporary environmental condition exists which was reasonably unforeseeable at the time of permit approval and the permitted activity, if allowed to continue, threatens to cause a substantial adverse impact;

(2) the permittee has failed to implement a required mitigating or preventative measure; or

(3) the permittee has failed to comply with a provision of this chapter, or a condition of the permit.

(b) The exclusion period established under (a) of this section will be as long as necessary for abatement of the temporary condition, completion of the required mitigating or preventive measure, or compliance with the permit condition or the provisions of this chapter, and will not exceed a total of 30 days in any calendar year, without the consent of the permittee.

(c) The commissioner will, by notice to the permittee, terminate an exclusion period after the permittee demonstrates abatement, compliance, or implementation of the required mitigating measures.

(d) If the commissioner finds, before or during an exclusion period, that corrective action is unlikely to be completed within any available exclusion period, the commissioner will, in his or her discretion, initiate a revocation proceeding under AS 44.62.330 – AS 44.62.630. (Eff. 6/5/86, Register 98)

|                   |              |              |
|-------------------|--------------|--------------|
| <b>Authority:</b> | AS 16.05.020 | AS 16.20.094 |
|                   | AS 16.05.050 | AS 16.20.096 |
|                   | AS 16.05.251 | AS 16.20.162 |
|                   | AS 16.05.255 | AS 16.20.530 |
|                   | AS 16.20.060 |              |

**5 AAC 95.940. Exemption for emergency and police power activities.** In an emergency, the commissioner may issue an oral permit for emergency or police power activities before receiving the completed application required in 5 AAC 95.700. A completed application must be submitted within the time specified by the commissioner, whether before or after the emergency or police power activity takes place. (Eff. 6/5/86, Register 98)

|                   |              |              |
|-------------------|--------------|--------------|
| <b>Authority:</b> | AS 16.05.020 | AS 16.20.094 |
|                   | AS 16.05.050 | AS 16.20.096 |
|                   | AS 16.05.251 | AS 16.20.162 |
|                   | AS 16.05.255 | AS 16.20.530 |
|                   | AS 16.20.060 |              |

**5 AAC 95.950. Bonding or security.** (a) The commissioner will, in his or her discretion, require a performance bond with a surety company authorized to transact business in Alaska, or other specified security to secure the performance of the terms and conditions of a permit issued under this chapter.

(b) A performance bond or security required under (a) of this section is limited to an amount reasonably necessary to ensure compliance with the provisions of this chapter or the terms and conditions of a permit issued under this chapter.

(c) The commissioner will inspect or review actions taken under each applicable term or condition of a permit issued under this chapter, and will make a written finding that each applicable term and condition of the permit has been completed, before the permittee's performance bond or security is released.

(d) The posting of a performance bond or the taking of other security under (a) of this section does not limit the department's right, under applicable law, to seek further compensation from the permittee for actual damages to fish or wildlife, or their habitats, or for a violation of the permit. (6/5/86, Register 98)

|                   |              |              |
|-------------------|--------------|--------------|
| <b>Authority:</b> | AS 16.05.020 | AS 16.20.094 |
|                   | AS 16.05.050 | AS 16.20.096 |
|                   | AS 16.05.251 | AS 16.20.162 |
|                   | AS 16.05.255 | AS 16.20.520 |
|                   | AS 16.20.050 | AS 16.20.530 |
|                   | AS 16.20.060 |              |

**5 AAC 95.990. Definitions.** In addition to the definitions set out in AS 16.05.940, as used in this chapter:

(1) “authorized representative of the state” means one who is legally empowered to enforce a statute under which regulations in this chapter are promulgated;

(2) “completed application” means the submission of full plans, specifications and notifications required by AS 16.20, and includes a form, series of forms, letter or other documents that provide all of the information necessary for the commissioner to issue, condition or deny a permit;

(3) “emergency” means an unforeseeable situation that presents an imminent threat to life or property;

(4) “mitigate” means to compensate fully for damage to fish and wildlife populations and their habitat by employing the most appropriate techniques;

(5) “permittee” means the holder of a permit and includes anyone employed, contracted, or assigned by the person or the organization to whom the permit was issued to conduct a land or water use operation;

(6) “permit” means the approval of plans and specifications required by AS 16.20.060 or 16.20.530, and any authorization made under AS 16.20.094, 16.20.096, or 16.20.162;

(7) “special area” means a state game refuge, a state game sanctuary, or a state fish and game critical habitat area, established under AS 16.20;

(8) “wildlife” means any species of bird or mammal as described in AS 16.05.940 (14). (Eff. 6/5/86, Register 98)

|                   |              |              |
|-------------------|--------------|--------------|
| <b>Authority:</b> | AS 16.05.020 | AS 16.20.094 |
|                   | AS 16.05.050 | AS 16.20.096 |
|                   | AS 16.05.251 | AS 16.20.162 |
|                   | AS 16.05.255 | AS 16.20.530 |
|                   | AS 16.20.060 |              |





**APPENDIX E:  
INHOLDINGS INVENTORY OF CRITICAL HABITAT  
AREAS BRISTOL BAY, ALASKA**



**Public Review Draft**

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**INHOLDINGS INVENTORY OF  
CRITICAL HABITAT AREAS  
BRISTOL BAY, ALASKA**

Alaska Department of Fish & Game  
Division of Sport Fish

**April 2010**

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# ***BRISTOL BAY CRITICAL HABITAT AREAS***

## **INTRODUCTION**

The Alaska State Legislature has classified over 3 million acres of land as being essential to the protection of fish and wildlife habitat. These areas are designated as refuges, critical habitat areas, or sanctuaries. Five of these legislatively designated areas are located in the Bristol Bay Region: Egegik Critical habitat area; Pilot Point Critical habitat area; Cinder River Critical habitat area; Port Heiden Critical habitat area; and Port Moller Critical habitat area. These five CHAs encompass over 620 thousand acres, including tide and submerged lands. These special areas provide important habitats for many species of mammals, birds, and fish. To assist in developing a management plan, information was collected to develop a catalog of inholdings for each CHA. The information collected could then be used in developing goals and policies for the management plan. In addition, the information could be used to prioritize inholdings for protection through land acquisitions, conservation easements and other mechanisms; and facilitate and maintain public access to fish and wildlife resources.

**LAND OWNERSHIP:** We developed a land title base for each of the special areas. Land ownership was determined utilizing records from the Bureau of Land Management (BLM), the Alaska Department of Natural Resources (ADNR), and the State Recorders Office. The information from these sources was cross-referenced to determine the current landowner, existing easements and development status.

Electronic land status maps was created, depicting the current size and location of lands within each special area. All public use easements were identified.

## EGEGIK CRITICAL HABITAT AREA

The uplands, tidelands, and submerged lands of Egegik Critical habitat area described in AS 16.20.565 was established in 1972 and contain 8,253 acres. This habitat area is located on the northern shore of the Alaska Peninsula

This refuge was created to protect and preserve habitat areas crucial to the perpetuation of fish and wildlife and to restrict all other uses not compatible with that primary purpose. Important species here include waterfowl molting, spring and fall concentrations as well as populations of spring brown bear feeding, wintering caribou, harbor seal haulout concentrations and spawning salmon.

The Becharof Corporation has patented (50-94-0479) 1504.14 acres of this habitat area. One easement exists within the CHA; EIN I C3, D1, D9, twenty-five feet in width for an existing trail from Egegik Bay parallel to the shoreline of Bristol Bay and Egegik Bay in Sec. 1, T. 23 S, R, 50 W, Seward Meridian, southwesterly to public lands. The uses allowed are travel by foot, dogsled, animals, snowmobiles, two- and three-wheel vehicles, and small all-terrain vehicles (ATVs) less than 3,000 lbs. Gross Vehicle Weight.

The remaining land is state land under General Selection 1696 Patent # 50-97-0186 and GS 1700 Patent # 50-97-0185 Bordering state land is tentatively approved AA5155.

Sec. 16.20.565. The following described area is established as the Egegik Critical habitat area:

### **Township 23 South 51 West, Seward Meridian:**

#### **CHA Section 13**

**Sections 24 - 25**

**Sections 35 - 36;**

*All lands*

Patented to the State.

### **Township 23 South 50 West, Seward Meridian:**

#### **CHA Section 7**

**Sections 18 - 19**

**Section 30**

**Section 31 (not tide or submerged land).**

*Sections 1, 2, 3, 12 (Portions Of)*

IC # 231 issued to Becharof Corporation

*Sections 3, 4, 6, 7, 14, and 18-36 (Portions Of)*

Patent # 50940479 issued to Becharof Corporation.

### **Township 24 South 51 West, Seward Meridian:**

#### **CHA Sections 1 - 2**

**Section 11 S 1/2**

**Section 12 N 1/2;**

*All lands*

State Patented.

## PILOT POINT CRITICAL HABITAT AREA

The uplands, tidelands, and submerged lands of Pilot Point CHA described in AS 16.20.570 was established in 1972 and contain 46,551.6 acres. This habitat area is located on the northern shore of the Alaska Peninsula 368 air miles southwest of Anchorage and encompassing most of Ugashik Bay.

This refuge was created to protect and preserve habitat areas crucial to the perpetuation of fish and wildlife and to restrict all other uses not compatible with that primary purpose. Important species here include waterfowl molting, spring and fall concentrations as well as populations of spring brown bear feeding, wintering and calving caribou, harbor seal haulout concentrations and spawning salmon.

There are two privately held parcels within the critical habitat area totaling 239.94 acres. Bristol Bay Native Corporation has patented and IC'd approximately \_\_\_ acres within the CHA. Pilot Point Native Corporation has patented and IC'd approximately 22,013.44 acres within the CHA. Two 17b easements exist within the CHA; one 25 ft. wide access trail (EIN 10 D1) from the village of Pilot Point in Sec. 29, T. 30 S., R. 51 W., northerly to public land. The uses allowed are limited to winter and include travel by foot, dogsled, animals, snowmobiles, two- and three-wheel vehicles, and small all-terrain vehicles (ATVs) less than 3,000 lbs. Gross Vehicle Weight. The second is EIN 9c D9, an easement 50 ft in width for an existing access trail from cape Menshikof easterly through sections 31, 32, 33, 34, and 35, T. 31 S, R 53 W, to public land. The uses allowed are travel by foot, dogsled, animals, snowmobiles, two- and three-wheel vehicles, and small all-terrain vehicles (ATVs) track vehicles and four-wheel vehicles.

There is one trespass cabin located in sec 3 of T 30 S R 52 W, ADL 223454.  
There are twenty-nine shore fishery leases with the CHA boundary.

Sec. 16.20.570. The following described area is established as the Pilot Point Critical habitat area:

### **Township 30 South, Range 51 West, Seward Meridian.**

#### **CHA Sections 5 - 8**

##### **Section 17;**

##### *Section 5-8 (Portions of)*

Native Allotment #50-94-0403 issued to Darlene Lind. Land is described in USS 9214 containing 79.98 acres.

##### *Sections 5-8, 17 (Remaining)*

Patent #50910500 issued to Pilot Point Native Corporation.

**Township 30 South, Range 52 West, Seward Meridian.**

**CHA Sections 1 - 3**

**Section 12**

**Sections 27 - 29**

**Sections 31 - 34**

*Sections 1,2*

Patent # 50910500 issued to Pilot Point Native Corporation.

*Section 3*

Patent # 50850476 issued to State of Alaska.

*Section 3*

Trespass Cabin ADL 223454 James J Waletski.

*Section 10 (Portions of)*

Application pending case AA 12840 to US Coast Guard for Light House.

*Sections 27, 28, 33, 34 (Portions of)*

Native Allotment # 50890327 issued to Martha Kalmakoff described in USS 9216 and is 159.96 acres.

*Sections 27, 28, 29, 31, 32, 33, 34 (Portions of)*

Patents 50850476, 50900469 issued to State of Alaska.

**Township 30 South, Range 53 West, Seward Meridian.**

**CHA Section 36;**

*Section 36*

Patent # 50840529 issued to State of Alaska.

**Township 31 South, Range 51 West, Seward Meridian.**

**CHA Sections 5 - 8**

**Sections 13 - 15**

**Sections 17 - 27;**

*Sections 1- 3, 10-15, 24,25,31- 36 (Portions of)*

Patent # 50850462 issued to State of Alaska.

*Section 4, 5, 8, 9, 16, 17, 19-22, 26-30 (Portions of)*

Patent # 50910500 Issued to Pilot Point Native Corporation.

*Section 15 (Portion Of)*

BLM case # 58327, Authorization issued to US Fish and Wildlife Service for a Right-Of-Way. Reservation under the provisions of 44 LD 513.

**Township 31 South, Range 52 West, Seward Meridian**

**CHA Sections 1 - 3**

**Sections 5 - 6**

**Sections 11 - 14**

**Sections 23 - 24;**

*Sections 19- 21, 30, 31*

Patent # 50850476 issued to State of Alaska.

*All Remaining Sections*

Patent # 50910500 issued to Pilot Point Native Corporation.



**Township 31 South, Range 53 West, Seward Meridian.**

**CHA Sections 1 - 2**

**Sections 10 - 11**

**Sections 12 - 14 (not tide or submerged land)**

**Sections 15 - 16**

**Sections 20 - 21**

**Sections 22 - 28 (not tide or submerged land)**

**Sections 29 - 31**

**Sections 32 - 36 (not tide or submerged land);**

*Sections 1, 2, 10- 12, 24, 25*

Patent # 50840529 issued to State of Alaska.

*All Remaining Sections*

Patent # 50910500 issued to Pilot Point Native Corporation.

**Township 32 South, Range 54 West, Seward Meridian.**

**CHA Section 36.**

*Section 36*

Tentative Approval AA 5316 issued to State of Alaska.

## CINDER RIVER CRITICAL HABITAT AREA

The uplands, tidelands, and submerged lands of Cinder River CHA described in AS 16.20.560 was established in 1972 and contain 25,773 acres. This habitat area is located on the northern shore of the Alaska Peninsula just south of the Pilot Point Critical habitat area.

This refuge was created to protect and preserve habitat areas crucial to the perpetuation of fish and wildlife and to restrict all other uses not compatible with that primary purpose. Important species here include waterfowl molting, spring and fall concentrations as well as populations of spring brown bear feeding, wintering caribou, harbor seal haulout concentrations and spawning salmon.

All State land under GS 1761, 1764, 1765, 1766, 1768, 1769, 1770, 1771 TA.

### DNR Trespass Cases

ADL 219964 Located within the SW  $\frac{1}{4}$  of Section 32, T32S R54W.

ADL 221897 Located within section 9, T33S R55W.

ADL 219963 Located within the North  $\frac{1}{2}$ , of Section 9 T33S R55W.

There are no privately held parcels within the Cinder River CHA.

Sec. 16.20.560. The following described area is established as the Cinder River Critical habitat area:

### **CHA Township 32 South, Range 54 West, Seward Meridian**

**Section 29**

**Sections 31 - 32;**

### **Township 33 South, Range 55 West, Seward Meridian**

**Sections 1 - 4**

**Sections 7 - 13**

**Sections 14 - 17 (not tide or submerged land)**

**Section 18;**

### **Township 33 South, Range 56 West, Seward Meridian**

**Sections 13 - 14**

**Sections 22 - 23**

**Sections 24 - 26 (not tide or submerged land)**

**Sections 27 - 29**

**Sections 31 - 32**

**Sections 33 - 36 (not tide or submerged land);**

### **Township 34 South, Range 56 West, Seward Meridian**

**Sections 5 - 7**

**Section 4 N  $\frac{1}{2}$ ;**

### **Township 34 South, Range 57 West, Seward Meridian**

**Section 1**

**Section 12.**

### *All lands*

Patent 50-2008-0282 issued to State of Alaska.

## PORT HEIDEN CRITICAL HABITAT AREA

The uplands, tidelands, and submerged lands of Port Heiden CHA described in AS 16.20.555 was established in 1972 and contain 72,147.85 acres. This habitat area is located on the northern shore of the Alaska Peninsula near the village of Port Heiden. Port Heiden is approximately 125 miles south west of King Salmon and 500 southwest of Anchorage. The old village called Meshik is located about 3 miles from the current location of Port Heiden.

This refuge was created to protect and preserve habitat areas crucial to the perpetuation of fish and wildlife and to restrict all other uses not compatible with that primary purpose. This area also supports populations of waterfowl nesting, feeding and migration areas, seabird colonies, brown bear spring feeding, calving caribou, harbor seal haulout concentrations and spawning salmon. There are two privately held parcels within the critical habitat area totaling 239.94 acres. Alaska Peninsula Corporation has patented and IC'd approximately 23,579.05 acres.

There are three trespass cabins within the CHA.

ADL 220007 in section 28, T 39 S R 61 W.

ADL 219965 in section 24, T 38 S R 61 W.

ADL 229197 in section 26, T 38 S R 61 W.

Sec. 16.20.555. The following described area is established as the Port Heiden Critical habitat area:

**Township 38 South 59 West Seward Meridian:  
CHA Sections 13 - 15 (not tide or submerged land)**

**Section 16**

**Section 21**

**Section 22 - 27 (not tide or submerged land)**

**Section 28**

**Sections 33 - 34**

**Sections 35 - 36 (not tide or submerged land);**

*All sections within CHA*

IC 91 and Pat 50910621 issued to Alaska Peninsula Corporation.

A 17B Easement exist Crossing through this township EIN 13 E.

**Township 38 South 60 West Seward Meridian:**

**CHA Sections 17 - 19;**

*All State patented land.*

**Township 38 South 61 West Seward Meridian:**

**CHA Sections 24 - 26**

**Section 34;**

*All State patented land.*

A 17B Easement exist Crossing through this township EIN 13 E.

**Township 39 South 59 West Seward Meridian:**

**CHA Sections 1 - 2 (not tide or submerged land)**

**Section 3**

**Sections 10 - 14 (not tide or submerged land)**  
**Section 15**  
**Sections 19 - 22**  
**Sections 26 - 29**  
**Sections 30 - 33 (not tide or submerged land)**  
**Sections 34 - 36;**

*Section 20*

Native Allotment # 50900632 conveyed to Margit Marie Carlson and described as USS 9201 containing 159.96 acres.

*All Remaining Sections*

Patent 50910621 issued to Alaska Peninsula Corporation.  
A 17B Easement exist Crossing through this township EIN 13 E.

**Township 39 South 60 West Seward Meridian:**

**CHA Sections 18 - 24**  
**Section 25 (not tide or submerged land)**  
**Sections 26 - 27**  
**Sections 28 - 36 (not tide or submerged land);**

*All State patented land.*

**Township 39 South 61 West Seward Meridian:**

**CHA Sections 2 - 4**  
**Sections 8 - 9**  
**Section 10 (not tide or submerged land)**  
**Sections 11 - 13**  
**Sections 14 - 15 (not tide or submerged land)**  
**Sections 16 - 18**  
**Sections 19 - 20 (not tide or submerged land)**  
**Section 21**  
**Sections 22 - 36 (not tide or submerged land);**

*Section 28, 29, 32, and 33(Portions of)*

Native Allotment 5020000075 issued to Henry A. Matson and described as USS 11288 (79.98 acres) through native allotment.

*All Remaining Sections*

State patented.

**Township 39 South 62 West Seward Meridian:**

**CHA Section 13**  
**Sections 23 - 28**  
**Sections 32 - 34**  
**Sections 35 - 36 (not tide or submerged land).**

*All Sections*

State patented.

## PORT MOLLER CRITICAL HABITAT AREA

The uplands, tidelands, and submerged lands of Port Moller CHA described in AS 16.20.550 was established in 1972 and contain 131,263 acres. This habitat area is located on the northern shore of the Alaska Peninsula near the villages of Nelson Lagoon and Port Moller, approximately 540 air miles southwest from Anchorage, Alaska.

This refuge was created to protect and preserve habitat areas crucial to the perpetuation of fish and wildlife and to restrict all other uses not compatible with that primary purpose. This area also supports waterfowl nesting, feeding and migration areas as well as spring brown bear feeding areas, calving caribou, harbor seal haulout concentrations, spawning herrings concentrations, bird colonies and spawning salmon.

There are 18 privately held parcels of land within the CHA totaling 9,585.64 acres. Nelson Lagoon Corporation holds 15,929.21 acres within this Habitat area. There are also 45 acres of land withdrawn by BLM for hot springs. Four 17b easements exist within this CHA:

- 1) EIN 6 C4 E, a 25 ft. access trail from EIN 6a C5 D1, southwesterly to public lands, the uses allowed are travel by foot, dogsled, animals, snowmobiles, two- and three-wheel vehicles, and small all-terrain vehicles (ATVs) less than 3,000 lbs. Gross Vehicle Weight.
- 2) EIN 6a C5 D1 a one acre site easement upland of the mean high tide line on the west shore of Mud Bay at the northeastern end of trail easement EIN 6 C4 E. the uses allowed are vehicle parking (e.g. aircraft, boats, ATVs, snowmobiles, cars, trucks), temporary camping, and loading or unloading limited to 24 hours.
- 3) EIN 10 C5 M is a twenty-five ft. wide access trail from EIN 10a C5 M southwesterly to Public lands. Uses allowed are travel by foot, dogsled, animals, snowmobiles, two- and three-wheel vehicles, and small all-terrain vehicles (ATVs) less than 3,000 lbs. Gross Vehicle Weight.
- 4) EIN 10a C5 M is a one acre site easement upland of the mean high tide line on the north shore of Nelson Lagoon at northeastern end of trail easement EIN 10 C5 M, allowed uses are vehicle parking (e.g. aircraft, boats, ATVs, snowmobiles, cars, trucks), temporary camping, and loading or unloading limited to 24 hours.

There are four-teen shore fishery leases issued within the CHA, and 23 oil and gas leases issued to Shell Offshore Inc within the CHA.

Sec. 16.20.550. The following described area is established as the Port Moller Critical habitat area:

**Township 48 South, Range 78 West, Seward Meridian**

**CHA Sections 26 - 27**

**Sections 31 - 34**

*All Sections*

Federal ownership.

**Township 48 South, Range 77 West, Seward Meridian.**

**CHA Sections 20 - 23**

**Sections 26 - 28**

*All Sections*

Patent # 50890787, issued to Nelson Lagoon Corporation.

**Township 48 South, Range 76 West, Seward Meridian.**

**CHA Sections 13 - 17**

**Sections 19 - 23**

**Sections 25 - 27**

**Sections 29 - 30**

**Sections 34 - 35**

**Section 36 (not tide or submerged land)**

*Section 19, 20-23,26- 30 (Portions of)*

IC # 167, Patent # 50890787, issued to Nelson Lagoon Corporation.

*Section 19 (Portions of)*

ADL 226171, 4.13 acres conveyed to Aleutians East Borough ADL 228931 issued to Aleutians East Borough, 2.3 acres. Native allotment # 50840470, issued to Paul M. Gunderson described as USS 6429 containing 80 acres. IC # 167, issued to Nelson Lagoon Corporation. State of Alaska, Dept. of Transportation and Public Facilities has a 75ft. ROW through the allotment. AA6681-B described in USS 499 appears to be federal refuge land.

*Section 20(Portion of)*

OSL 987, 3 acres, unverified, DOT ROW associated with 300-302. LSH 300-302 Airport access road DOT ROW.

*Section 20, 29(Portion of)*

Patent # 676132, issued to Pacific American Fisheries Inc. Chain of title is unclear, current owner is unclear. Land is described in USS 663, containing 12.3 acres.

Patent # 720517, issued to Pacific American Fisheries Inc. Chain of title is unclear, current owner is unclear. Land is described in USS 662, containing 8.71 acres

*Section 29 (Portion of)*

Patent # 658258, issued to Pacific American Fisheries Inc. Chain of title is unclear, current owner appears to be Kyookuyo USA Inc. Land is described in USS 498, containing 8.61 acres .

*All Remaining*

Federal ownership.

**Township 48 South, Range 75 West, Seward Meridian.**

**CHA Sections 15 - 18**

**Section 22**

**Sections 29 - 30**

**Section 31 (not tide or submerged land)**

**Section 32;**

*All Lands*

Patent # 50890787, issued to Nelson Lagoon Corporation.

**Township 49 South, Range 78 West, Seward Meridian.**

**CHA Sections 2 - 5**

**Sections 8 - 12**

**Sections 13 - 16 (not tide or submerged land)**

**Section 17.**

*Section 11 (Portion of)*

Native allotment certificate # 50970167, issued to Arthur H. Johnson.  
Land is described in USS 9315, containing 79.98 acres.

*Section 12 (Portion of)*

Native allotment certificate # 50960631, issued to Marlene I Johnson.  
Land is described in USS 8960, containing 39.98 acres.

*Sections 13 to 16, 20 to 29, and 32 to 36*

Patent # 50850520, issued to the State of Alaska.

*All Remaining Lands*

Patent # 50-89-0787 and IC # 167, issued to Nelson Lagoon Corporation.

**Township 49 South, Range 77 West, Seward Meridian.**

**CHA Sections 1 - 2**

**Sections 4 - 5**

**Sections 7 - 12**

**Sections 13 - 18 (not tide or submerged land);**

*Sections 1, 2, 11, and 12 (Portion of)*

Native allotment certificate # 50840219, issued to Charles J. Franz.  
Current owner appears to be Heuker Properties Inc. Land is described in  
USS 6283, containing 119.92 acres .

*Sections 1, 2, 4, 7, 8- 12*

Patent # 50890787 and IC # 167, issued to Nelson Lagoon Corporation.

*Sections 19 to 36*

Patent # 50850520, issued to the State of Alaska.

A 17B Easement exists in sec 12 and 13, EIN 10, C5, M and site 10a, C5, M

**Township 49 South, Range 76 West, Seward Meridian.**

**CHA Sections 1 - 4**

**Sections 7 - 9**

**Sections 10 - 11 (not tide or submerged land)**

**Sections 12 - 14**

**Sections 15 - 16 (not tide or submerged land)**

**Sections 17 - 18**

**Section 21 (not tide or submerged land)**

**Section 22**

**Sections 28 - 29**

**Sections 33 - 34;**

*Sections 19, 20, 30, 31, and 33*

Currently under Federal ownership

*All Remaining Lands*

Patent # 50890787, issued to Nelson Lagoon Corporation.

A 17B Easement exists in sec 7 and 18, EIN 10 C5 M and site easement 10a C5 M.  
Also in section 34, EIN 6, C4, 5, as well as the site easement 6a C5, D1.

**Township 49 South, Range 75 West, Seward Meridian.**

**CHA Section 3**

**Sections 4 - 6 (not tide or submerged land)**

**Sections 7 - 11**

**Sections 14 - 16**

**Sections 21 - 32;**

Sections 25 and 26

Native allotment certificate # 50990357, issued to Ernest L. Olson Sr. and Ernest L Olson Jr. Land is described in USS 7390, Lot 1, containing 138.00 .

Native allotment certificate # 50990196, issued to Emma Olson. Land is described in USS 7390, Lot 2, containing 149.98 acres .

*All Remaining Lands*

Tentatively approved State Selection, AA5374.

**Township 49 South, Range 73 West, Seward Meridian.**

**CHA Sections 10 - 11**

**Section 12 (not tide or submerged land)**

**Sections 13 - 16**

**Section 21**

**Section 24**

**Section 28;**

*All Lands*

Tentatively approved State Selection, AA5327.

**Township 50 South, Range 76 West, Seward Meridian.**

**CHA Section 1**

**Section 3**

**Section 4 (not tide or submerged land)**

**Section 9 (not tide or submerged land)**

**Sections 10 - 13**

**Sections 14 - 16 (not tide or submerged land)**

**Sections 21 - 23 (not tide or submerged land)**

**Sections 24 - 25**

**Sections 26 - 28 (not tide or submerged land);**

*Sections 1, 3, 10 to 13, 24, 25, and 36*

Patent # 50890787, issued to Nelson Lagoon Corporation.

*All Remaining Lands*

Patent # 50840558, issued to the State of Alaska.

A 17B Easement exist in sec 4, EIN 6, C4, E, and site 6a C5, D1.

**Township 50 South, Range 75 West, Seward Meridian.**

**CHA Section 1**

**Sections 6 - 7;**

*Section 1 (portion of)*



Patent # 720522, issued to Nelson Lagoon Packing Company. Current owner appears to be Security National Alaska Remote Properties LCC. Land is described in USS 1213 containing 15.68 acres .

*Sections 1 and 12, Also in Sections 6 and 7 of next township (Portions of)*

Native allotment certificate # 50960231, issued to Selma Rupke. Current owners appear to be Arnold Rupke, Darrell Olson, Lori Alvord, and Kelly Rupke. Land is described in USS 7851, Lot 5, containing 136.08 acres.

**Township 50 South, Range 74 West, Seward Meridian.**

**CHA Sections 5 - 7**

**Section 8 (not tide or submerged land)**

**Sections 9 - 13**

**Sections 14 - 16 (not tide or submerged land)**

**Sections 17 - 18**

**Section 20;**

*Section 5 and 6 (Portion of)*

Native allotment certificate # 50950536, issued to Emily M. Roberts. Land is described in USS 7851, Lot 2, containing 150 acres.

*Section 6 (Portion of)*

Native allotment certificate # 50950483, issued to Edith L. Edgmon Shade. Land is described in USS 7851, Lot 1, containing 159.99 acres (PMCHA-16). Native allotment certificate # 50950270, issued to Roberts A. Freeman. Land is described in USS 7851, Lot 3, containing 154.31 acres .

*Section 6, 7 (Portion of)*

Native allotment certificate # 50960231 issued to Selma Rupke, Land is described as USS 7851 lot 5, containing 136.08 acres .

*Section 7 (Portion of)*

Native allotment certificate # 50950615, issued to Ernest Louis Olson III(Deceased). Current owners appear to be Emma Wood Olson, Selma Olson Rupke, Edith Olson Shade, and Ernestine Olson Richard. Land is described in USS 7851, Lot 4, containing 129.99 acres . Native allotment certificate # 50950328, issued to Helena M. Andree. Land is described in USS 11284, Lot 2, containing 119.96 acres.

*Section 17 and 18 (Portion of)*

Native allotment certificate # 50-96-0631, issued to Marlene I Johnson. Land is described in USS 11284, Lot 1, containing 80 acres.

*All Remaining Lands*

Tentatively approved State Selection, AA8416.

**Township 50 South, Range 73 West, Seward Meridian.**

**CHA Sections 7 - 13**

**Sections 14 - 17 (not tide or submerged land)**

**Section 18;**

*Sections 11, 12, 13, and 14 (Portion of)*

Native allotment certificate # 50-96-0631, issued to Marlene I Johnson. Land is described in USS 10794, Lot 2, containing 39.94 acres .

*Section 12(Portion of)*

PO 399 designates this land as (case type 261101) withdrawal for Hot Springs and is being held by BLM. The land is described as lot 1 and being 45 acres.

*All Remaining Lands*

Tentatively approved State Selection, AA8416.

**Township 50 South, Range 72 West, Seward Meridian.**

**CHA Sections 18 - 19**

**Sections 30 - 32;**

*All land*

Federal ownership.

**Township 50 South, Range 71 West, Seward Meridian.**

**CHA Sections 7 - 8**

**Section 14 (not tide or submerged land)**

**Sections 15 - 17**

**Sections 21 - 23**

**Section 32;**

*All land*

Federal ownership.

**Township 51 South, Range 72 West, Seward Meridian.**

**CHA Sections 5 - 8**

**Sections 11 - 12;**

*Sections 3, 10- 15, 22-27, and 34-36.*

Tentatively approved State selection, AA8417.

*All Remaining Lands*

Federal ownership.

**Township 51 South, Range 71 West, Seward Meridian.**

**CHA Section 3 (not tide or submerged land)**

**Sections 4 - 5**

**Section 7**

**Sections 9 - 10**

**Sections 15 - 17;**

*All land*

Federal ownership

# SOURCES

## Grid

Alaska PLSS Township Boundaries- <http://www.asgdc.state.ak.us/>  
Alaska PLSS Section Grid - <http://www.asgdc.state.ak.us/>

## Hydro

NHD Area- <http://nhd.usgs.gov/data.html>  
NHD Flowline- <http://nhd.usgs.gov/data.html>  
NHD Waterbody- <http://nhd.usgs.gov/data.html>  
Coastline- Clipped from NHD Flowline

## Infrastructure

Alaska Airstrips 1:63,360 from land Records <http://www.asgdc.state.ak.us/>  
Secondary Roads -from infrastructure <http://www.asgdc.state.ak.us/>  
Alaska DNR RS2477 Trails- from trails <http://www.asgdc.state.ak.us/>

## Land Estate

Land Disposal Conveyed <http://www.asgdc.state.ak.us/>  
Permit Lease <http://www.asgdc.state.ak.us/>  
Other Activities <http://www.asgdc.state.ak.us/>

## Mineral Estate

Mineral permit or Lease <http://www.asgdc.state.ak.us/>  
Mineral Order <http://www.asgdc.state.ak.us/>  
State Mining Claim <http://www.asgdc.state.ak.us/>

## Native Allotments

SDMS- derived from Master Title Plats  
Naldigi- ?

## Natural Resources

Shore Fishery Lease <http://www.asgdc.state.ak.us/>

## Other

ADF&G Marker- digitized from SFP 192  
Mask- a digitized element used for aesthetics.

## Ownership

Agreement Settlement Reconveyance <http://www.asgdc.state.ak.us/>  
Federal Action <http://www.asgdc.state.ak.us/>  
Municipal Entitlement <http://www.asgdc.state.ak.us/>  
Other State Aquired Land <http://www.asgdc.state.ak.us/>  
State TA or Pat <http://www.asgdc.state.ak.us/>

## Surface

Admin Large Parcel <http://www.asgdc.state.ak.us/>

Alaska Maritime NWR <http://alaska.fws.gov/GIS/refuge.htm>

City Boundary <http://www.asgdc.state.ak.us/>

Disposable Interest <http://www.asgdc.state.ak.us/>

State Managed LDA <http://www.asgdc.state.ak.us/>

## Water Estate

Tidal Conveyances <http://www.asgdc.state.ak.us/>

**APPENDIX F**  
**ALASKA PENINSULA AREAWIDE LEASE SALE**  
**2005 BEST INTEREST FINDING MITIGATION MEASURES**



# **Chapter Seven: Mitigation Measures and Lessee Advisories**

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## **Chapter Seven: Mitigation Measures and Lessee Advisories**

AS 38.05.035(e) and the departmental delegation of authority provide the Director, Division of Oil and Gas (DO&G) ["Director"], with the authority to impose conditions or limitations, in addition to those imposed by statute, to ensure that a resource disposal is in the state's best interests. Consequently, to mitigate the potential adverse social and environmental effects of specific lease related activities, DO&G has developed mitigation measures and will condition plans of operation, exploration, or development and other permits based on these mitigation measures.

Lessees must obtain approval of a detailed plan of operations from the Director before conducting exploration, development, or production activities. A plan of operations must identify the sites for planned activities and the specific measures, design criteria, construction methods and operational standards to be employed to comply with the restrictions listed below. It must also address any potential geophysical hazards that may exist at the site.

These measures were developed after considering terms imposed in earlier competitive lease sales and comments and information submitted by the public, local governments, environmental organizations, and other federal, state, and local agencies. Additional measures will likely be imposed when lessees submit a proposed plan of operations.

Lessees must comply with all applicable local, state and federal codes, statutes and regulations, as amended, as well as all current or future ADNR area plans and recreation rivers plans; and ADF&G game refuge plans, critical habitat area plans, and sanctuary area plans within which a lease area is located. Lease activities must be consistent with the enforceable policies of the Alaska Coastal Management Program (ACMP), including statewide standards and the enforceable policies of an affected coastal district, as amended. In addition, AS 38.05.140(f) designates the submerged and shoreland north of 57 degrees, 30 minutes, North latitude and east of 159 degrees, 49 minutes West, longitude within the Bristol Bay drainage as the Bristol Bay Fish Reserve (BBFR). Within the BBFR, no surface entry permit to develop an oil and gas lease or oil and gas exploration license may be issued on state owned or controlled land until the Legislature, by appropriate resolution, specifically finds that entry will not constitute a danger to the fishery.

The Director may grant exceptions to these mitigation measures. Exceptions will only be granted upon a showing by the lessee that compliance with the mitigation measure is not feasible and prudent or that the lessee will undertake an equal or better alternative to satisfy the intent of the mitigation measure. Requests and justifications for exceptions must be included in the plan of operations. The decision whether to grant an exception will be made during the public review of the plan of operations. Mitigation Measure 7 may not be amended by the Director without completing a supplemental Best Interest Finding.

Abbreviations mean: Alaska Department of Environmental Conservation (ADEC), Alaska Department of Fish and Game (ADF&G), Alaska Department of Labor and Workforce Development (ADLWD), Alaska Department of Natural Resources (ADNR), Alaska Oil and Gas Conservation Commission (AOGCC), Commissioner (ADNR Commissioner), Division of Mining, Land and Water (DMLW), Division of Oil and Gas (DO&G), Federal Aviation Administration (FAA), National Marine Fisheries Service (NMFS); Office of Habitat Management and Permitting (OHMP), Office of Project Management and Permitting (OPMP); State Historic Preservation Officer (SHPO), U.S. Army Corps of Engineers (USCOE), U.S. Coast Guard (USCG), and U.S. Fish and Wildlife Service (USFWS).



## **A. Mitigation Measures**

### **1. Facilities and Operations**

1. A plan of operations must describe the lessee's efforts to minimize impacts on residential, commercial, and recreational areas, Native allotments and subsistence use areas. At the time of application, lessee must submit a copy of the proposed plan of operations to all surface owners whose property will be entered.
2. Facilities must be designed and operated to minimize sight and sound impacts in areas of high residential, commercial, recreational, and subsistence use and important wildlife habitat. Methods may include providing natural buffers and screening to conceal facilities, sound insulation of facilities, or by using alternative means approved by the Director, in consultation with OHMP.
3. The siting of facilities, other than docks, roads, utility or pipeline corridors, or terminal facilities will be prohibited within one-half mile of the coast, barrier islands, reefs and lagoons, 500 feet of all fish bearing waterbodies and 1,500 feet from all current surface drinking water sources. Additionally, siting of such facilities will be prohibited within one-half mile of the banks of the Igushik, Naknek, Egegik, King Salmon (tributary to Egegik), David, Milky, Ugashik, King Salmon (tributary to Ugashik), Cinder, Meshik, Ilnik, Muddy, Sandy, Bear, Nelson, Caribou, Sapsuk and Dog Salmon Rivers, Black Hills, Steelhead, Painter and Pumice Creeks, Becharof and Ugashik Lakes and Franks Lagoon. Facilities may be sited within these buffers if the lessee demonstrates to the satisfaction of the Director, in consultation with OHMP and the affected local borough government, that site locations outside these buffers are not feasible and prudent or that a location inside the buffer is environmentally preferred. Road, utility, and pipeline crossings must be consolidated and aligned perpendicular or near perpendicular to watercourses.
4. The siting of temporary and permanent facilities will be prohibited within the Bristol Bay Fisheries Reserve.
5. Impacts to important wetlands must be minimized to the satisfaction of the Director, in consultation with OHMP and ADEC. The Director will consider whether facilities are sited in the least sensitive areas. Further, all activities within wetlands require permission from the US Army Corps of Engineers. See Lessee Advisory 13 regarding activities within wetlands.
6. Pipelines must utilize existing transportation corridors and be buried where conditions permit. In areas with above ground placement, they must be designed, sited, and constructed to allow for the free movement of wildlife. Pipeline gravel pads must be designed to facilitate the containment and cleanup of spilled fluids. Pipelines must be designed and constructed to assure integrity against climatic conditions and geophysical hazards.
7. Drilling in offshore tracts will only be conducted directionally from onshore locations.
8. Pipelines that must cross marine waters will be constructed beneath the marine waters using directional drilling techniques, unless the Director, in consultation with OHMP and the local borough and CRSAs, approves an alternative method based on technical, environmental, and economic justification.

9. Dismantlement, Removal and Rehabilitation (DR&R): Upon abandonment of material sites, drilling sites, roads, buildings or other facilities, such facilities must be removed and the site rehabilitated to the satisfaction of the Director, unless the Director, in consultation with DMLW, OHMP, DEC, an affected local borough, and any non-state surface owner, determines that such removal and rehabilitation is not in the state's interest.
10. Gravel mining within an active floodplain is prohibited. Gravel mining in upland sites will be restricted to the minimum area necessary to develop the field in an efficient manner.

## 2. Fish and Wildlife Habitat

11. Detonation of explosives within or in proximity to fish bearing waters must not produce instantaneous pressure changes that exceed 2.7 pounds per square inch in the swim bladder of a fish. Detonation of explosives within or in close proximity to a fish spawning bed during the early stages of egg incubation must not produce a peak particle velocity greater than 0.5 inches per second. Blasting criteria have been developed by ADF&G and are available upon request. The location of known fish bearing waters within the project area can be obtained from the OHMP.
12. Compaction or removal of snow cover overlying fish bearing waterbodies is prohibited except for approved crossings. If ice thickness is not sufficient to facilitate a crossing, ice or snow bridges may be required.
13. Water intake pipes used to remove water from fish bearing waterbodies must be surrounded by a screened enclosure to prevent fish entrainment and impingement. Screen mesh size shall be no greater than 0.1 inches unless another size has been approved by OHMP. The maximum water velocity at the surface of the screen enclosure may be no greater than 0.2 feet per second. Screen material must be corrosion resistant, and must be adequately supported to prevent excessive sagging which could result in unusable intake surface. The intake structure must be designed and installed to avoid excessive fouling from floating debris, and a minimum of eight square feet of effective wetted screen surface must be provided for each multiple of a 450-gallon per minute (one cubic foot per second) pumping rate. The pump intake opening must be placed equidistant from all effective wetted screen surfaces.
14. Before commencement of any activities, lessees shall consult with ADF&G to identify the locations of known bear den sites that are occupied in the season of proposed activities. Exploration and development activities started between October 15 and April 30 may not be conducted within ½-mile of known occupied brown bear dens, unless alternative mitigation measures are approved by ADF&G. A lessee who encounters an occupied bear den not previously identified by ADF&G must report it to the Division of Wildlife Conservation, ADF&G, within 24 hours (King Salmon 907-246-3340). Mobile activities shall avoid such discovered occupied dens by ½ -mile unless alternative mitigation measures are approved by the Director with concurrence from ADF&G. Non-mobile facilities will not be required to be relocated
15. To minimize impacts to important waterfowl habitats in Kvichak Bay, Egegik Bay, Ugashik Bay, Cinder River Estuary, Port Heiden, Seal Islands Lagoon, Port Moller, Herendeen Bay, and Nelson Lagoon exploration, development, and major maintenance within these areas will only be allowed between November 16 and April 6, unless an exception is approved by the Director, in consultation with OHMP. Routine maintenance and emergency repairs will be permitted on a year-round basis during the production phase. A detailed plan describing routine maintenance activities to be conducted between April 7 and November 15 in these areas must be included in the plan of operations.

16. Cape Seniavin Walrus Haulout: Above ground lease-related facilities and structures will be prohibited within one mile inland from the coast, in an area extending one mile northeast and one mile southwest of the Cape Seniavin walrus haulout. See also Lessee Advisories 14, 15 and 16.

### **3. Subsistence, Commercial and Sport Harvest Activities**

17. Lease-related use will be restricted when the Director determines it is necessary to prevent conflicts with local subsistence, commercial and sport harvest activities. In enforcing this term DO&G, during review of plans of operation, will consult with other agencies, the affected local borough(s) and the public to identify and avoid potential conflicts. In order to avoid conflicts with subsistence, commercial and sport harvest activities, restrictions may include alternative site selection, requiring directional drilling, seasonal drilling restrictions, and other technologies deemed appropriate by the Director.
18. Traditional and customary access to subsistence areas shall be maintained unless reasonable alternative access is provided to subsistence users. "Reasonable access" is access using means generally available to subsistence users.

### **4. Fuel and Hazardous Substances**

19. Secondary containment shall be provided for the storage of fuel or hazardous substances.
20. Containers with an aggregate storage capacity of greater than 55 gallons which contain fuel or hazardous substances shall not be stored within 100 feet of a waterbody, or within 1,500 feet of a current surface drinking water source.
21. During equipment storage or maintenance, the site shall be protected from leaking or dripping fuel and hazardous substances by the placement of drip pans or other surface liners designed to catch and hold fluids under the equipment, or by creating an area for storage or maintenance using an impermeable liner or other suitable containment mechanism.
22. During fuel or hazardous substance transfer, secondary containment or a surface liner must be placed under all container or vehicle fuel tank inlet and outlet points, hose connections, and hose ends. Appropriate spill response equipment, sufficient to respond to a spill of up to five gallons, must be on hand during any transfer or handling of fuel or hazardous substances. Trained personnel shall attend transfer operations at all times.
23. Vehicle refueling shall not occur within the annual floodplain, except as addressed and approved in the plan of operations. This measure does not apply to water-borne vessels.

24. All independent fuel and hazardous substance containers shall be marked with the contents and the lessee's or contractors name using paint or a permanent label.
25. A fresh water aquifer monitoring well, and quarterly water quality monitoring, is required down gradient of a permanent storage facility, unless alternative acceptable technology is approved by ADEC.
26. Waste from operations must be reduced, reused, or recycled to the maximum extent practicable. Garbage and domestic combustibles must be incinerated whenever possible or disposed of at an approved site in accordance with 18 AAC 60.
27. New solid waste disposal sites, other than for drilling waste, will not be approved or located on state property during the exploration phase of lease activities. Disposal sites may be provided for drilling waste if the facility complies with 18 AAC 60.
28. Drilling mud and cuttings cannot be discharged into lakes, streams, rivers, or important wetlands. On pad temporary cuttings storage will be allowed. Impermeable lining and diking, or equivalent measures, will be required for reserve pits. Injection of non-hazardous oilfield wastes is regulated by AOGCC through its Underground Injection Control (UIC) Program for oil and gas wells. See also Mitigation Measure 37f.

## 5. Access

29. Exploration activities must utilize existing road systems, where practicable, or vehicles that do not cause significant damage to the ground surface or vegetation. Construction of temporary roads may be allowed. Construction of permanent roads may be allowed, upon approval by the Director in consultation with the local borough government.
30. Public access to, or use of, the lease area may not be restricted except within the immediate vicinity of drill sites, buildings, and other related facilities. Areas of restricted access must be identified in the plan of operations. Lease facilities and operations shall not be located so as to block access to or along navigable or public waters as defined in AS 38.05.965.

## 6. Prehistoric, Historic, and Archeological Sites

31. Prior to the construction or placement of any structure, road, or facility resulting from exploration, development, or production activities, the lessee must conduct an inventory of prehistoric, historic, and archeological sites within the area affected by an activity. The inventory must include consideration of literature provided by nearby communities, Native organizations, and local residents; documentation of oral history regarding prehistoric and historic uses of such sites; evidence of consultation with the Alaska Heritage Resources Survey and the National Register of Historic Places; and site surveys. The inventory must also include a detailed analysis of the effects that might result from the activity.
32. The inventory of prehistoric, historic, and archeological sites must be submitted to the Director, and to SHPO who will coordinate with the local borough government for review and comment. If a prehistoric, historic, or archeological site or area could be adversely affected by a lease activity, the Director, after consultation with SHPO and the local borough, will direct the lessee as to the course of action to take to avoid or minimize adverse effects.

33. If a site, structure, or object of prehistoric, historic, or archaeological significance is discovered during lease operations, the lessee must report the discovery to the Director as soon as possible. The lessee must make reasonable efforts to preserve and protect the discovered site, structure, or object from damage until the Director, after consultation with the SHPO and the local borough, has directed the lessee as to the course of action to take for its preservation.

## 7. Local Hire, Communication, and Training

34. To the extent they are available and qualified, lessees are encouraged to employ local and Alaska residents and contractors for work performed on the lease area. Lessees shall submit, as part of the plan of operations, a proposal detailing the means by which the lessee will comply with the measure. The proposal must include a description of the operator's plans for partnering with local communities to recruit, hire and train local and Alaska residents and contractors. The lessee is encouraged, in formulating this proposal, to coordinate with employment and training services offered by the State of Alaska, the Southwest Vocational Education Training Center and local communities to train and recruit employees from local communities.
35. A plan of operations application must describe the lessee's past and prospective efforts to communicate with local communities and interested local community groups.
36. A plan of operations application must include a training program for all personnel including contractors and subcontractors. The program must be designed to inform each person working on the project of environmental, social, and cultural concerns that relate to that person's job. The program must use methods to ensure that personnel understand and use techniques necessary to preserve geological, archeological, and biological resources. In addition, the program must be designed to help personnel increase their sensitivity and understanding of community values, customs, and lifestyles in areas where they will be operating.

## 8. Definitions

37. In this document:
- a. "Facilities" means any structure, equipment, or improvement to the surface, whether temporary or permanent, including, but not limited to, roads, pads, pits, pipelines, power lines, generators, utilities, airstrips, wells, compressors, drill rigs, camps and buildings;
  - b. "Feasible and prudent" means consistent with sound engineering practice and not causing environmental, social, or economic costs that outweigh the public benefit to be derived from compliance with the standard;
  - c. "Important wetlands" means those wetlands that are of high value to fish, waterfowl, and shorebirds because of their unique characteristics or scarcity in the region or that have been determined to function at a high level using the hydrogeomorphic approach;
  - d. "Minimize" means to reduce adverse impacts to the smallest amount, extent, duration, size, or degree reasonable in light of the environmental, social, or economic costs of further reduction;
  - e. "Plan of operations" means a lease Plan of operations under 11 AAC 83.158 and a unit Plan of operations under 11 AAC 83.346;
  - f. "Secondary containment" means an impermeable diked area or portable impermeable containment structure capable of containing 110 percent of the volume of the largest independent container plus 12 inches of freeboard. Double walled tanks do not qualify as Secondary Containment unless an exception is granted for a particular tank.
  - g. "Temporary" means no more than 12 months.

## **B. Lessee Advisories**

Lessee Advisories are intended to alert lessees to possible additional restrictions that may be imposed at the permitting stage of a proposed project or activity in certain leasehold areas, especially where entities other than DO&G have permitting authority.

### **DNR/OHMP**

1. Under the provisions of Title 41 of the Alaska Statutes, the measures listed below may be imposed by OHMP below the ordinary high water mark to protect designated anadromous fish-bearing streams and to ensure the free and efficient passage of fish in all fish-bearing water bodies. Specific information on the location of anadromous water bodies in and near the area may be obtained from OHMP.
  - a. Alteration of riverbanks may be prohibited.
  - b. The operation of equipment, excluding boats, in open water areas of rivers and streams may be prohibited.
  - c. Bridges or non-bottom founded structures may be required for crossing fish spawning and important rearing habitats.
  - d. Culverts or other stream crossing structures must be designed, installed, and maintained to provide free and efficient passage of fish.
2. Removal of water from fish-bearing water bodies requires prior written approval by DMLW and OHMP.
3. For projects in proximity to areas frequented by bears, lessees are encouraged to prepare and implement a human-bear interaction plan designed to minimize conflicts between bears and humans. The plan should include measures to:
  - a. minimize attraction of bears to drill sites;
  - b. organize layout of buildings and work areas to minimize interactions between humans and bears;
  - c. warn personnel of bears near or on facilities and the proper actions to take;
  - d. if authorized, deter bears from the drill site;
  - e. provide contingencies in the event bears do not leave the site;
  - f. discuss proper storage and disposal of materials that may be toxic to bears; and
  - g. provide a systematic record of bears on site and in the immediate area.
4. The Director, in consultation with OHMP, may impose seasonal restrictions on activities located in, or requiring travel through or overflight of, important moose and caribou calving and wintering areas during the plan of operations approval stage.
5. The Director, in consultation with OHMP, may impose seasonal restrictions on activities located in and adjacent to important waterfowl and shorebird habitat during the plan of operations approval stage.

**DNR/OPMP**

6. Pursuant to Alaska Statutes, applicants for lease are required to comply with all requirements of the Alaska Coastal Management Program, including the District Coastal Management Plans.

**ADEC**

7. Pursuant to state regulations administered by ADEC, lessees are required to have an approved oil discharge prevention and contingency plan (C-Plan) prior to commencing operations. The plan must include a response action plan to describe how a spill response would occur, a prevention plan to describe the spill prevention measures taken at the facility, and supplemental information to provide background and verification information.
8. Pursuant to state regulations administered by ADEC and the Clean Air Act administered by EPA, lessees are required to obtain air quality permits prior to construction and operation. The permits will include air quality monitoring, modeling, and emission control obligations.
9. Unless authorized by an ADEC permit, surface discharge of reserve pit fluids and produced waters is prohibited.
10. Unless authorized by NPDES or state permits, disposal of wastewater into freshwater bodies is prohibited.

**ADF&G**

11. Management of legislatively designated state game refuges and critical habitat areas is the co-responsibility of ADF&G, per AS 16.20.050-060 and AS 16.20.500-530, and ADNR, per AS 38.05.027. For activities occurring within a refuge or critical habitat area, the lessee will be required to obtain permits from both ADNR and ADF&G. The following requirements are established by, and exceptions may only be granted by, ADF&G.

Five Critical Habitat Areas (CHA) are located within or partially within the Alaska Peninsula lease area: Port Moller CHA, Port Heiden CHA, Cinder River CHA, Pilot Point CHA, and the Egegik CHA. One State Game Refuge (SGR), Izembek SGR, abuts the boundary of the lease sale area.

Operations within these CHAs must comply with the terms and conditions of the sale, the regulations contained within 5 AAC 95.400-990, and the measures listed below:

- a. Surface entry for drilling and above ground lease-related facilities and structures will be prohibited on tide and submerged lands. Surface entry for seismic surveys and similar temporary activities may be allowed in all of these areas, consistent with the Special Area regulations. Directional Drilling from adjacent sites may be allowed.
- b. Exploration, development, and major maintenance activities within wetlands and upland areas will only be allowed between November 16 and April 6, unless an exception is approved by ADF&G and DO&G. Routine maintenance and emergency repairs will be permitted on a year-round basis during the production phase. A detailed plan describing routine maintenance activities to be conducted between April 7 and November 15 must be submitted to ADF&G and DO&G for review and approval.

- c. Gravel pads and wellheads are the only permanent above ground structures that will be allowed on wetlands and uplands. Gravel roads will not be allowed during exploration.
- d. Construction, operation, and maintenance activities shall minimize the visual, environmental, and physical impacts to the CHA.
- e. Surface discharge of produced waters will be prohibited.
- f. Disposal of drilling muds and cuttings will be allowed only at upland sites approved by the director, DO&G, and ADF&G, after consultation with DMLW and DEC.
- g. Facilities within a critical habitat area must be designed to minimize the risk of spills or fires resulting from vandalism or accidents.

Upon abandonment of facilities, such facilities must be removed and the site rehabilitated to the satisfaction of ADF&G and DNR, unless the departments determine that such removal and rehabilitation is not in the state's best interests.

#### **ADLWD**

- 12. The Lessee shall facilitate Alaska resident hire monitoring by reporting project wages on a quarterly basis for each individual employed by the Lessee in the lease area, through electronic unemployment insurance reporting, and by requiring the same of the lessee's contractors and subcontractors.

#### **USCOE**

- 13. Any activity involving wetland-related dredge or fill activities requires a permit from the USCOE.

#### **FAA**

- 14. Pilots are requested to follow these guidelines between April 1st and October 31st when traveling near Cape Seniavin:
  - a. Fixed wing aircraft remain at altitudes greater than 2,000 feet above ground level (AGL) within ½ mile of Cape Seniavin (56° 24' N, 160° 09' W). Helicopters remain at altitudes greater than 5,000 feet AGL within one (1) nautical mile of the Cape. If cloud conditions necessitate flying lower than these recommended altitudes, please pass inland to avoid flushing walrus from the beach.
  - b. Walrus are particularly sensitive to changes in engine noise and are more likely to stampede off beaches when planes turn or fly low overhead - please avoid circling or turning while in the area of the haulout.
  - c. Aircraft visiting Cape Seniavin should land well away from the haulout and only taxi as close to the haulout as is necessary for landing and take off. Approaching the haulout by foot will greatly reduce the amount of disturbance to the animals resting at the haulout.



**USCG**

15. Lessees are advised of the U.S. Coast Guard Advisory: United States Department of Interior, Fish and Wildlife Service is asking for mariners’ cooperation in minimizing disturbances to walrus resting at Cape Seniavin. Mariners are asked to stay 1,000 yards from shore when transiting past Cape Seniavin 56°24’00”N 160°09’00”W. For more information contact U.S. Fish and Wildlife Service, Marine Mammals Management at 1-800-362-5148.

**USFWS**

16. Walrus Haul Outs: Disturbance of walrus is a violation of the Marine Mammals Protection Act (MMPA) of 1972, as amended (16 USC 1361-1407). The USFWS shares authority over marine mammals with the National Marine Fisheries Service (NMFS), per the MMPA. Oil and gas activities, including exploration and development, in areas where walrus or other marine mammals occur, may result in their disturbance. The unintentional, or incidental, disturbance of marine mammals may be allowed under the MMPA, provided the USFWS or NMFS determine that the proposed activity will have a negligible impact on marine mammals and will not adversely impact subsistence hunting activities. The USFWS reviews requests for the incidental take of marine mammals on a case by case basis, and if authorized, may require certain mitigative measures to minimize industry disturbance and impact to marine mammals. In areas such as the Cape Seniavin walrus haulout, mitigative measures are likely to include protective buffer areas landward and seaward of the haulout, seasonal closures and monitoring programs. The USFWS concurs with the Federal Aviation Administration and U.S. Coast Guard advisories for pilots and mariners operating near Cape Seniavin, and refers pilots and mariners to those advisories for recommendations to avoid walrus disturbance.
17. Endangered and Threatened Species: The Lessee is advised that the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 et seq.) protects the following endangered or threatened species and candidate species for listing that may occur in the lease sale area:

**Table 7.1: Endangered and Threatened Species**

| Common Name                                     | ESA Status |
|-------------------------------------------------|------------|
| a. Sei whale                                    | Endangered |
| b. Humpback whale                               | Endangered |
| c. Blue whale                                   | Endangered |
| d. Steller sea lion (western stock)             | Endangered |
| e. Steller’s eider (Alaska breeding population) | Threatened |

18. Bald eagles are protected under the Bald Eagle Protection Act (16 U.S.C. 668-668c) and the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712). Lessees are responsible to ensure their actions do not take bald eagles. The Eagle Protection Act defines “take” to include disturbing birds. A survey for bald eagle nests is necessary prior to beginning exploration or development activities during the nesting period (March 1 through August 31). Any nests located within ½-mile of the project site must be mapped, and destruction of nest trees or locations is prohibited. If any nests are located within ½-mile of a project site, Lessees shall meet with the USFWS prior to construction to review any site-specific concerns regarding the subject nest. USFWS generally recommends no clearing of vegetation within 330 feet of any nest. No activity should occur within 660 feet of any nests between March 1 and June 1. Between June 1 and August 31, no activity should occur within

660 feet of active eagle nests until after juvenile birds have fledged, unless specifically authorized by the USFWS. While the USFWS can recommend ways to avoid the take of eagles, final accountability lies with the party responsible for the action.

19. Lessees are advised of the need to comply with the Migratory Bird Treaty Act (MBTA)(16 U.S.C. 703) which is administered by the U.S. Fish and Wildlife Service. Under the Migratory Bird Treaty Act, it is illegal to "take" migratory birds, their eggs, feathers or nests. "Take" is defined (50 CFR 10.12) to include "pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting." The MBTA does not distinguish between "intentional" and "unintentional" take. Migratory birds include songbirds, waterfowl, shorebirds, and raptors. In Alaska, all native birds except grouse and ptarmigan (which are protected by the State of Alaska) are protected under the MBTA.

In order to ensure compliance with the MBTA, it is recommended that Lessees survey the project area prior to construction, vegetation clearing, excavation, discharging fill or other activities which create disturbance, and confirm there are no active migratory bird nests. It is recommended Lessees contact the U.S. Fish and Wildlife Service for assistance and guidance on survey needs, and other compliance issues under the Migratory Bird Treaty Act. While the Service can recommend methods (such as surveys and timing windows) to avoid unintentional take, responsibility for compliance with the MBTA rests with Lessees. In the Lease area, the Service normally recommends that to prevent impacts to nesting migratory birds, no vegetation clearing, fill placement, excavation, or other construction activities be conducted between May 1 and July 15. Further, ADNRC refers lessees to Chapter 3, Section 2, Estuaries, for information relative to the timing windows and locations of migratory birds' migration staging.

#### **NMFS**

20. NMFS shares authority for marine mammals with the USFWS, per the Marine Mammals Protection Act of 1972 (16 USC 1361-1407).

February 4, 2010

**Supplement to the Alaska Peninsula Areawide 2005 Oil and Gas Lease Sale  
Final Finding of the Director**

On November 24, 2009, the Alaska Department of Natural Resources (ADNR), Division of Oil and Gas (DO&G) issued a Call for New Information regarding its proposal to offer all available state acreage in the Alaska Peninsula Areawide 2010 Oil and Gas Lease Sale, tentatively scheduled for May 2010. The 2005 best interest finding was previously supplemented in 2007. In response to the call, DO&G received comments from: the Alaska Department of Fish and Game (ADF&G), Division of Habitat; Brian Okonek of Talkeetna; and ADNR, Division of Mining, Land and Water.

**Alaska Department of Fish and Game (ADF&G), Division of Habitat:** ADF&G submitted updates to the listing of anadromous waters, updated harvest estimates and other information for some species of fish and wildlife, and provided some minor corrections to the 2005 final finding.

- **Although some of this information is new, it is not substantial information that justifies a supplement to the most recent best interest finding. This information will be reviewed when DO&G begins the process for a new best interest finding for the Alaska Peninsula in 2011.**

ADF&G also noted that on October 8, 2009, final critical habitat designations were made by USFWS for the southwest Alaska Distinct Population Segment of the northern sea otter, which is listed as threatened under the federal Endangered Species Act. Critical habitat designation Subunit 4c (Port Moller and Herendeen Bay area), and a small section of Subunit 4b (Izembek Lagoon and Moffet Lagoon) fall within the Alaska Peninsula lease sale area.

- **This information is new and substantial, and therefore justifies a supplement to the most recent best interest finding as follows (added text indicated by underlined, bold, italics):**

**Alaska Peninsula Areawide 2010 Oil and Gas Lease Sale, modification to lessee advisory (as previously modified by the November 21, 2007 supplement):**

17. Endangered and Threatened Species: The Lessee is advised that the Endangered Species Act of 1973 (ESA) as amended (16 U.S.C. 1531 et seq.) protects the following endangered or threatened species and candidate species for listing that may occur in the lease sale area. The Lessee is further advised of its responsibility to consult with USFWS under section 7 of the ESA if any of its actions have a federal nexus and may affect listed species. If the lessee's actions are likely to result in take of listed species, but the action does not have a federal nexus, then the lessee must obtain a section 10(a)(1)(B) permit, usually in the form of a "Habitat Conservation Plan." **The Lessee is also advised that critical habitat has been designated for northern sea otter within the lease sale area, including Port Moller, Herendeen Bay, and Moffet Lagoon.**

**Supplement to the Alaska Peninsula Areawide 2005 Oil and Gas Lease Sale  
Final Finding of the Director**

Table 7.1: Endangered and Threatened Species

| Common Name                                                          | ESA Status |
|----------------------------------------------------------------------|------------|
| a. Sei whale                                                         | Endangered |
| b. Humpback whale                                                    | Endangered |
| c. Blue whale                                                        | Endangered |
| d. Stellar sea lion (western stock)                                  | Endangered |
| e. Steller's eider (Alaska breeding population)                      | Threatened |
| f. Northern sea otter (southwest Alaska Distinct Population Segment) | Threatened |

**Brian Okonek of Talkeetna:** Mr. Okonek submitted information concerning walrus life history and potential impacts from noise and other disturbances, and requested a mitigation measure prohibiting boats, overflights, and development to protect Cape Seniavin. Pacific walrus are discussed in Chapter Three, Section B5 of the most recent best interest finding, which notes the importance of Cape Seniavin to Pacific walrus. Mitigation Measure 16 prohibits above ground lease-related facilities and structures within one mile inland from the coast, in an area extending one mile northeast and one mile southwest of the Cape Seniavin walrus haulout. Lessee Advisories 14 and 15, addressing overflights and boating near Cape Seniavin, protect walrus as well; and Lessee Advisory 16 addresses protections under the Marine Mammals Protection Act.

- **This information is not new, and additional protections for walrus are not necessary at this time.**

**ADNR, Division of Mining, Land and Water:** ADNR, DMLW submitted comments stating that there is state land in the Alaska Peninsula lease sale area that is involved in a land exchange with USFWS and should not be offered for lease.

- **Tracts 1027, 1028, 1031, 1032, 1036, 1037, 1042 and 1043, located in T. 53 & 54 S., R. 85 W., Seward Meridian will be deferred from this sale.**

## **APPENDIX G: MAPS**



**Public Review Draft**

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**BRISTOL BAY CRTICAL HABITAT AREAS  
MANAGEMENT PLAN**

**Appendix G  
MAPS**

**By Frances Inoue  
and  
Jason Graham**

**Division of Sport Fish**

April 13, 2010

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Alaska Department of Fish and Game

Divisions of Habitat and Wildlife Conservation



## MAPS BRISTOL BAY CRITICAL HABITAT AREAS

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**Land Status:** Base land status for this project comes from the DNR<sup>1</sup>. This coverage has been edited to reflect the land status information on DNR's status plats<sup>2</sup>, BLM's MTP's<sup>2</sup>, the states recorders office<sup>3</sup>, and documented case reports<sup>4</sup>. Because Alaska is a non-recording state, there is no guarantee that additional undocumented land transfers have occurred that could potentially alter the data we have compiled. Land ownership is not static, consequently, even in the time it took to compile this information, some parcels may have changed ownership.

1. [http://www.asgdc.state.ak.us/metadata/vector/landstat/statewide/akstat\\_c63.html](http://www.asgdc.state.ak.us/metadata/vector/landstat/statewide/akstat_c63.html)
2. <http://www.dnr.state.ak.us/cgi-bin/lris/landrecords>
3. <http://www.dnr.state.ak.us/ssd/recoff/search.cfm>
4. <http://www.dnr.state.ak.us/las/lasmenu.cfm>
5. [http://sdms.ak.blm.gov/acres/acres\\_menu](http://sdms.ak.blm.gov/acres/acres_menu)

**Base Features:**

**Hydrography:** National Hydrography Dataset, U.S. Geological Survey, 2008.

**CHA Boundaries:** SA\_LDAs, GIS layer, Alaska Department of Fish and Game, Division of Sport Fish, 2009.

**Anadromous Fishes:** Atlas to the Catalog of Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes: Southwest Region. Geographic Information Systems Data Draft 2009. Division of Sport Fish, Alaska Department of Fish and Game, Anchorage.

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Steve Machida ADFG – (No Contact)

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**Eelgrass:** Ward, David. USGS –aerial photo –indistinct image- no defined eelgrass area

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Bodkin J. 2009. Personal communication. Biologist, Bird Science Center, USGS, Anchorage

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Savage, S. 2009. Personal communication. Wildlife Biologist, U.S. Fish and Wildlife Service, King Salmon. (Plover nest sites and species lists)

Gill, R. USGS – (No Contact)

T. Lee Tibbitts USGS – (No contact)

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Savage, S. 2009. Personal communication. Wildlife Biologist, U.S. Fish and Wildlife Service, King Salmon.

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**Waterfowl (includes Emperor Geese and Steller's Eider):** Research Planning Institute, Inc. 2004. ESI Atlas. Bristol Bay, Alaska. Geographical Information Systems Data. Prepared for the National Oceanic and Atmospheric Administration, Hazardous Materials Response and Assessment Division, Seattle, Washington. (Rerelease in 2009 did not change digital data.)

Dau, C. 2009. Personal communication and hardcopy map. Wildlife Biologist, Migratory Birds, U.S. Fish and Wildlife Service, Anchorage. (Including Steller's Eider and Emperor Geese)

Platte, R. 2009. Personal communication and Geographical Information Systems Data. Wildlife Biologist, Migratory Birds, U.S. Fish and Wildlife Service, Anchorage. (Detailed survey data on black scoter by transect)

Most Environmentally Sensitive Area Atlas 2000. Habitat and Restoration Division, Alaska Department of Fish and Game, Anchorage.

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**By Community:**

**Egegik:**

Morris, J., field research 1982-1983. Division of Subsistence, ADF&G, 1984. Bristol Bay Region Subsistence Profile for description of methodology and further information.

Data were collected through interviews with ten Egegik residents. Draft maps were reviewed and corrected at a public meeting prior to final drafting. Data represent contemporary resource use areas, defined as areas used over the 1963 to 1983 time period.

**Nelson Lagoon:**

Stanek, R., field research 1987. Subsistence Resource Specialist. Division of Subsistence, ADF&G, 1984. Bristol Bay Region Subsistence Profile for description of methodology and further information.

Data were collected through interviews with thirteen Nelson Lagoon households out of 18 households. Draft maps were reviewed and corrected at a public meeting prior to final drafting. Data represent contemporary resource use areas, defined as areas used over the 1963 to 1983 time period.

**Pilot Point:**

Morris, J., field research 1982-1983. Division of Subsistence, ADF&G, 1984. Bristol Bay Region Subsistence Profile for description of methodology and further information.

Data were collected through interviews with six Pilot Point residents. Draft maps were reviewed and corrected at a public meeting prior to final drafting. Data represent contemporary resource use areas, defined as areas used over the 1963 to 1983 time period.

**Port Heiden:**

Morris, J., field research 1982-1983. Division of Subsistence, ADF&G, 1984. Bristol Bay Region Subsistence Profile for description of methodology and further information.

Data were collected at a public meeting held in Port Heiden. Draft maps were reviewed and corrected at a public meeting prior to final drafting. Data represent contemporary resource use areas, defined as areas used over the 1963 to 1983 time period.

**Ugashik:**

Brigs, R., field research 1982-1983. Bristol Bay Region Subsistence Profile for description of methodology and further information.

Data were collected with the aid of two local experts in Ugashik. Data represent contemporary resource use areas, defined as areas used over the 1963 to 1983 time period.