

3 4982 00020974 1



US FISH & WILDLIFE SERVICE--ALASKA



ALASKA PENINSULA NATIONAL WILDLIFE REFUGE
King Salmon, Alaska

ANNUAL NARRATIVE REPORT

CALENDER YEAR 1981

SPEC
COLL
NARR
APNWR
1981

ALASKA PENINSULA NATIONAL WILDLIFE REFUGE

King Salmon, Alaska

ANNUAL NARRATIVE REPORT

Calender Year 1981



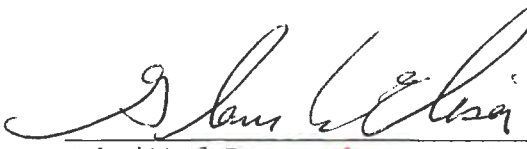
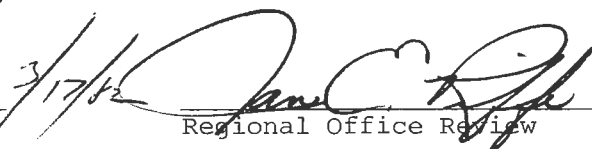
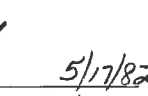
Library
U.S. Fish & Wildlife Service
1011 E. Tudor Road
Anchorage, Alaska 99503

U.S. Department of the Interior
Fish and Wildlife Service
National Wildlife Refuge System

Personnel

1. Glenn Ellison	Refuge Manager	GS-12/1	EOD 10/08/81
2. Kent Hall	Refuge Manager (acting)	GS-11	EOD 06/??/81 transferred 09/28/81

Review and Approvals

		
Submitted By	Date	Regional Office Review Date
<i>GC 4/15/82</i>	<i>3/17/82</i>	<i>5/17/82</i>

Central Office Review Date

US FISH & WILDLIFE SERVICE--ALASKA



3 4982 00020974 1

TABLE OF CONTENTS

	<u>Page</u>
A. <u>HIGHLIGHTS</u>	1
B. <u>CLIMACTIC CONDITIONS</u>	1
C. <u>LAND ACQUISITION</u>	
1. Fee Title	NTR*
2. Easements	NTR*
3. Other	2
D. <u>PLANNING</u>	
1. Master Plan	2
2. Management Plan	3
3. Public Participation	3
4. Compliance with Environmental Mandates	3
5. Research and Investigations	NTR*
E. <u>ADMINISTRATION</u>	
1. Personnel	3
2. Youth Programs	3
3. Other Manpower Programs	NTR*
4. Volunteer Programs	NTR*
5. Funding	3
6. Safety	3
7. Technical Assistance	NTR*
8. Other Items	8
F. <u>HABITAT MANAGEMENT</u>	
1. General	8
2. Wetlands	9
3. Forests	9
4. Croplands	NTR*
5. Grasslands	NTR*
6. Other Habitats	9
7. Grazing	10
8. Haying	NTR*
9. Fire Management	10
10. Pest Control	NTR*
11. Water Rights	10
12. Wilderness and Special Areas	10
13. WPA Easement Monitoring	NTR*

* NTR = Nothing to Report

G. WILDLIFE

1. Wildlife Diversity	13
2. Endangered and/or Threatened Species	13
3. Waterfowl	13
4. Marsh and Water Birds	15
5. Shorebirds, Gulls, Terns and Allied Species	15
6. Raptors	15
7. Other Migratory Birds	16
8. Game Mammals	16
9. Marine Mammals	18
10. Other Resident Wildlife	18
11. Fisheries Resources	18
12. Wildlife Propagation and Stocking	NTR*
13. Surplus Animal Disposal	NTR*
14. Scientific Collections	NTR*
15. Animal Control	NTR*
16. Marking and Banding	NTR*
17. Disease Prevention and Control	NTR*

H. PUBLIC USE

1. General	NTR*
2. Outdoor Classrooms - Students	NTR*
3. Outdoor Classrooms - Teachers	NTR*
4. Interpretive Foot Trails	NTR*
5. Interpretive Tour Routes	NTR*
6. Interpretive Exhibits/Demonstrations	NTR*
7. Other Interpretive Programs	NTR*
8. Hunting	20
9. Fishing	23
10. Trapping	23
11. Wildlife Observation	23
12. Other Wildlife Oriented Recreation	NTR*
13. Camping	NTR*
14. Picnicking	NTR*
15. Off-Road Vehicling	23
16. Other Non-Wildlife Oriented Recreation	NTR
17. Law Enforcement	26
18. Cooperating Associations	NTR*
19. Concessions	NTR*

I. EQUIPMENT AND FACILITIES

1. New Construction	NTR*
2. Rehabilitation	26
3. Major Maintenance	NTR*
4. Equipment Utilization and Replacement	30
5. Communications Systems	NTR*
6. Energy Conservation	NTR*
7. Other	NTR*

J. OTHER ITEMS

1. Cooperative Programs	30
2. Items of Interest	30
3. Credits	31

K. FEEDBACK

31

APPENDICIES

I. Bristol Bay Co-operative Management Plan Scoping Meetings Report	32
II. Mammals of the Alaska Peninsula and Adjacent Coastal Waters	38
III. Birds of the Alaska Peninsula	39
IV. Fishes of the Alaska Peninsula	41

A. HIGHLIGHTS

The refuge received its first staffing in June. (Section J.2)

The first refuge manager arrived in October. (Section J.2)

Routine management of the Pavlof Unit was transferred to Izembek NWR. (Section E.5)

Public meetings were held in various villages to identify concerns and issues that local citizens wanted addressed in the Refuge Comprehensive Conservation Plan. (Section D.1)

B. CLIMATIC CONDITIONS

Climate on the Alaska Peninsula is generally classed as a moderate, polar maritime climate. Conditions are highly variable between the Pacific and Bering sides of the Peninsula. Ocean currents and the Aleutian Mountain Range have a tremendous impact upon the weather. The Pacific side is characterized by milder temperatures and greater precipitation than the Bering side. Precipitation ranges from 160 inches annually in the vicinity of Chignik to less than twenty inches annually on the Bristol Bay Lowlands. Temperatures range from 88°F to -46°F.

Cyclonic storms frequently enter the region and dominate the weather for much of the year. Winds are often strong and turbulent particularly in mountain passes and valleys. The winds in conjunction with cool temperatures can produce extreme wind chill problems during any month.

Table 1 shows the years minimum and maximum temperatures and precipitation by month for King Salmon, the refuge headquarters location.

Table 1. Monthly high and low temperatures and precipitation, 1981.

	High	Low	Precipitation (in.)	Snowfall (in.)
January	44	-16	1.8	10.5
February	51	-12	2.3	11.3
March	50	15	1.8	15.8
April	55	13	.5	.6
May	73	25	.7	
June	74	30	2.3	
July	75	33	2.2	
August	80	28	3.9	
September	62	26	1.8	.1
October	54	5	1.6	.3
November	44	-8	1.3	4.9
December	40	-29	.6	5.9

C. LAND ACQUISITION

3. Other

Alaska Peninsula National Wildlife Refuge (APNWR) was established on December 2, 1980 by the Alaska National Interest Lands Conservation Act (ANILCA). Approximately 3,500,000 acres were withdrawn from the Public Domain.

Lands on the Alaska Peninsula selected by or conveyed to the Native Regional Corporation, Koniag, Inc. are being transferred to the Federal Government in exchange for lands on Afognak Island. The action is known as the Afognak Exchange and should occur during 1982. Koniag will relinquish all surface rights to lands on the Alaska Peninsula while retaining some subsurface rights. Lands being relinquished are mostly within APNWR and Becharof National Wildlife Refuge (BNWR) and will be managed by the appropriate refuge.

D. PLANNING

1. Master Plan

ANILCA mandated that a comprehensive management plan be completed for the Bristol Bay Region by December, 1983. Four refuges; Togiak, Becharof, APNWR, and Izembek are within the Bristol Bay Region and are thus directly involved in the plan. The plan is known as the Bristol Bay Cooperative Management Plan (BBCMP).

The plan is a cooperative effort by the State of Alaska and the Federal Government to produce a coherent land management strategy for the region. All State and Federal lands with the exception of Park Service lands are included in the plan. Park Service lands were excluded from the plan by ANILCA. The purposes of the plan as outlined in ANILCA are:

- 1) to conserve the fish and wildlife and other significant natural and cultural resources within the region.
- 2) to provide for the rational and orderly development of economic resources within the region in an environmentally sound manner.
- 3) to provide for such exchanges of land among the Federal Government, the State, and other public or private owners as will facilitate the carrying out of purposes one and two.
- 4) to identify lands within the region which are appropriate for selection by the State under the Statehood Act or ANILCA.
- 5) to identify lands within the region which may be appropriate for Congress to designate as conservation system units.

ANILCA mandated that Comprehensive Conservation Plans (Master Plans) be completed for five refuges within three years of passage of the Act. The Refuge Planning Team in the Regional Office is initiating efforts to complete these plans. Refuges in the Bristol Bay Region have been scheduled for completion by December 1983. The refuges will be involved

throughout the process; writing, reviewing, and commenting on various parts of the plan. The Refuge Comprehensive Conservation Planning (RCCP) efforts ^{are} ~~is~~ being coordinated with the BBCMP.

Public scoping meetings were conducted jointly by the State and USFWS throughout the Bristol Bay Region and Anchorage in November. The meetings were held to identify concerns and issues that local citizens wanted addressed in the BBCMP and the RCCP. The meetings partially fulfilled the NEPA requirement for public involvement in the planning process. The RCCP will require an EIS since it is considered a major Federal action.

The APNWR refuge manager attended meetings in the villages of Naknek, Egegik, Chignik Lake, and Port Heiden. Representatives from the Alaska Department of Natural Resources and the Refuge Planning Team also attended the meetings. Izembek NWR (INWR) Refuge Manager, John Sarvis represented APNWR at meetings in Cold Bay and Sand Point. Results of the meetings are appended (Appendix I).

2. Management Plan

No action was taken by years end towards writing management plans, however, management plans are a high priority for the coming year. Work will be done and interim plans drafted in the coming year. Plans will not be finalized until the RCCP has been approved.

3. Public Participation

See Section D.1., Master Planning and Appendix I.

4. Compliance with Environmental Mandates

The RCCP will require an EIS. Public meetings discussed in Section D.1., were the initial phase of public participation in the NEPA process.

E. ADMINISTRATION

1. Personnel

At year's end the refuge manager constituted the entire staff of APNWR. Kent Hall, assistant refuge manager for the Aleutian Islands Unit, Alaska Maritime NWR transferred to King Salmon as acting refuge manager in June. Kent was selected for the position of refuge manager, Selawik NWR, in Kotzebue and transferred in late September. The present refuge manager arrived on 8 October.

As 1981 drew to a close, the refuge was actively recruiting for an assistant refuge manager/pilot. The position was filled in early 1982 by Vernon Berns, assistant refuge manager, Kenai NWR. The staffing pattern for APNWR as annual work planned for FY'82 is shown in table 2.

Table 2. Staffing pattern for APNWR.

<u>FY</u>	<u>FTE</u>	<u>Other</u>
82	2	.6
81	1	0

2. Youth Programs

Three YACC employees were hired by BNWR in October. The YACC's worked jointly for APNWR and BNWR. One of the YACC's served as clerk for about six weeks before obtaining better paying employment. She was hard working and talented. Her skills are sorely missed.

The other two YACC's have a variety of carpentry and maintenance skills. They have been valuable in helping to improve the maintenance of the generally rundown compound occupied by APNWR and BNWR. The YACC's constructed an Arctic entrance on the refuge manager's trailer and one on the office building. At year's end they were renovating a seasonal cabin so it would be habitable year round.

5. Funding

Funding for FY'81 was confusing at best. The refuge was activated late in the fiscal year. The FY'81 budget was 1210 - \$10,000, 1220 - \$20,000, 1300 - \$32,000. By the end of FY'81, \$54,000 had been obligated.

Funding for FY'82 is Migratory Birds - \$65,000, Mammals and Non-migratory Birds - \$190,000. Originally \$25,000 of Fisheries money had been annual work planned, but was subsequently lost when the Fisheries program suffered major budget cuts. The O&M funding is adequate to maintain the present skeleton staff. Construction funds are desperately needed to provide housing, procure equipment, provide office space and renovate facilities which are currently on lease from National Marine Fisheries Services (NMFS).

6. Safety

Field operations in bush Alaska are inherently hazardous. A number of small aircraft accidents on and around the refuge reinforced the obvious fact that the primary means of transportation is not without peril. Unpredictable weather, operation in remote areas, and a healthy population of brown bears all add to the need for constant attention to safety.

Facilities occupied by APNWR and BNWR are being leased from NMFS. The buildings and grounds are full of safety hazards, e.g. poor wiring, scrap and debris scattered about, inadequate heat and lighting in the building, etc. The place is a safety officers dream or nightmare depending upon your point of view. A shortage of staff and time have prevented rectifying all but the most severe deficiencies.



Interior rehab of seasonal cabins and construction of arctic entrances are two valuable projects completed by YACC personnel.



Office space is located in this uninsulated, inadequately heated and lighted metal building. Rehab funds are desperately required so staff members are not required to wear parkas and bunny boots to stay warm while working in the offices.



Headquarter facilities for Alaska Peninsula NWR are located in the National Marine Fisheries Service compound along the Naknek River in downtown King Salmon.

A safety inspection was conducted by the Regional Safety Officer in November. Numerous problems were identified. The most serious problems are being corrected immediately. The rest of the deficiencies will have to get in line with all the other problems on this new refuge and wait their turn for attention and money.

The safety committee of one was active sporadically throughout the year. Work on a safety plan has yet to be initiated, though 1982 should result in progress.

8. Other Items

APNWR is divided into three management units; Ugashik, Chignik and Pavlof Units. None of the units are close to King Salmon, but the Pavlof Unit in particular is far removed and difficult to reach. The Pavlof Unit extends from Port Moller to the tip of the Alaska Peninsula and borders on INWR. INWR headquarters are closer to parts of the Pavlof Unit than to INWR. Because of the remoteness of the Pavlof Unit from APNWR headquarters, the lack of staff and equipment, the closeness of INWR headquarters, and the relatively complete staffing and equipping of INWR a recommendation was made jointly by the refuge managers, of APNWR and INWR that at least on a temporary basis the routine management of the Pavlof Unit should be transferred to INWR.

The recommendation was agreed to by the Regional Office. The refuge managers of both refuges coordinate efforts to ensure that policies, management and administration of the Pavlof Unit are consistent with management of the rest of APNWR. Long term management of the Pavlof Unit will be addressed in the RCCP.

One of the administrative problems Refuge Manager Sarvis is getting, involves squatters who have recently "renovated" old WWII buildings near Cold Bay on APNWR lands. At least three buildings are being renovated and occupied which puts their occupants in trespass. The problem will require attention soon, before the squatters become firmly entrenched. Until recently little action could be taken. Detailed maps of the refuge boundary were only recently obtained. Administrative responsibilities were still being finalized at the end of the year. Considerable progress in resolving this issue should occur in 1982.

F. HABITAT MANAGEMENT

1. General

This being the first annual narrative report for APNWR it seems appropriate that a more thorough description of habitat than normal be presented. To the extent that knowledge of the area permits, such a description will be given. Habitat management on APNWR as on most Alaska refuges is limited to protecting the existing natural state from

degradation by unnatural forces. There is little background to compare current habitat conditions with long term trends so no comparisons will be attempted.

2. Wetlands

Thousands of lakes and ponds dot the Bristol Bay lowlands on the north side of the Alaska Peninsula. Lake sizes range from the miniscule to the largest, 160 square mile Ugashik Lake. Lakes are highly variable in productivity, physiography, and other characteristics. Generally biological pollutants of lake waters are low.

Streams and rivers in the area are numerous. Streams on the south side of the Peninsula flow into the Pacific and are characterized as shorter, smaller, and with steeper gradients than waters flowing north into Bristol Bay. The largest river in the area is the Ugashik which drains an area of 1,260 square miles and is 34 miles long. Other major rivers on or near the refuge include: Dog Salmon, Chignik, Meshik, King Salmon, Cinder, Muddy, Sandy, Bear, Kametollok, and Cathedral Rivers.

Spring runoff is generally gradual. Most flooding occurs in the fall, the period of maximum precipitation. Water quality is generally good. Headwaters near glaciers and/or snowfields generally carry substantial sediment loads. Downstream lakes tend to act as settling ponds leaving lower sections of streams and rivers clear. Ground water and springs are plentiful.

The refuge borders on extensive areas of tidewater and numerous estuaries of various sizes. These areas provide rich food sources for marine mammals, pelagic birds, and many species of fish.

3. Forests

APNWR is virtually devoid of trees. Some cottonwoods are found along river drainages in the Ugashik Unit. Willow and alder form dense stands on both sides of the Peninsula, but are more common on the wetter Pacific side. The willow and alder can be exceedingly thick and are a definite impediment to travel.

6. Other Habitats

Tundra is the major habitat on APNWR and generally falls into three categories: wet tundra, moist tundra, and alpine tundra.

Wet tundra is found generally below 200 feet elevation in areas of little or no topographic relief. Empetrum, dwarf willow, and a variety of forbs characterize the vegetation of the area. Wet tundra is most common on the north side of the Alaska Peninsula with much of this habitat lying outside of the refuge.

Moist tundra, also referred to as heath, is common throughout the lowlands in moderately drained areas. Empetrum nigrum, crowberry, is

the most common vegetation. Small variations in substrate, aspect, slope, or drainage generally produce major variations in plant species.

Alpine tundra, as the name implies, occurs at higher elevations on slopes and ridges of the Aleutian Range and other well drained areas. High winds, ground movement, and frost action make the vegetation discontinuous and generally decumbent. Empetrum, lichens, and grasses are common in the Alpine tundra.

Extensive areas of ice, snow, and bare ground occur in the Aleutian Range above 2,000 feet elevation.

7. Grazing

Reindeer herding on the Alaska Peninsula is a possibility but is not being pursued at this time.

9. Fire Management

Wild fire has not been a problem in the area. There are no contingency plans for fire suppression and apparently little need.

11. Water Rights

Hydroelectric sites are actively being considered on APNWR, particularly in the Chignik Unit. Figure 1 shows a number of potential sites. Power costs in bush Alaska are exorbitant. Most power is produced by small diesel generators. The generators are costly to purchase and maintain and the fuel, expensive in its own right, is exorbitant when the cost of shipping is added. It is not uncommon for electricity to cost \$.50/kwh.

Consequently, there is an almost overwhelming desire for alternative sources of energy. Hydroelectric power holds great appeal to many residents of bush Alaska. They actively support small scale hydroelectric development and desire its rapid development. Many residents apparently fail to see the severe potential conflict between hydroelectric dams and the salmon fishery which is the mainstay of the regional economy. It will be interesting to see what proposals are pursued and how they develop.

Unfortunately, many villagers are skeptical of alternative energy sources. Wind generation appears to have the greatest potential, however, design problems in early wind generators have mostly convinced local residents that the technology is not suitable for Alaska. It will take a great deal of effort to convince people that hydropower is not the only option available.

12. Wilderness and Special Areas

APNWR has no designated wilderness areas or scenic rivers at this time, though the refuge is generally managed to maintain its present

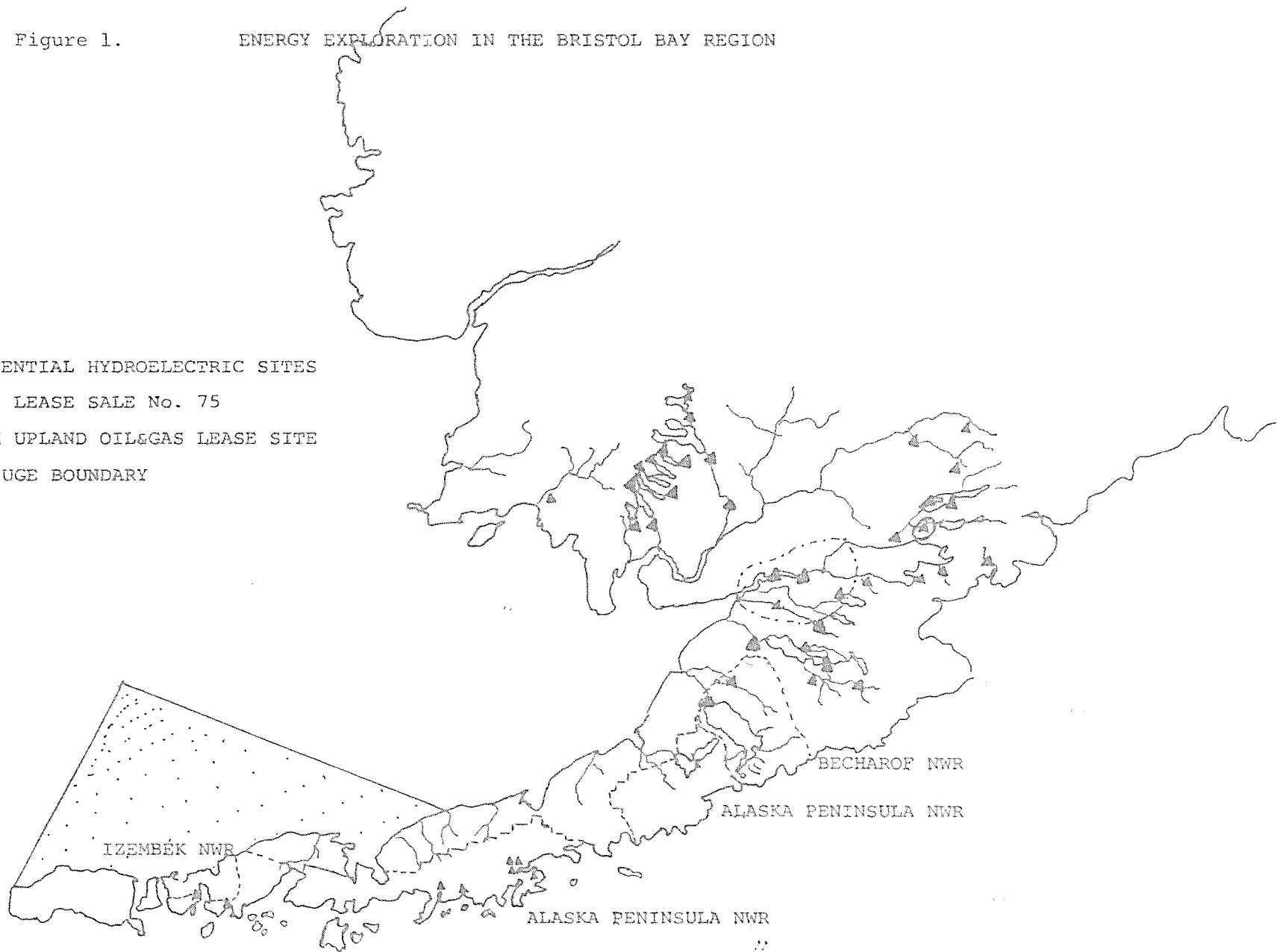


Mount Chigninagak is one of many areas on Alaska Peninsula NWR with high wilderness values.

Figure 1.

ENERGY EXPLORATION IN THE BRISTOL BAY REGION

- ▲ POTENTIAL HYDROELECTRIC SITES
- ▣ OCS LEASE SALE No. 75
- .- BLM UPLAND OIL&GAS LEASE SITE
- REFUGE BOUNDARY



wilderness character. Extensive wild and scenic areas exist on the refuge. Assessment of areas suitable for wilderness classification will be part of the RCCP effort.

G. WILDLIFE

1. Wildlife Diversity

The Alaska Peninsula is home to one of the richest and most diverse wildlife populations in the State. Management of the refuge for its wilderness character will help maintain the present diversity. Appendices II, III, and IV list species of mammals, birds, and fish respectively, occurring on APNWR.

2. Endangered and/or Threatened Species

The endangered peregrine falcon, Falco peregrinus anatum may migrate across the base of the Alaska Peninsula. It is assumed to occur rarely on the refuge. The non-endangered Peale's peregrine falcon, F. p. pealei, is a relatively common inhabitant of the area, nesting regularly on cliffs and offshore islands.

3. Waterfowl

The Alaska Peninsula has very high seasonal waterfowl use, however, the vast majority occurs off of APNWR. Approximately 100,000 Canada geese traverse the Peninsula annually. Black brandt stage at INWR at the western end of the Peninsula in the fall. Whitefronted and snow geese occur regularly on the north side of the Alaska Peninsula at Egegik and Ugashik Bays. The geese later cross APNWR on their southward migration. Emperor geese are common on the Alaska Peninsula in fall, winter, and spring. A survey conducted from October 3-8 resulted in a count of 60,233 emperor geese from Ugashik Bay to the tip of the Alaska Peninsula and along the south side of the Peninsula east to Wide Bay. Most of the geese occurred on the north side of the Peninsula off APNWR or on INWR.

INWR staff monitors whistling swan activity on the Pavlof Unit particularly in the area adjacent to INWR. INWR has been neck collaring swans for sometime. Figure 2 shows the nest locations of whistling swans on or near the Pavlof Unit in the vicinity of Cold Bay. Table 3 lists production for nests under observation. INWR's narrative should be consulted for information on the study procedures and more detailed results.

Nesting ducks on APNWR include mallard, pintail, green-winged teal, gadwall, greater scaup, harlequin, common eider, white-winged scoter, black scoter, common merganser, and red-breasted merganser. No attempt to quantify waterfowl use-days or production on APNWR has been attempted though it is safe to say that waterfowl use of APNWR is a small proportion of total waterfowl use on the Alaska Peninsula.

Figure 2.
1981 Swan Nests
(on or adjacent to Ak-Pen-Nur)

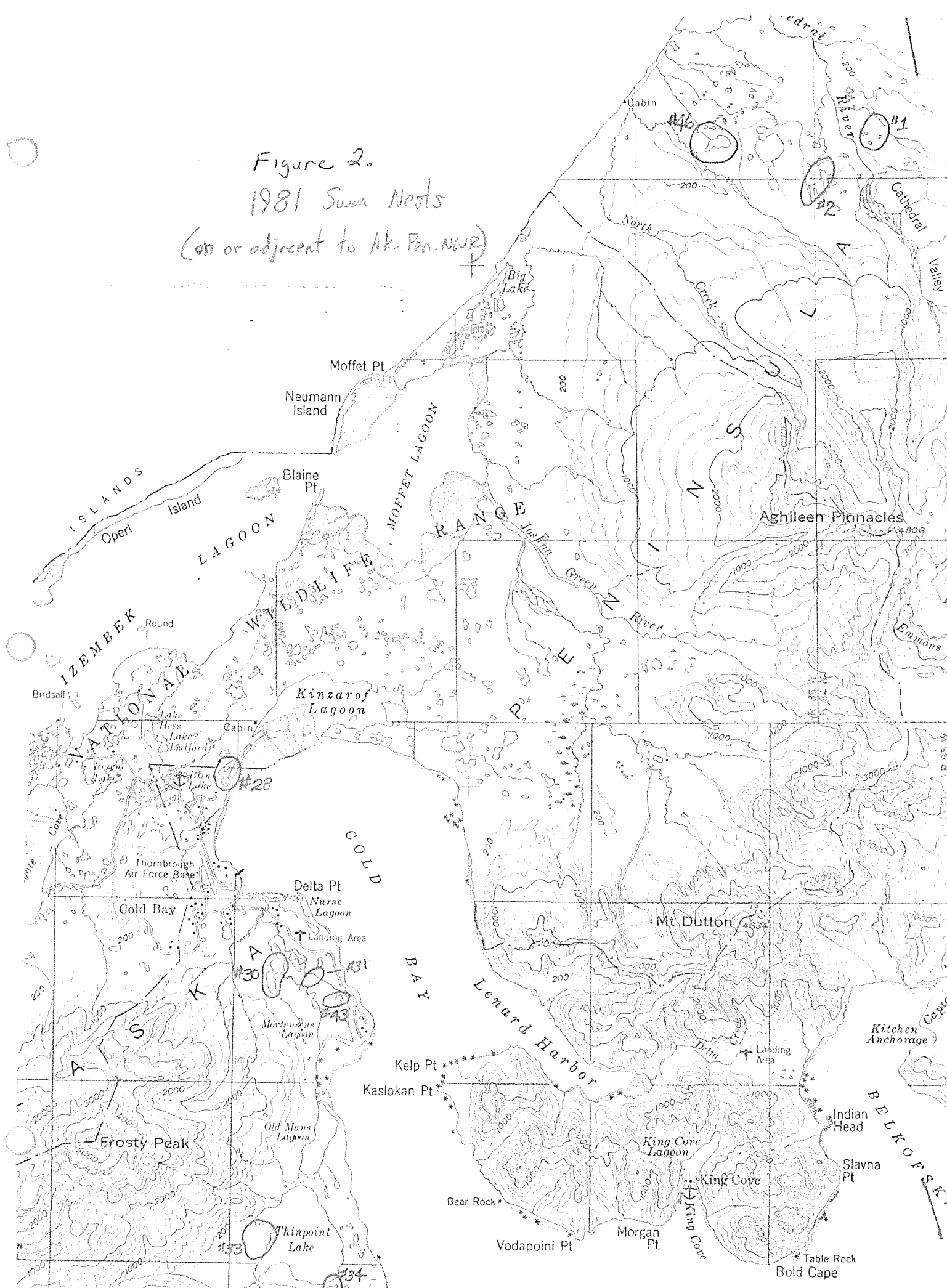


Table 3. Whistling swan nests and production on or adjacent to the Pavlof Unit of APNWR (area above Black Hills/Trader Mountain not surveyed).

INWR Nest No.	Date Located	Eggs	Fate	No. Cygnets 1st Obs.	No. Cygnets Last Obs.
1	5/15	6	Hatched 6/7	6	5 (flight stage)
2	5/15	5	Hatched 6/11	2	2 (flight stage)
46	5/30	unk.	Hatched 5/31	6	4 (flight stage)
28	5/1	4	Hatched 6/5	3	3 (flight stage)
30	5/1	6	Hatched 5/30	5	4 (flight stage)
31	5/13	5	Hatched 6/10	5	0 (All died 6/16)
33	5/13	6	Hatched 6/7	5	5 (flight stage)
34	5/13	6	Hatched 6/16	2	1 (8/5)
43	5/24	5	Hatched 6/26	4	0 (7/4)
Total		43	$\bar{x} = 5.4$	38	24

4. Marsh and Water Birds

Common and red-throated loons nest in many lakes throughout the region. Arctic loons breed only in the northeastern portion of the Bristol Bay lowlands. Yellow-billed loons occur in small numbers in winter. Red-necked grebes are common migrants and breeders while horned grebes are migrants and winter residents. Sandhill cranes breed in wetland areas in low numbers.

5. Shorebirds, Gulls, Terns, and Allied Species

As with waterfowl the Alaska Peninsula receives heavy use by shorebirds, gulls, terns, etc. Populations peak during spring and fall migrations. The EIS for APNWR reported, "Millions of shorebirds move along the Alaska Peninsula during migration in spring and fall." Areas of concentration are Izembek Lagoon, Nelson Lagoon, Port Heiden, Ugashik Bay, Egegik Bay, and other estuaries. Populations peak in August and September.

Year round resident shorebird species of the Peninsula are limited to rock sandpipers and black oystercatchers. Other nesting species include least sandpipers, black turnstones, common snipe, greater yellowlegs, dunlins, short-billed dowitchers, northern phalaropes, and wandering tattlers.

Much of the use on the Peninsula in this category occurs off of the refuge on the north side of the Peninsula. No effort has been made to quantify on refuge use.

6. Raptors

Bald eagles are common along coastlines and along some major streams, particularly during salmon runs. Eagles nest on the Pacific side with

greater frequency than along the Bering Sea coast. Bald eagles generally winter on the milder Pacific side of the Peninsula. Golden eagles are rare. The only nesting record is near Izembek Lagoon.

Peale's peregrine falcon, a dark subspecies, nests on mainland cliffs and offshore islands, generally on the Pacific side. Approximately 35 eyries have been identified on the refuge. Peregrines rely heavily on seabirds as a food source, consequently they frequently nest near seabird colonies.

Other raptors on the refuge include rough-legged hawk, marsh hawk, osprey, merlin, gyrfalcon, short-eared owl, and snowy owl. Hawk owls and great-horned owls may occur in the northeastern portion of the refuge.

7. Other Migratory Birds

Lapland longspurs are widely distributed across the tundra during the summer and are the most abundant passerines. During winter gray-crowned rosy finches and snow buntings are common along beaches and around villages. Ravens are common and widespread. Black-billed magpies are locally common in alder thickets. Passerines generally prefer shrub habitat. Passerine diversity is greatest in the eastern units of the refuge.

8. Game Mammals

a. Brown Bears: The Alaska Peninsula is home to a dense population of brown bears. Population estimates for the Peninsula are inexact, but range from 2000-3000. Approximately 55% of bear denning sites south of Becharof Lake are located on the refuge.

Bears regularly move on and off the refuge, hence it is difficult to assess the number of bears on APNWR at any given time. The abundant salmon and berries provide the mainstay of the bears' diet and dictate much of the annual bear movements. Carrion and new growth vegetation augment the diet. Bears regularly wander into villages on the Alaska Peninsula where they are sometimes killed in defense of life and property.

INWR is currently conducting a brown bear study, with part at the study area on the Pavlof Unit. Bears are being collared and in some cases radio tagged. INWR's narrative should be consulted for a detailed report of the study procedures and results.

b. Caribou: The Alaska Peninsula caribou herd is one of 13 herds in Alaska. The herd is in good condition, with the population stable or increasing slightly. The total population of the Peninsula herd is estimated at 21,000-28,000 animals. Generally two subherds are recognized. The largest, 15,000-20,000, ranges from King Salmon to Port Moller. The smaller herd, 6,000-8,000, ranges from Port Moller to Cold Bay.

Approximately 20% of the caribou's calving and wintering grounds are located within APNWR. As with other wildlife populations it will take considerable field work to assess and quantify the actual use of APNWR by the Peninsula caribou herd.

Production counts on or near the Pavlof Unit by INWR staff are shown in Table 4. (INWR's narrative should be consulted for additional information.)

Table 4. Production Counts, Caribou, Alaska Peninsula 1981.

Date	Location	Total Animals	% Sampled	% Calves	Survey Type
3 June	Black Hills	3000	10	5.2	Aerial
18 June	SW Black Hills	5000	50	11.9	Aerial
16 July	Cathedral River	4500	15	14.0	Ground

c. Moose: Moose on the Alaska Peninsula are a relatively new occurrence. It was only after the early 1900's that moose occupied the Peninsula. Moose have been seen over the entire length of the Peninsula though they are rare south of Port Moller.

Moose populations peaked in the mid-1960's at about 6500. Currently the Peninsula population is 2,000-2,500. The reason for the decline is not well documented but may relate to succession of key plant species, e.g. willow. Calf survival is low, averaging about 20-22 calves/100 cows. Brown bear predation is suspected of being the major depressant on calf survival.

There is a direct conflict between managing for optimum brown bear and moose populations. At this time ADF&G appears to be favoring the brown bear population.

As with other species it is difficult to quantify what percentage of the Alaska Peninsula moose herd occurs on the refuge. Approximately 50% of the high density moose habitat occurs on the refuge so it is assumed that an equal proportion of the moose population frequents the refuge.

d. Other Game Mammals: Wolves inhabit the entire Peninsula but are generally not abundant. Wolverines are widespread and generally abundant throughout the Peninsula. Land otters and red foxes inhabit the entire Peninsula. Red foxes are generally abundant though populations may vary radically with changes in the food supply or rabies outbreaks.

9. Marine Mammals

Harbor seals, Stellar's sea lions, and sea otters are abundant along both the Pacific and Bering Coasts. Sea lion and sea otter numbers were estimated at 50,000 and 30,000 respectively in the early 1970's. Many of these animals occur on islands and offshore rocks that are outside the refuge boundary.

10. Other Resident Wildlife

Rock ptarmigan, willow ptarmigan, spruce grouse, and snowshoe hares are widely scattered throughout the refuge. Abundance fluctuates widely between areas and between years.

11. Fishery Resources

The fishery resources of APNWR are as widely diversified as the refuge itself. In Bristol Bay the Ugashik Lake system produced 7.6% of the sockeye salmon commercially harvested in this area. The Bear River, Nelson Lagoon, and Sandy River areas are of lesser importance. On the Pacific side, Chignik realizes the largest commercial catches and produces all five species of salmon. The smaller Pacific tributaries produce chum, pink, and coho salmon.

The Ugashik Lakes system is the only area that receives intensive management by ADF&G. Pre-season predictions of run strength are based on parental escapement and environmental factors. The commercial catch is sampled for age-class, and escapement is monitored. An escapement goal of 500,000 was set in the mid 1970's, but escapement has far exceeded the goal due to fishermen strikes and lack of processing facilities. The FWS participates in the harvest strategy sessions in King Salmon, where the fishery is managed. The fisheries biologist for BNWR attends the sessions and represents the Service. Table 5 shows catch, escapement, and retail value of salmon spawning in refuge streams.

The Chignik system and other Pacific drainages are managed by ADF&G in Kodiak. The Fishery Resource Enhancement Division of ADF&G operates a pink and chum salmon hatchery in the Cold Bay area.

Table 5. Catch (C), escapement(E), and retail value data of APNWR salmon.

System	Sockeye		Pink		Chum		Coho		Chinook	
	C	E	C	E	C	E	C	E	C	E
Ugashik	1,950,000	1,327,000	--	--	34,000	--	18,000	--	4,000	--
Ex-Vessel	\$9,067,500	--	--	--	99,960	--	94,500	--	95,000	--
(Value to Fishermen)										
Retail	\$20,039,000	--	--	--	221,000	--	208,000	--	210,000	--



The Chignik Lake and River system are a major producer of salmon on Alaska Peninsula NWR.

In certain areas e.g. the Chignik River drainage, beaver populations are high enough that their activity blocks some tributary streams to spawning salmon. Interest in beaver trapping is generally low which reduces the impact of the primary control means. The impact of beaver activity on spawning salmon is a subject of considerable debate. Most fisheries biologists familiar with the area maintain that the impact is low or non-existent. Locals, particularly commercial fishermen, tend to have the opposite view.

H. PUBLIC USE

8. Hunting

Hunting is the primary public use occurring on the refuge. Alaska Peninsula is a favorite area for sport hunters seeking brown bear, moose, or caribou. Local residents rely heavily on moose and caribou for subsistence. A number of commercial guiding operations cater to hunters. In 1981, 19 Special Use Permits were issued for commercial guiding operations.

All hunting regulations on the Peninsula are established by the State of Alaska. Harvest of brown bears during the fall hunt was 184 for Game Management Unit 9. Figures were not available for the fall hunt for the kill on the Alaska Peninsula. The most recent seasons other than fall, 1981 were the fall, 1979 and spring 1980 seasons. Harvests were 30 and 36 bears respectively on the Peninsula. Brown bear hunting on the Alaska Peninsula is done every other year. There will be a spring hunt in 1982 and then no open season until fall, 1983.

The moose season is split. In September there is a bulls only hunt, mainly for sport hunters flying into the area. In December an either sex hunt is held to provide locals with an opportunity to obtain their annual meat supply. Harvest figures for 1981 are not available at this time. The harvest for 1980 was 64 moose which was down substantially from the 165 moose harvested in 1979.

The caribou season runs from August 10 - March 31. Only one caribou is allowed from August 10 - October 31. A total of four caribou are allowed per license holder for the entire season. The early fall restrictions limit the kill by non-local hunters who generally hunt during that time period. The total harvest for the 1980-81 season was estimated at 448. It is unknown what percentage of the bear, moose, and caribou harvest occurred within the refuge boundary.

Much of the hunting on the Alaska Peninsula falls under the category of subsistence. Caribou and moose provide a vital food source for many local residents. The villages in the Chignik River drainage rely heavily on moose. Villages along Bristol Bay have greater opportunities to harvest caribou, which many residents use as their primary source of red meat. Subsistence harvest by villagers is unknown at this time.



Excellent caribou hunting is a major attractant for sport hunters. These caribou were taken in the vicinity of Painter Creek in the Ugashik Unit of Alaska Peninsula NWR.



Many local village residents rely on subsistence hunting as their primary means of obtaining meat.

Wolves and wolverines are occasionally shot by sport hunters looking for other game. Trappers may occasionally shoot a few animals. Ptarmigan are hunted by local residents and sport hunters when not pursuing big game, but no information is available on the size of the kill.

9. Fishing

The Alaska Peninsula is famous for its variety of sport fish and high quality fishing. Fishing for arctic grayling, arctic char, dolly varden, steelhead, northern pike, and lake trout is generally excellent. The world record arctic grayling, 4.2 lbs, was caught at Ugashik Narrows in 1981.

Special regulations restricting grayling harvest have been promulgated in the Ugashik area by ADF&G in order to maintain the trophy fishery. Research efforts include tagging projects and life history studies by ADF&G.

All five species of Pacific salmon spawn in streams on the refuge. Salmon are highly sought both commercially and as sport fish though most fishing occurs off of the refuge. Sport fishing lodges are located at Ugashik Narrows and other areas. Approximately 4,000 angler days are spent on the refuge.

10. Trapping

Red fox, otter, beaver, mink, wolf, and wolverine are all trapped on APNWR. Overall interest in trapping is generally low though some individuals run extensive traplines. Thirty-nine individuals took a total of 20 wolves, 32 wolverines, 54 lynx and 69 river otters. Most of the wolves were shot. Other animals were taken in traps. The harvest of beaver, mink, and fox is unknown.

As specified by ANILCA, permits are not required for trapping consequently information on the number of trappers and their harvest is not readily obtained or accurate. Most of the information available on trapping is gleaned from State records for fur bearers which, by law, must be sealed prior to sale.

11. Wildlife Observation

Though rich in wildlife the Alaska Peninsula does not lend itself to people interested strictly in wildlife observation. The high cost of transportation, difficulty of travel, and lack of services generally force people interested in viewing wildlife to visit the more established National Parks, e.g. Katmai and Denali.

15. Off-Road Vehicling

Airplanes, snowmachines, and ORV's are all common means of transportation on the Alaska Peninsula and are routinely used in conjunction with hunting. Snowmachines and ORV's are used extensively



Ugashik is one of several villages on the Alaska Peninsula which harvest salmon spawned on the refuge for a livelihood and utilize wildlife for subsistence.



Three-wheeled ATV's are frequently used by subsistence hunters for moose and caribou hunting.

for subsistence hunting. No major resource damage has been observed with the exception of areas immediately adjacent to villages. These areas are generally Native owned or selected lands and not within refuge jurisdiction.

17. Law Enforcement

Due to lack of plane, pilot, additional personnel, and other demands on the existing refuge staff, a refuge law enforcement program was virtually non-existent. Assistant Manager Hall and Becharof Refuge Manager, John Taylor, checked a few guides on APNWR during the fall hunt.

Stories of flagrant game violations are common and many are undoubtedly true. Big game guiding is very lucrative, hence there is tremendous incentive and competition to provide trophies for sport hunters as quickly as possible. Brown bear hunts typically cost from \$7,000-\$10,000 per client so the temptation to break the law in the name of expediency is great.

One of the most common and difficult to prove violations is hunting the same day airborne. Many of the sport hunters, particularly the rapidly developing European clientele are ignorant of the law and are easily led astray by guides. Other hunters are well aware of the law, but their zeal for trophies exceeds their desire to obey the law.

Alaska's Fish and Wildlife Protection Service, which is primarily charged with enforcing fish and game laws, works on the Peninsula, but they are understaffed like most government organizations and consequently have difficulty enforcing the regulations. It will be important in future years for APNWR to become adequately staffed and equipped in order to enforce regulations on refuge lands.

I. EQUIPMENT AND FACILITIES

2. Rehabilitation

Three 14' x 70' house trailers, obtained from the Bureau of Indian Affairs were placed in the compound and set up under contract. The contract cost \$100,000 and covered placement, blocking, skirting, insulation, and construction of a walkway. An additional expenditure of approximately \$5,000 was required to repair plumbing, check and correct electrical problems, plus make other needed repairs. The work that was done was good, but very expensive.

The trailers arrived having been well used and suffering the effects of sitting unoccupied and unheated for two years. Broken plumbing and wiring, paneling falling off the walls, dirty and mildewed carpet, and a general state of filth accurately describes their condition. A great deal of work was needed to make them habitable. The worst sections of carpeting were replaced.



Registration and permitting of cabins will be one of the major administrative and law enforcement tasks facing the refuge in the near future.



These two trailers provide housing for the current refuge staff. Additional housing is needed before any new positions can be filled.



Storage space is amply provided by the large warehouse on the right.
The building on the left is being re-habbed for a shop building.

4. Equipment Utilization and Replacement

Late in the year a Chevy pick-up and Suburban had been obtained from YACC surplus and were awaiting maintenance followed by shipment to King Salmon. A tractor with front-end loader and backhoe also acquired from YACC was scheduled for shipment. The tractor and one vehicle were earmarked for BNWR's account with the other vehicle designated for APNWR. A Cessna 180 on floats was being worked on in preparation for transfer to APNWR in early 1982.

Equipment is shared routinely with BNWR to get maximum utilization of a scarce commodity. As with most of rural Alaska equipment acquisition, maintenance, and repair is very expensive and difficult to obtain. APNWR is working to equip a maintenance shop so refuge personnel may do as much work as possible on refuge facilities and equipment.

J. OTHER ITEMS

1. Cooperative Programs

Because of the large size of APNWR and difficulty in visiting the various sections of the refuge, cooperation with ADF&G in data gathering, sharing charter flights, law enforcement, and generally monitoring the area will greatly enhance management. At this time there are no formal agreements, however, such agreements should be developed in conjunction with the RCCP effort over the next few years.

Another possibly fertile area for cooperative work is with the regional and village native corporations. Alaska Natives have large land holdings within the boundaries of APNWR. Well drafted cooperative agreements with the appropriate groups would permit a more effective ecosystem management approach to the area than would otherwise be possible.

2. Items of Interest

Kent Hall arrived in June from the Aleutian Islands Unit of Alaska Maritime NWR to serve as acting refuge manager for APNWR. Kent departed in late September to assume his new duties as Refuge Manager, Selawik NWR in Kotzebue. During his short tenure at APNWR, Kent worked hard and effectively at getting the new refuge started. His efforts made the present refuge manager's life much easier than it otherwise would have been.

Glenn Elison arrived on October 8 to serve as Refuge Manager. Prior to transferring to Alaska he had served as Refuge Manager, Fish Springs NWR, in Utah. This is his third assignment in Alaska, having previously made two tours in the Aleutian Islands, one with the Aleutian Islands NWR and one with the U.S. Navy on Adak.

3. Credits

This narrative was written and edited by Refuge Manager, Elison. Wildlife data for the Pavlof Unit were supplied by the staff at INWR and are gratefully acknowledged.

K. FEEDBACK

As with any new refuge, problems associated with start-up are numerous and seem monumental, however, there is little point in enumerating problems which are widespread and generally well known with the exception of addressing housing. The ability to solve the day-to-day and long-range problems and effectively manage the resource is dependent upon adequate staffing. In King Salmon adequate staffing is precluded until the FWS obtains government housing, since no alternative housing is available. The priority for this year and each year until the problem is rectified must be acquisition of additional housing through construction, purchase, or lease. Additional O&M funds alone will not solve the management problems. Funds must be accompanied by ceilings and ceilings cannot be filled until housing is available. Currently ceilings are going unfilled because of lack of housing.

As with any move, particularly where a family is involved, this move had its traumatic moments. This seems the appropriate place to acknowledge the help of a number of people who smoothed the way. Several of the Regional Office refuges staff, particularly Jerry Leinecke, were extremely helpful. Personnel and CGS worked quickly, effectively, and responsively to accomodate my needs for the move. John Taylor and Chris Dlugokenski of BNWR and my predecessor, Kent Hall were invaluable in getting me introduced to King Salmon, familiar with the area, and over that first hump of "Where the Hell do I start."

In attempting to compile information for this narrative it has become apparent that the due date is too early in the year to permit accurate inclusion of data. APNWR now, and probably always will, rely heavily on outside sources, e.g. ADF&G, National Marine Fisheries, Wildlife Operations, etc. for wildlife survey and harvest data, and public use information. Much of this data is not available early in the year. The alternatives are to submit an incomplete and probably inaccurate narrative early in the year or submit more complete information in a narrative later. I think the later course should be the preferred alternative.

APPENDIX I. BRISTOL BAY CO-OPERATIVE MANAGEMENT PLAN
 SCOPING MEETINGS

From November 16th to 19th I attended scoping meetings held at Naknek, Egegik, Chignik Lake and Port Heiden for the Bristol Bay Co-operative Management Plan (BBCMP) and Refuge Comprehensive Plan. The meetings were diverse in nature and amount of information gained. Each meeting will be addressed individually and impressions summarized.

Twenty six people were present at the Naknek meeting on November 16th. It rapidly became apparent that most people represented one government agency or another. The question was specifically asked how many individuals did not represent government. The show of hands revealed there were only four private citizens. Because of the small citizen input into the meeting this proved to be the least valuable of the meetings I attended.

The few comments that were received without prodding from the facilitator included strong desires that the plan be flexible, easily amended, and have a provision for periodic review. There was considerable concern about duplication of effort with the BBCMP and other planning efforts going on in the area. I was impressed by the fact that the people attending the meeting were fairly suspect of new planning efforts and the value of public meetings. One individual was strongly interested in economic development within the National Wildlife Refuges. He was interested in mining, concessions, and other opportunities for economic gain associated with refuge lands. Overall the group was not particularly talkative. There was little interest in APNWR which was to be expected considering that the refuge is generally remote from the Naknek area.

The meeting held in Egegik on November 17th had six residents present which represented about 12% of the population. Only two residents provided much input. Consequently, it is difficult to tell how well they represented the village as a whole. The general tone of the meeting was pro-development. Residents were interested in jobs, improved housing, economic opportunities, travel possibilities, roads, and access corridors to various areas. They said they would, "welcome oil development with open arms". The residents felt that oil development probably would have minimum impact. They used the example of the Alaska Pipeline to support their belief. They felt that techniques have been worked out so that oil development can basically be done in harmony with the natural resources. The people were concerned that recent seismic work had not been done with the most modern technology available. Explosive charges apparently have been used extensively in the area in the course of seismic work. Individuals felt the explosives scared the caribou, perhaps changing their migration route. They were also concerned about conflicts with spawning salmon.

There was major concern with the issue of sport hunting. While the residents had no real problem with guiding they were concerned with the considerable wanton waste that has allegedly been occurring, particularly by Anchorage residents flying down to hunt caribou and moose in the area. While the group wants

economic development they really desire that newcomers not be given the same opportunities to hunt local game populations. Specifically they would welcome the oil companies but they desire that oil company personnel and workers not be allowed to hunt in the area fearing that over exploitation of local game herds may occur.

Residents were strongly in favor of hydro-electric development. At Egegik electricity costs \$.37 per kilowatt hour. Residents strongly desire cheaper energy. To residents, hydro-power is a panacea that they look forward to having as soon as possible. The subject of alternate energy sources, i.e. wind generation, came up and the residents were unanimous in their belief that the technology was not developed sufficiently to provide adequate and reliable power for the region. The basic desires of the people at Egegik, at least the ones at the meeting, were generally in conflict with each other. The people profess a strong desire for economic growth, more jobs, more people, better housing, better transportation routes and cheaper power. At the same time they want to exclude outsiders from hunting and basically maintain the status quo as it refers to the desirable features of their life style.

People attending the meeting were specifically asked about their views concerning Becharof and Alaska Peninsula NWR, what problems they were having with the refuges, if any, and changes they would like to see made. The basic response which seemed to be supported by the entire group was that there was no real problem with the refuges. Establishment of the refuges has meant no change to them. Residents have access as before, they make the same basic use of the refuge lands as they had prior to establishment, and consequently they were basically neutral in their feelings toward the refuges. There was no real desire for changes in land status one way or the other. The people felt that they had adequate village lands and were not overly concerned about land status of other areas as long as access continued to be available.

The Chignik Lake meeting on November 18th was one of the more interesting and informative meetings of the series. Twenty-one people were present and they appeared to represent a good cross section of the community. As in Egegik, there was a strong desire for hydro-electric power generation. This may be of particular interest to the refuge. There will probably be a strong desire to avoid damming major salmon spawning streams and sites may be investigated in the surrounding mountains which are mostly in refuge status at this time. Wind power was largely dismissed as not being feasible due to the relative crude technology involved and the strong gusty winds occurring in the Chignik Lake region.

There was strong anti-sport hunting sentiment in the group. They felt wanton waste was prevalent and it appears to be something that is particularly irritating to the people. Guides are basically not welcomed in the area. Residents were interested in limiting recreational facilities. Basically the group wanted to maintain their access to the surrounding area for subsistence use and at the same time limit outside access and use to prevent conflicts and possible degradation of their subsistence life style. Along the same vane the group was opposed to State land disposal programs basically because it would bring in additional outsiders which might compete for the resources in the area. Specifically a land sale in the Port Heiden area was opposed.

Chignik Lake revealed that there are some major communication problems between the village and outside interests. While none of the problems were of immediate impact on the refuge it is important to note that good communication is

needed to prevent misunderstanding. There were obvious communication problems between the Regional and Village Corporation particularly regarding development of the sub-surface estate of the Village Corporation. Chignik Lake desires additional contact with Alaska Department of Fish and Game. They feel that they are largely unheard and they have no input when it comes to setting seasons and bag limits in the area. Problems were reported to exist with beaver dams stopping spawning salmon. This problem has reportedly been brought to the attention of the State by the Natives with no response from the State. The Natives were really not interested in trapping and desire, in effect, an animal damage control type approach to eliminating the beaver problem. To the extent that these beaver dams may exist on refuge lands the refuge may become involved in this issue.

The people were very vocal in their desire for input into planning efforts, review of plans, and having adequate time for draft plans to be reviewed. They wanted to know what the requirements were for local participation in environmental impact statement procedures and what the chances were that their efforts might really and truly have any meaning in the planning process. At least a few residents were interested in introducing deer, mountain goats, and Dall sheep into the area. To them the habitat appears good for these species. They desire the animals for additional hunting opportunities to support the subsistence life style. The introduction of various big game species on Kodiak Island was used as an example to support their case.

At the meeting in Port Heiden on November 19th fifteen people were present and again a good representative cross section of the village appeared to be present. The point was made by the group that whatever form the BBCMP took it should be fluid, flexible and the ability to amend it should be present. The views of the group as a whole quite closely paralleled those found at Chignik Lake. The group did not desire roads or pipelines. They did not want land disposal sales basically out of the belief, and probably correctly, that they would bring in outsiders particularly those from Anchorage and Fairbanks. They felt that lands sales would increase the sport hunting pressure in the area and decrease the opportunity for subsistence use of big game. The group, which apparently is doing quite well from the local salmon fishing economy, did not want additional growth. They strongly desire to retain their current life style with as little change as possible.

Residents were not in favor of oil and gas development; however, they expressed the belief that there was really very little they could do to prevent development and that it was going to come in one form or another. They felt that the lesser of two evils would be to have on-shore development of oil and gas as opposed to off-shore development since the obvious potential impact upon the salmon fishery could occur with off-shore development. If oil and gas development does come they specifically stated that they want to have as little interchange as possible with oil company workers and personnel simply because it would change the life style existing at Port Heiden.

A strong desire for hydro-electric power was present at the village. Power costs are very high and the residents strongly desire a cheaper alternative. Apparently a recent U.S. Army Corp of Engineers study was done in the area concerning hydro-electric power. The results indicated that it was not economically feasible at this time. The residents strongly believe that improper assumptions were used in the study and that the study should be done again with local input into the study.

The group was basically opposed to sport hunting and guiding with the exception of bear hunting. The residents feel that: there are too many bears in the area, the bears impact strongly upon the moose population, cause problems in the village with the destruction of property, and are a possible threat to human safety. They strongly desire a reduction of the bear population. Of interest to the U.S. Fish and Wildlife Service, though not necessarily the refuge, was the belief that there are too many seals in the area and that they are adversely impacting upon the salmon fishery. A drastic reduction in the seal population is desired by the village.

The villagers want more local control of surrounding lands particularly the opportunity to have a stronger input into management decisions that are made. Numerous questions were asked concerning the Aniakchak National Monument and Preserve; however, there was no Park Service representative present. It was explained that National Park Service lands in Lake Clark, Katmai, and Aniakchak were specifically excluded from the BBCMP by the ANILCA legislation. The residents wanted to know why these areas were excluded and quite frankly the questions could not be answered other than that it was the law. However, that does not eliminate the fact that questions remain for the Park Service to answer concerning Aniakchak. The discussion was left with the understanding that their concerns would be passed along to the National Park Service.

SUMMARY

The interested publics in the area, formerly known as groups, basically are limited to fishermen and subsistence users. The groups are largely one in the same. The groups interests were basically parochial. Their main concerns, understandably, were those which will specifically impact upon their individual villages and life styles. There did not seem to be great concern in what was happening in other areas of the Bristol Bay Region with the possible exception of interest in both Chignik Lake and Port Heiden concerning what might occur in the other village. Issues that will have to be dealt with in the Refuge Comprehensive Plan will be: providing adequate spawning grounds and water quality to maintain the outstanding fishery resource in the region, to provide and protect adequate subsistence hunting and fishing opportunities in the region, oil and gas development, and access corridors across refuge lands. A major source of contention will be the continued impact of sport hunting and guiding activities on the refuge as it affects the subsistence user. In general sport hunters and guides are not welcomed by the villagers. This will probably result in obvious conflict since it is reasonable to expect sport hunting opportunities will be desired by Anchorage, Fairbanks and other residents in Alaska and outside of Alaska for hunting on the Alaska Peninsula. The one possible exception to this is a strong desire for the reduction in the bear population in certain areas which will result in sport hunters and guides being welcomed as long as they are hunting bears only.

There seemed to be no strong desire to either include additional lands within the refuge areas or to remove them. In fact the only real issues identified by the villagers concerning land status was a strong desire that State land disposals not be allowed to continue in the area particularly without strong input from the local communities. An issue which will impact the refuge largely because of the geography of the Alaska Peninsula will be the issue of access corridors either for roads or gas and oil pipelines.

Desires among the villagers vary from strong support of access corridors to opposing them though those who oppose them have a fairly strong fatalism that there is not much they can do to stop these corridors from going through. Residents desire to have as much input as possible into access planning. The villagers made no recommendations as to exactly where they desire access corridors to be included or excluded from the area.

One of the universal issues of concern was cheap power. Village residents were almost unanimous in their belief that the need for inexpensive power could best be met by hydro-electric power generation. There was a strong belief that wind power or other alternative energy sources were not technically feasible and adequate to meet the needs of the area. This may well become an issue that the refuge will have to address because of either locating hydro-electric sites on the refuge itself or the obvious conflict between salmon spawning runs and damming of various rivers and streams within the region.

The meeting provided more input into the planning process than I anticipated. The meetings were largely rewarding and gave me an excellent opportunity to meet a number of the villagers and begin to establish a working relationship with them. The local contact person for Naknek is probably Dan O'Hara. He is well known in the region, on the borough assembly for Naknek, and on a variety of planning committees and groups. In the village of Egegik, Dick Deigh and Keith Black had the most to say at the meeting. Dick Deigh is the representative for Peninsula Airways. He has a small store in the village and appears to be one of the leading citizens. He was also the most vocal advocate of development of all kinds I ran into any place in any of the meetings. For the village of Chignik Lake contact can best be made by writing directly to the Chignik Lake Village Council, attention: Elia Lind, Village Administrator, P. O. Box 24, Chignik Lake, Alaska 99502. The village council was mentioned frequently by members attending the Chignik Lake meeting and is probably the best entity to either send information to or request information from. In Port Heiden the leading citizen appears to be Johnnie Christensen. Information going to or requested from the village should be addressed to Johnnie Christensen or the Village Council.

The series of meeting appears to have been successful in meeting the scoping requirements for the BBCMP and the Refuge Comprehensive Plan. In the future judicious use of public meetings should be used to both obtain input from the village and to explain various programs and activities on the refuge. It would appear to be quite easy to over work the public meeting approach to gathering information. Other alternatives such as sending one individual, possibly the Refuge Manager, to a village to talk with the people would be better in many cases than having a group of people go in and hold a formal meeting. In any case, when meetings are held or individuals go to a village it appears that the most effective way is to have a leisurely informal approach so that there is time to spend with the people both prior to and following the meeting. A hurried, high powered, structured approach to meetings and activities in the village appears to limit input from village members and in affect produces a barrier between people of the village and those holding the meeting.

One of the issues that will need to be addressed in the Refuge Comprehensive Plan is staffing on the refuge. It became evident to me during these meetings that before placing anyone in a permanent or semi-permanent situation in one of the remote villages, considerable ground work will need to be done. The people in the villages have followed a subsistence life style for years almost

completely without any type of oversight from law enforcement or any other authority figure. Considerable effort will be required to convince villagers that stationing an employee from Fish and Wildlife Service in a village is not being done simply to spy on residents and regulate their activities. To ignore that fact will only result in placing employees in untenable situations where they are totally stone walled by the village occupants. The point was made in both Chignik Lake and Port Heiden that while protection was desired to regulate the sport hunters it was not desired that permanent offices be established in the villages.

GLENN W. ELISON
Refuge Manager

APPENDIX II

MAMMALS OF THE ALASKA PENINSULA AND ADJACENT COASTAL WATERS

Common Name

Masked shrew	Northern red-backed vole
Dusky shrew	Tundra vole
Little brown bat	Meadow vole
Grizzly and brown bears	Muskrat
Short-tailed weasel	Beaver
Least weasel	Porcupine
Mink	Tundra hare
Marten	Snowshoe hare
Wolverine	Moose
River otter	Barren ground caribou
Sea otter	Baird beaked whale
Coyote	Stejneger beaked whale
Gray wolf	Cuvier beaked whale
Arctic fox	Spermwhale or cachalot
Red fox	Right-whale dolphin
Canada lynx	Pacific striped porpoise
Alaska fur seal	Pacific killer whale
Northern sea lion	Pacific blackfish
Pacific walrus	Harbor porpoise
Harbor seal	Beluga whale
Meadow jumping mouse	Gray whale
Hoary marmot	Finback whale
Arctic ground squirrel	Rorqual or sei whale
Red squirrel	Little piked whale
Northern bog lemming	Blue or sulfur-bottom whale
Greenland collared lemming	Humpback whale
Brown lemming	Pacific right whale

APPENDIX III

BIRDS OF THE ALASKA PENINSULA

Common Name

Common loon
 Arctic loon
 Red-throated loon
 Red-necked grebe
 Horned grebe
 Fulmar
 Slender-billed shearwater
 Pelagic cormorant
 Red-faced cormorant
 Whistling swan
 Cackling Canada goose
 Lesser Canada goose
 Black brant
 Emperor goose
 White-fronted goose
 Lesser snow goose
 Mallard
 Pintail
 Green-winged teal
 American wigeon
 Northern shoveler
 Greater scaup
 Lesser scaup
 Barrow's goldeneye
 Bufflehead
 Oldsquaw
 Harlequin duck
 Common eider
 Steller's eider
 King eider
 White-winged scoter
 Surf scoter
 Common scoter
 Ruddy duck
 Common merganser
 Red-breasted merganser
 Goshawk
 Sharp-shinned hawk
 Rough-legged hawk
 Golden eagle
 Bald eagle
 Marsh hawk
 Osprey
 Gyrfalcon

Common Name

Peregrine falcon
 Merlin
 American kestrel
 Spruce grouse
 Willow ptarmigan
 Rock ptarmigan
 Sandhill crane
 Black oystercatcher
 Semipalmated plover
 American golden plover
 Ruddy turnstone
 Black turnstone
 Common snipe
 Spotted sandpiper
 Solitary sandpiper
 Whimbrel
 Wandering tattler
 Greater yellowlegs
 Rock sandpiper
 Baird's sandpiper
 Least sandpiper
 Red-backed sandpiper
 Western sandpiper
 Sharp-tailed sandpiper
 Dunlin
 Short-billed Dowitcher
 Long-billed Dowitcher
 Bar-tailed Godwit
 Sanderling
 Red Phalarope
 Pomarine Jaeger
 Parasitic Jaeger
 Long-tailed Jaeger
 Glaucous Gull
 Northern phalarope
 Sabine's gull
 Aleutian tern
 Glaucous-winged gull
 Herring gull
 Mew gull
 Bonaparte's gull
 Pacific black-legged kittiwake
 Arctic tern
 Common murre
 Thick-billed murre
 Pigeon guillemot
 Ancient murrelet

APPENDIX III. continued

Marbled murrelet	Northern waterthrush
Kittlitz's murrelet	Pileolated warbler
Cassin's auklet	Rusty blackbird
Parakeet auklet	Brown-headed cowbird
Crested auklet	Pine grosbeak
Least auklet	Gray-crowned rosy finch
Horned puffin	Hoary redpoll
Tufted puffin	Common redpoll
Great-horned owl	White-winged crossbill
Hawk owl	Savanah sparrow
Great gray owl	Dark-eyed junco
Snowy owl	Tree sparrow
Short-eared owl	White-crowned sparrow
Belted kingfisher	Golden-crowned sparrow
Common flicker	Fox sparrow
Downy woodpecker	Song sparrow
Three-toed woodpecker	Lapland longspur
Willow flycatcher	Snow bunting
Olive-sided flycatcher	
Violet-green swallow	
Tree swallow	
Bank swallow	
Gray jay	
Black-tailed magpie	
Raven	
Yukon black-capped chickadee	
Clark's nutcracker	
Boreal chickadee	
Brown creeper	
Dipper	
Winter wren	
American robin	
Varied thrush	
Hermit thrush	
Gray-cheeked thrush	
Willow warbler	
Wilson's warbler	
McKay's bunting	
Golden-crowned kinglet	
Ruby-crowned kinglet	
Water pipit	
Northern shrike	
Orange-crowned warbler	
Yellow warbler	
Yellow-rumped warbler	
Blackpoll warbler	

APPENDIX IV

FISHES OF THE ALASKA PENINSULA

Common Name

Artic lamprey	Northern pike
Bering cisco	Longnose sucker
Least cisco	Burbot
Pink salmon	Threespine stickleback
Chum salmon	Ninespine stickleback
Sockeye (red) salmon	Coastrange sculpin
Chinook (king) salmon	Slimy sculpin
Round whitefish	(marine)
Dolly Varden	
Lake trout	Arctic smelt
Arctic grayling	Pacific cod
Pond smelt	Pacific staghorn sculpin
Alaska Blackfish	Starry flounder
<i>Coho (silver) salmon</i>	