

ALASKA PENINSULA NATIONAL WILDLIFE REFUGE

King Salmon, Alaska

ANNUAL NARRATIVE REPORT

Calendar Year 1984

U.S. Department of the Interior  
Fish and Wildlife Service  
NATIONAL WILDLIFE REFUGE SYSTEM



Back Row: Solberg    Rogers    Mumma  
Front Row: Arment    Wilk    Berns

Personnel

1. John Taylor	Refuge Manager	GS-485-12	EOD 08/26/79
2. Vernon D. Berns	Acting Refuge Manager/Pilot	GS-485-12	EOD 02/18/82
3. C. Randall Arment	Asst. Refuge Manager/Pilot	GS-485-12	EOD 10/03/82
4. John Solberg	Asst. Refuge Manager	GS-485-07	EOD 03/06/83
5. Randall J. Wilk	Wildlife Biologist	GS-486-07	EOD 06/27/83
6. Dwight Mumma	Biological Technician	GS-404-05	EOD 02/19/84
7. Alan Rogers	Maintenance Man	WG-4749-08	EOD 03/04/84
8. Janice Collins	Refuge Assistant	GS-303-05	EOD 06/11/84



John Taylor, Refuge Manager GS-485-12 EOD 8/26/79  
Transferred 12/21/84



Janice Collins, Refuge Assistant GS-303-5 EOD 6/11/84

Y.C.C.

Jenifer Bullock	EOD 6/11/84	Terminated 8/17/84
Kevin Riske	EOD 6/11/84	Terminated 8/17/84
Kelly Fundeen	EOD 6/25/84	Terminated 8/10/84

Review and Approvals

*Vernon D. Bena* 3-16-85  
Refuge Manager Date  
*Jimmy Calvert* 4/9/85

*James P. Maynard* 4/9/85  
Regional Office Review Date



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NTR\*—Nothing to Report

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## A. INTRODUCTION

In 1971, much of the public domain on the Alaska Peninsula was set aside by the Secretary of Interior under section 11(a) of the Alaska Native Claims Settlement Act (ANCSA) as a potential selection area for Native regional and village corporations.

In December 1980, Congress enacted the Alaska National Interest Lands Conservation Act (ANILCA) and the Alaska Peninsula refuge became a part of the National Wildlife System managed by the U. S. Fish and Wildlife Service (USFWS).

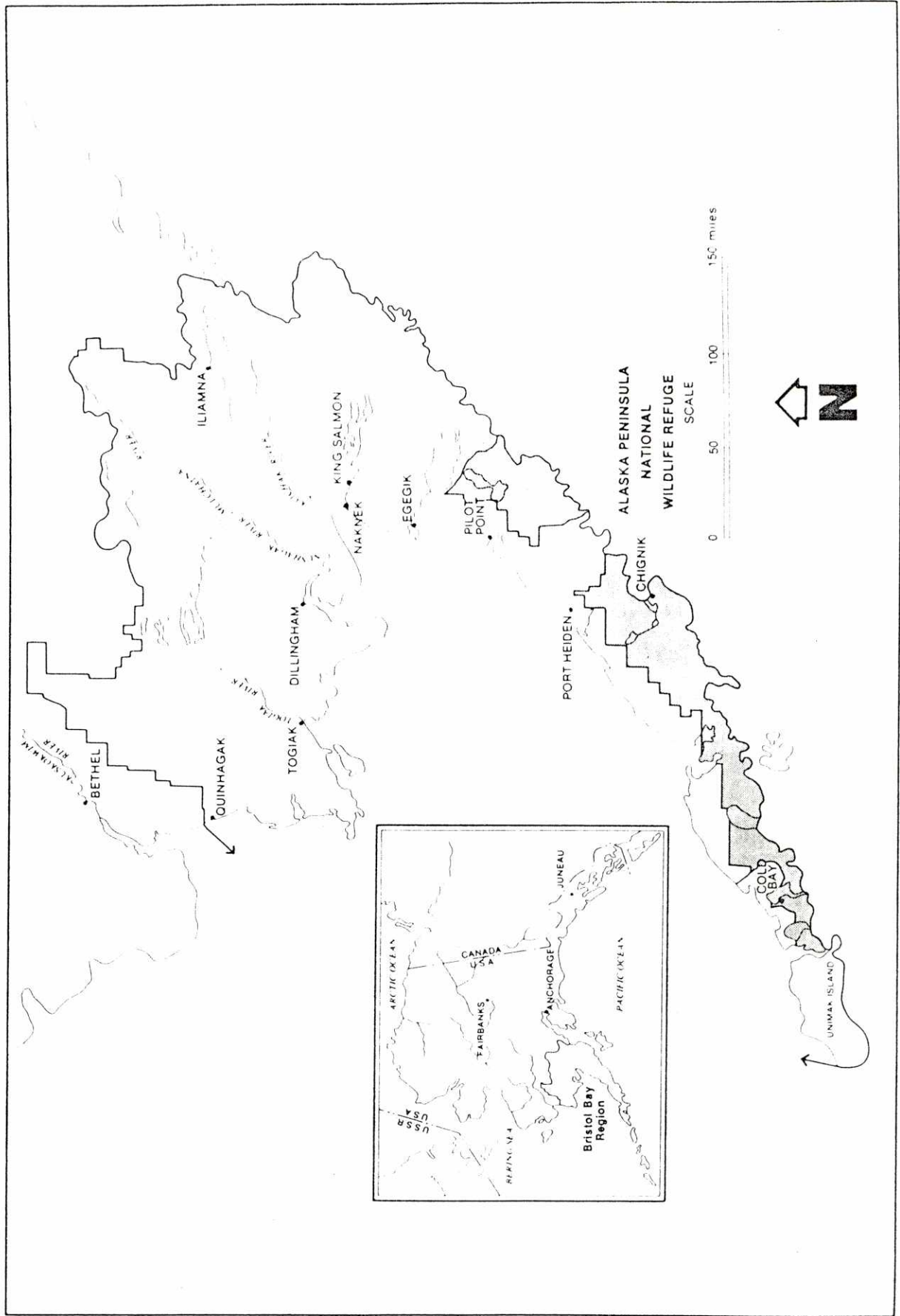
Three Regional Native Corporations have large refuge inholdings. Seven villages are within the refuge boundaries and six other villages are adjacent to it. Approximately 60% of the refuge land mass plus an additional 11% of the subsurface rights have been selected or conveyed to the natives. An additional 3% of the total acreage has State selections which do not conflict with the native selections present. Some of this acreage will not be conveyed due to overselection but they are presently inholders on the refuge.

The Alaska Peninsula National Wildlife Refuge (APNWR) comprises of approximately 4.3 million acres. The refuge stretches nearly 340 miles along the peninsula to the southwest as far as False Pass whereas the refuge's northeastern boundary is about 60 miles south of refuge headquarters at King Salmon and 290 air miles southwest of Anchorage. The Becharof Refuge adjoins the northern boundary of the refuge.

The APNWR is indeed very scenic. The Pacific coastline is rugged with seacliffs rising hundreds of feet from the water while the refuge west of the mountains is primarily rolling tundra. The two coastlines are bisected lengthwise by the Aleutain Range. These mountains are of volcanic origin, heavy glaciated and rising to over 8,020 feet. Rivers including as the Ugashik, Chignik, Dog Salmon, King Salmon, Sandy and Bear provide habitat for the five species of Pacific salmon which support for a multi-million dollar industry on the Alaska Peninsula. Over 30 species of marine and terrestrial mammals are present, with numerous birds and waterfowl utilizing the lakes and wetlands.



Location of Alaska Peninsula Refuge.







#### A. HIGHLIGHTS

On February 6 we were able to move into offices upstairs after Phase II was completed and inspected by the Regional Engineers.

Maintenanceman Alan Rogers entered on duty and began by repairing sick engines and sorting old and unused equipment left over from National Marine Fisheries.

Paug Vik Village Corporation was awarded 2.4 acres of the Headquarters compound. Offers to buy the land back were rejected and the Service was given 30 days notice to remove the refuge's wind generator, radio antenna towers, and septic system from their lands.

The refuge complex got a Refuge Assistant-typist after being without one for over six months. She is the best thing we have seen since high button shoes.

The refuge was host to numerous visiting dignitaries during the summer that included among them: Regional Director Putz, Director Jantzen, Undersecretary Arnett and son Chip, Congressman Conti, and Carl Yaztremski, ARD Riffe, Ric Davidge, Vern Wiggins, Deputy Budget Director Kris Marcy, and MBM Dr. Rogers, as well as several Regional Office (RO) personnel including the planning team to get information and an overview of the refuge.

It was a year of planning! Meetings and hearings were held on the Bristol Bay Cooperative Management Plan (BBCMP), Alaska Peninsula Comprehensive Conservation Plan (APCCP), and Becharof Refuge Comprehensive Conservation Plan (BCCP) at Naknek, Egegik, Pilot Point, Port Heiden, Chignik Lake, Chignik Bay, Perryville, and Ivanof. Many of the villagers are getting burned out on planning meetings.

Refuge Manager Taylor transferred to the Alligator River NWR in North Carolina after 5 years in Alaska.

#### B. CLIMATIC CONDITIONS

##### January-March

Mild conditions caused late freeze of the Naknek River. Mid January marked the first time since last year that the river was safe to cross by surface vehicles. The first quarter's high was on March 9th 50 degrees (Table 1) and the low was -23 degrees on Jan. 4th coupled with 30 mph winds that created a wind chill factor of -85 degrees. Six inches of snow fell on the 6th of Jan. and the greatest snow depth on the ground was 10 inches on the 7th of Jan. The chill factor temperature was at its highest for the winter with a temperature of



Table 1. 1984 Climatological Data - National Weather Service, King Salmon, Alaska.

Month	Temperatures			Precipitation (inches)		Max. Snow on ground (inches)	Wind (mph)		Sky Cover <sup>1</sup> (days)		
	High	Low	Avg.	Norm.	Snow		Avg.	Peak	Clear	Pt.	Cldy.
Jan	42	-23	17	13	1.16	1.04	8.4	10	40	3	11
Feb.	34	-30	-2	14	.55	.88	5.5	7	41	5	6
Mar.	50	-10	36	19	.44	1.13	T <sup>2</sup>	6	55	0	8
Apr.	56	2	29	31	.44	1.05	4.0	1	48	6	7
May	65	18	43	42	1.8	1.18		T	44	9	3
June	72	33	52	50	1.58	1.59		0	35	2	4
July	72	36	54	55	1.30	2.08		0	30	0	2
Aug.	75	25	54	54	2.41	3.13		0	35	1	11
Sept.	66	21	48	47	.92	2.78		0	33	3	7
Oct.	55	1	30	33	.56	1.92		3	59	8	10
Nov.	45	-08	23	23	1.00	1.40		4	47	5	17
Dec.	45	-17	25	13	1.79	.55	3.8	3	43	4	6
Total					13.95	18.73	21.7				

<sup>1</sup>Sky cover: clear= 0 to .3 cloud cover; Partly cloudy= .47 to .7 cloud cover; and cloudy= .8 to 1.6 cloud

cover.

<sup>2</sup>T=Trace

-26 degrees and 30-35 mph winds which produced a wind chill in excess of -90 degrees. March averaged 17 degrees, warmer than normal, as a result Becharof Lake, which had just frozen over in February reopened in March. The Naknek River opened by mid month also.

#### April-June

April exhibited normal temperatures with 29 degrees as the average. Refuge lakes began opening the first of the month and by the end were ice free. The high of 56 degrees occurred on the 27th while the low remained above 0 degrees. May exhibited normal temperatures with 43 degrees as the monthly average. The high of 65 degrees occurred on the last day of the month, while the low of 18 degrees occurred on the 4th. The first of the month brought high waterfowl concentrations on the Naknek River. June exhibited normal temperatures with 50 degrees as the monthly average. Temperatures remained above freezing during the entire month and hit the 70 degrees mark on four days with a taste of summer weather and a sprinkle of king salmon got the local salmon fishermen on their way to a fine salmon fishing season.

#### July-September

July exhibited normal temperatures with 54 degrees as the monthly average. The high of 72 degrees occurred on the 27th while the low of 36 degrees occurred on the 13th. The biting insects populations were down, as a result of the slightly cooler, dryer spring. August exhibited temperatures with 54 degrees as the monthly average. The high of 75 degrees occurred on the 1st while the low of 25 degrees occurred on the 31st. The 31st was also the first frost.

The salmon fishing was slowing down and people were gearing up for the caribou that had migrated to the Naknek River. Most of the local residents were ready for the taste of fresh caribou meat and to resupply their freezers for the in-coming cold winter. Antler hunters descended upon the Peninsula area from the Lower 48, to enjoy some of the great, big game hunting. September exhibited normal temperatures with 48 degrees as the monthly average. The high of 66 degrees occurred on the 4th while the low of 21 degrees occurred on the 20th. Precipitation for the year has been below normal every month except for two months which had normal amounts. The low amount of precipitation can probably account for the very poor salmonberry and blueberry productions however, the cranberry production was about normal. The fall colors changed from many shades of green to brown-gold and yellow as our winter was slowly sneaking upon us.

#### October-December

October exhibited slightly below normal temperatures with 30 degrees as the monthly average. The high of 55 degrees occurred on the 3rd and 5th while the low of 1 degrees occurred on the 28th. The first snowfall occurred on the 6th, however, the ground was snow free at the end of the month. The winds hit 60 mph on the 31st. November exhibited normal temperatures with 23 degrees as the monthly average. The high of 45 degrees occurred on the 1st, while the low of -8



degrees occurred on the 26th. The month started with no snow cover and ended with 3 inches. During the month peninsula lakes as far south as Egegik and Ugashik River froze over solid, however, the larger lakes and Naknek River remained open.

December exhibited temperatures well in excess of normal. The monthly average was 25 degrees which is 13 degrees above average. The high of 45 degrees occurred on the 31st while the low of -17 degrees occurred on the 12th. As a result of the mild weather, the Naknek River has not remained frozen solid. Ice crossing was unsafe to marginal throughout the month. December was the first and only month during the year to have precipitation significantly above the normal.

### C. LAND ACQUISITION

#### 1. Fee Title

On November 16, 1978, the Secretary of Interior invoked his emergency withdrawal powers under section 204 (e) of the Federal Land Policy Management Act (FLPMA; 90 Stat. 2743) and withdrew land throughout Alaska. Public Land Order 5653 (as amended by Public Land Order 5654) covered all of the present Alaska Peninsula NWR, including all of the (d)(1) lands and those lands available to the native villages and regional corporations but not yet selected. These lands were withdrawn, subject to valid existing rights, for three years from settlement, location, entry, and selection under the public lands laws. The intent of the withdrawal was to protect Congress' options for national interest lands legislation. In December 1980, Congress enacted ANILCA. This act, among other things, rescinded the above Order, and designated all of the withdrawn lands as Alaska Peninsula NWR.

Along with ANILCA, major legislation affecting refuge land ownership included the Alaska Statehood Act and the Alaska Native Claims Settlement Act of 1971 (ANCSA). These laws implemented the transfer of lands from federal to state and native ownership. The land status is constantly changing because refuge lands selected by natives, native corporations, and the state are in the process of being relinquished, invalidated or conveyed.

Of the 4,359,000 acres of land within the refuge boundary, excluding navigable waters, 2,964,000 acres or 60 percent of the land is under the jurisdiction of the federal government. Table 2 indicates how much refuge land has been selected and conveyed as of January 1984. Figure 1 shows the location of selected and conveyed lands. As of February 1984, a total of 1,528,000 acres or 44 percent of the refuge lands remained selected by natives, native corporations, private interests and the state. These selections are scattered throughout the refuge, but many probably will be invalidated or relinquished.



Table 2. Status of lands within the Alaska Peninsula Refuge as of January, 1984.

Category	Selected Lands	Conveyed Lands
Ugashik Unit		
Native	238,802 <sup>a</sup>	113,545 (subsurface interim conveyed) <sup>b</sup>
State of Alaska	205,258 <sup>a</sup>	658 (patented)
Private selections	34.97	40.79 (patented)
Native allotments	915	0
Total	445,019.97	114,270.79
Chignik Unit		
Native	384,212 <sup>c</sup>	460,329 (surface and subsurface interim conveyed)
State of Alaska	141,487 <sup>c</sup>	0
Private selections	62.14	1,033.68
Native allotments	6,357	159.93 (patented)
Total	532,118.14	461,522.61
Pavlof Unit		
Native	475,848 <sup>a</sup>	325,096 (surface and subsurface interim conveyed)
State of Alaska	73,923 <sup>a</sup>	40,327 (tentatively approved) <sup>e</sup>
Private selections	5.00	268.74 (patented)
Native allotments	1,049	159.97 (patented)
Total	550,825	365,851.71

<sup>a</sup> Includes 62,849 acres selected by both the Natives and the state.

<sup>b</sup> Includes 94,552 acres which have had surface rights conveyed also.

<sup>c</sup> Includes 112,854 acres selected by both Natives and the state.

<sup>d</sup> Includes 55,118 acres selected by both Natives and the state.

<sup>e</sup> Tentatively approved carries the same rights as an interim conveyance; both are only awaiting survey before being patented.

This map illustrates various land selections and wilderness areas across Alaska. The legend identifies six categories:

- U.S. Fish and Wildlife Service Land**: Represented by a pattern of small circles.
- Native Land Selected - Surface and/or Subsurface**: Represented by a solid white box.
- Native Land Conveyed - Surface and/or Subsurface**: Represented by diagonal hatching.
- State Land Selected - State Land Conveyed**: Represented by a dotted pattern.
- State Selected Land Conflicting with Native Selections**: Represented by a cross-hatch pattern.
- Wilderness Area**: Represented by a pattern of small triangles.

The map includes geographical features such as the Pacific Ocean, Chukchi Sea, Bering Sea, and numerous rivers and lakes. Key locations labeled include Barrow, Prudhoe Bay, Wainwright, Utqagvik, Igarka, and many others. A scale bar indicates distances up to 60 miles, and a north arrow points towards the top right.

The native category in Table 2 includes refuge lands selected by 23 villages, seven of which are from the Koniag Region, eight from the Aleut Region, and eight from the Bristol Bay Region. The seven Koniag villages have relinquished their surface selections on the refuge. In addition to the village, the category includes "mineral lieu" (subsurface) estate selected by Koniag Regional Corporation totaling 529,000 acres of which 87,000 acres are in conflict with state selections. Three regional native corporations have also filed historical place applications totaling 61,000 acres.

The state has selected a total of 462,000 acres of which 231,000 acres are in conflict with native selections. A total of 38,000 acres has been tentatively approved for patent to the state.

The private category in Table 2 includes four trade and manufacturing site applications, four headquarters site applications, five homesite applications, 74 soldiers additional homestead applications, and four mission site applications.

There are 89 native allotment applications on the refuge, totaling 8,600 acres.

About 22 percent of the lands within the refuge boundary are inholdings. A total of 942,000 acres have been conveyed to native groups, natives, state, and private interest. This includes interim conveyed lands (both surface and subsurface), tentatively approved (TA) lands, and patented lands.

Under the draft BBCMP in reference to ANCSA section 11(a)(3), Alaska Department of Natural Resources (DNR) has agreed to resolve the status of state selected lands with the refuge. The state selected areas were filed on lands that had been withdrawn for, but which were not selected by native corporations under section 11(a)(3). The validity of the particular state selections has been questioned by Fish and Wildlife Service (FWS). Resource value and logical land management patterns are the primary criteria by which the state and FWS will decide whether the areas should be excluded from the refuge.

### 3. Other.

The FWS is considering a land exchange with the Bristol Bay Native Corporation for lands near Hook Bay, located between Aniakchak National Monument and Chignik Bay. The draft BBCMP completed in June 1983, had indicated mineral exploration and development might be a primary use for nonrefuge lands in the area. The acquisition of Hook Bay lands by the corporation would augment a contiguous block of mineral development lands already owned by the corporation. We are considering exchanging for lands of higher wildlife values.

State owned lands adjacent to Mother Goose Lake has attracted FWS interest. Its southwestern location from the lake would place the entire watershed under FWS administration. The area receives



considerable recreational use and has been considered by Alaska DNR for public use. Thus, having this land as part of the refuge would insure its availability for public recreation. The area which includes lands between Herendeen Bay and Port Moller on the north and the Pacific Ocean on the south, has a confusing pattern of land ownership. The area contains a hodgepodge of refuge, state, state selected, native corporation, native corporation selected, and other private lands. The draft BBCMP recommends that FWS, state, Aleut Native Corporation, and affected village native corporations accomplish land exchanges to consolidate ownership.

On January 27th and September 5th-7th, refuge staff met with RO, state, and other personnel to discuss several of the aforementioned land exchange options.

#### D. PLANNING:

##### 1. Master Plan.

Alaska refuges do not utilize master planning as it exists for the refuges in the lower 48 states, but rather complies with Public Law 96-487, ANILCA. Section 304 authorizes the Secretary of the Interior to enter into cooperative management agreements and to prepare comprehensive conservation plans. As a result the draft BBCMP was developed which includes 31 million acres in the Bristol Bay area. The plan was devised in part from the draft Refuge Comprehensive Conservation Plan (RCCP) completed in August 1984.

A considerable amount of time and travel was spent on providing input for the plans and their various management alternatives. Some of the major commitments included but were not limited to:

January - RM Taylor attended meeting in Anchorage presenting the Alaska Peninsula RCCP management alternatives to the Regional Directorate. RM Taylor and staff met with RO Planners Ron Thuma and Dave Patterson at refuge headquarters and provided information for the public use assessment sections of the Alaska Peninsula RCCP.

February - Refuge staff met again with RO planners Thuma and Patterson at refuge headquarters to provide information for the public use assessment section of the Alaska Peninsula RCCP.

April - The Alaska Peninsula RCCP was reviewed by the refuge staff for comment.

September - ARM Berns accompanied by RO Planners, Pete Jerome, Bill Knauer, and Connie Wassink, attended public meetings in Pilot Point, Chignik Bay, Chignik Lake and Port Heiden to discuss the Alaska Peninsula RCCP with the residents of these villages.

October - RM Taylor traveled to Anchorage to attend public meetings there for the Alaska Peninsula RCCP.

November - ARM Arment traveled to villages of Ivanof Bay and Perryville to attend public meeting on the Alaska Peninsula RCCP.

## 2. Management Plan.

Several wildlife inventory procedures including brown bear, moose, caribou, bald eagle, and sport fishing were submitted to RO for review and comments and upon return, corrections were incorporated therein. After several revisions most of the procedures were accepted.

## 3. Public Participation.

Public participation in the form of meetings and written comments were used during the preparation and selection of alternative for the Becharof and Alaska Peninsula RCCPs. Meetings were conducted in all the major villages up and down the Alaska Peninsula between King Salmon and Port Moller. Major issues centered around oil and gas development and contingent pipeline/corridor plans. Most villagers expressed mixed and generally negative feeling toward development of the proposed pipeline corridors. Attitude could generally be grouped into one of three categories: (1) those opposing pipeline corridors completely; (2) those for energy development but against a pipeline corridors in their area; (3) and those for energy development and a pipeline corridor in their area but against access roads. Overall the villagers want to protect their existing subsistence lifestyle and leave land management the way it is.

## 4. Compliance with Environmental Mandates.

Both the Becharof and Alaska Peninsula RCCPs are considered major federal action and include Environmental Impact Statements within the plans.

# E. ADMINISTRATION

## 1. Personnel.

In late November, RM John Taylor accepted a position at the newly established Alligator River NWR headquartered in Manteo, N.C. John was the first manager of the Becharof National Monument (NM) which received a change in size and designation (to a NWR) after the passage of ANILCA in late 1980. Taylor was stationed in King Salmon for 4



years as project leader of Becharof NM/NWR with the added responsibility of managing the Alaska Peninsula NWR during the last 15 months of his stay.

In March Alan Rogers was selected for the maintenance position that was converted from temporary to Permanent Full Time (PFT) in 1984. Alan transferred from Izembek NWR in Cold Bay, Alaska. Alan and his skills were a welcome addition to our staff. The Full Time Equivalent (FTE) and funding for this position is shared with Becharof NWR and the King Salmon Fishery Resource Station (FRS).

Although Alaska Peninsula NWR and Becharof NWR were combined at the beginning of the fiscal year to be managed by one project leader, budgets for FY-84 were kept separate. Even with separate budgets some funding and FTE's were shared by both refuges which at times causes an administrative nightmare concerning budget tracking, FTE's and payroll.

The status of personnel affairs is shown in Table 3.

Table 3. Personnel Status of Alaska Peninsula NWR.

FY	PFT	TEMPORARY
85	3.4	—
84	3.4	.4
83	3	.7
82	2	.6
81	1	

## 2. Youth Programs.

One enrollee completed a 7 week and two enrollees completed 10 week work sessions this summer. Jenifer Bullock spent all of her time in the compound concentrated mainly in the office. She helped the Refuge Assistant with the files and telephone answering and helped with some biological work (swan data transcribing and swan collar forming). Kevin Riske and Kelly Fundeen assisted MW Rogers in the compound (see Section I. Facility and Equipment) and made one trip to the cabin at Becharof Lake for a couple of days of "clean-up, paint-up and fix-up".

A problem exists in recruiting enrollees for our youth programs. The Youth Conservation Corps (YCC) work sessions occur (generally) at the height of the salmon processing period. Consequently, teenagers can usually find more lucrative summer employment with local canneries. There are five canneries in Naknek located 15 miles west of King Salmon.



YCC enrollees Fundeen and Riske helped fix-up Becharof Lake field camp. DM

##### 5. Funding.

Table 4. Alaska Peninsula NWR Funding FY81 - FY 85.

FY	1210	1220	1260	1300	1360	Total
85	--	--	\$901K <sup>1</sup>	--	--	\$901K
84	--	--	\$415K <sup>2</sup>	--	\$10K <sup>3</sup>	\$425K
83	\$70K	\$210K	--	--	--	\$280K
82	\$70K	\$220K	--	--	--	\$290K
81	\$10K	\$20K	--	\$32	--	\$62K

<sup>1</sup>Combined budget with Becharof NWR.

<sup>2</sup>Includes \$130K earmarked for Accelerated Refuge Maintenance and Management (ARMM) project.

<sup>3</sup>Earmarked to assist King Salmon Fisheries Research Station in developing a Fisheries Management Plan.

<sup>4</sup>Includes \$56K spent on BBCMP mapping.



## 6. Safety.

Field operations in bush Alaska are inherently hazardous. A number of small aircraft accidents on and around the refuges reinforces 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.

Portable Emergency Locator Transmitters (ELT's) were purchased this year for use in the field. The transmitters, when activated emit a signal on 121.5 MHz and 243.0 MHz that can be received by passing aircraft or satellite. These radios are carried by field personnel as extra insurance in the event of an emergency.

In March those staff members who travel to peninsula villages began a series of hepatitis type B vaccinations (3 shots over a six month period). Hepatitis B is quite common in villages in Western Alaska where sanitary conditions are often substandard. The state of Alaska picked up the tab for the shots.

The facilities occupied by APNWR and BNWR were acquired from the National Marine Fishery Service (NMFS). Much headway was gained this year in correcting numerous unsafe conditions relating mainly to facilities. These accomplishments are a result of the talent and motivation of our maintenance worker.

Monthly safety meetings were conducted throughout the year by various staff members covering a wide variety of safety topics.

## F. HABITAT MANAGEMENT

### 1. General.

The Alaska Peninsula extends approximately 450 Miles (720km) from near Lake Iliamna to Isonotski Strait at the beginning of the Aleutian Islands. The peninsula's width varies from about 100 miles (160km) at the base to 3 miles (5km) near the southern tip. APNWR extends for most of the length of the Pacific side of the peninsula, from the Becharof NWR in the north to Izembek NWR in the south.

The refuge's area of influence includes the Bering Sea, Pacific Ocean and coastal lands. These surrounding waters affect the climate and weather, and provide habitat and migrational pathways for fish, birds, and mammals. Changes that occur on the refuge and adjacent lands and waters are likely to affect each other. It is important to expand and research the different habitats of the APNWR which support at least

248 species of resident and migratory wildlife and fish. Many of these species range throughout the refuge, while others occur predominantly on the islands off the Pacific coast and on the Bristol Bay lowlands adjacent the refuge boundaries.

## 2. Wetlands.

Water is an important resource on APNWR affecting the landscape, fish and wildlife populations, human uses, and management of the refuge. The refuge includes 18 major rivers, several hundred streams, approximately 300 lakes (9 major lakes), hundreds of ponds and potholes, extensive wetland areas, and more than 80 coastal bays, coves, lagoons, ports, tidal flats, and harbors (Figures 2, 3, and 4). Although hydrological and water quality data is scarce, the King Salmon FRS station is conducting inventories to gather this type of data on drainages lying in areas likely to be impacted by oil, gas, or mineral development to help assess potential impacts on the refuges fisheries resources.



Chiginigak Bay located on the Pacific southern portion  
of the Alaska Peninsula. RJW

Runoff rates vary with changes in the seasons. Freeze-up on the refuges is not well documented, but is reported to occur near mid-December on the Ugashik River and in late November to mid-December



Fig. 2. Cover types — deep clear water, barrens, open low shrub/ericaceous tundra, and shallow sediment water.

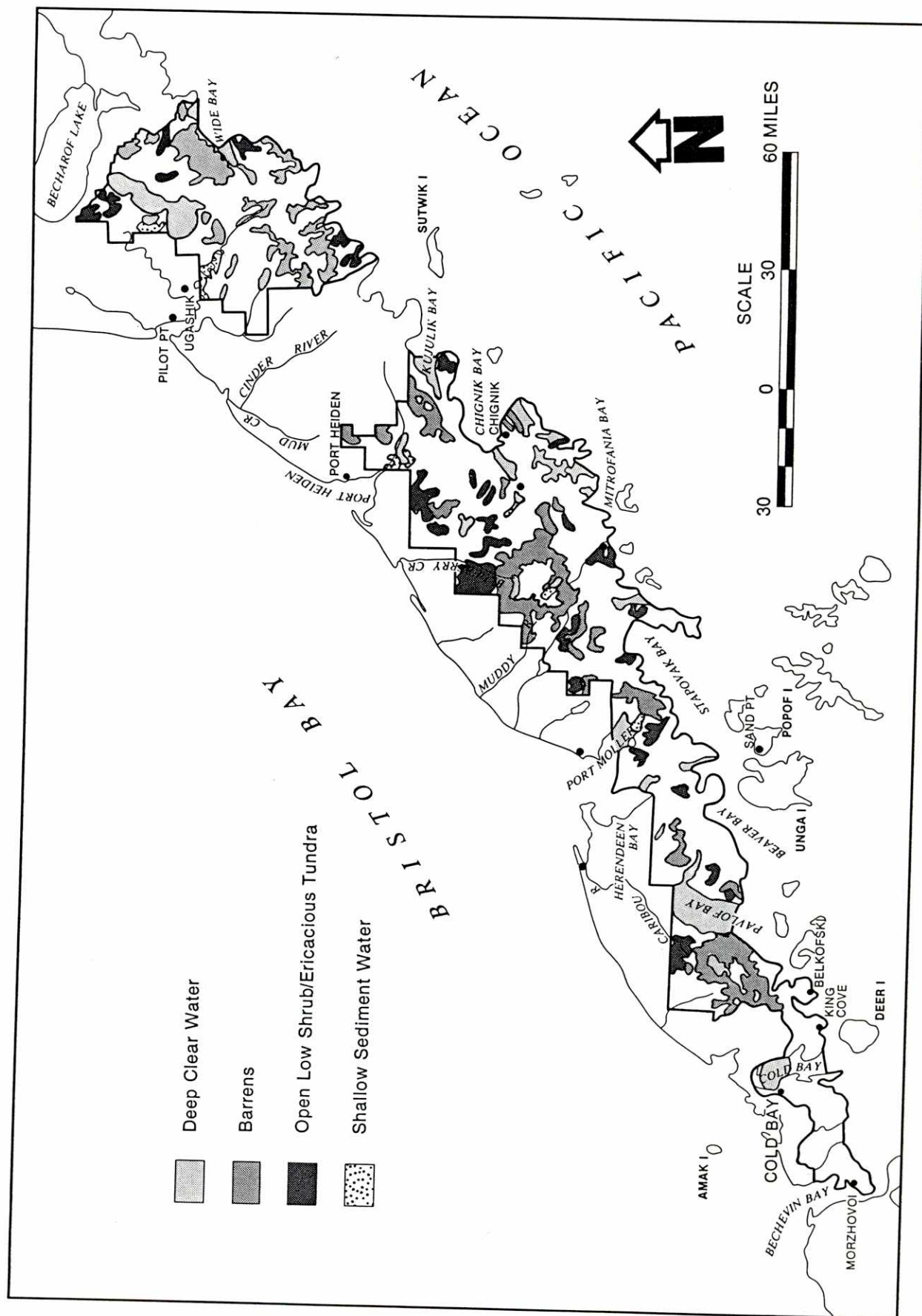




Fig. 3. Cover types-wet bog/wet meadow.

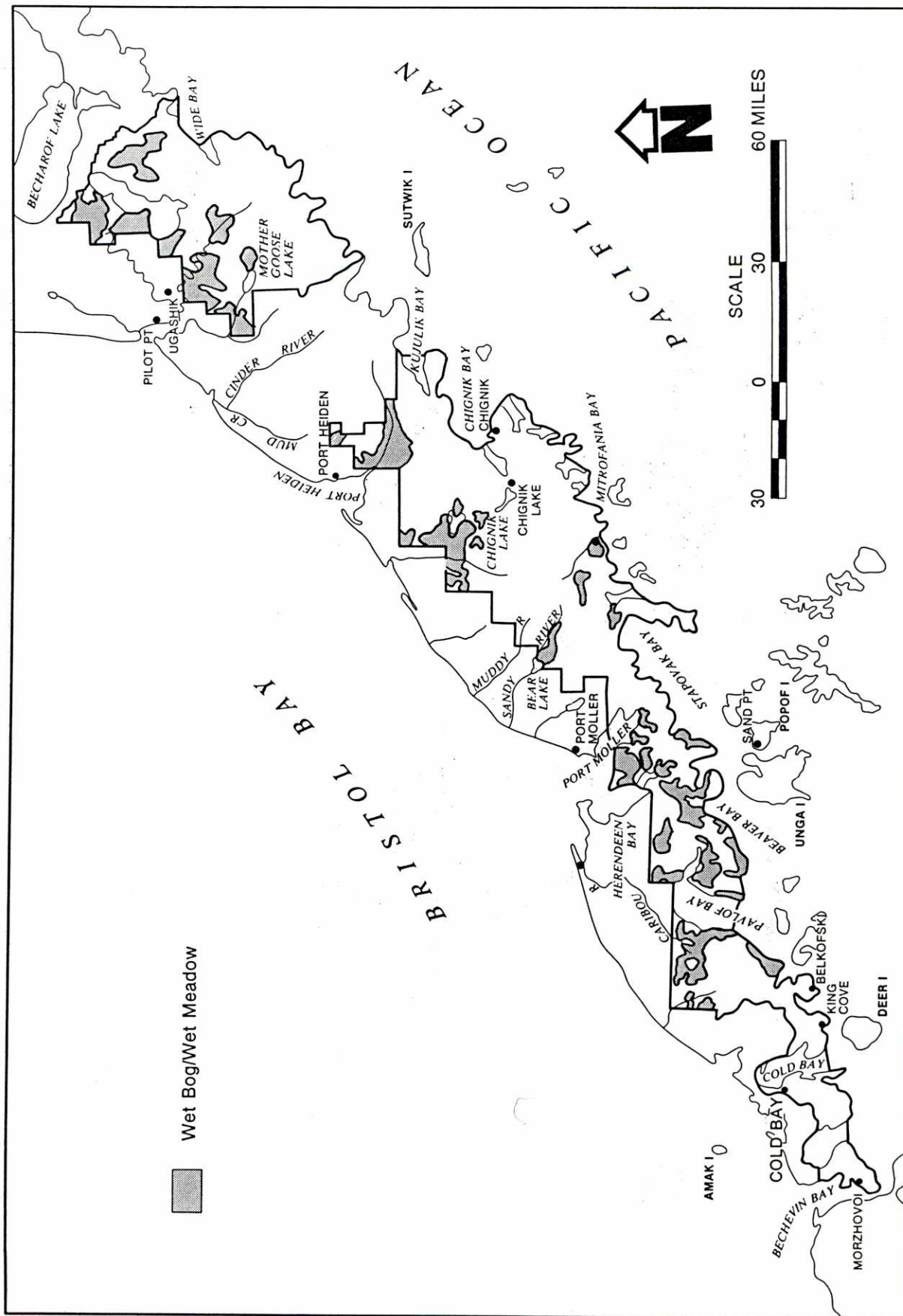
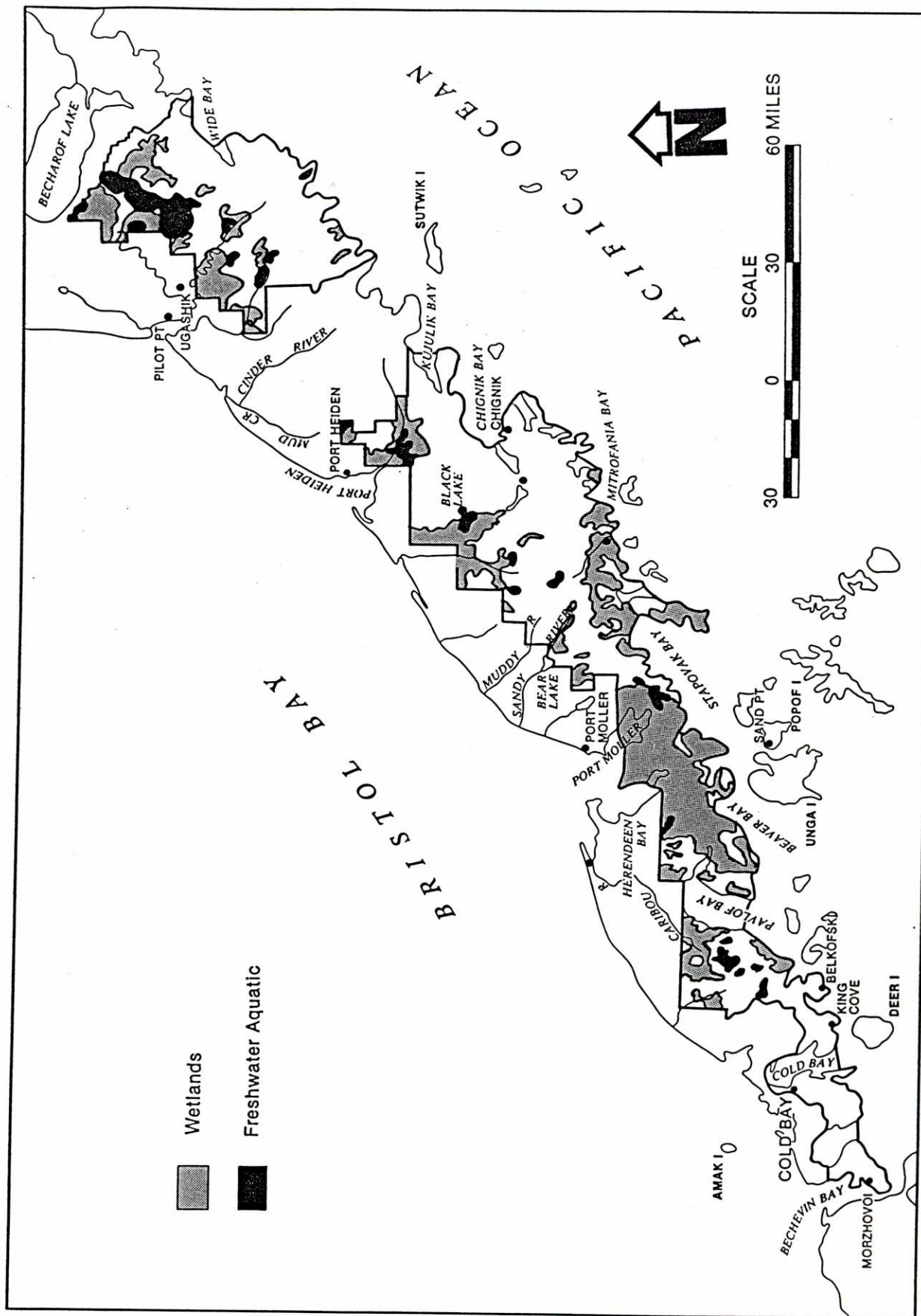


Fig. 4: Ecosystems — wetlands and freshwater aquatic.





near Cold Bay. In the winter, when most streams and springs are frozen, run off rates are lower. Run off rates increase dramatically with the spring break-up.

### 3. Forest.

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 side of the peninsula but are more common on the wetter Pacific side.

### 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 the 200 feet (61m) elevation. Crowberry, 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 the habitat lying outside of the refuge.



The False Morel mushroom is abundantly found in certain areas of the Alaska Peninsula. DDM

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



Alpine tundra occurs at higher elevations on slopes and ridges of the Aleutian Range and other well drained areas. Crowberry, 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 (610m) elevation.

Acreage of the cover types are listed in Table 5.

Table 5. Major Cover Types and Percentage of Total Cover on or Near Alaska Peninsula NWR.

Cover Type	Approximate no. acres	Approximate % total cover
Closed shrub/graminoid	881,000	19.2
Barren	847,000	18.4
Snow/cloud/light barren	616,000	13.4
Miscellaneous deciduous	558,000	12.2
Deep clear water	473,000	10.3
Open low shrub/graminoid tundra	431,000	9.4
Open low shrub/ericaceous tundra	297,000	6.5
Wet bog/wet meadow	258,000	5.6
Marsh/very wet bog	142,000	3.1
Shallow sedimented water	27,000	0.6
All other types	61,000	1.3
Total	4,590,000	100.0

#### 9. Fire Management.

The Bureau of Land Management (BLM) wildfire records have not provided any significant natural fire history for the APNWR. Wildlife records did produce evidence of a few man caused fires in the past. Since it is not possible to plan for incendiary fires or volcanism, it is not possible to develop a station fire plan as required by 6 RM 7.

#### 12. Wilderness and Special Areas.

APNWR has no designated wilderness areas at this time though the refuge is generally managed to maintain its present wilderness character. Extensive wild and scenic areas exist on the refuge.



Mt. Veniaminof, January 23, 1984. The U.S. Geological Survey (USGS) made regular over-flights to monitor strombolian activity. USGS



Mt. Veniaminof, located on the refuge, erupted in 1983 and is still active through 1984. USGS



## G. WILDLIFE

### 1. Wildlife Diversity

Diverse topographic features, defacto wilderness and the narrow breadth of the Alaska Peninsula, extending into the Bering Sea fosters a rich and unique variety of wildlife. The moderate polar and Aleutian maritime climates attract wintering wildfowl to coastal bays and estuaries from as far away as Asia. At least 183 bird species, 30 land mammal species, and 11 species of sea mammals probably occur on or near the refuge. Streams and tributaries harbor 24 species of fish and are nurseries for five Pacific salmonids.

### 2. Endangered and/or threatened Species

The endangered Aleutian Canada goose (Branta canadensis leucopareia), may occur on the Alaska Peninsula NWR during migrations to and from their western Aleutian nesting areas, however, they have not been documented by actual observations. The Arctic and American races of the peregrine falcon (Falco peregrinus tundrius and F.p. anatum, respectively) may occur in the area during migration, however, these species have not been documented either. In 1984, F.p. tundrius was removed from the endangered list to threatened status. Peal's peregrine (F.p. pealei) is the non-endangered or threatened race that is a fairly common resident of the area.

### 3. Waterfowl

The importance of the Alaska Peninsula to waterfowl is evidenced by the thousands of birds that nest there and stage during migrations to and from the Aleutian Islands, Yukon-Kuskokwin Delta and Siberia. The North American population of emperor, cackling Canada (Brantus canadensis minima) and greater white-fronted geese stage in Bering Sea side estuaries during migration, as do brant, occurring at Izembek Bay at the peninsula's southern terminus. Most of the Bristol Bay tundra swan population nests on the northern peninsula lowlands, as do pintail, black scoter, scaup, mergansers and numerous other ducks.

### Naknek River Survey

In spring, Naknek River aerial waterfowl surveys are conducted to record staging wildfowl (Table 6). The survey documents species abundance and arrival phenology and is an intensive exercise in waterfowl recognition and data recording. Because the river is influenced by tides and diurnal activities, bird populations were



highly variable since surveys were not always synchronized with the peak daily populations . Observer experience also biased the data.

Table 6. Naknek River Waterfowl Survey, 1984.

Species	4/10/84	4/15/84	4/24/84
Tundra Swan	86	444	2625
Greater white-fronted goose			2453
Canada goose		182	50
Northern pintail	10		
Goldeneye spp.	665	165	1102
Mallard	196	600	489
Common/red-breasted merganser			347
Common merganser	1070	1558	
Red-breasted Merganser	47		
American wigeon			30
Bufflehead		25	
Unid. Ducks	20		
Gull spp.	121	80	143
Bald Eagle	2	1	6
Common Raven	7		1
Yellowlegs spp.			2

#### Tundra Swan Survey

The first extensive aerial tundra swan surveys were initiated on the northern Alaska Peninsula in 1984. The total estimated nesting habitat (5700 mi<sup>2</sup> or 1.52 million ha<sup>2</sup>) between the Naknek River and Port Moller on the Bristol Bay lowlands was censused in June. A similar resurvey for production was conducted in mid-July, covering 65% of the study area. Thirty-eight hundred, including 1200-1300 pairs were determined summering on the study area (one third of the estimated Bristol Bay population) (Figure 5). Forty two percent of the observed pairs had broods averaging 3.32 cygnets. Recruitment was 29%.

#### Emperor Goose

Spring and fall emperor goose surveys in southwestern Alaska were completed by aerial crews 28-30 April, 4 May and 3-8, 10-16 October 1984, respectively. Personnel from Izembek NWR, Wildlife Assistance Alaska Department of Fish and Game (ADF&G), and the refuge participated. Spring estimates were 71,217 geese. Fall enumeration was 82,842 geese. Spring estimate were 10% lower than 1983 counts; fall counts were 14% higher, respectively. Better survey timing with

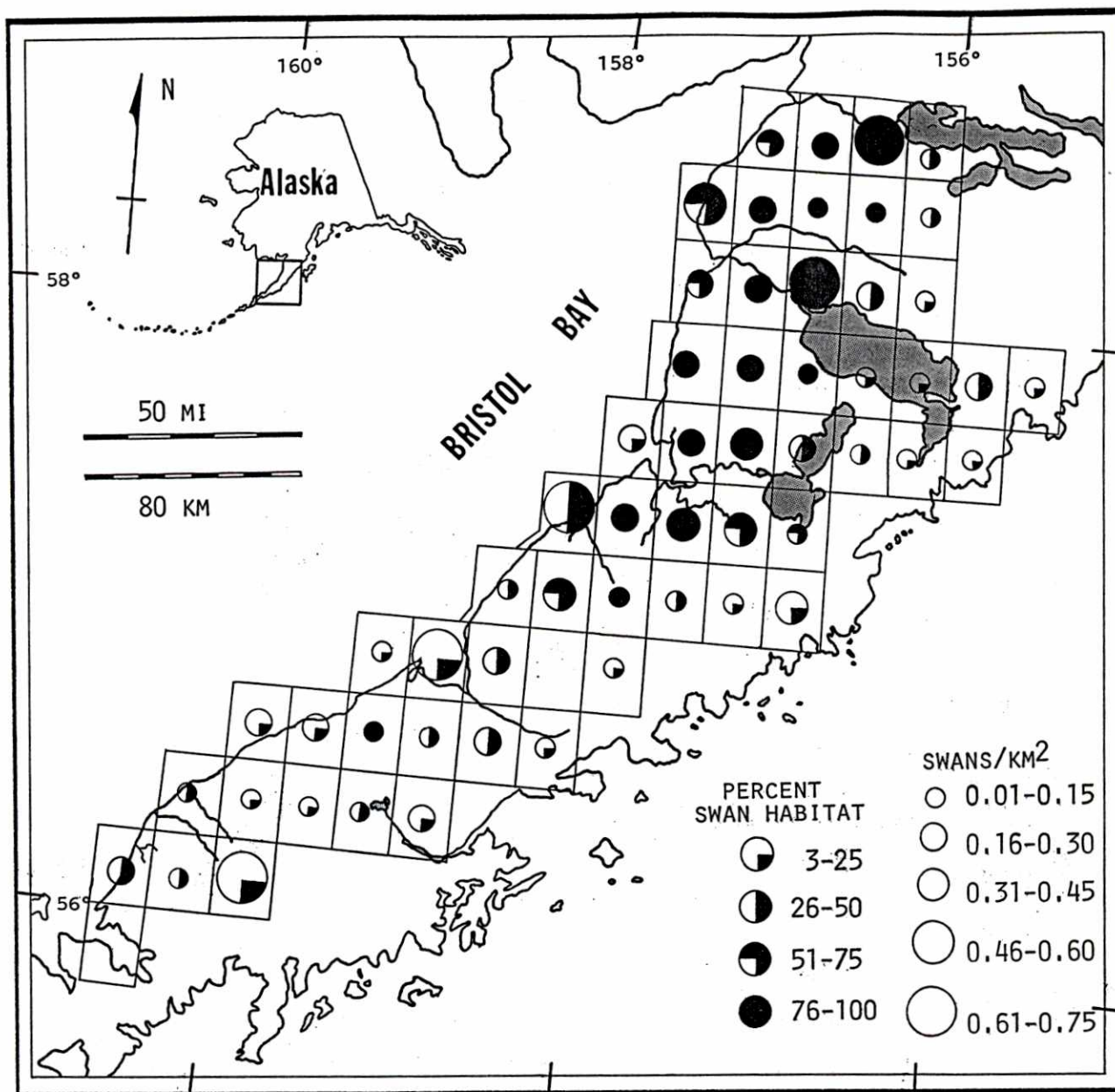


Fig. 5. Tundra Swan densities and habitat censused from June-August, 1984 aerial nesting/production surveys. Units without symbols were not surveyed.

peak staging may attribute to the increase in the latter. (Tables 7, 8 and Figure 6)

Table 7. Spring Population size and productivity trends in emperor geese.<sup>1</sup>

Year	Spring Population Size (%Change from prev. year)	Production (% young in Population)	Family Group Size
1980	No Survey	24.8	2.3
1981	91,267	31.7	3.2
1982	100,643 (+10.3)	7.8	2.7
1983	79,155 (-21.4)	27.1	3.2
1984	71,217 (-10.0)	--	--

<sup>1</sup>Data from Izembek NWR

Table 8. Fall population size of emperor geese.

Year	Fall population size (% change from Prev. year)
1979	59,114 <sup>1</sup>
1980	63,091 <sup>1</sup> (+6.7)
1981	63,156
1982	80,608 (+27.6)
1983	72,551 (-10.0)
1984	82,842 (+14.2)

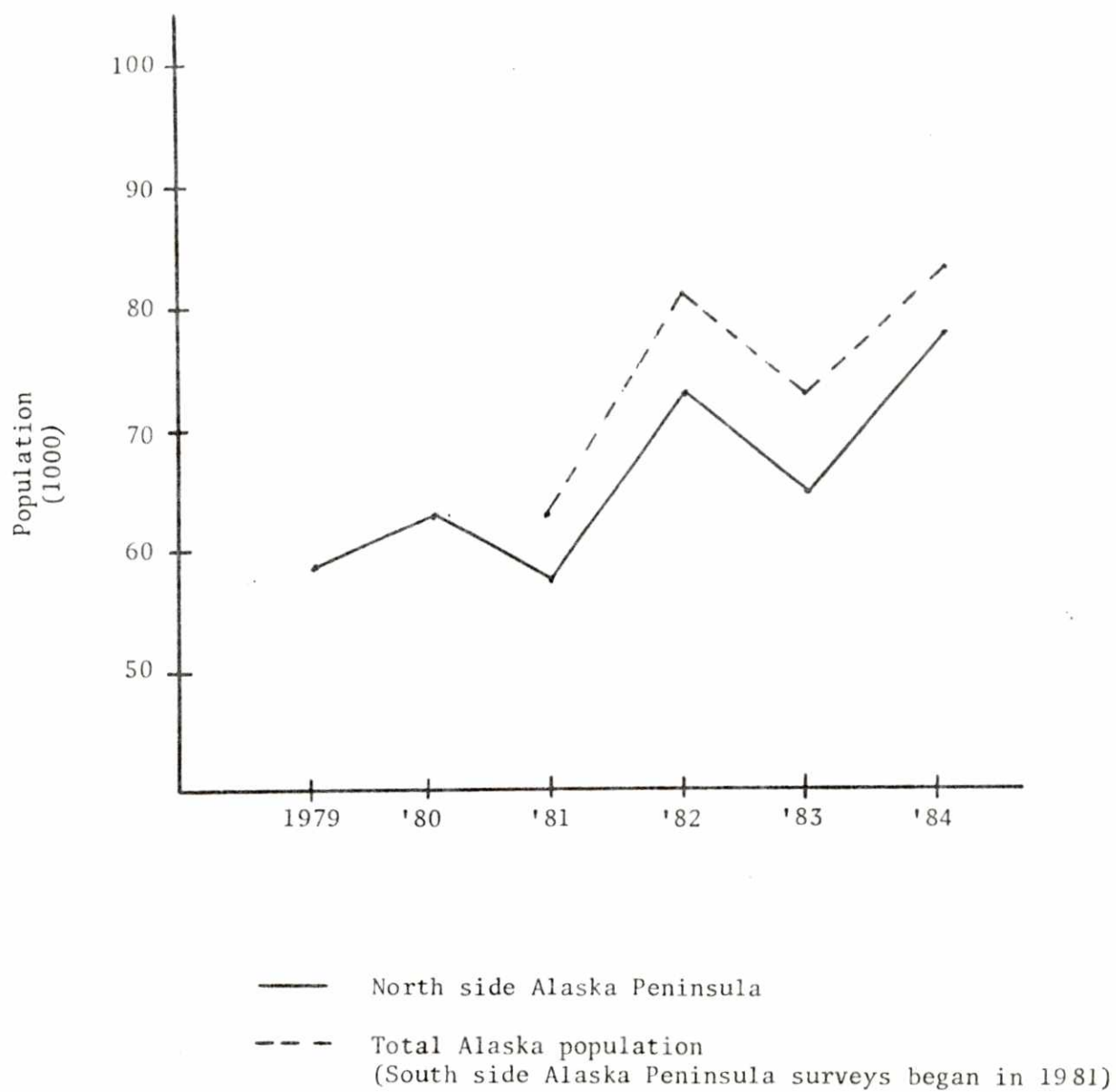
<sup>1</sup>Surveys on south side of peninsula not conducted.

#### 4. Marsh and Waterbirds

The peninsula is an important summering area for lesser sandhill cranes which nest in the sedge-grass marshes of the wet lowland



Figure 6. Fall Populations of Emperor Geese 1979 to 1984.



tundra. Common and red-throated loons probably nest along refuge lakes and rivers as do Arctic loon. Yellow-billed loons are rare and probably winter on the Pacific coast. Red-necked grebes have been observed breeding on the peninsula.

#### 5. Shorebirds, Gulls, Terns and Allied Species

Numerous shorebirds migrate along the Alaska Peninsula in spring and fall. Major staging areas are off-refuge in Izembek and Nelson Lagoons, Port Heiden, and Ugashik and Egegik Bays. Some species occurring on the refuge include rock sandpipers, black oystercatchers, least sandpipers, black turnstones, common snipe, yellowlegs, dunlins, short-billed dowitchers, red-necked phalaropes, semi-palmated plovers, and wandering tattlers. Mew and glaucous-winged gulls and arctic terns are common larids.

Nesting seabirds flourish along the peninsula's coast. The steep, rocky, cliffs of the Pacific coast are particularly suited for colony-nesting species of black-legged kittiwakes, common and thick-billed murres, horned and tufted puffins, red-faced pelagic and double-crested cormorants, pigeon guillemots and gulls.



Numerous cliff-nesting seabirds congregate in colonies along both peninsula coasts. These are black-legged kittiwakes. DDM



## 6. Raptors

The bald eagle is a common nesting species on the refuge. Aeries are constructed atop cliffs and Pacific seastacks. The population was estimated at  $1422 \pm 21\%$  for adults and  $418 \pm 38\%$  for juveniles (95% C.I.) from a recent survey conducted by Jack Hodges. Eagles and other birds of prey are not regularly inventoried by refuge personnel.

A gryfalcon aerie was found atop a defunct U.S. Air Force Distant Early Warning Site superstructure near Port Heiden this summer. Though a rare observation, gryfalcon nests have been previously documented on the peninsula. The nest location, however, may be the first verified nesting of gryfalcons on an artificial structure for the peninsula. An immature female gryfalcon was found gunshot but alive in Naknek and was flown to Anchorage for rehabilitation.

Other raptors known or probably occurring on the refuge are great-horned, northern hawk, great-gray, snowy, boreal and short-eared owls, osprey, northern harrier, rough-legged hawk, and golden eagles.

## 7. Other Migratory Birds

Eight passerine species and 53 individuals were banded by refuge personnel in 1984. All banding was accomplished at baited traps and mist nets placed outside one of the refuge residences. Species banded included tree, fox, golden-crowned and white-crowned sparrows, dark-eyed junco, tree swallow, robin and common red poll.

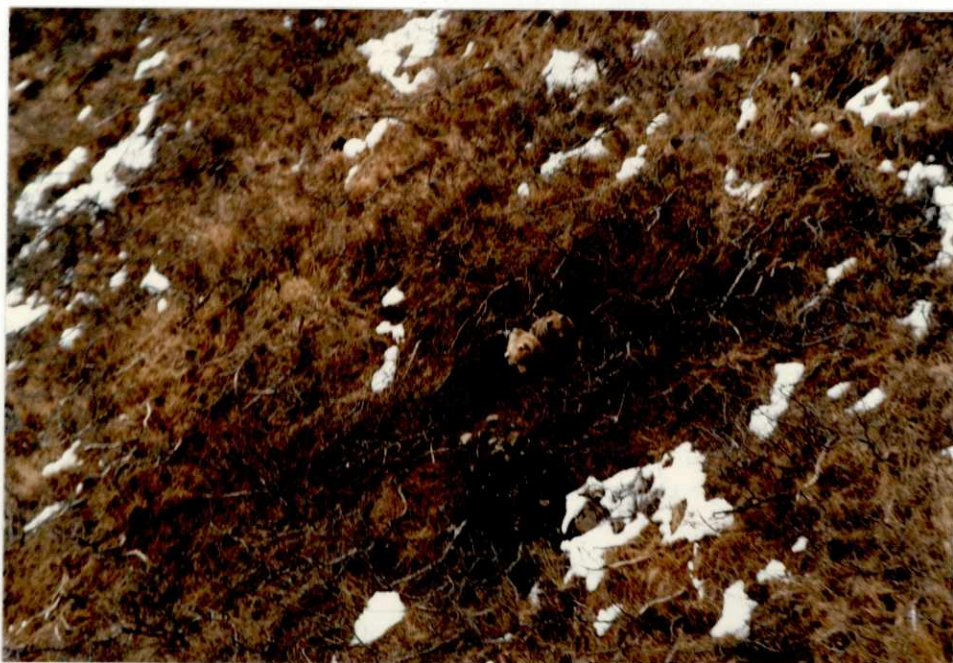
## 8. Game Mammals

### Brown bear

Aerial brown bear surveys of Ugashik and Black/Chignik Lake tributaries were conducted again in 1984 (Table 9 - 12, Figure 7). Bad weather precluded completion of the traditional series of counts used for determining peak concentrations (data from previous years indicated peak bear densities on salmon streams occurring between 17-20 August). Refuge survey crews conducted Ugashik surveys between 27-29 August. State biologists conducted surveys on Black and Chignik Lake streams between 7-8 August.

The highlight of the Ugashik survey was observing a female with 6 yearlings in the same area where a sow with 6 cubs of the year were recorded in 1983. The progeny observed in 1984 were nearly the same size as the sow this year.





April brown bears emerging from winter dens. CRA

Table 9. Ugashik Lakes Brown Bear Survey, 1984.

Survey #1 8/27/84			Survey # 2 8/28/84		
1729-1939 = 130 min.			028-1029 = 120 min.		
Salmon run good			Salmon run good		
Calm; high overcast			Heavy fog - to ground in area		
<u>Composition Summary</u>			<u>Composition Summary</u>		
	#	%		#	%
Female w/young	7	20.0	Female w/young	6	17.7
cubs	9	25.7	cubs	7	20.6
yearlings	10	28.6	yearlings	3	8.8
Single bears	<u>9</u>	25.7	Single bears	<u>18</u>	52.9
Total	35		Total	34	
<u>Composition of Young &amp; % Total</u>			<u>Composition of Young &amp; % of Total</u>		
Female & young all age	26	74.3	Female & young		
all ages	26	74.3	all ages	16	47.1
<u>Single Bears &amp; % of Total</u>			<u>Single Bears &amp; % of Total</u>		
Small	1	11.1		1	5.5
Medium	8	88.8		16	88.8
Large	<u>0</u>	0.0		<u>1</u>	5.5
<u>Average Litter Size</u>			<u>Average Litter Size</u>		
Cubs	2.2		Cubs	1.8	
Yearlings	3.3		Yearlings	1.5	
All young	2.7		All young	1.7	

Table 10. Black/Chignik Lakes Brown Bear Surveys, 1984.

<u>Survey #1</u>			<u>Survey #2</u>		
8/7/84 - AM, 3.25 hrs.			8/7/84 - PM, 2.67 hrs.		
<u>Composition Summary</u>			<u>Composition Summary</u>		
Female w/young	28	(25%)	Female w/young	37	(22%)
Young	54	(49%)	Young	79	(46%)
Single	<u>28</u>	(25%)	Single	<u>55</u>	(32%)
Total	110		Total	171	
<u>Composition of Young &amp; % of Total</u>			<u>Composition of Young &amp; % of Total</u>		
Cubs and Small	32	(15%)	Cubs and Small	32	(19%)
Medium	10	( 9%)	Medium	40	(23%)
Large	12	(11%)	Large	7	( 4%)
<u>Single Bears &amp; % of Total</u>			<u>Single Bears &amp; % of Total</u>		
Small	16	(15%)	Small	24	(14%)
Medium	11	(10%)	Medium	27	(16%)
Large	0	( 0%)	Large	4	( 2%)
Unknown	1	( 1%)	Unknown	0	( 0%)
<u>Average Litter Size</u>			<u>Average Litter Size</u>		
Cub and small	2.0		Cub and small	2.3	
Medium and Large	1.8		Medium and Large	1.8	
All Young	1.9		All young	2.1	



Table 10 Cont'd.

Survey #3			Survey #4		
8/8/84 - 1.6 hrs.			8/8/84 PM - 2.5 hrs.		
<u>Composition Summary</u>			<u>Composition Summary</u>		
Female w/young	26	(26%)	Female w/young	37	(24%)
Young	47	(47%)	Young	70	(46%)
Single	26	(26%)	Single	46	(30%)
Total	99			153	
<u>Composition of Young &amp; % of Total</u>			<u>Composition of Young &amp; % of Total</u>		
Cubs and Small	17	(17%)	Cubs and Small	26	(17%)
Medium	29	(29%)	Medium	44	(29%)
Large	1	(1%)	Large	0	(0%)
<u>Single Bears &amp; % of Total</u>			<u>Single Bears &amp; % of Total</u>		
Small	15	(15%)	Small	23	(15%)
Medium	10	(10%)	Medium	19	(12%)
Large	1	(1%)	Large	3	(2%)
Unknown	0		Unknown	1	(1%)
<u>Average Litter Size</u>			<u>Average Litter Size</u>		
Cubs and small	2.1		Cubs and small	2.2	
Medium and Large	1.7		Medium and Large	1.8	
All Young	1.8		All Young	1.9	

Table 11. Comparison of annual brown bear surveys 1980-1984<sup>1</sup>

Class	1980		1981		1982		1983		1984	
	No	%	No	%	No	%	No	%	No	%
Cubs	90	26	89	16	65	25	198	19	29	29
Yearlings	55	16	48	9	25	9	64	19	11	11
Sows w/cubs	48	14	47	9	36	14	36	10	23 <sup>2</sup>	23 <sup>2</sup>
Sows w/yearlings	30	8	29	5	13	5	34	9		
Single Bears	124	36	329	61	121	47	147	43	46	46
Sample Total	347		542		260		345		99	
Avg. Litter size (cubs)	1.9		1.9		1.9		1.8		2.0	
Avg. Litter Size (yearlings)	1.8		1.7		1.9		1.9		1.6	

<sup>1</sup>Categories are based on lumped observation for all surveys.  
1980-1983 Data are from 1983 Narrative Report.

<sup>2</sup>Sow w/cubs and sows w/yearling totals combined.

Table 12. Black Lakes brown bear trend counts 1958-1984

Date	♀w/ young		Cubs		Yearlings		Cubs & Yearlings		Singles		Total Sample		Mean Litter Size "Yearlings"		Best Survey		Comments
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Coy	Bears	No. of Bears	per/hr.	
8/1/58															76		No raw data
8/6/59															73		No raw data
1961																	
1962	439	26	512	30	376	22	888	52	391	23	1,718		-	2.02	118		27 counts
3/6 & 7/65	65	28	75	32	60	25	135	57	36	15	236		2.21		123	49.2	2 counts
8/9/66	24	22	37	34	14	13	51	47	33	31	108		-		108	43.2	1 count
8/10/67	42	27	70	45	16	10	86	55	27	17	157		-		82	30.4	2 counts
8/13/68	30	23	55	43	18	14	73	57	25	19	129		-		67	20.9	3 counts
8/8/69	148	22	196	30	145	22	341	51	174	26	663		-		122	44.4	6 counts
10/11/70	70	22	53	17	84	26	137	43	114	36	321		-		126	4.0	3 counts - Fall
8/88/74	39	23	43	25	46	27	89	52	44	26	172		-		95	43.0	2 counts
8/8/82	53	19	71	25	45	16	116	41	113	40	282		2.1	2.4	148	50.7	2 counts
8/9-12/1983	139	22	171	27	122	19	293	46	199	32	631		2.3	2.1	173	55.8	4 counts
8/768/84	127	24	107	20	139	26	246	46	160	30	533		2.1	1.8	171	64.0	4 counts



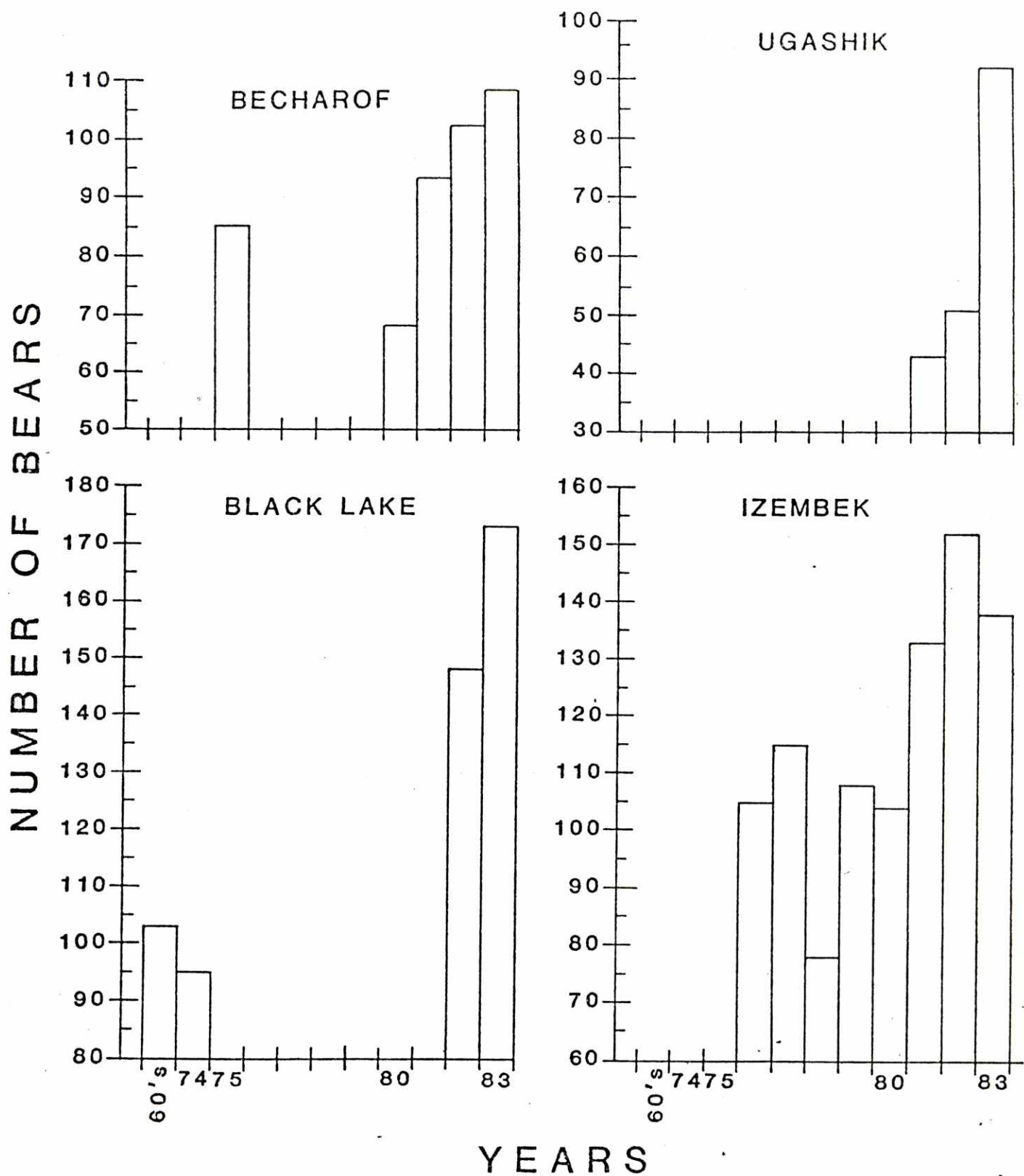


Figure 7. Highest single counts of brown bears in four trend areas surveyed by USFWS and ADF&G on the Alaska Peninsula.

Becharof NWR and Izembek NWR abutt APNWR at the northern and southern terminus.

Figures are modified from ADF&G unpublished report, 1984

## Caribou

State game biologists have conducted annual spring/fall counts for the Alaska Peninsula caribou herd. In 1984, post-parturition counts showed 19,000 animals in the northern herd, of which 24.5% were calves. During October, calves composed 22% of the herd. Calf/cow ratios were 39/100 and bull/cow ratios were 39/100 (Table 13).

The FWS assisted state biologists in tracking 20-25 radio collared caribou from the northern subherd to monitor the movements.

The estimated annual herd harvest is 1000-1200 animals. Most hunters take bulls.



A segment of the northern Alaska Peninsula caribou subherd in August. JWS

## Moose

Aerial stratification surveys of moose by state biologist in Game Management Unit (GMU) 9(E) in 1983 estimated 2500 moose and at least 2500 roam the peninsula's northern reaches.

Moose trend surveys have been flown by state biologists on the peninsula since 1962. Trend data for GMU 9(E) from 1969-72 compared with 1982-83 suggest moose numbers have declined by 60% during the 12 year period (ADF&G data).

Table 13. Summary of caribou population statistics for the Northern Alaska Peninsula.

Year	Season	Bull:Cow Ratio	Calf:Cow Ratio	Calf % in Herd	Population Estimate
1970	Fall	48.3:100	46.1:100	22.9	
1975	Fall	33.0:100	44.6:100	25.1	10,340
1976	Spring	--	--	--	11,368
1978	Fall	48.3:100	55.2:100	25.0	--
1980	Fall	52.8:100	56.5:100	27.0	--
1981	Spring	--	--	27.8	16,600*
1981	Fall	33.6:100	39.2:100	22.7	--
1982	Spring	52.5:100	55.4:100	26.7	16,800*
1982	Fall	43.1:100	51.6:100	26.5	--
1983	Spring	--	--	28.5	18,000*
1983	Fall	39.2:100	26.7:100	16.1	--
1984	Spring	--	--	24.5	19,000*
1984	Fall	39.0:100	39.0:100	22.0	--

\* Post calving photo count with aid of radio telemetry.



Some of the densest moose populations on the refuge occur in the Dog Salmon River, Cinder River, Mother Goose Lake, Upper Meshik River Valley and Black and Chignik Lakes areas.

#### 9. Marine Mammals

Cape Seniavin on the Bristol Bay side of the peninsula is a major haulout area for walrus. Harassment by fishermen and ivory hunters has put pressure on the species.

In May, four decapitated carcasses with "oosiks" removed were investigated by refuge personnel. Subsequent law enforcement "stake outs" resulted in investigations of local fishermen in Naknek who were observed shooting at beached walrus from their boats. No arrests were made.



Close quarters for walrus hauled out at Cape Seniavin. DDM

#### 10. Other Resident Wildlife

Wolves, wolverine, lynx, red foxes, river otter, mink, weasel, and beaver are furbearers occurring on the refuge. Spruce grouse, willow and rock ptarmigan and arctic and snowshoe hare and other game species are also residents on the peninsula. No population data is available for the above species.

## 11. Fisheries Resources

The King Salmon Fishery Resource station initiated baseline studies of the Meshik River fishery in 1984. Investigation focused on salmonid species composition. Abundance and distribution in the drainage. Age, weight, and length data were collected from spawning fish and carcasses. King, silver, sockeye and chum salmon are major spawning species. Pinks are generally found on the Pacific side.

The BBCMP has proposed the establishment of economic development corridors through certain peninsula drainages. The work on the Meshik should provide the kind of fishery data necessary to assess potential impacts of habitat disturbances on fish as well as provide first-time information about fish species in the system.



Anaconda Mining chopper escorted FRS personnel to Braided Creek headwaters to discuss mining impacts on the salmon nursery in the Meshik drainage. CD

## 16. Marking and Banding

Due to scheduling conflicts with brown bear collaring, stream surveys, and poor weather conditions towards the end of August only 9 tundra swans were banded at APNWR during the 1984 season (Table 14).



Table 14. Alaska Peninsula Swan Banding 1984.

Date	Collar#	FWS Band #	Age/ Wt. Sex (kg)	Parasite <sup>1</sup>	Location
8/16/84	P046	609-08046	L-F 4.1	LL	2 mi S of Ugashik Creek
8/19/84	P047	609-08047	L-F 4.8	T	3 mi E of Upr Ugashik Lake
8/19/84	P048	609-08048	L-M 4.2	-	2 mi S of Ugashik Creek
					3 mi E of Upr Ugashik Lake
					5 mi NW of Blue Mtn.
8/19/84	P049	609-08049	L-F 3.2	LL	5 mi NW of Blue Mtn.
8/23/84	P052	609-08052	L-M 5.6	LR	1 mi S Pilot Point
8/23/84	P053	609-08053	L-F 4.6	-	1 mi S. Pilot Point
8/23/84	P054	609-08054	L-U 3.5	LR	1 mi W of Ugashik Village
8/23/84	P055	609-08055	L-M 7.0	2L, LR	5 mi E of Upr Ugashik Lake
8/23/84	P056	609-8056	L-M 6.1	LL,LR	5 mi E of Upr Ugashik Lake

<sup>1</sup>Parasite is Leech (*Theromyzon* sp.) unless notes as T (tapeworm).

L=left eye, R=right eye. Also listed is number of leeches found under nictitating membranes.



Our capture method consisted of flying and locating a brood on a lake, landing on the lake and drive the birds into the grass along the shoreline. As soon as the airplane stopped one person would begin catching swans while the other person tied down the aircraft and then he assisted in their capture. On August 23, 1984, a flight in the Dog Salmon River drainage showed no birds on landable lakes and those birds present amounted to only scattered adults and a few single cygnet family groups. Those captured cygnets in the Ugashik Lake area had already reached flight stage and were more difficult to capture. For these reasons the banding operation was terminated.



Catching the cygnets in tall grass and marsh areas can be exciting, tiring and wet if you fall. JWS



All captured swans were fitted with a blue on white neck collar and tarsus band as well as the FWS metal band. JWS

## H. PUBLIC USE

### 1. General

Residents from small communities dotting the Alaska Peninsula recreate on and participate in taking subsistence resources from the refuge. The communities extend from the Bristol Bay Borough at the base of the peninsula, to Cold Bay where the refuge adjoins Izembek NWR. Figure 8 shows popular access areas of the refuge.

### 8. Hunting

Sport hunting constitutes a major use of APNWR. Commercial guiding includes hunts for world-class trophy moose, brown bear and caribou.

Thirty individuals applied for Special Use Permits to commercially guide on the refuge and nearby Becharof NWR in 1984.

Moderate waterfowl hunting occurs near the refuge. The Bristol Bay lowlands and estuaries are major nesting and staging areas for migratory waterfowl. Pilot Point and Cinder River receive considerable use from non-local hunters during peak fall migration.

A gross estimate for 1984 was 3600 hunter visits for 67,000 activity hours.

The ADF&G in King Salmon is our best source of harvest data for game management units on the refuges (Figure 9). The figures are estimates since harvest data does not distinguish between on-refuge and off-refuge lands within a unit. Harvest data totals are not available 1984. Table 15-19 list big game harvest data for 1983.

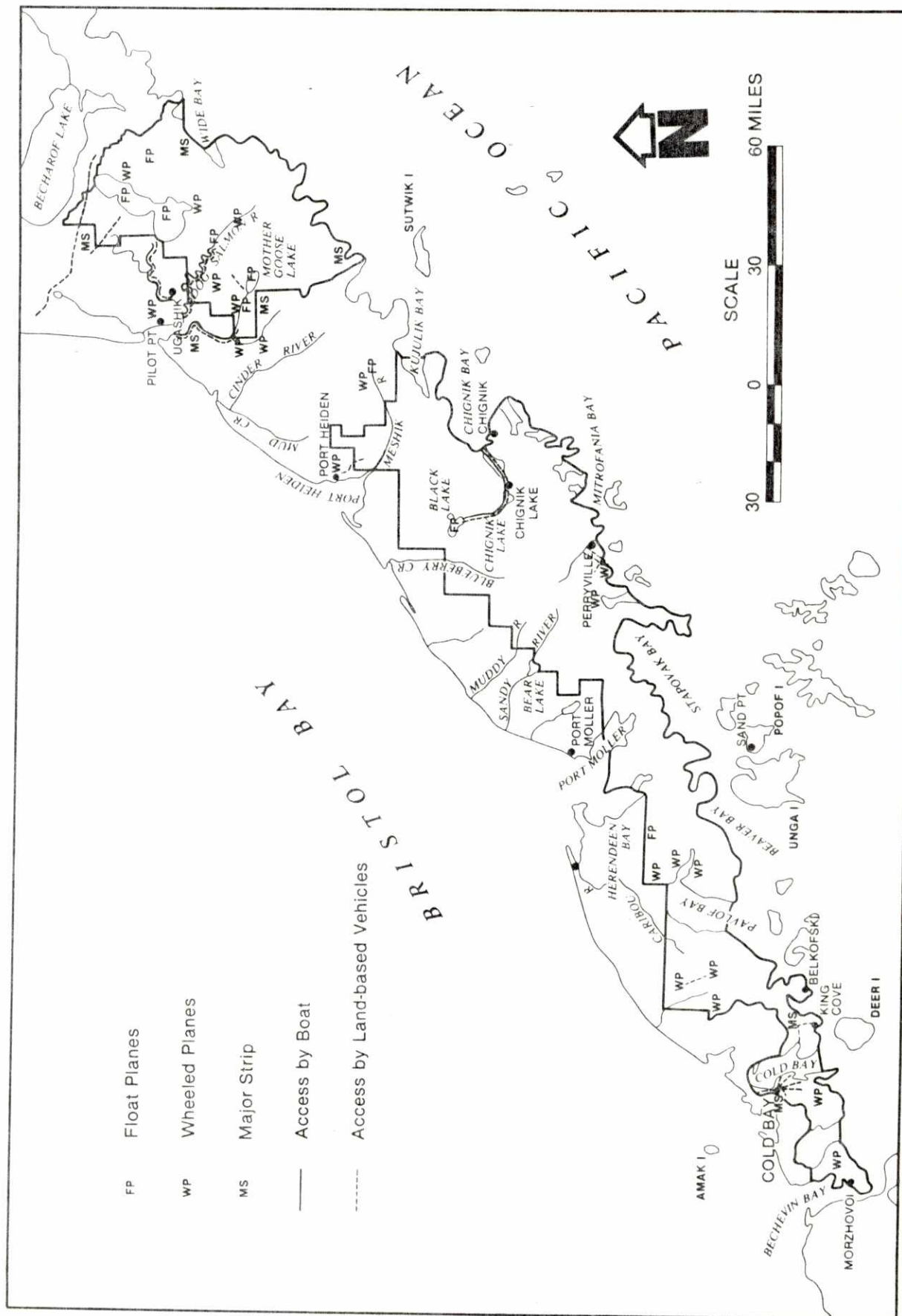
Table 15. Summary of caribou harvest on the Alaska Peninsula

	<u>Carbiou</u>				<u>Hunters</u> <sup>1</sup>					
	M	F	?	Total	res.		non-res.		?	Total
					+	o	+	o		
GMU 9C	159	46	7	212	332	70	155	10	34	5 606
GMU 9E	334	82	11	427						
Total	493	128	18	639	402		165		39	606
APNWR	118	18	2	138						

<sup>1</sup>+ = successful, o = unsuccessful, ? = unknown.



Figure 8. Popular access areas (approximate locations).



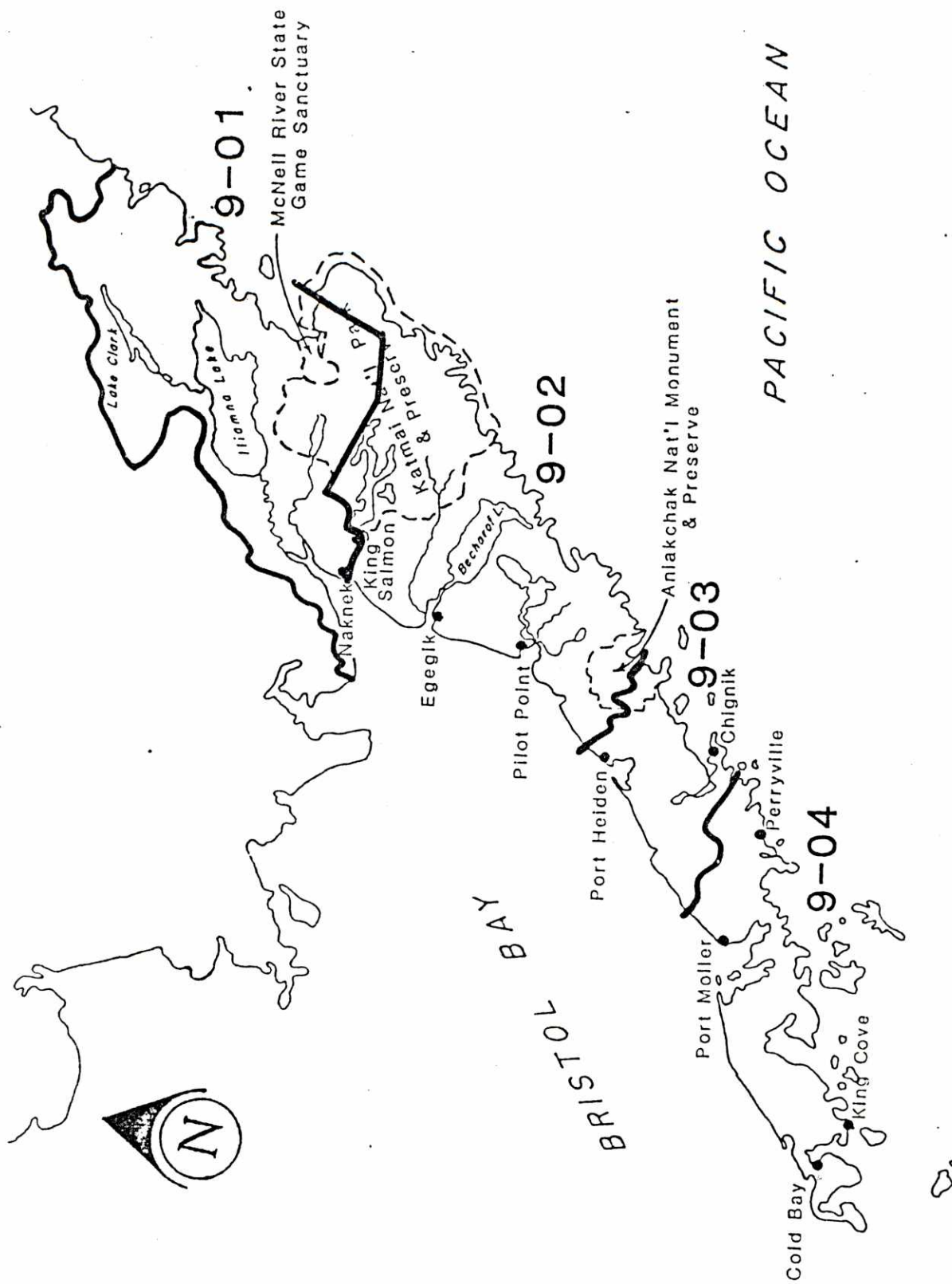


Figure 9. Map of brown bear "subunits" within Game Management Unit 9.

Table 16. Summary of moose harvest on the Alaska Peninsula.

	<u>Moose</u> harvested	<u>Hunters<sup>1</sup></u>				Total
		res.		non-res.		
		+	o	+	o	
APNWR	61	30	18	31	7	86

<sup>1</sup>+ = successful, o = unsuccessful.

Table 17. Brown bear harvest for the Alaska Peninsula, 1975-1983.

Date	Total	%non-res.	%male	age		% 5 yr. old	
				M	F	M	F
1975-76	261	67	62	6.4	6.8	48.7	51.3
1977-78	311	72	64	5.9	7.1	45.3	54.7
1979-80	316	77	68	6.1	6.2	46.7	53.3
1981-82	339	76	59	5.9	6.4	47.0	53.0
1983-fall	165		61				
Mean		73	63	6.1	6.6	46.9	53.1

On the Alaska Peninsula, 77% of the caribou taken were males, 20% cows, and 3% not specified. Sixty-four per cent of the successful hunters were residents and 30% were non-residents. Only 14% of all hunters were unsuccessful in harvesting caribou. Figures 10 - 12 show general areas of recreational harvest of moose and caribou.

Approximately one-third of the brown bear hunted in Alaska have been taken on the Alaska Peninsula since hunting of the species took hold in the early 1960's. Most bears are taken by commercially-guided non-resident hunters during the fall season. State hunts occur one season every year in either spring or fall. Data from ADF&G show that at least 165 bear were harvested from the Alaska Peninsula during May, 1984. Table 17 lists recent harvest data from the Alaska Peninsula.

Alaska statutes allow the taking of wolf and wolverine with either hunting or trapping license. Animals taken by firearm and trapping are listed in Table 20.



Table 18. Reported harvest for Northern Peninsula caribou herd.

Year	Fall Season			Winter Season			Season Unknown		Totals	
	Male	Female	Total*	Male	Female	Total*	Male	Female	Male	Female
1977-78	418	59	480	219	78	297	46	13	683	150
1978-79	345	53	402	51	47	98	46	23	442	123
1979-1980	-	-	443	-	-	135	-	-	-	-
1980-81	358	44	419	146	100	246	-	-	504	144
1981-82	447	36	490	118	93	216	-	-	565	129
1982-83	287	42	346	104	108	248	11	4	402	154
										594

\* Totals include unknown sex animals.

Table 19. Reported harvest for Southern Peninsula caribou herd

Year	Fall Season			Winter Season			Season Unknown		Totals	
	Male	Female	Unk	Male	Female	Unk	Male	Female	Male	Female
1977-78	47	4	1	40	9	-	49	21	10	122
1978-79	26	5	-	36	10	-	46	17	-	103
1979-1980	-	-	-	-	-	-	110	-	2	169
1980-81	-	-	-	-	-	-	192	-	8	251
1981-82	65	6	1	233	124	3	360	130	4	432
1982-83	34	1	0	271	103	0	374	110	0	410

\* Totals include unknown new seasons of harvest.

Figure 10. Areas where local residents hunt moose on the refuge.

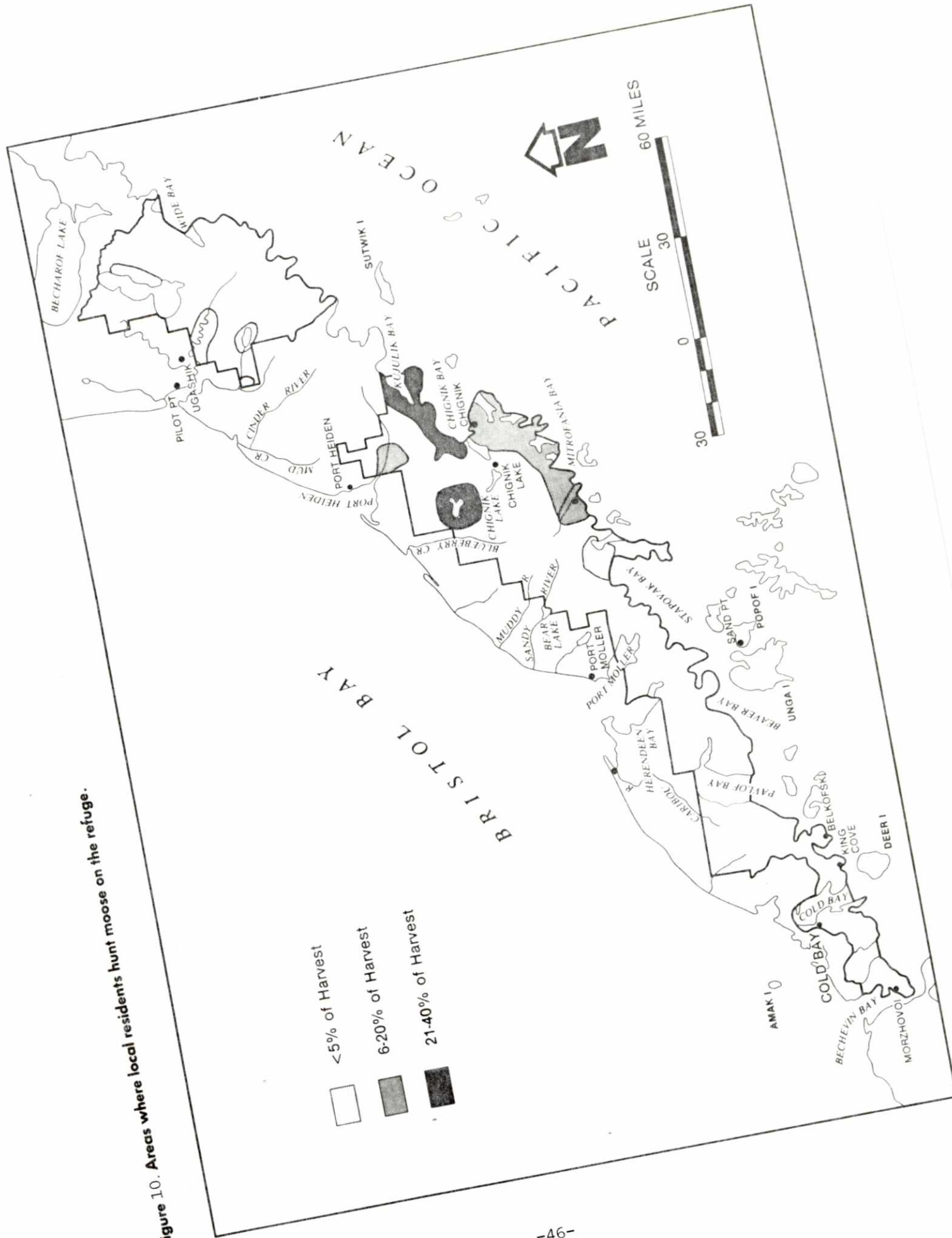
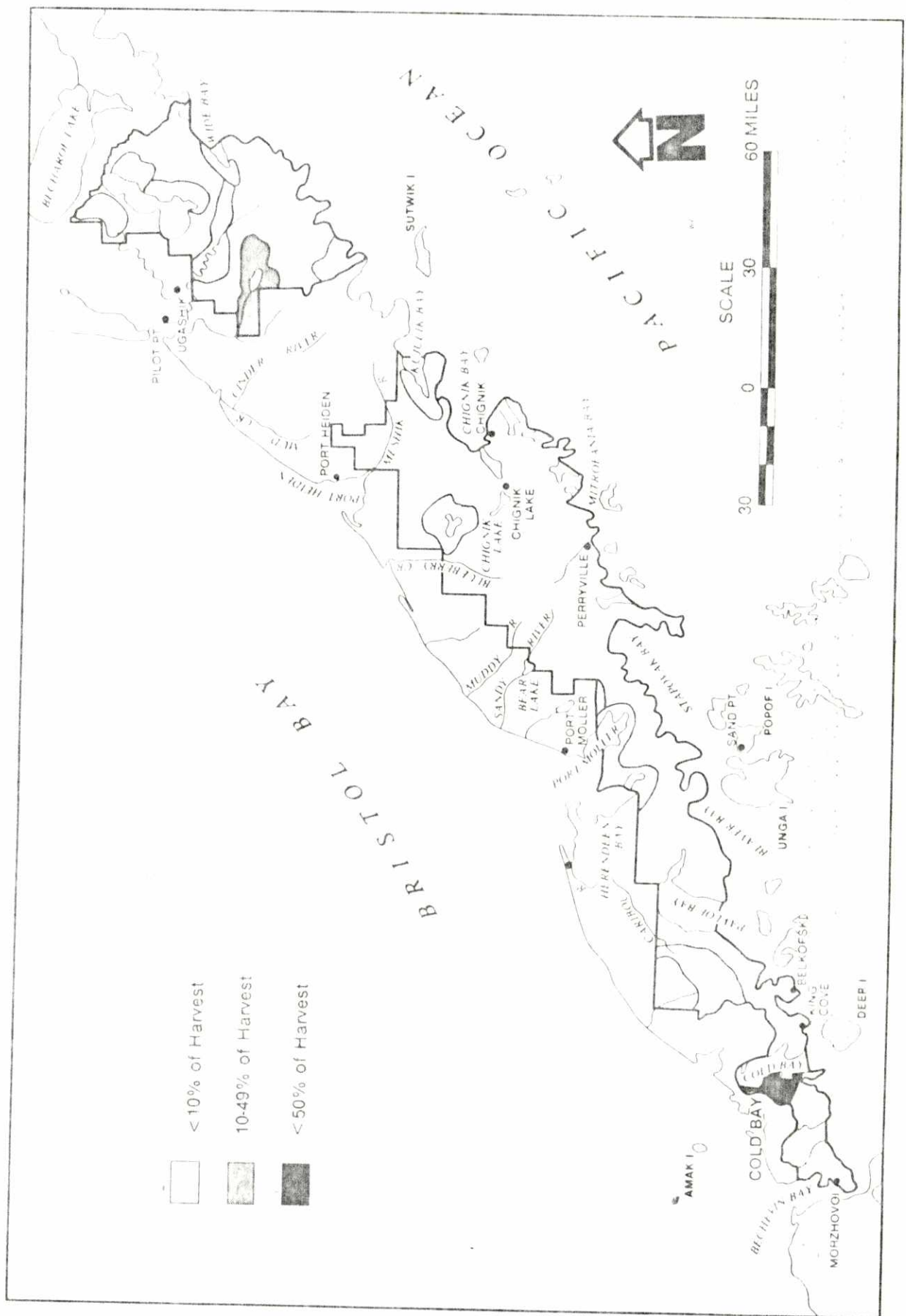






Figure 12 Areas used for caribou recreational hunting.



The above laws also apply to fox and lynx in Alaska. Fox harvest data is lacking, however numbers are high, evidenced by the high local trapper trade. There were no lynx registered for the refuge during the 1983-84 season.

#### 9. Fishing

The Alaska Peninsula is an international destination for sport fisherman. Salmon, rainbow trout and northern pike are the major game species. The world record arctic grayling was taken at the Ugashik Narrows on APNWR in 1981.

Several private fishing lodges operate in the refuge. Lodge owners generally promote catch and release angling ethics. A gross estimate of fishing use for 1984 was 669 visits and 5,456 activity hours.



Alaska Peninsula streams are world class sport fisheries. DM

#### 10. Trapping

Historically, trapping was a full-time endeavor during the Alaska Peninsula winter. At the turn of the century, most of the islands off the peninsulas Pacific coast were occupied by fox ranchers. The prevalence of dilapidated cabins are testimony of the bygone era. Trapping harvest is listed in Table 20.

Table 20. Fur-bearer harvest by trap and gun, APNWR and adjacent areas, 1983-1984.

Species	Date	M	F	UKN	Total
Wolverine	1983-84	12	7	1	20
Wolf	1983	3	1	0	4
Otter	1983-84	8	7	0	15

#### 11. Wildlife Observation

The high cost of travel, lack of support facilities and weather hinders refuge visitors exclusively interested in wildlife observation. Regular commercial air service to Katmai National Park (NP) is an appealing alternative to visitors of the Alaska Peninsula. Katmai NP offers comfortable amenities in an attractive wilderness setting. Brown bear photography opportunities are excellent there, particularly during the peak red salmon run. Generally, people interested strictly in on-ground wildlife observations understandably by pass the refuge in favor of the NP.

#### 12. Other Wildlife Oriented Recreation

Nature photography usually occurs incidental to hunting and fishing. A gross estimation of 348 visits and 1074 activity hours occurred in this category.

#### 13. Camping

Most camping on the refuge is associated with hunting and fishing. The average trip is usually 3-4 nights. Most commercial guides have cabins on the refuge, but also operate out of spike camps.

#### 15. Off-Road Vehicling

Three-wheeled all-terrain vehicles (ATV's) are a mainstay means of transportation for off-road movement on the peninsula. Most of villagers near the refuge have three-wheelers. ANILCA allows traditional means of surface transportation for subsistence purposes however, three-wheelers are not considered traditional. Some commercial big game guides use tracked ATV's but, are limited to use only on trails defined before the refuge was established.



## 17. Law Enforcement

Law enforcement activities focused on the spring brown bear season and illegal taking of walrus. Refuge personnel flew patrol flights over and into bear guiding camps. A stake out was conducted near a guiding operation on Painter Creek where the refuge personnel posed as hunters. An observation post was set along a major hunting area near Mother Goose Lake during the season. Late April through early May, refuge personnel assisted FWS Special Agents in coordinating a stake-out to gather evidence on the illegal taking of walrus. Taylor and Rogers assisted LE Special Agents Soroka and Tuttle in serving search warrants on two commercial fishing boats involved in attempting to take walrus.

## 20. Cabins

ANILCA mandates FWS to require permits of all people who currently own or use cabins on the refuge. The permit gives legal statute to use the cabin(s) for traditional and customary purposes such as commercial fishing, guiding, trapping and subsistence activities. The permit also protects refuge wildlife, habitat and other resources, ensuring that the cabin(s) and associated uses will not be detrimental to the refuge through its special conditions.

The permits normally issued for five-year periods, may be renewed until the death of the last immediate family member using the cabin(s), provided the cabin's continued use is compatible with the purposes for which the refuge was established. However, contention of ownership, etc. have resulted in the issuance of some permits for less than the five-year period.

The refuge currently has 36 known cabin sites within the Ugashik and Chignik subunits. However, as time passes, additional cabins may be found during aerial wildlife surveys, by word of mouth, etc. The current status of the cabins is as follows: 17 have been permitted, 2 are in the process of being permitted, 9 applications are pending due to a combination of factors including cabin/land ownership dispute, legitimate use/need of cabin, construction date, etc., 8 applications have been denied.

### I. EQUIPMENT AND CONSTRUCTION

#### 1. New Construction

In late January, Kreuger Construction Company completed Phase II of the office construction. The Phase II portion added 2,000 sq ft (a second floor added to the existing ground floor) to be utilized as

office space, conference room, and resource center (reference library, study skins, herbarium, etc.). Final inspections of the Phase II project were conducted in February and September by engineering.

With the help of other staff members, Rogers installed a new AVGAS fuel system for refueling aircraft during float operation. The new improved system provides for: reduced hassels associated with 55 gallon drums, no more hand pumping, bulk delivery from supplier, and reduced contamination (by better filters and virtually no contact with sand). The system was inspected by an Office of Aircraft Services fuels specialist.

MW Rogers constructed six 10' x 10' storage areas for compound residents. The new storage rooms will replace storage area lost to bunkhouse rehabilitation scheduled for FY85.

Upon conveyance of 2.4 acres of refuge compound land to Paug-Vik native corporation we were given 30 days to remove our facilities (radio antennas, wind generator/tower, leach field). Numerous visits by RO engineers conducting soil percolation tests indicated no suitable sites existed on remaining Service lands for a new septic system. An agreement was reached in August to install the new system on ADF&G property, our neighbors to the east. The contract was awarded to Terry Brauner of Kodiak, Ak. and was accomplished for \$13,700. The project required approximately 1 week to complete and involved installing a new leach field approximately 30 yards east of the old one. The holding tank and pump station from the previous set-up was used with the new system.

MW Rogers and various other refuge personnel poured a new wind generator tower foundation. Ready-mix concrete was purchased locally for \$250/yd (delivered of course)!! The tower will be erected in early FY85 with help from the Air Force and their crane.

## 2. Rehabilitation

In June, a crew from King Construction replaced wall and ceiling insulation and added sheetrock to the walls of the auto shop. The furnace doesn't seem to be "working as hard" as in the past (suggesting better energy efficiency) but its hard to tell as we've had a mild winter thus far. The new drywall has also improved lighting conditions in the shop. Total cost for the project was \$13K (FY84 ARMM project).

MW Rogers remodeled the bathroom in Quarter #8 in November. The sub-flooring was replaced and covered with new linoleum. Additionally, sheet rock was hung and an exhaust fan added. New fixtures include: toilet, sink, tub with shower enclosure, and cabinets.



### 3. Major Maintenance

Our dock, purchased in 1983 from Meeco Marina's of Oklahoma, functions pretty well in general. The structure was designed for warmer climates where installation is permanent. However, here in King Salmon the dock must be removed annually due to freezing temperatures. The design of the structure hinders quick and easy assembly and take down. Once in place the dock is sturdy and stable. As in the past the dock was placed in the river with help from the U. S. Air Force and their crane.



The dock purchased in 1983 is structurally sound but the design hinders quick installation and removal. CJW

MW Rogers along with the YCC completed the following projects: painting (trailer add-ons, fuel tanks, trailer windows, shop interior, sewage pump barricade), carpentry (office shelves and equipment stands, replaced windows in trailers, sewage pump barricade), mowed lawns, fertilized and seeded lawns, and cleaned and organized the warehouse. The YCC also helped MW Rogers remove the chain-link fence surrounding the 2.4 acres that was conveyed to the native corporation in July.

In October, MW Rogers conducted a maintenance inspection of all facilities and equipment as part of this stations participation in the Maintenance Management System task force.



#### 4. Equipment Utilization and Replacement

Efforts continued this year in cleaning up most of the junk around the headquarters compound that had accumulated through the years. Bidding closed on excess property about mid-July and by the end of the month most items had been picked-up. It has really improved the appearance of the compound to have items like a D-8 cat and 2 24' wooden hulled Chris-Crafts out of the way.

In April, MW Rogers removed and replaced the engine in our forklift. By October the transmission needed an overhaul. The machine is old and quite worn but by repairing the forklift we were able to redirect \$70K (85 ARMM money) toward an aircraft hanger to be shared with National Park Service NPS).

Personnel from Information Resource Management (IRM) visited the refuge headquarters in late July to set up a new Data General micro-computer. For the time being the system will be used solely as a word processor for refuge business with budget tracking capabilities to be added later. IRM has visited 2-3 times since installation trying to get the "bugs" out of the system. It seems to be a pretty good rig but it appears that IRM has a few more visits to make.

#### 5. Communications Systems

In mid-June, MW Rogers (with the help of the YCC crew) dismantled and removed the HF antenna system located on the 2.4 acres of land that was conveyed to the natives. As a temporary replacement for the multi-thousand dollar antenna system, Rogers strung-up a \$300.00 system (using nylon rope and a commercial bailum which out performs its predecessor).

In early October, 4 hand-held Motorola Ht-440's (walkie-talkies) were purchased for use in the field. They don't have the frequency capability of any of our aircraft radios, but are compatible with NPS repeater equipment giving us an extra margin of safety during remote operations.

#### 6. Energy Conservation

In August, the wind generator was taken down from its tower and the tower was removed from the original site. This action resulted from the loss of 2.4 acres in the North end of the compound to the local native corporation.

The performance of the wind generator in 1984 was poor; for that matter, it was poor throughout its life. Between January and August the generator operated for about two weeks. Enertech has sent us a new generator (5KW) for freight cost only. When considering the track record of the old unit, we wonder how much this "free" generator is going to cost us before it is producing electricity.





With the help of the Air Force (and their crane) and YCC, the wind generator and tower were removed from the 2.4 acres of Service land lost to the Native Corporation. JWS

## 7. Other

With land selections being provided for in the ANCSA, Paug-Vik Corporation requested conveyence of 2.4 acres in the North end of the headquarters compound. Because we could not prove use prior to ANSCA, the land was conveyed. Visits by RO Realty on two occasions to the native corporation headquarters with offer of \$53K and \$100K were met with an "evicvtion" notice and given 30 days to remove our facilities (HF antenna system, wind generator and tower, leach field, and chain-link fence) from the property. As far as commercial value is concerned, the land is some of the best in King Salmon. It is located on the main road near the air terminal and is on a hill that provides a view of the river.

## J. OTHER ITEMS

### 1. Cooperative Programs

APNWR is continuing to work cooperatively with local ADF&G personnel on wildlife surveys. This year we have not been as active with them

since they acquired their own Supercub and have not needed logistical support. On one flight with the ADF&G, 14 radio collared caribou were located in February. Seven of them were found in the Kejulik drainage which was unusual for this time of year. Another support flight was a moose survey in November for the State. The area starting at Naknek Lake (within Katmai NP) and extending south and west into the refuge was flown for moose composition counts.

A survey was conducted from the Naknek River along the Bristol Bay coastline to Cold Bay for emperor geese and related waterfowl. The local ADF&G Biologist, Dick Sellers assisted in this survey and participated in a meeting on survey methods conducted by waterfowl biologists, while at Cold Bay.

Four minnow traps were flown to and set out in an unnamed lake about 5 miles south of Jensen Strip for Fisheries Resources. A second flight was made the following day to retrieve them. The objective of this project was to determine if anadromous fish used the lake and streams flowing into it before permitting AMOCO from taking water for drilling and culinary purposes at their camp.

## 2. Items of Interest

Dwight Mumma joined the refuge staff under local hire for the Biological Technician position.

Refuge Manager Taylor attended the Advanced Refuge Management training course in March.

At last! After being without a Clerk Refuge Assistant for months, we had the good fortune to have Jan Collins join the staff. Jan had previous government experience working for the U.S. Postal Service so she knows how to handle paper.

Berns was requested through Flight Service to rescue an Anchorage pilot and his young son that had become stranded in a refuge lake too shallow for their float plane. The rescue was fine but ended as a costly fishing trip for the pilot getting his plane off the lake.

Wilk took leave in August for a semester of graduate studies at the University of Wisconsin, Steven Point.

ARM Solberg attended the Refuge Management Training Academy in Blair, Nebraska during May. Most of his peers enjoyed his refuge slide presentation but were not impressed with the high prices in the Alaska bush.

ARM Berns was presented a length of service certificate for 30 years of Federal Service in December.



ARM Solberg received certification (from ADF&G/National Rifle Assn.) as a Hunter Education Instructor. He conducted classes in the fall at Bristol Bay High School.

### 3. Credits

This narrative was a joint effort by all the refuge staff with special kudos to our typist for deciphering our penmanship. Section authors are listed below:

Berns	Sections A, G-16, J, K, and editing.
Arment	Sections C, D, H-15-17-20 and editing.
Solberg	Sections E, I and editing.
Wilk	Sections G-1-15, H-1-12, and editing.
Mumma	Sections B and F.
Collins	Editing and typing.

### K. FEEDBACK

It is difficult to understand how our FWS system works in the upper ranks and offices. Why is it that we have all the big inspections, VIP trips, fact gathering trips etc. in the summer when the salmon are running at King Salmon? VIP's fly out here in government aircraft for a couple days, talk to the manager or staff for an hour and spend the rest of their time here on the river using Government boat, motor and fuel.

Checking the Federal Register in section 20.735-15 it states "--an employee is prohibited from directly or indirectly using or allowing the use of Government equipment and supplies for other than officially approved activities. The willful misuse of a Government vehicle or aircraft require a suspension action of not less than one month." Are all of these trips officially approved activities? Why is it that these trips must be flown here in a Government Goose when there are four or more daily commercial flights?

I do not mean to imply that this occurs with all the visiting dignitaries but it is very noticeable to the public as well as Service employees. Perhaps some planning and feedback on their part would give the people in the field a better understanding of the FWS system and their roles.

Why are most of the inspections and trips from June through September but we seldom see or hear of these people the rest of the year? If more trips were scheduled during the winter they would have an opportunity to talk to all of the staff and discuss problems. Instead, the trips are conducted during the summer when the staff is doing field work and usually under pressure because of weather conditions and the short field season so only the Refuge Manager can schedule his time to be with them.



All things must come to THE END. VDB