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US FISH & WILDLIFE SERVICE--ALASKA



BECHAROF NATIONAL WILDLIFE REFUGE

King Salmon, Alaska

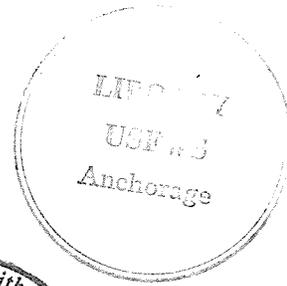
ANNUAL NARRATIVE REPORT

Calendar Year 1985

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

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



Front Row: Arment, Wilk, Collins
Back Row: Savery, Mumma, Rogers, Hood

Personnel

| | | | | |
|-------------------|-------------------------------|------------|----------|----------|
| Ronald E. Hood | Refuge Manager | GS-485-12 | 09/15/85 | Present |
| Vernon D. Berns | Act. Refuge Manager Pilot | GS-485-12 | 02/18/82 | 5/1/85 |
| Jim Savery | Dep. Refuge Manager | GS-485-11 | 09/29/85 | Present |
| C. Randall Arment | Asst. Refuge Manager Pilot | GS-485-12 | 10/03/82 | Present |
| John Payne | Asst. Refuge Manager Pilot | GS-485-11 | 09/29/85 | Present |
| John Solberg | Asst. Refuge Manager | GS-485-07 | 03/06/83 | 4/29/85 |
| Randall J. Wilk | Wildlife Biologist | GS-486-07 | 06/27/83 | Present |
| Dwight Mumma | Biological Technician | GS-404-05 | 02/19/84 | Present |
| Alan Rogers | Maintenance Worker | WG-4749-08 | 03/04/84 | Present |
| Janice Collins | Refuge Assistant | GS-303-05 | 06/11/84 | Present |
| Carl Downing | OAS Pilot | GS-2181-11 | 06/10/85 | 9/07/85 |
| Cynthia Kranich | Biological Technician | GS-404-05 | 05/20/85 | 11/09/85 |
| Diane Macfarlane | Biological Technician | GS-404-05 | 05/20/85 | 9/06/85 |
| Richard Pastor | Biological Technician | GS-404-05 | 05/28/85 | 9/06/85 |

Y.C.C.

| | | | |
|-----------------|--------------|----------|----------|
| Rebecca Singley | YCC Enrollee | 06/10/85 | 08/03/85 |
| Denise Tucker | YCC Enrollee | 06/10/85 | 08/03/85 |
| David Chapman | YCC Enrollee | 06/10/85 | 08/03/85 |
| Chris Harding | YCC Enrollee | 06/10/85 | 08/03/85 |

VOLUNTEERS

| | | | |
|----------------|--|----------|----------|
| Keith Reopelle | | 05/20/85 | 08/15/85 |
| Dave Vannier | | 06/15/85 | 08/12/85 |
| Robert Weh | | 06/15/85 | 08/12/85 |
| Lee Elliott | | 06/17/85 | 08/16/85 |
| James Ferrari | | 05/27/85 | 08/16/85 |
| Walter Boyce | | 06/10/85 | 06/29/85 |
| Karen Wilk | | 01/01/85 | 08/22/85 |

Review and Approvals

Edwin J. Sawyer 3-15-86
Refuge Manager Date
acting

Roy L. Allen 3/20/86
Refuge Supervisor Review Date

Joseph P. Maynard 7/1/86
Regional Office Approval Date

US FISH & WILDLIFE SERVICE--ALASKA



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INTRODUCTION

In 1978, the lands of Becharof Refuge were withdrawn under the Presidential Proclamation 4614 and established as the Becharof National Wildlife Monument. In 1980, the Alaska National Interest Lands Conservation Act (ANILCA) made the Monument part of the National Wildlife Refuge System. Becharof is one of only two wildlife monuments in the history of the National Wildlife Refuge System (Fig. 1).

Becharof Refuge contains approximately 1.2 million acres. It is 10 miles south of King Salmon and 295 miles southwest of Anchorage (Fig. 2). The refuge lies between Katmai National Park (NP) and Alaska Peninsula National Wildlife Refuge (NWR) on the southeastern section of the Alaska Peninsula.

The refuge landscape consists of tundra, lakes, wetlands, and volcanic peaks. Becharof Lake, the second largest lake in Alaska, is nestled between the low tundra wetlands to the north and west and the Aleutian Mountain Range to the east and south. Mount Peulik drops to the edge of the lake about midway along its southern shore. The geologically active Ukinrek Marris bares scars of the eruption that took place in 1977.



Mt. Peulik, the most prominent landmark on Becharof NWR, with the gas rock in the foreground. RJW

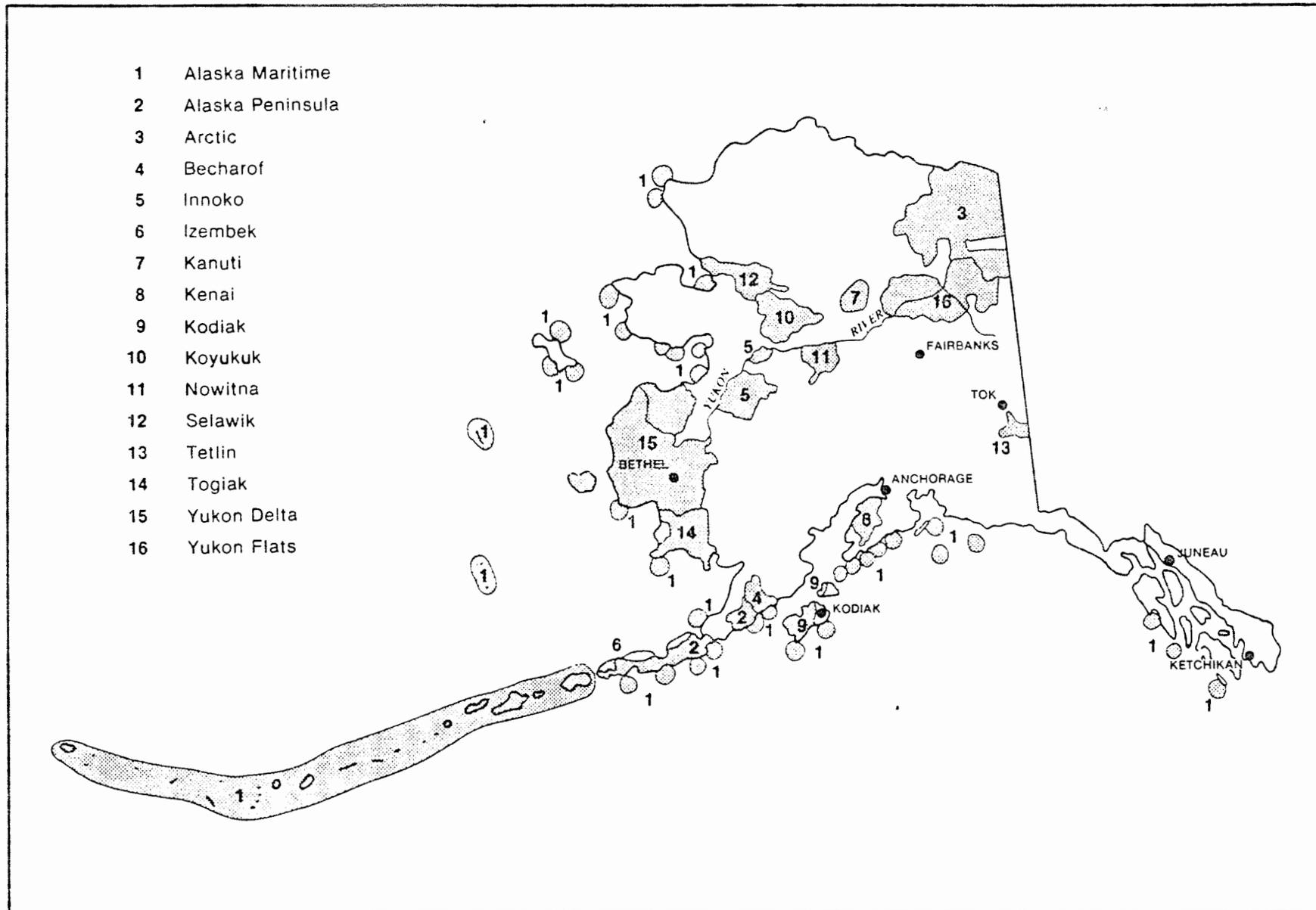


Fig. 1. National Wildlife Refuges in Alaska.

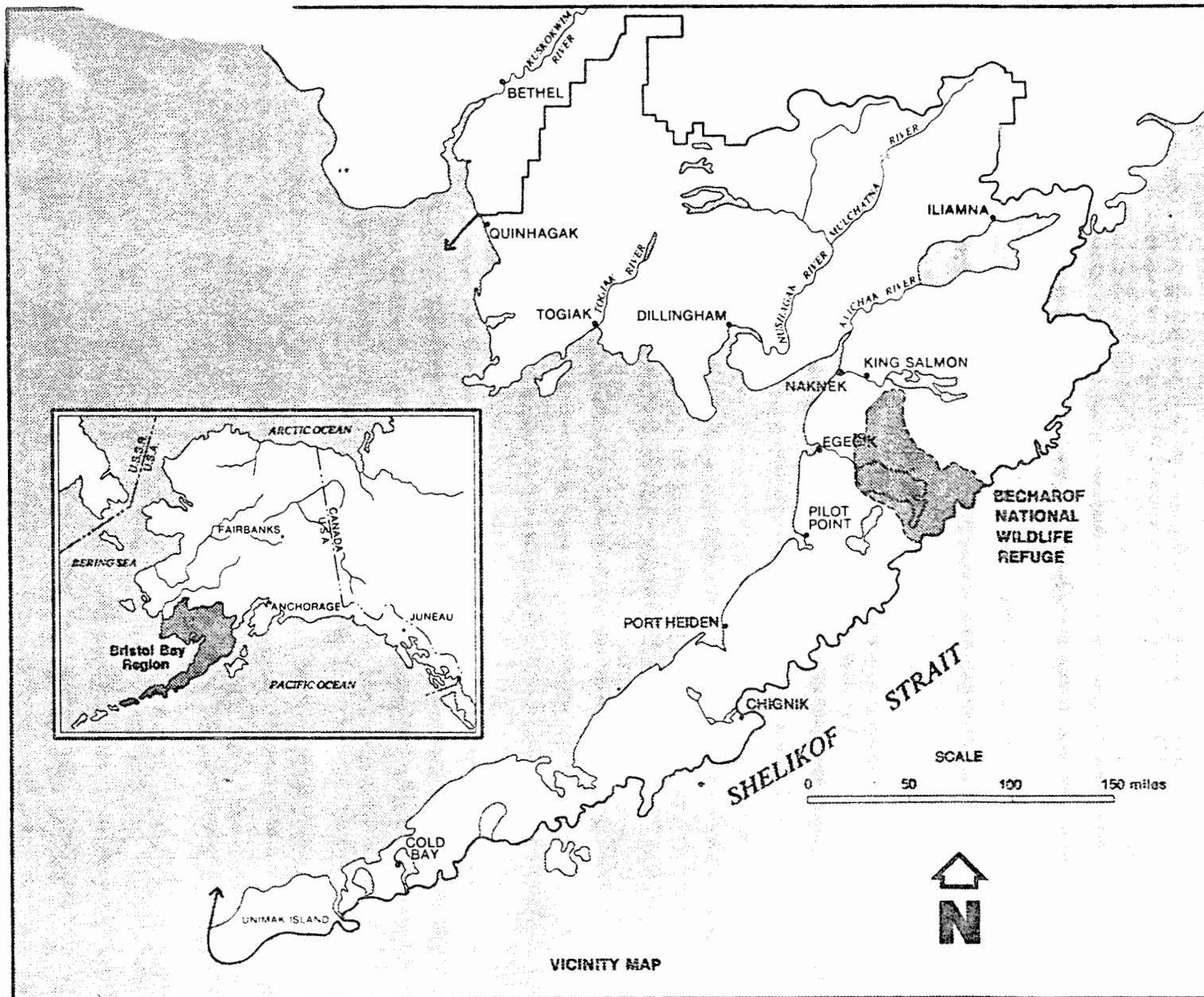


Fig. 2 Vicinity map.

The lowest elevation on the west side of the refuge is about 50 feet above sea level. The highest elevations on the refuge are about 5,000 feet where the northern boundary crosses the Kejulik Mountains. The Kejulik River Valley, about 6 miles wide at Becharof Lake, splits the main trend of the Aleutian Range, separating the rugged Kejulik Mountains from the coastal range. A few glaciers are on slopes and upper valleys of higher peaks north of the refuge. The only travel routes of low relief across the Aleutian Range are through Becharof Lake and north of the refuge through Katmai Pass.



Kejulik Mountains. DDM

Becharof Lake is a nursery, and its tributary streams provide important habitat for the multi-million dollar salmon industry in Bristol Bay. This system is renowned for its spawning runs of red salmon, an important food source for brown bears. Dolly Varden, grayling, rainbow trout, all five species of Pacific salmon and other fish are found in the refuge streams.

The refuge's fauna includes a large population of brown bears. Moose inhabit the area in moderate numbers and over 10,000 caribou migrate through the area during fall and winter. Other animals found are wolves, foxes, and wolverines, while sea otter, sea lions, and harbor seals inhabit the shorelines as do nesting bald eagles, peregrine falcons, and thousands of seabirds on the rocky seacliffs of the Pacific coast. Nesting and migratory waterfowl are found on wetlands and lakes throughout the refuge.

Section 302(2)(B) of Alaska National Interest Lands Conservation Act (ANILCA) set forth the following major purposes for which Becharof Refuge was established and shall be managed:

- (i) to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to, brown bears, salmon, migratory birds, the Alaska Peninsula caribou herd and marine birds and mammals;
- (ii) to fulfill the international treaty obligation of the United States with respect to fish and wildlife and their habitat;
- (iii) to provide, in manner consistent with the purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents;
- (iv) to ensure, to the maximum extent practical and in a manner consistent with the purposes set forth in paragraph (i), water quality and necessary water quantity within the refuge.

HIGHLIGHTS

The Record of Decision of the Becharof NWR Comprehensive Conservation Plan, Environmental Impact Statement and Wilderness Review was signed by Regional Director, Robert E. Gilmore on August 1, 1985. (Section D.1).

Refuge Manager, Deputy Refuge Manager and Assistant Refuge Manager/Pilot positions are filled (Section E.1.).

Bids for construction of four (4) houses for refuge staff were opened on 12/18/85. Unlimited Construction Co., King Salmon, Alaska was apparent low bidder with an offer of \$710,000 (Section I.1.).

Rehabilitation of the bunkhouse (FY 1984 ARMM project) was completed (Section I.2.).

Construction of new hangar began (Section I.1.).

Vernon Berns, Assistant Refuge Manager/Pilot, receives 30 year service pin and retires (Section E.1.).

Secretary of the Interior, Donald Hodel, met with Governor Bill Sheffield in King Salmon to discuss the State's request for a ten-year moratorium on Federal oil and gas leasing in the Bristol Bay area (Section J.3.).

The Island Arm Brown Bear Study reveals a significant interchange of bears between Becharof NWR and Katmai National Park. (Section G.8.)

B. CLIMATIC CONDITIONS

General

The upper Alaska Peninsula is characterized by polar maritime climate with moderate temperatures, protracted cloud cover, frequent precipitation and high winds.

Large atmospheric differences between interior Alaska and the Pacific Ocean and Bering Sea are the dominate influences on weather. Pacific Ocean and Bering Sea winds with high moisture content blow frequently across the upper peninsula forming fog and clouds which tend to develop into precipitation. High winds and turbulence are especially common in mountain passes. The heaviest precipitation occurs on the Pacific Ocean side of the refuge, while the Bering Sea side enjoys more clear weather but lower average temperatures. Skies are usually cloudy. From fall to spring, the skies are clear to partly cloudy 40 percent of the time, while in summer this occurs only 20 percent of the time. King Salmon averages 50 clear days per year.

Precipitation varies with elevation and distance from coasts. Less than 20 inches of precipitation falls annually in the western lowlands, while as much as 160 inches falls on the Pacific side of the refuge.

Temperatures are generally moderate throughout the year. Daily maximum temperatures exceed the freezing mark during all months while daily minimum temperatures drop below freezing on approximately one-half the days of the year. The King Salmon temperatures average 12 degrees F in December, the coldest month, and 54 degrees F in July, the warmest month. Extremes range from -46 degrees F to 88 degrees F.

Daily winds average 10 to 15 miles per hour. However, most months have peak winds from 40 to 70 miles per hour with the extreme being 94 miles per hour.

At King Salmon the dangerous effects of wind chill can be dramatic. Interior Alaska is known for the low winter temperatures and the Aleutian Islands for their high winds. However, when effects of each area meet on the upper Alaska Peninsula, the wind chill factor may exceed -120 degrees F.



High winds have their affect on the Alaska Peninsula--
cabin blown over by high winds. CRA

January-March

The year started off with excessively high temperatures. The monthly mean temperature for January was above freezing and 20 degrees above normal (Table 1). February and March exhibited near normal temperatures. As a result of the excessively high January temperatures, the Naknek River was either open or unsafe for crossing during the entire winter making it difficult for residents to get to their winter meat supply of caribou on the other side. Precipitation for the quarter was slightly below normal. The highest winds for the quarter were 55 miles per hour on January 29.

April-June

April exhibited temperatures 10 degrees below normal while the remainder of spring exhibited normal temperatures. The high for the year was 76 degrees F which occurred on June 29. At the end of April, the Naknek River was open from Naknek Lake to Bristol Bay and beluga whales could be observed in the lower portion of the river. The Egegik and Ugashik Rivers did not open until mid May, which was a late spring for migratory waterfowl. Precipitation was slightly below normal for the quarter. The last measurable snowfall for the spring was May 12 when 3.8 inches fell. It melted the following day. The highest winds for the quarter were 63 miles per hour on May 17.

Table 1. 1985 Climatological Data - National Weather Service, King Salmon, Alaska.

| Month | Temperature (degrees F) | | | | Precipitation (inches) | | | Max. Snow on ground (inches) | Wind (mph) | | Sky Cover ^a (days) | | |
|-------|----------------------------|-----|------|-------|---------------------------|-------|------|------------------------------------|---------------|-------|----------------------------------|------|-----|
| | High | Low | Avg. | Norm. | Total | Norm. | Snow | Avg. | Peak | Clear | Pt. Cldy. | Cldy | |
| Jan | 46 | 8 | 33 | 13 | .95 | 1.04 | 3.7 | 1 | 12 | 55 | 4 | 5 | 22 |
| Feb. | 41 | -18 | 11 | 15 | .73 | .88 | 6.4 | 3 | 12 | 43 | 11 | 6 | 11 |
| Mar. | 40 | -09 | 23 | 19 | 1.27 | 1.13 | 8.9 | 1 | 14 | 46 | 5 | 6 | 20 |
| Apr. | 47 | -15 | 21 | 31 | .34 | 1.05 | 3.4 | 2 | 10 | 41 | 8 | 8 | 14 |
| May | 64 | 23 | 40 | 42 | 1.16 | 1.18 | 5.2 | 3 | 12 | 63 | 4 | 6 | 21 |
| June | 76 | 34 | 47 | 50 | 1.23 | 1.50 | | 0 | 10 | 44 | 1 | 3 | 26 |
| July | 72 | 40 | 54 | 55 | 1.31 | 2.08 | | 0 | 9 | 45 | 0 | 3 | 28 |
| Aug. | 71 | 39 | 53 | 54 | 3.24 | 3.13 | | 0 | 12 | 53 | 0 | 1 | 30 |
| Sept. | 65 | 25 | 47 | 47 | 2.64 | 2.78 | | 0 | 11 | 52 | 0 | 3 | 27 |
| Oct. | 54 | -08 | 27 | 33 | 2.29 | 1.92 | 2.5 | 2 | 10 | 46 | 5 | 12 | 14 |
| Nov. | 43 | -16 | 25 | 23 | 3.35 | 1.40 | 9.3 | 5 | 10 | 44 | 5 | 3 | 22 |
| Dec. | 47 | 07 | 34 | 12 | 1.58 | 1.24 | 3.6 | 2 | 14 | 64 | 2 | 8 | 21 |
| Total | | | | | 20.09 | 19.33 | 43.0 | | | | 45 | 64 | 256 |

^aSky cover: clear = 0 to .3 cloud cover; Partly cloudy = .4 to .7 cloud cover; and cloudy = .8 to 1.0 cloud cover.

July-September

Temperatures and precipitation amounts were near normal for the quarter. However, precipitation fell on all but 18 days of the quarter. There were no days with clear skies and only seven days with partly cloudy skies, as the remaining 85 days were cloudy. The winds blew 53 miles per hour on August 14 and 52 miles per hour on September 28.

October-December

Fall temperatures were slightly below normal for October and November. However, December averaged 34 degrees F, which was 22 degrees above normal. As a result, most lakes south of Becharof Lake remained open through the end of the year. Most lakes north of Becharof Lake were frozen by the end of October and remained iced over through the end of the year. Precipitation for the quarter was 7.22 inches which was 2.66 above normal. However, total precipitation for the year was only 0.75 inches above normal. The first measurable snowfall was 1.0 inches which fell on October 20. The highest winds for the year were on Christmas day at 64 miles per hour.

C. LAND ACQUISITION

1. Fee Title

On December 1, 1978, President Carter established the Becharof National Wildlife Monument by Proclamation 4613. The Monument was set aside entirely from public domain. Legislation which affects land ownership includes the Alaska Statehood Act, the Alaska Native Claims Settlement Act (ANCSA), and the Alaska National Interest Lands Conservation Act (ANILCA). These laws transferred lands from federal to state and native ownership.

The land ownership status of refuge lands is constantly changing resulting from the process of being selected and conveyed to the State, native and native corporations. Of the 1,171,000 acres of land within the refuge boundaries, approximately 1,050,000 acres or 90% of the land is owned by the federal government while state, native corporations, and private interest either own or have selected the remaining 10% of the land. The refuge land status as of May 1983 is summarized in Table 2. and the location of selected and conveyed lands is shown in Fig. 3.

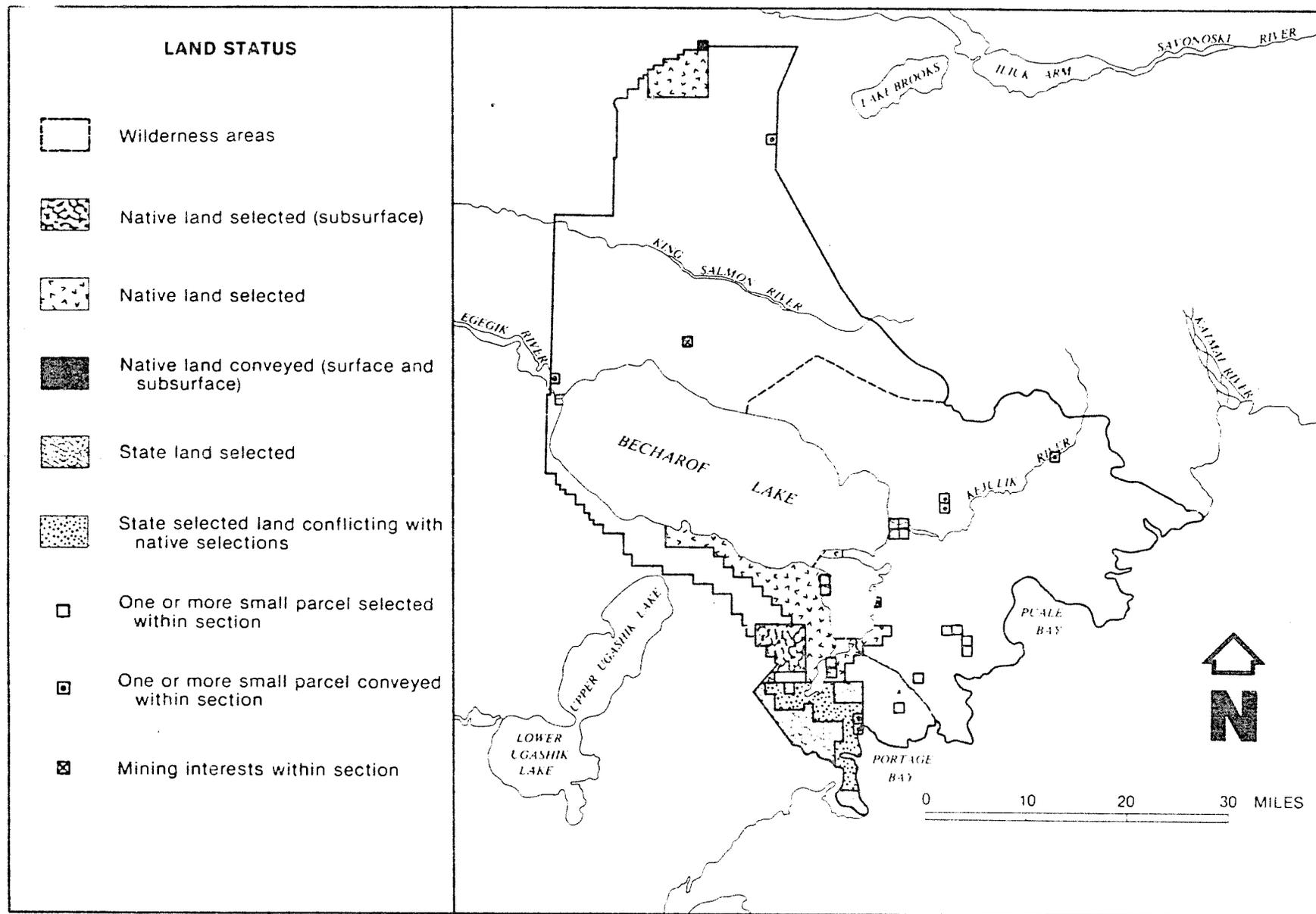


Fig. 3. Land status.

Table 2. Status of Lands within the Becharof NWR - May, 1983

| Category | Land Status (acres) | |
|----------------------------------|---------------------|-----------------------|
| | Selected | Conveyed ^a |
| Native Corporations ^b | 102,640 | 640 |
| State of Alaska | 16,576 | 156 |
| Private Selections | 8 | 45 |
| Native Allotments | 255 | |
| Total | 119,479 | 841 |

^a Land approved for conveyance to native corporations must be surveyed before patent is issued. Since it will take many years to survey millions of acres, an interim conveyance is issued. This conveys land subject to survey to determine exact boundaries and acreage.

^b Surface and subsurface rights.

In FY 1984, CAF funds were provided for the construction of four residences for refuge personnel. One of the prerequisites to construction was the purchase of lands. Four lots were selected in various subdivisions in the King Salmon area. On September 8, 1985, Clyolyn Campbell, Realty, closed the deal on the purchase of the final house lot. Two 1.2 acre lots were purchased on February 22, 1985 in Thelma's Subdivision; one lot of 1.98 acres was purchased in King Salmon Creek Acres on July 16, 1985; and the final lot of 1.0 acre was purchased in Grant "D" Subdivision. The purchase price was \$15,000 per lot.

Conveyance of 2.4 acres of the refuge compound to Paug-Vik Native Corporation was completed. On July 15, 1985, surveyors from the Bureau of Land Management (BLM) established a new headquarters boundary. By the end of the year, a shopping center was being constructed where we had once planned to build a new headquarters building.

3. Other

The final Bristol Bay Regional Management Plan (BBCMP), completed in March 1985, contains several proposals that will affect the boundaries of the refuge. The BERMP recommends that lands in the upper Kejulik drainage, presently within Katmai National Park (NP) be re-designated by Congress as part of the refuge. The boundary change would place virtually the entire drainage within the refuge. The proposal would provide visitors with additional opportunities for

recreational hunting and would simplify management by placing the area under one administrative agency.

In addition, the BBRMP recommends that the three Alaska Peninsula refuges (Becharof, Alaska Peninsula, Izembek) be reorganized into two refuges to provide better management of fish and wildlife resources. If Congress agrees to this recommendation Becharof NWR would no longer exist as a separate refuge. The "Upper Peninsula" refuge would include what is now Becharof NWR and the Ugashik and Chignik units of the Alaska Peninsula NWR. The Pavlof Unit of Alaska Peninsula NWR would become part of Izembek NWR. Current administration reflects this strategy.

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 comply with Public Law 96-487 (ANILCA). ANILCA Section 304 directs the Secretary of Interior to prepare Comprehensive Conservation Plans (similar to "Master Plans").

In April, 1985, the Final Comprehensive Conservation Plan /Environmental Impact Statement and Wilderness review for Becharof NWR was mailed out for public review. Alternative B (the Preferred Alternative) would:

- maintain the refuge's natural diversity and key fish and wildlife populations and habitats by minimizing potential impact from development;
- provide future opportunities for oil and gas exploration in designated areas;
- maintain traditional access;
- provide for continued subsistence use of refuge resources;
- maintain opportunities for recreational hunting and fishing;
- recommend wilderness designation for (1) the northeast section of the refuge including the drainages of Big Creek, the eastern reaches of the King Salmon River, and Gertrude Creek, and (2) the southeast section of the refuge including Mount Peulik - Gas Rocks area, Mount Becharof, and the drainages of Otter Creek, Featherly Creek, and Island Arm.

During the last two weeks of July, a flurry of meetings to discuss the Record of Decision (ROD) on the Becharof NWR Comprehensive Conservation Plan, Environmental Impact Statement and Wilderness

Review were held in the Regional Office. Regional Director Gilmore signed the ROD on August 1, 1985. Alternative B, the Preferred Alternative, was selected with modification that included:

- oil and gas exploration may be allowed in the minimal management area in the northwestern and southwestern parts of the refuge;
- the wilderness proposal defined in Alternative B will be submitted to the Secretary, and;
- the Service will allow all traditional modes of access when utilized for subsistence activities under all management classifications including Congressionally designated wilderness areas.

2. Management Plan

An Alaska Interagency Fire Management Council (AIFMC) fire suppression plan was completed for the area that included the Alaska Peninsula/Becharof NWR's. Assistant Refuge Manager/Pilot Randy Arment participated as a member of the interagency team that wrote the plan.

A review of BLM fire history records during the AIFMC planning effort revealed a very low incidence of natural and man-made fires. As a result, refuge lands were placed in the "limited" suppression category (no initial attack; let burn).

A draft of the Fishery Resource Management Plan for the Alaska Peninsula NWR was reviewed and comments provided to the King Salmon Fishery Resource Station. The draft plan was submitted to the Regional Office for review comments in September.

3. Public Participation

The Final Becharof RCCP/EIS/Wilderness Review raised a firestorm of protest from development interest. The Record of Decision (ROD) issued on August 1, 1985 reflected the impact of public comment. To gain an appreciation of that impact, we recommend that you review the ROD attached as Appendix A.

4. Compliance with Environmental Mandates

Both the BBCMP and Becharof RCCP are considered major federal actions and include Environmental Impact Statements within the plans.

One contract, for a total value of \$97,460, was awarded to Heritage Research Associates of Eugene, Oregon, for the preparation of a cultural resources overview and predictive model, with limited testing, on the Alaska Peninsula/Becharof, Izembek, and Togiak NWR's.

The preliminary report of the background work for this project, along with specific proposals for field testing locations, will be forthcoming in January 1986. Field performance will occur in the 1986 season, with a draft final report due within 45 days after completion of the field work.

Compliance with Section 106 of National Historic Preservation Act was accomplished for construction in headquarters compound and at four (4) residence lots. Regional Archeologist Chuck Diters conducted an archeological survey of these sites in early June. No evidence of archeological sites was found.

5. Research and Investigations

Major studies are in progress on Becharof Refuge and on adjacent Alaska Peninsula Refuge. Both are funded through Becharof Refuge Resource Problem-Related Projects (RPRP) monies. The former is in the second year of a scheduled five-year brown bear denning and habitat-use investigation; the latter involves wildlife and vegetation studies in specific areas of Alaska Peninsula Refuge, along transportation corridor routes which have been proposed land-use alternatives in the Bristol Bay Regional Management Plan.

The brown bear study is discussed in Section G. Information about the Alaska Peninsula National Wildlife Refuge studies can be found in Section G of that annual narrative report.

E. ADMINISTRATION

The Fish and Wildlife Service intends to reorganize the three Alaska Peninsula refuges (i.e., Becharof, Alaska Peninsula, and Izembek). To accomplish the reorganization, the Service will submit a proposal to Congress to adjust the boundaries. Boundaries would be altered by combining Becharof Refuge (1,461,000 acres) with the Ugashik and Chignik units (approximately 3,365,000 acres) of the existing Alaska Peninsula Refuge. The Pavlof Unit (the southern 1,535,000 acres) the present Alaska Peninsula Refuge) would be incorporated into Izembek Refuge. The new boundary between Alaska Peninsula Refuge and Izembek Refuge would cross the peninsula at Right Hand Bay, in Port Moller. Becharof Refuge would no longer exist as a separate refuge. Figure 4 shows the proposed boundary changes; Fig. 2. shows the existing boundaries of the refuges.

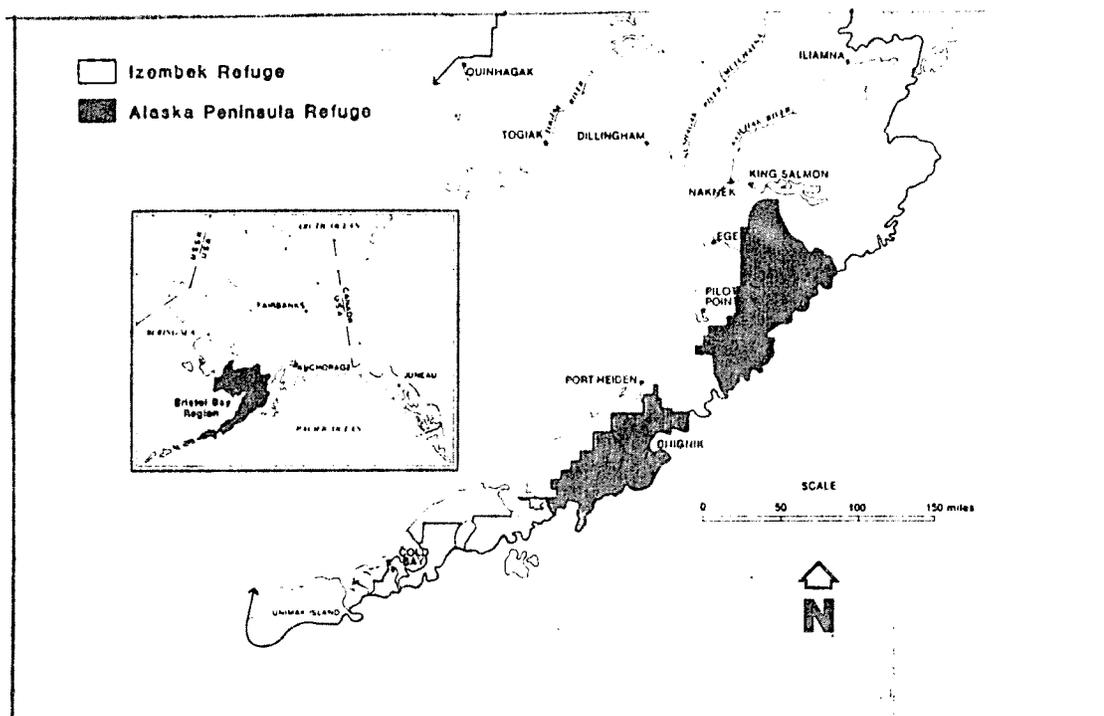


Fig. 4. Proposed boundary adjustments for the Alaska Peninsula refuges.

The Service is proposing this action for both biological and administrative reasons. The mountainous terrain around Port Moller geographically isolates the big game populations on the Alaska Peninsula. The State uses this physiographic barrier for distinguishing between State Game Management Units 9D and 9E. Two distinct herds of caribou use habitats on either side of this line: one herd uses habitat of the Izembek Refuge and Pavlof Unit of the Alaska Peninsula Refuge, while another herd uses habitats north of Port Moller, in the Chignik and Ugashik units of the Alaska Peninsula Refuge and in Becharof Refuge. Moose are common north of Port Moller, but are rare in the Pavlof Unit and in Izembek Refuge. A distinct, non-migratory subpopulation of tundra swans also nests in the Pavlof Unit and Izembek Refuge.

From an administrative viewpoint, it is impossible for the Service to manage the Pavlof Unit from King Salmon due to frequent storms. Survey and inventory work and intensive species-specific biological programs conducted by the Izembek Refuge Staff are directed toward populations ranging over the Pavlof Unit and Izembek Refuge; the Becharof Refuge staff also directs its programs towards populations ranging over the Ugashik and Chignik units of Alaska Peninsula Refuge. Biologically, it is impossible to adequately monitor wildlife populations without simultaneously working on both Alaska Peninsula and Izembek refuges or on Alaska Peninsula and Becharof refuges. The refuge staff in Cold Bay is in a better logistical position to organize and perform biological programs and to handle the administrative responsibilities of the Pavlof Unit and Izembek Refuge, while the refuge staff in King Salmon are in the logistical position to manage the Ugashik and Chigniks units of Alaska Peninsula Refuge and Becharof Refuge.

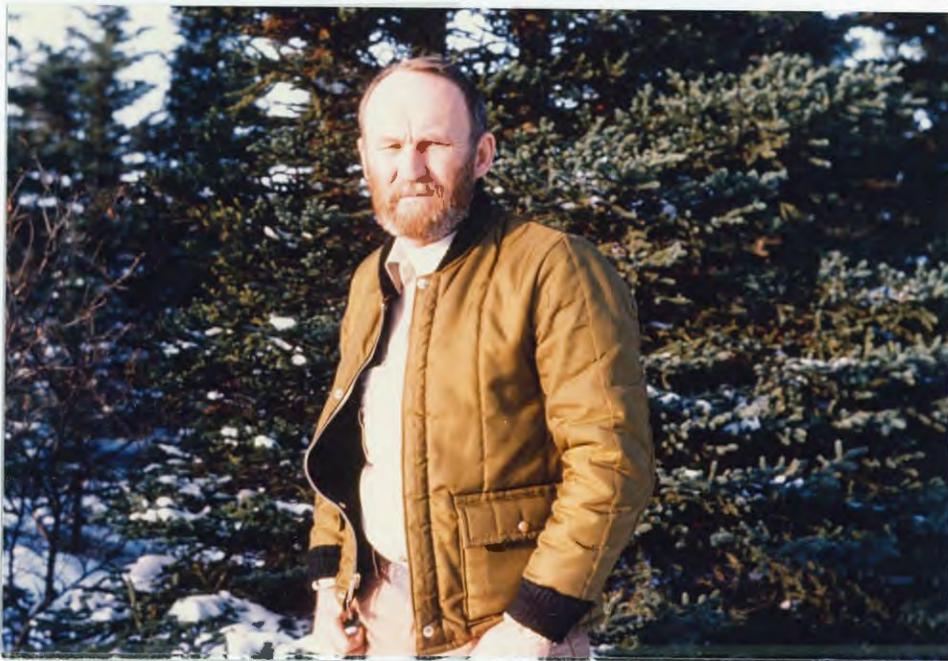
All of the management directions, staff, facilities, and other recommendations proposed in the Becharof RCCP would be incorporated into the Alaska Peninsula RCCP after the change is made. Until the change is made, however, the three Alaska Peninsula refuge plans will be implemented for the refuges as they are presently constituted.

The Alaska Peninsula and Becharof NWR's are currently being managed under this administrative view point. However, funds and personnel ceilings (FTE's) are allotted by refuge. This creates quite an administrative challenge when tracking budgets, FTE's and payroll.

1. Personnel

Both 1984 and 1985 were years of change. In December, 1984, Refuge Manager 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 which was designated a National Wildlife Refuge with the passage of ANILCA in late 1980.

Following John's departure, Vernon Berns acted as refuge manager until his retirement on May 1, 1985. Vern's retirement surprised everyone. At the staff meeting on March 25, 1985, he announced that he would retire on May 1, 1985. Vern received his 30-year pin at the April 1 staff meeting. Vern departed on May 1 and will be fishing commercially in Kodiak.



Vernon Berns retires after 30 years with FWS. VDB

Assistant Refuge Manager John Solberg departed King Salmon on April 29, 1985 for Walden, CO. His new position is as Assistant Refuge Manager at Arapaho NWR. John should now have an active social life. King Salmon has a definite lack of young ladies for bachelors' to select from.

On May 12, Ron Hood was detailed for 120 days from the Regional Office as Acting Refuge Manager. He was Chief, Resource Support, Wildlife Resource, at the time of his detail. On September 15, 1985 Ron was permanently assigned as Refuge Manager, Alaska Peninsula/Becharof NWR's.



Refuge Manager, Ronald E. Hood DDM

Elton "Jim" Savery was selected for Deputy Refuge Manager and entered on duty on September 29, 1985. Jim, wife Barbara and daughters Kim and Kirsten arrived in King Salmon on October 15, 1985. Jim was an Assistant Refuge Manager at Salton Sea NWR, Calipatria, CA at the time of his selection.

Our Assistant Refuge Manager/Pilot Trainee position was filled by John Payne. John comes to us from Bureau of Land Management's (BLM), Realty Office in Anchorage. After reporting to King Salmon on September 31, 1985, John was immediately detailed to the Regional Office to begin his commercial pilot/instrument rating training. In early December, John was detailed to Realty as an ascertainment biologist on Project ANWR.

Construction Representative Walt Szelag spent so much time in King Salmon monitoring the rehabilitation of the bunkhouse that we have designated him a defacto staff member. He has worked hard at keeping the contractor from producing shoddy work.



Walt Szelag phoning the RO about another problem. REH

Randall Wilk, Wildlife Biologist returned to graduate school in late August for the fall semester. Randy used a combination of paid leave and leave without pay (LWOP) to attend the University of Wisconsin, Stevens Point, WI to complete required course work toward a Masters Degree.

Dwight "Moose" Mumma received his 10-year pin and certificate in September, 1985.



"Moose" Mumma receives his 10-year pin. CRA

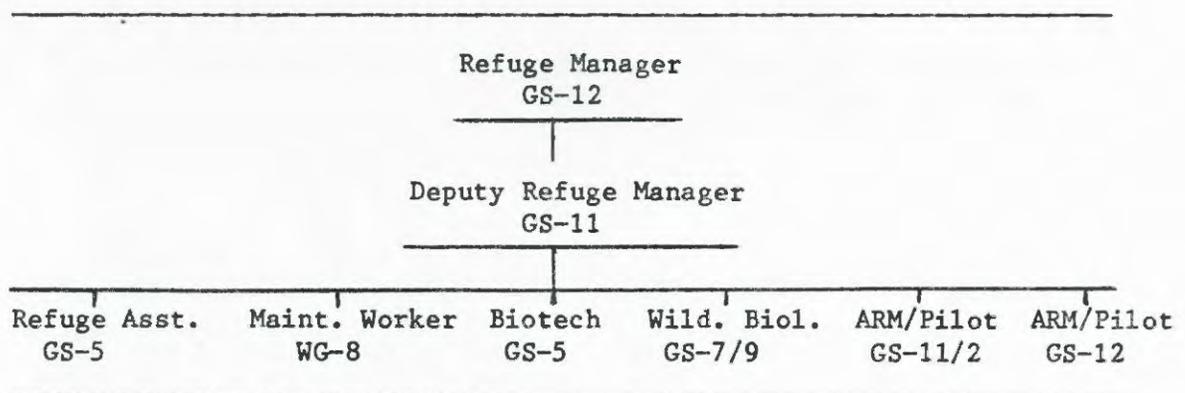
The Becharof RPRP project provided funding for four temporary positions on Alaska Peninsula NWR. These included Carl Downing, OAS Pilot, and three Biological Technicians--Richard Pastor, Diane Macfarlane, and Cynthia Kranich.



Carl Downing, Temporary OAS pilot. CRA

Alaska Peninsula/Becharof NWR's have an approved staffing pattern shown in Fig. 5.

Fig. 5. Approved organizational chart for Alaska Peninsula/Becharof NWR's.



These positions require 6.8 FTE's, one local hire and the sharing of FTE and funding of the maintenance position with the King Salmon Fishery Resource Station. The history of FTE allocations is shown in Table 3.

Table 3. Historic record of FTE allocation.

| <u>FY</u> | <u>AKP</u> | <u>BCH</u> | <u>TOTAL</u> |
|-----------|------------|------------|--------------|
| 86 | 3.4 | 3.4 | 6.8 |
| 85 | 3.4 | 3.4 | 6.8 |
| 84 | 3.4 | 4.0 | 7.4 |
| 83 | 3.0 | 3.2 | 6.2 |
| 82 | 2.0 | 3.0 | 5.0 |
| 81 | 1.0 | 2.0 | 3.0 |

2. Youth Programs

One of two Youth Conservation Corps (YCC) enrollees selected on April 18, 1985 waited until May 2, 1985 to decline. A replacement was selected on May 3, 1985. The Regional Office gave us the opportunity to utilize two more YCC enrollees. Recruitment was completed on May 28, 1985. Our enrollees were Rebecca Singley, Chris Harding, David Chapman, and Denise Tucker.

One enrollee provided operational support to the Refuge in the form of office help. Major duties included answering the telephone, filing reports and correspondence, using both the typewriter and the word processor, and distributing mail to various offices. The other three enrollees worked on general maintenance projects at the headquarters area. Most of these projects could not have been accomplished without the YCC help. The projects included painting the office and cabin boardwalks, staining the dock, replacing chain-link fencing around the compound, general clean-up of scrap material and landscaping around the dock area, and rehabilitation of refuge quarters No. 8. The enrollees also spent a considerable amount of time cleaning the shop and warehouse, washing and waxing vehicles and policing the grounds.

Environmental awareness programs were presented to the enrollees as time permitted by the refuge staff. The topics included an explanation of the National Wildlife System, the function and general description of the Alaska Peninsula/Becharof Refuge and a description of the various wildlife and fisheries projects on the refuge. Overall this years program went very well.

4. Volunteer Programs

During this year, the refuges utilized volunteers for the first time to assist in conducting field studies in the camps established at Braided Creek and Herendeen Bay, Alaska Peninsula NWR. The names of the six volunteers and their recent homes of record were:

Lee F. Elliott
James B. Ferrari
Keith A. Reopelle

Cedar Bluff, Alabama
Delmar, New York
Madison, Wisconsin

David M. Vannier
 Robert C. Weh
 Karen I. Wilk

Sierra Madre, California
 Fort Atkinson, Wisconsin
 King Salmon, Alaska

Volunteer Walter M. Boyce spent a week in camp before heading back to Alabama for medical reasons.

Considering the diverse educational backgrounds of the volunteers, their contributions were substantial. Their duties included participation in aerial tundra swan surveys, and field studies of wildlife and their habitats discussed above.

A serious drawback of the program still centers around the last-minute withdrawals made by volunteers for other positions offered. We had two volunteers recant their commitments only days before their expected EOD dates. Problems like these sometimes hurt the refuge program rather than help it.

5. Funding

Table 4. Alaska Peninsula NWR Funding FY81 - FY83

| FY | 1210 | 1220 | 1300 | TOTAL |
|----|-------|--------|--------|--------|
| 83 | \$70K | \$210K | -- | \$280K |
| 82 | \$70K | \$220K | -- | \$290K |
| 81 | \$10K | \$ 20K | \$ 32K | \$ 62K |

Table 5. Becharof NWR Funding FY81 - FY83

| FY | 1210 | 1220 | 1300 | TOTAL |
|----|-------|---------------------|--------|--------|
| 83 | \$96K | \$164K | -- | \$260K |
| 82 | \$64K | \$119K ^a | \$104K | \$287K |
| 81 | -- | \$ 82K | \$124K | \$206K |

^a Includes \$56K spent on Bristol Bay Cooperative Management Plan (BBCMP) mapping.

Table 6. Alaska Peninsula NWR Funding FY 84 to FY 86.

| FY | 1260 | | | | 1360 | TOTAL |
|----|----------|-----------------------|------|--------|--------------------|--------|
| | Base | ARMM | RPRP | TOTAL | | |
| 86 | \$180.6K | \$ 66.4K | -- | \$247K | -- | \$247K |
| 85 | \$179.5K | \$235.5K ^a | -- | \$415K | \$ 5K ^b | \$420K |
| 84 | \$285 K | \$130 K ^c | -- | \$415K | \$10K ^b | \$425K |

^a Includes \$180K for large ARMM Projects.

^b Earmarked to assist King Salmon Fisheries Resource Station in developing a Fishery Management Plan.

^c Earmarked for large ARMM projects.

Table 7. Becharof NWR Funding FY 84 to FY 86.

| FY | 1260 | | | | 1360 | TOTAL |
|----|----------|----------------------|--------|--------|--------------------|--------|
| | Base | ARMM | RPRP | TOTAL | | |
| 86 | \$201.6K | \$ 56.4K | \$101K | \$247K | -- | \$359K |
| 85 | \$216 K | \$169 K ^a | \$101K | \$486K | \$ 5K ^b | \$491K |
| 84 | \$240 K | \$ 80 K ^c | -- | \$320K | \$10K ^b | \$330K |

^a Includes \$132K for large ARMM Projects.

^b Earmarked to assist King Salmon Fisheries Resource Station in developing a Fishery Management Plan.

^c Earmarked for large ARMM projects.

Table 8. Base Funding for Alaska Peninsula/Becharof NWR's
FY 81 to FY 8

| FY | AKP | BCH | TOTAL |
|----|----------|----------|----------|
| 86 | \$180.6K | \$210.6K | \$382.2K |
| 85 | \$179.5K | \$216.0K | \$395.5K |
| 84 | \$285.0K | \$240.0K | \$525.0K |
| 83 | \$280.0K | \$260.0K | \$540.0K |
| 82 | \$290.0K | \$287.0K | \$577.0K |
| 81 | \$ 62.0K | \$206.0K | \$268.0K |

A review of Tables 4-8 is self explanatory. The utilization of soft funds, i.e., ARMM and RPRP, to subsidize refuge budgets is going to have disastrous results when these funds dry up.

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.

The point was driven home on August 26th, when the refuge Super Cub 3685Z had to make an emergency landing on a lake 18 miles south of King Salmon due to a partial engine failure. Pilot Downing and BT Mumma were picked up by Superintendent Dave Morris, Katmai National Park, and returned to King Salmon. The aircraft was repaired by an OAS mechanic and returned to flight status the next day.

Special emphasis was placed on bear safety precaution training to our seasonal Biotechs and volunteers as well as our staff. Our field season was highly successful. There were no lost time accidents! The YCC program also had no lost time accidents.

On October 9, 1985, our accident free status was broken when MW Rogers dropped a sheet of 5/8" plywood on his left foot and broke his big toe. The break occurred just behind the area protected by his steel-toed shoe. Not thirty-minutes before the accident, he had received his performance evaluation for FY 1985 and had been complimented on an accident free year.

F. HABITAT MANAGEMENT

1. General

The Becharof Refuge lies in a transition zone between forest/tundra plant communities to the north and the generally treeless grass/sedge/low-shrub tundra typical of the peninsula to the south. The transition occurs between King Salmon River and a line running east-west of the lower arm of Naknek Lake.

Little documentation exists on the vegetation of the upper Alaska Peninsula. Most available data is from isolated studies, local descriptions or military needs. The most recent study is the 1981 Bristol Bay Land Cover Cooperative Mapping Project. The study used Landsat satellite imagery and computer technology to provide more accurate and detailed information than previously existed. Ten main cover types were identified on the refuge by the study. Acreage of the cover types are listed in Table 9.

Table 9. Major Cover Types and Percentage of Total Cover on Becharof NWR^a

| Cover Type | Approximate Area (acres) | Approximate % Total Cover |
|-----------------------------|--------------------------|---------------------------|
| Deep clear water | 299,169 | 20.5 |
| Shallow sedimented water | 17,054 | 1.2 |
| Snow/cloud/light barren | 21,799 | 1.5 |
| Barren | 119,585 | 8.2 |
| Open low shrub/heath tundra | 69,066 | 4.7 |
| Marsh/very wet bog | 22,171 | 1.5 |
| Closed shrub/grass | 89,618 | 6.1 |
| Miscellaneous deciduous | 70,905 | 4.9 |
| Wet bog/wet meadow | 17,363 | 1.2 |
| Open low shrub/grass tundra | 459,525 | 31.5 |
| All other | 273,304 | 18.7 |
| Total | 1,459,286 | 100.0% |

^a Data from Bristol Bay Land Cover Cooperative Mapping Project.

Vegetation on the refuge is generally limited to low-growing species that resist cool summer temperatures, strong winds, limited moisture, shallow soils and a short growing season. About 90 terrestrial species are known to occur on the refuge. At least 20 freshwater plant species (mostly algae) are found on the refuge, while more than 70 marine plant species (most algae) inhabit salt water adjacent to the refuge.



Cleo Creek is a prime example of summer brown bear habitat. It is one of many tributaries that feed into the Southeast end of Becharof Lake. VDB

Ongoing wildlife Habitat Studies in the Braided Creek, Meshik River drainage study areas, may provide us a first step for future management decisions.



Hook Bay, located on the Pacific side of the Alaska Peninsula. SHL

2. Wetlands

The refuge has four significant drainage basins: a tributary of the Naknek River, the King Salmon River, the Egegik River and east slope coastal streams. The first three basins drain the western slopes of the mountains on the refuge and the Bristol Bay lowlands in the north and west. The estimated mean annual run-off for the refuge west of the mountains is 2 cubic feet per second per square mile (cfs/mi²). Freeze-up for the western part of the refuge usually begins between November 30 and December 15; breakup occurs between March 25 and April 5.

The Pacific side of the refuge, along the coast of the Shelikof Strait, contains many streams ranging from 2 to 5 miles in length. The streams flow east into the Pacific Ocean. Average annual run-off varies from 25 to 50 cfs/mi² and the average annual low monthly

run-off is one cfs/mi². The refuge contains 173 lakes of over 25 acres, as well as numerous ponds and potholes (Table 10). Only 35 lakes are larger than 100 acres and a few lakes are glacially fed. Most of these lakes (79%) are located below 500 feet elevation, while approximately 35 percent of the lakes have inlets or outlets and 35 percent have ocean access.

Table 10. Becharof NWR Lake Summary.

| Lake | Size, Surface Acreage | Quantity | | Class Total Surface Acreage |
|--------|--------------------------|----------|---------|--------------------------------|
| | | Number | Percent | |
| 1 | 25 to 100 | 138 | 79.8 | 8,600 |
| 2 | 101 to 500 | 32 | 18.5 | 9,600 |
| 3 | 501 to 1,000 | 2 | 1.2 | 1,500 |
| 4 | 1,001 to 5,000 | | | |
| 5 | 5,001 plus | 1 | .5 | 293,000 |
| Totals | | 173 | | 312,700 |

There are two major lakes on the refuge. Becharof Lake, approximately 293,000 acres, is the second largest lake in Alaska. The discharge from Becharof Lake is unknown, but its large size stabilized the discharge of the Egegik River. Ruth Lake, about 1,000 acres is located a few miles south of Becharof Lake and feeds the Ruth River which flows into Becharof Lake.



Kejulik River, a tributary in the East end of Becharof Lake. It is a designated wilderness area that represents a variety of habitats. SHL

3. Forest

The refuge has no major forested areas. Small stands of cottonwoods are found along the Kejulik River and scattered open stands of spruce are found in the northernmost portion of the refuge.

11. Water Rights

During 1985, the Regional Office Habitat Resources staff developed an information package to establish an accelerated Federal Reserved Water Rights and Instream Flow program as a high Regional priority. Refuge staff submitted comments on this package. Five refuge streams were identified for quantification of instream flow requirements and include: Big Creek, King Salmon River, Shosky Creek, Egegik River, and Kejulik River on the Becharof Refuge. Stream weighting and prioritization will continue in FY 1986.

12. Wilderness and Special Areas

Approximately 400,000 acres or one-third of the refuge was established under ANILCA as the Becharof National Wilderness Area. The values of the wilderness area are several fold. The area represents a variety of superlative pristine habitats with a complete compliment of plant and animal association still intact. Wilderness designation will help to insure that representative samples of these interdependent associations, some of which are unique, will be perpetuated for this and future generations to enjoy. The genetic diversity protected by the unit will serve as an invaluable source of data for scientific investigation and for potential future needs for fish and wildlife protection, restoration and enhancement. Because of the area's designation as wilderness, it will mean that the special wildlife/wildland associations within will be the last place on the refuge subject to irreversible development.

Four private inholdings currently exist within the wilderness area. Three of the inholdings are owned by two guides, one is former Alaska State Governor, Jay S. Hammond. Both guides are interested in selling and have approached the Service concerning same.

An additional 347,000 acres, 29 percent, of the refuge has been selected and recommended for wilderness designation under the Becharof RCCP. The proposed additions include: the lower Island Arm/Ruth Lake area; Mount Peulik/Gas Rocks area; eastern reaches of the King Salmon River drainages; and Big Creek drainage.

Designation of these additional lands as wilderness will depend on approval of the President and Congress. In accordance with ANILCA Section 1317(b), the President must advise Congress of his wilderness recommendations by December 2, 1987. Regardless of whether the areas are legally designated as wilderness however, FWS will maintain the wilderness qualities of these areas whether or not they are congressionally designated.



Cabin and associated land parcel privately owned by former Governor Jay S. Hammon. The inholding, located in the middle of the Becharof Wilderness Area, is now up for sale. CRA

G. WILDLIFE

1. Wildlife Diversity

The Alaska Peninsula's great geographical extension, diverse physiography and narrow, tapering land mass--influenced by the Bering Sea, foster a tremendously diverse environmental regime (see Fig. 7 for place names). At least 183 bird species, 30 land mammal species, and 11 marine mammals probably occur in refuge habitats or adjacent areas. Freshwater streams and related habitats harbor at least 24 fish species including 5 Pacific salmonids during various times of the year.

2. Endangered and/or Threatened Species

The endangered Aleutian Canada goose (Branta canadensis leucopareia) may occur on the Becharof NWR during migration to their Aleutian Island nesting areas, however, they have not been documented on refuge lands. The Arctic (Falco peregrinus tundrius) and American (F. p. anatum) races of the peregrine falcon may occur in the area during



Fig. 6. Reference map for Alaska Peninsula place names discussed in text.

migration, however, these species have not been documented either. The Arctic peregrine was changed from endangered to threatened status in 1984. Peale's peregrine (F. p. pealei) is the non-endangered/non-threatened race that is a rarely-observed inhabitant of the area.

3. Waterfowl

The Alaska Peninsula's estuaries, bays and wet tundra coastal lowlands are important waterfowl habitats for major populations of ducks, geese, tundra swans and (Pacific) brant. The North American population of emperor (Chen canagica), cackling Canada (Branta 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 (A brant was observed on the Naknek River near King Salmon last spring-blown in by a storm.). Most of the Bristol Bay tundra swan population nests on the northern peninsula lowlands, as do pintail, black scoter, scaup, mergansers and numerous other waterfowl.



Bristol Bay lowlands on the northern Peninsula in March. Some ponds have opened. RJW

Naknek River Survey

Aerial surveys are conducted annually over the Naknek River in April and May to record the occurrence and abundance of waterbirds (primarily waterfowl). Approximately 15 miles of river are flown, between the mouth of the river at Bristol Bay, and the outlet at Naknek Lake. Some river segments along the survey route support high bird densities. Since we have no present method for determining errors in our estimates, the data obtained are indexes at best, except

perhaps for the more visible geese and swan species. Table 11 lists peak staging count results for 1983-1985.



Menyanthes trifoliata (buckbean) wetland CLK

Table 11. Highest count^a estimates and species composition for common waterfowl occurring on the Naknek River, 1984-1985

| | Estimated observed totals | |
|-------------------------------|---------------------------|------|
| | 1984 | 1985 |
| Tundra swan | 2625 | 2776 |
| Greater white-fronted goose | 2453 | 1610 |
| Canada goose | 182 | 846 |
| Northern pintail | ? | 1638 |
| Common/red-breasted merganser | 1558 | 1644 |
| Common/Barrow's goldeneye | 1102 | 733 |
| Mallard | 600 | 263 |

^aThe highest number during any single weekly count, occurring generally between mid-April and late May.

Tundra Swan Surveys

Since 1983, aerial tundra swan surveys have been conducted on the northern peninsula (including refuge lands) to document the distribution, abundance and productivity of swans summering on the Bristol Bay lowlands. Swans are highly visible and information about them can be used to index the welfare of sympatric waterfowl species using the same habitats. An attempt is being made to stratify survey units from swan data recorded on topographic quadrangle maps. Tables 12-15 are preliminary summaries of swan data through 1985. In February, WB Wilk presented a paper to the first Alaska Bird Conference and Workshop, titled, "Aerial Tundra Swan Survey on the Northern Alaska Peninsula".



Tundra swans and associated waterbirds staging on the Naknek River during aerial counts in spring. RJW

Table 12. Tundra swan adult/subadult densities and study area population estimates from northern Alaska Peninsula aerial surveys, 1983-1985. Preliminary estimates do not include aerial correction index, and are based on simple number : area ratio extrapolation. Study area was based on 18061 km² of potential viable tundra swan habitat.

| | Area sampled (% of total) | Single/paired swans per km ² | Total swans per km ² | Estimate |
|-----------|---------------------------------|---|---------------------------------------|----------|
| 1983 | | | | |
| June | 39.3 | 0.16 | 0.23 | 4109 |
| July-Aug. | 25.4 | 0.15 | 0.24 | 4391 |
| 1984 | | | | |
| June | 82.3 | 0.17 | 0.24 | 4414 |
| July-Aug. | 54.4 | 0.18 | 0.29 | 5277 |
| 1985 | | | | |
| June | 62.1 | 0.20 | 0.33 | 5889 |
| July-Aug. | 28.2 | 0.16 | 0.30 | 5352 |

Table 13. Tundra swan population structure from observations made during northern Alaska Peninsula aerial surveys, 1983-1985. Numbers in parentheses to right are percentages with cygnets included. Numbers in parentheses below are percentages that do not include cygnets.

| | Paired/single swans | Flocked swans | Cygnets | Totals |
|--------------------------|------------------------|-------------------|-----------|--------|
| June | | | | |
| 1983 | 1140 (67) (70) | 476 (28) (30) | 94 (5) | 1710 |
| 1984 | 2454 (64) (68) | 1180 (31) (32) | 200 (5) | 3834 |
| 1985 | 2292 (59) (63) | 1370 (36) (37) | 194 (5) | 3856 |
| July-August ^a | | | | |
| 1983 | 687 (49) (62) | 427 (31) (38) | 280 (20) | 1394 |
| 1984 | 1817 (45) (63) | 1055 (26) (37) | 1193 (29) | 4065 |
| 1985 | 923 (45) (61) | 588 (30) (39) | 463 (23) | 1974 |

^aIn 1983 and 1984, production counts ended 2 August. In 1985, counts ended 25 July.

Table 14. Tundra swan pair success determined from aerial production survey observations on the northern Alaska Peninsula, 1983-1985^a

| | Pairs observed ^b | Pairs with broods | Pairs with broods (%) |
|------|--------------------------------|----------------------|-----------------------------|
| 1983 | 343.5 | 95 | 27.7 |
| 1984 | 908.5 | 351 | 38.6 |
| 1985 | 461.5 | 157 | 34.0 |

^aPacific coast data not included.

^bPossible breeding pairs calculated by the formula: pairs + (singles/2)

Table 15. Tundra swan flock and brood sizes from northern Alaska Peninsula aerial surveys, summer 1983-1985.

| | Survey type and year ^a | | | | | |
|--------|-----------------------------------|-----|------|-----|------|-----|
| | 1983 | | 1984 | | 1985 | |
| | N | P | N | P | N | P |
| | Flocks | | | | | |
| Number | 31 | 93 | 65 | 159 | 75 | 76 |
| Mean | 15.4 | 4.6 | 18.2 | 6.6 | 18.3 | 7.7 |
| S. E. | 2.5 | 0.2 | 4.4 | 0.6 | 3.5 | 1.4 |
| | Broods | | | | | |
| Number | 26 | 96 | 65 | 355 | 68 | 157 |
| Mean | 3.4 | 2.9 | 3.1 | 3.4 | 3.0 | 2.9 |
| S. E. | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |

^aN = nesting counts conducted in June; P = production counts conducted in July to early August.



Tundra swans, mallard and northern pintail on Naknek River in King Salmon, in April. KIW

Emperor Goose Surveys

Refuge staff have assisted the Migratory Bird Office in Anchorage and Fairbanks, and Izembek NWR conducting spring aerial emperor goose surveys. Our data supplements Izembek's more extensive spring (and fall) surveys for comparative purposes. The data also provide information about local temporal population shifts. In the recent past, we have assisted in fall enumerations as well. The emperor goose is one of 4 Arctic geese that have undergone recent population declines. The aerial survey results are summarized in Tables 16-17.

Table 16. ^a Spring population size and productivity trends in emperor geese.

| Year | Population size | Production (% young) | Family group size |
|------|-----------------|----------------------|-------------------|
| 1980 | - | 24.8 | 2.3 |
| 1981 | 91,267 | 31.7 | 3.2 |
| 1982 | 100,643 | 7.8 | 2.7 |
| 1983 | 79,155 | 27.1 | 3.2 |
| 1984 | 71,217 | 22.3 | 2.8 |
| 1985 | 58,833 | - | - |

^aData from Izembek NWR.

Table 17. Fall population size of emperor geese.^a

| Year | Population size |
|------|---------------------|
| 1979 | 59,114 ^b |
| 1980 | 63,091 ^b |
| 1982 | 80,608 |
| 1983 | 72,551 |
| 1984 | 82,842 |

^aData from Izembek NWR.

^bSurveys not conducted on south side of peninsula.

4. Marsh and Waterbirds

The peninsula is an important summering area for numerous waterbirds which use the wet tundra lowlands for breeding areas. Table 18 is a list of species and their statuses determined from studies conducted in 1985 in two study areas on the peninsula. The list is not a complete representation of all species, but does document those species encountered in first-time, on-ground studies conducted by adjacent Alaska Peninsula NWR.

Table 18. Species composition and status of waterfowl, marsh and waterbirds observed in two study areas in Alaska Peninsula National Wildlife Refuge, summer 1985.

| | Study area and status ^a | |
|--|------------------------------------|---------------|
| | Braided Creek | Herendeen Bay |
| Loon spp. (Common, red-throated, arctic) | CV | - |
| Red-necked grebe | UB | - |
| Tundra swan | CB | CV |
| Canada goose | UB | - |
| Mallard | CB | UB |
| Northern pintail | M | - |
| Gadwall | M | - |
| American wigeon | CB | - |
| Green-winged teal | CB | M |
| Greater scaup | CB | - |
| Harlequin duck | RV-CB | CB |
| Common eider | CV | - |
| Common/Red-breasted merganser | RV | - |
| Red-breasted merganser | RV | CB |
| Lesser sandhill crane | CB | - |
| Common snipe | CB | UB |

^aStatus classes: CB = common breeder, UB = uncommon breeder, RV = regular summer visitor, CV = casual or accidental visitor, M = migrant, - not present.



Solitary tundra swan amongst an Aleutian Mountain Range backdrop. CLK

5. Shorebirds, Gulls, Terns and Allied Species

Numerous shorebirds migrate along or breed on the Alaska Peninsula. Major staging areas occur on or near the refuge in Izembek and Nelson Lagoons, Port Heiden and Ugashik and Egegik Bays, and many unstudied areas.

Nesting seabirds flourish along the peninsula's coast. The steep, rocky cliff's of the refuge's Pacific coast are particularly suited for the colony-nesting species, black-legged kittiwakes, common and thick-billed murres, horned and tufted puffins, red-faced, pelagic and double-crested cormorants, pigeon guillemots and gulls. The present status and abundance of many of these species is unknown and requires updating and study.



Pelagic cormorants and black-legged kittiwakes occupying coastal habitats. DDM





Foraging yellowlegs. SHL

6. Raptors

Bald eagles are common nesting species on the refuge and Alaska Peninsula. Nests are constructed atop cliff headlands, seastacks and are occasionally found in tree tops on the tundra. A recent survey conducted by the Office of Raptor Management along the Pacific side estimated eagle numbers at $1422 \pm 21\%$ for adults and $418 \pm 38\%$ for juveniles (95% CI). Presently, eagles and other birds of prey are not regularly monitored by refuge personnel.



Bald eagle aerie on precarious coastal cliff. RAP

7. Other Migratory Birds

Other numerous migratory birds use refuge and adjacent peninsula Lands for various needs, including breeding, migration, resting and wintering. Tables 19-20 list other migratory and resident birds observed during field studies in nearby Alaska Peninsula NWR in 1985.

Table 19. Species composition and status of other migratory and resident birds observed in two study areas in Alaska Peninsula National Wildlife Refuge, summer 1985.

| | Study area and status ^a | |
|---|------------------------------------|---------------|
| | Braided Creek | Herendeen Bay |
| Willow ptarmigan ^b | CB | CB |
| Rock ptarmigan ^b | CB | CB |
| Cliff swallow | CV | - |
| Violet-green swallow | CB | - |
| Tree swallow | CB | CV |
| Bank swallow | CB | CB |
| Black-billed magpie ^b | CB | CB |
| Common raven | RV | UB |
| Black-capped chickadee ^b | CV | UB |
| American dipper | CB | - |
| American robin | CB | - |
| Gray-cheeked thrush | CB | - |
| Hermit thrush | - | CB |
| Water pipit | CB | UB |
| Yellow wagtail | - | UB |
| Northern shrike | CB | CV |
| Orange-crowned warbler | CB | CV |
| Yellow warbler | CB | CB |
| Wilson's warbler | CB | CB |
| Common rosefinch (<i>Carpodacus erythrinus</i>) ^c | CV | - |
| Rosy finch | CB | UB |
| Common redpoll | CB | CB |
| Savannah sparrow | CB | CB |
| American tree sparrow | CB | - |
| White-crowned sparrow | CB | - |
| Golden-crowned sparrow | CB | CB |
| Fox sparrow | CB | CB |
| Lapland longspur | CB | CV |
| Snow bunting | CB | UB-M |

^aStatus classes: CB = common breeder, UB = uncommon breeder, RV = regular summer visitor, CV = casual or accidental visitor, M = migrant, - not present.

^bResident species.

^cNot absolute confirmed observation.



Vigilant tree swallow and an Alaska
Peninsula sunset. RJW



A willow ptarmigan brood. CLK

Table 20. Species composition of common nesting bird species occurring during weekly upland runway transect counts, Braided Creek study area, Alaska Peninsula National Wildlife Refuge, Alaska 1 June-9 August 1985.^a

| | Weekly total (mean + SD) | | | Total obs. |
|---------------------------|-----------------------------|--------------|-------------|---------------|
| | June | July | August | |
| Willow ptarmigan | 3.00 + 1.41 | 0.25 + 0.43 | 2.50 + 2.50 | 21 |
| Common snipe | 0.20 + 0.40 | 0.25 + 0.43 | | 2 |
| Tree swallow | 7.80 + 3.66 | 2.25 + 1.48 | | 48 |
| Gray-cheeked thrush | 0.60 + 0.49 | 0.50 + 0.87 | | 5 |
| American robin | 0.60 + 0.49 | 1.50 + 2.06 | | 9 |
| Orange-crowned warbler | 2.60 + 2.87 | 4.50 + 3.20 | 1.00 + 1.00 | 33 |
| Yellow warbler | | 0.25 + 0.43 | | 1 |
| Wilson's warbler | 9.80 + 5.90 | 1.75 + 0.83 | 1.50 + 1.50 | 59 |
| American tree sparrow | 0.20 + 0.40 | 0.75 + 0.83 | | 4 |
| Savannah sparrow | | 0.75 + 1.30 | | 3 |
| Fox sparrow | | 0.25 + 0.43 | | 1 |
| Golden-crowned sparrow | 10.20 + 1.72 | 20.25 + 7.26 | 2.50 + 2.50 | 137 |
| White-crowned sparrow | 7.00 + 6.72 | 10.50 + 1.66 | 3.50 + 3.50 | 84 |
| Lapland longspur | 0.80 + 0.75 | | | 4 |
| Common redpoll | 7.40 + 4.32 | 5.25 + 3.34 | 0.50 + 0.50 | 59 |
| Unknown passerine | 1.8 + 0.75 | 5.75 + 1.79 | 5.50 + 0.50 | 43 |

^aOther species observed: mallard, northern pintail, American wigeon, lesser sandhill crane, greater yellowlegs, short-billed dowitcher, glaucous-winged gull, mew gull, arctic tern, bank swallow, common raven, and northern shrike.

^bOnly two surveys were conducted in August. The second survey occurred during high winds, thus observations were limited.

8. Game Mammals

Alaska Refuges are open to sport and subsistence harvest. Figure 7 shows the 3 Alaska Department of Fish and Game game management subunits on the Alaska Peninsula, and their approximate boundaries relative to refuge lands.

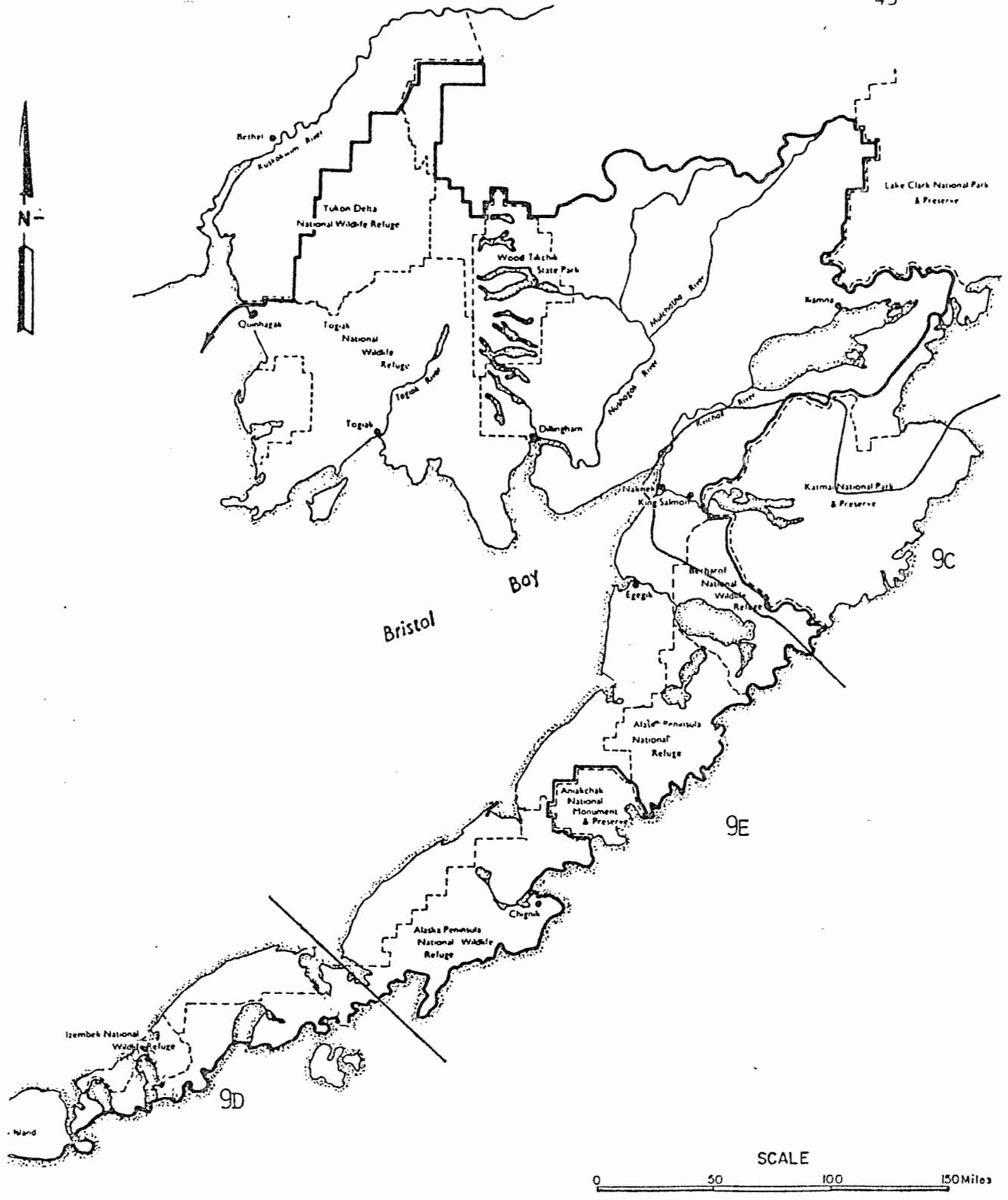


Fig. 7. Becharof Refuge boundaries in relation to Alaska Department of Fish and Game's game management subunits and other political boundaries.

Brown Bear

In recent years, the refuge has made significant contributions in obtaining brown bear data from aerial surveys in previously unstudied (or minimally studied) areas. Annual brown bear composition surveys of the tributaries to the Island Arm, Becharof Lake, have been conducted by the refuge since 1980, (Fig. 8). Other areas surveyed in various years include the Pacific side, Kejulik River drainage, Big, Gertrude, and Bible Camp Creeks.

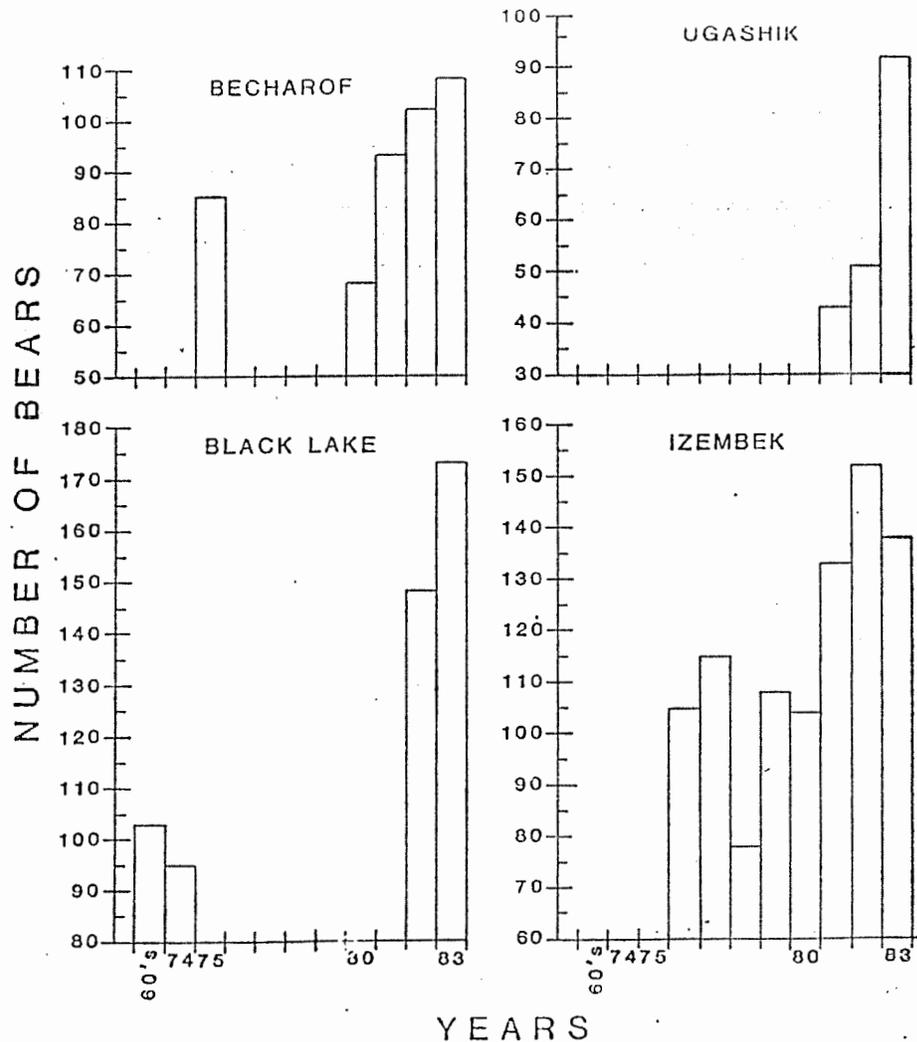


Fig. 8. Brown bear totals from highest composition/trend counts in four Alaska Peninsula locations (ADF & G table).



Returning from an evening of brown bear surveys, over the Island Arm, Becharof Lake. RJW

The 1981 Records of North American Big Game classify the peninsula Alaska brown bear as *Ursus arctos middendorffi*, distinguishing it from the conspecific grizzly bear (*U. a. horribilis*), which is generally associated with interior ranges. Other taxonomists have split this difference and consider the behemoths of Kodiak Island as *U. a. middendorffi* (e. g., The Wildlife Management Institute's, *Big Game of North America* (1978)), and lump the coastal brown bear of the mainland with interior grizzlies. Nonetheless, the 1981 Boone and Crockett record lists the number 6 brown bear as having been taken near Port Heiden on the Alaska Peninsula in 1961. Forty-six of the top 100 brown bear listed were taken on the Alaska Peninsula, rivaling Kodiak Island's 53.



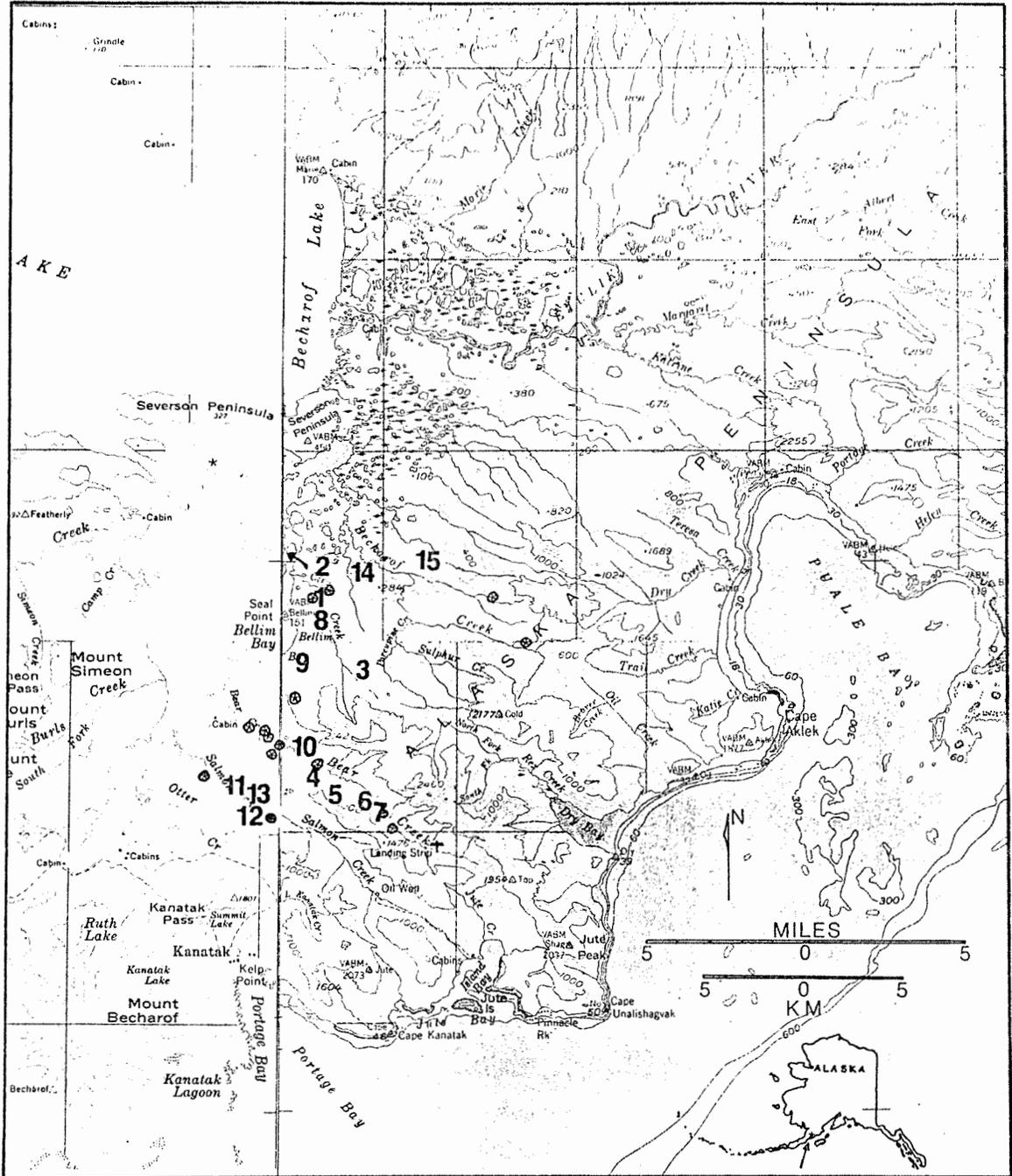
Brown bear dwarfing Kejulik Mountains from Becharof Lake shoreline. RJW.

Brown bear study

In late 1983, a brown bear study was initiated on Becharof Refuge. The study objectives were to:

1. Determine the extent and characteristics of island-denning brown bear on the refuge.
2. Determine the seasonal movement of brown bear within, into and out of the refuge.
3. Locate and describe winter denning sites.
4. Increase knowledge of brown bear refuge use and establish a data base.

Since the time that the original study was designed, it became increasingly apparent that the island denning objectives would be difficult to accomplish (assuming a portion of the population used the islands for denning). During the winter, 1983-1984, only one island den was observed (Fig. 9). In the winter, 1984-1985, only a cursory reconnaissance of the Island Arm was completed and no dens were located (although bear tracks were observed in the snow on several islands). These results are in contrast to the 14 dens that National Park Service biologist Willard H. Troyer reported for 1974. Troyer's findings were ecologically significant, since early studies on Kodiak Island and the Alaska Peninsula showed that most bears den mid-slope in the mountains. That information, coupled with the establishment of



- ⊙ 1984 capture sites
- △ base camp
- * den island, winter 1983-1984

FIGURE 9. Island Arm, Becharof Lake, Alaska Peninsula study area for brown bear capture/collaring, 1984-1985. Bold numbers are locations from 1985 field work. Numbers coded to bears captured.

Becharof National Wildlife Refuge (1980) provided the stimulus for this study. Although the above study objectives are still intact, we have obtained little data about island-denning bears from radio-tracking. Brown bear denning in the islands of Becharof Lake is presently not a predictably common phenomenon.

During the summers 1984-1985, 29 brown bear sows with cubs/yearlings and one boar were captured and radio-collared along the Island Arm tributaries of Becharof Lake (Fig. 9). In late 1984 and early 1985, comparatively few radio-tracking flights were conducted. After the 1985 capture effort, tracking flights and schedules became somewhat regular, but weather confounded many of our plans. Figs. 11-12 provide a preliminary visual summary of brown bear movements for bears we captured in this study. At this writing (Jan. 1986), there were 22 bears still presumed to have collars. We have also tentatively identified as many as 12 possible general den locations, although only 1 has been visually observed (Table 21).



Refuge personnel "processing" a brown bear sow high above an Island Arm tributary stream. CL

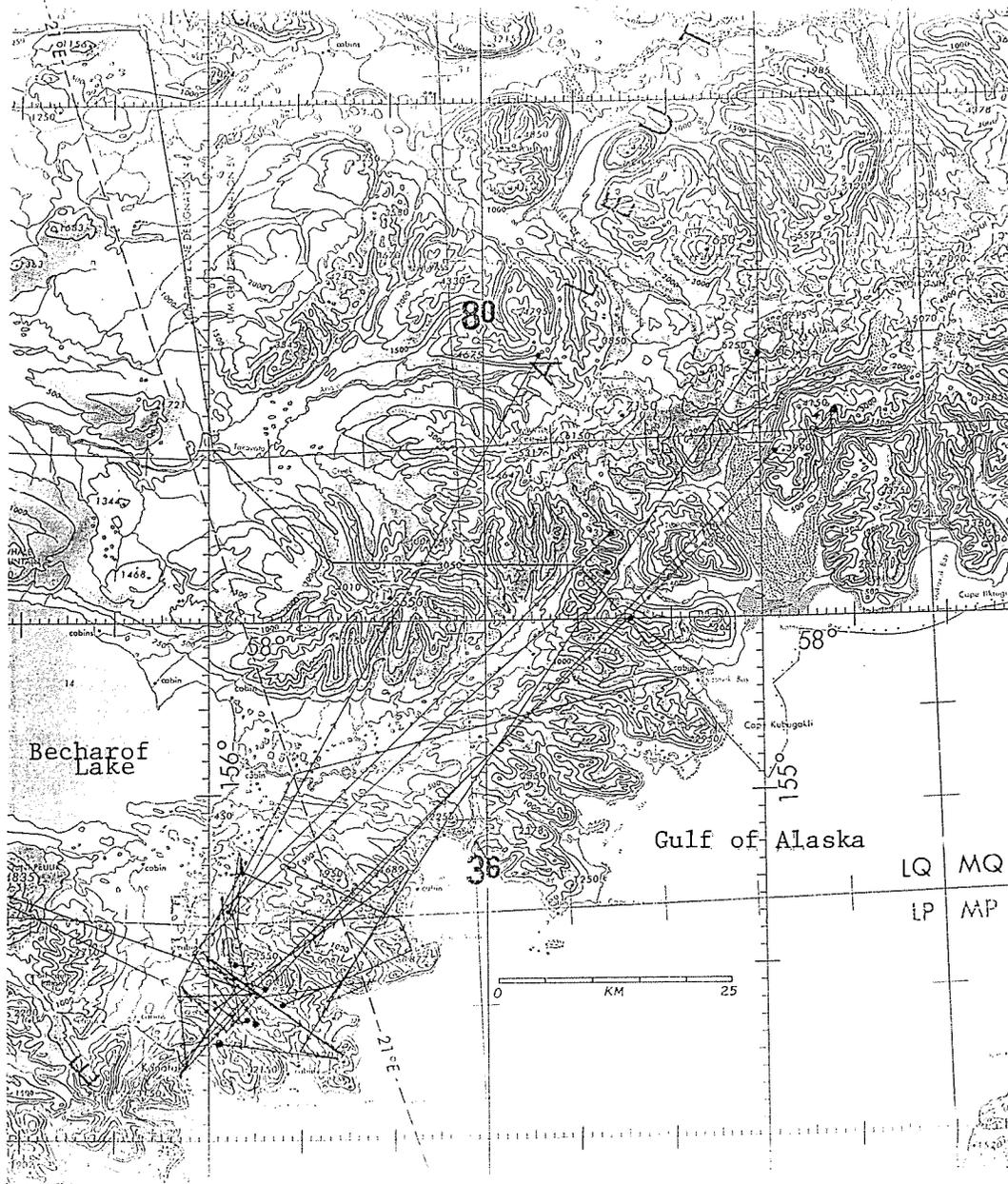


Fig. 11. Visual summary of linear brown bear movements from radio-tracking surveys, Becharof National Wildlife Refuge, Alaska, 1985.

Table 21. Status and radio-location summaries for thirty brown bear radio-collared on the Island Arm, Becharof Lake, August 1984 and 1985.

| Number | Capture date | Status to winter, 1985-1986 ^a |
|--------|--------------|--|
| 04-01 | 08-13-84 | Sow w/2 cubs; probable den site located (a) ^b observed w/2 yrlngs. in 1985 |
| 02 | 08-13-84 | Sow w/1 yrlng.; possible shed collar |
| 03 | 08-13-84 | Sow w/2 yrlngs.; probably shed collar on or before 09-13-84; collar recovered 07-09-85, reassigned to bear no. 05-13 |
| 04 | 08-13-84 | Sow w/1 yrlng.; last observed with yrlng. on 08-24-85 |
| 05 | 08-13-84 | Sow w/3 cubs; collar shed on or before 10-29-84, recovered 07-11-85, reassigned to bear no. 05-15 |
| 06 | 08-13-84 | Sow w/2 cubs; collar shed on or before 10-02-84, recovered 10-11-85, inactive |
| 07 | 08-13-84 | Sow w/2 yrlngs.; last observed w/2 yrlngs. on 09-04-85 |
| 08 | 08-13-84 | Sow w/1 cub; last observed 10-19-84 (a) |
| 09 | 08-13-84 | Sow w/2 cubs; observed w/cubs on 10-02-84, audio observation only on 10-01-85 |
| 10 | 08-14-84 | Sow w/2 cubs; collar shed on or before 08-27-84, recovered on 10-28-84, reassigned to bear no. 05-14 |
| 11 | 08-14-84 | Sow w/1 yrlng.; collar shed on or before 08-27-84, not recovered |
| 12 | 08-14-84 | Sow w/2 yrlng.; possible den site located, winter 1985-1986 (a) |
| 13 | 08-14-84 | Sow w/3 cubs; last observed with 3 yrlngs. on 10-01-85 |
| 14 | 08-14-84 | Sow w/2 yrlngs.; possible den site located, winter 1985-1986 (a) |
| 15 | 08-14-84 | Sow w/2 yrlngs.; audio observations made in 1985; last occurred on 09-04-85 |

Table 21. Continued.

| | | |
|-------|----------|---|
| 05-01 | 08-03-85 | Sow w/1 cub or small yrlnng.; possible den site located, winter 1985-1986 (a) |
| 02 | 08-03-85 | Sow w/2 lg. yrlnngs.; last observed 09-30-85 (a) |
| 03 | 08-03-85 | Boar; Visual observation of bear at den on 11-07-85 |
| 04 | 08-03-85 | Sow w/1 cub; probable den site located 11-07 (a) |
| 05 | 08-03-85 | Sow w/2 cubs; probable den site located 11-12 (a) |
| 06 | 08-03-85 | Sow w/3 cubs; audio observation on 09-30-85 |
| 07 | 08-03-85 | Sow w/1 cub of year and 2 yrlnngs.; probable den located winter 1985-1986 (a) |
| 08 | 08-03-85 | Sow w/1 yrlnng.; probable den located 12-19-85 (a) |
| 09 | 08-03-85 | Sow w/2 cubs; probable den area located winter 1985-1986 (a) |
| 10 | 08-03-85 | Sow w/2 cubs; collar found in buried food cache near cabin, Upper Ugashik Lake, collar inactive |
| 11 | 08-04-85 | Sow w/3 yrlnngs.; suspected shed collar from 10-01-85 audio relocation |
| 12 | 08-04-85 | Sow w/2 yrlnngs.; probable den site located 11-07-85 (a) |
| 13 | 08-04-85 | Sow w/3 cubs; probable den site located 11-07-85 (a) |
| 14 | 08-04-85 | Sow w/2 yrlnngs.; probable den located winter 1985-1986 (a) |
| 15 | 08-04-85 | Sow w/2 lg. yrlnngs.; possible den located 12-20-85 (a) |

Table 21. Continued.

| SUMMARY | 1984 | 1985 |
|----------------------------------|---------|----------|
| Bears collared | 15 | 15 |
| Collars shed | 6 (40%) | 2 (13%) |
| Collars reassigned | 3 | - |
| Collars recovered | 4 | 1 |
| Collars not recovered | 2 | 1 |
| Collars not in use | 2 | 1 |
| Confirmed dens located | 0 | 1 |
| Probable dens (audio relocation) | 3 | 10 |
| Probable total active bears: | | |
| SUBTOTAL | 9 (60%) | 13 (87%) |
| TOTAL | | 22 (73%) |

PRELIMINARY RELOCATIONS SUMMARY^c

| | 1984 | | 1985 | |
|------------------------|---------|---------|----------------------|---------|
| | Audio | Visual | Audio | Visual |
| Dec.-Jan. ^d | - | - | 10 (91) ^e | 1 (9) |
| Feb. | - | - | - | - |
| March | - | - | - | - |
| April | - | - | 0 | 2 (100) |
| May | - | - | 0 | 2 (100) |
| June | - | - | 0 | 2 (100) |
| July | - | - | 0 | 1 (100) |
| Aug. | 10 (56) | 8 (44) | 7 (47) | 8 (53) |
| Sep. | 6 (50) | 6 (50) | 11 (79) | 3 (21) |
| Oct. | 7 (33) | 14 (67) | 5 (42) | 7 (58) |
| Nov. | 5 (100) | 0 (0) | 6 (100) | 0 (0) |
| | 28 | 28 | 39 | 26 |

^aIncludes data up to 2 January 1986 only.

^b(a) = audio relocation.

^cDoes not include consecutive relocations of shed or presumed shed collars.

^dDec.-Jan. (winter) 1985-86 dates end 2 Jan 1986.

^ePercentages in parentheses.

Barren-ground caribou

The Alaska Peninsula caribou herd is composed of the northern and southern subherds. The ranges of the two are split at Port Moller. Izembek NWR in Cold Bay monitors the smaller southern herd, while state game biologists monitor the northern population. Population

estimates for the northern subherd are listed in Table 22. In 1985, post-parturition counts showed an estimated 18,978 animals in the northern herd, of which 27.0% were calves.

Table 22. Sex and age composition of the northern Alaska Peninsula caribou subherd. (ADF&G table).

| 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 ^a |
| 1981 | Fall | 33.6:100 | 39.2:100 | 22.7 | -- |
| 1982 | Spring | 52.5:100 | 55.4:100 | 26.7 | 16,800 ^a |
| 1982 | Fall | 43.1:100 | 51.6:100 | 26.5 | -- |
| 1983 | Spring | -- | -- | 28.5 | 18,000 ^a |
| 1983 | Fall | 39.2:100 | 26.7:100 | 16.1 | -- |
| 1984 | Spring | -- | -- | 24.5 | 19,000 ^a |
| 1984 | Fall | 39.0:100 | 39.0:100 | 22.0 | -- |

a Post calving photo count with aid of radio telemetry.

The refuge assisted state biologists in their annual caribou capture/radio-collaring efforts in April. Radio-telemetry is used as an aid in locating caribou for surveys, and to obtain data on seasonal migration of this highly nomadic species.

The estimated annual herd harvest is 1000-1200 animals. Most hunters take bulls. The 1981 Records of North American Big Game (Boone and Crockett) list the number 1 barren-ground caribou (Rangifer tarandus granti) as having been taken at Ugashik Lake in 1967 (Fig.12). Thirty-seven of the top 100 caribou listed were taken on the Alaska Peninsula.



Photograph by Lens Unlimited

Fig. 12 **WORLD'S RECORD BARREN GROUND CARIBOU**
SCORE: 463 6/8
Locality: Ugashik Lake, Alaska. Date: 1967.
Hunter and owner: Ray Loesche.



Alaska Peninsula caribou. SHL

Moose

The Alaska Peninsula moose population has not fared well in GMU 9 (E) in recent years. Data from GMU 9 (E) for 1969-1972 vs. 1982-1983 suggest a 60% moose decline over the 12-year period. The Becharof Refuge has little data on the species. State biologists have surveyed an area that abuts the extreme northern border of the refuge, extending from the south shore of Naknek Lake, to Granite Peak, and both sides of the Katmai NP and Preserve boundary. The survey area also includes the extreme northern border of Becharof Lake. Results from those surveys are in Table 23.

The number 4 Alaska-Yukon moose (*Alces alces gigas*) listed in the 1981 Boone and Crockett record book was taken in 1967 at Mother Goose Lake. Twenty-two of the top 100 moose listed in the record were taken on the Alaska Peninsula, primarily during the 1960's.

9. Marine Mammals

Sea otters, Steller's sea lions and harbor seals occur along the Pacific coast. Few walrus occur on the Pacific side, however there is a haulout area which sometimes includes several thousand walrus at Cape Seniavin on the Bering Sea side. Several whale species occur in offshore waters. In spring, belukhas (beluga whales) visit some of the major river tributaries to Bristol Bay in search of smelt and salmon smolts. The refuge data base on marine mammals is scant.

Table 23. Moose Sex and Age Ratios From Fall Counts Conducted on Park Border area which includes the extreme northern Boundary of Becharof Lake. (ADF&G data).

| Date | Tot.M ^a per 100 F ^a | Sm. M ^b per 100 F | Sm M % in Herd | Sm M per 100 m Calves | Calves per 100 F | Calves per 100 F > 2 yrs | Incidence of twins per 100 F w/calf | Calf % in herd | Animals per hour | Total sample |
|----------|---|------------------------------------|----------------------|-----------------------------|------------------------|--------------------------------|---|----------------------|------------------------|-----------------|
| 11/21/81 | 23.2 | 10.1 | 7.4 | 140.0 | 14.5 | 16.1 | 11.1 | 10.5 | 47.5 | 95 |
| 11/30/82 | 31.0 | 7.1 | 5.1 | 150.0 | 9.5 | 10.3 | 0 | 6.8 | 67.4 | 118 |
| 10/22/83 | 33.0 | 4.4 | 2.9 | 44.4 | 19.8 | 20.7 | 13.3 | 12.9 | 69.5 | 139 |
| 11/07/84 | 27.8 | 4.3 | 3.1 | 70.6 | 12.1 | 12.7 | 13.3 | 8.7 | 65.3 | 196 |
| 12/06/85 | 20.5 | 2.6 | 2.0 | 85.7 | 10.30 | 10.5 | 9.1 | 7.8 | 45.0 | 153 |

a M = Male F = Female

b Small = possible yearlings

c Raw data unavailable to check ratios.

The 1981 Records of North American Big Game lists the number 5 (based on tusk measurements) walrus having been taken from the Alaska Peninsula. Seventeen of the top 100 walrus listed have been taken in the Bristol Bay/Bering Sea area.



Walrus haulout at Cape Seniavin. DDM



10. Other Resident wildlife

Lynx, beaver, and arctic and snowshoe hare are other residents of the Alaska Peninsula. In 1985, a coyote was taken by a local trapper. Coyotes are rare on the Alaska Peninsula.

11. Fishery Resources

A draft fishery management plans for both refuges were prepared by the King Salmon Fishery Resources Project Leader and sent to the Regional Office for review.

The Alaska Department of Fish and Game (ADF&G) continued to monitor Becharof Lake sockeye salmon smolt out-migration during 1985. An estimated 66 million smolts, 54.6 million Age I (82%) and 11.4 million Age II (18%), passed the side scanning sonar site in the Egegik River. The out-migration data is used to forecast adult sockeye salmon returns and estimate optimal spawner escapement levels. The returning spawners and rearing juveniles serve as a major nutrient source for refuge fish and wildlife populations. This project has been cooperatively funded by ADF&G and USFWS since 1982. Unfortunately, administrative problems within ADF&G blocked the transfer of Service funds in 1985.

14. Scientific Collections

Since 1983, plant specimens have been collected for the refuge herbarium. During 1985 field studies on the adjacent Alaska Peninsula NWR more than 300 specimens were collected and archived. To date, bird and mammal specimens have been collected and prepared only as random mortalities that were encountered in the field or in King Salmon.



Ornate wild iris. RAP

16. Marking and Banding

The refuge banding program was initiated in 1983. The program is presently two-dimensional, focusing on opportunistic banding of passerines year-round, and tundra swan banding during the summer.

Our present swan banding methods include the use of a small float plane, pilot, and assistant. The team searches tundra wetlands from the plane until a brood is observed. Once on water, the team either eases the brood to shore from the plane, runs them down, or scoops the cygnets off the water with a fish landing net or bare hands. Basic measurements are recorded and cygnets are banded and fitted with alpha-numeric color-coded (blue with white numerals) tarsus and neck bands.

Reports of banded swans have come from Alaska, British Columbia, Alberta, Washington and Oregon. Tables 24-25 are banding summaries.

Table 24. Preliminary summary of banded swans and observation records for tundra swans banded on the northern Alaska Peninsula 1983-1985.

| | Number banded | Observation site(s) |
|------|---------------|--|
| 1983 | 39 | Vancouver, B. C., Whatcom Co., WA, Summer Lake, OR, |
| 1984 | 9 | Langdon Reservoir near Calgary, Alta. (spring); Sauvie Lake Wildl. Area, OR (fall); Malheur Lake, OR (fall); S. Kenai Peninsula, AK (fall) |
| 1985 | 2 | nothing reported |



Banded/collared tundra swan cygnet. Unknown

Table 25. Species composition, and total numbers of passerines banded on FWS compound, King Salmon, Alaska, 1984-1985.^a

| | Total banded | |
|-------------------------------|--------------|----------|
| | 1984 | 1985 |
| Fox sparrow | 10 | 7 |
| White-crowned sparrow | 22 | 5 |
| Golden-crowned sparrow | 2 | 1 |
| Snow bunting | 0 | 1 |
| American robin | 2 | 0 |
| American tree sparrow | 5 | 1 |
| Tree swallow | 2 | 0 |
| Common redpoll | 8 | 93 |
| Dark-eyed junco | 1 | 0 |
| <u>Black-capped chickadee</u> | <u>0</u> | <u>6</u> |
| Totals | 52 | 114 |

^aIn 1984, three cackling Canada goose goslings were banded.

H. PUBLIC USE

1. General

Most users of Becharof NWR are non-local and non-resident sportsmen. Residents from the Bristol Bay Borough, Egegik and the U.S. Air Force Station (King Salmon) are more frequent users of the refuge, but fewer in number. Big Creek is frequently used as access to the refuge by boat and in the fall and winter all-terrain-vehicles (ATV's) for subsistence hunting of caribou and moose.

Recreational use of the refuge is difficult to distinguish from subsistence use since local residents combine the two activities. Non-local use is increasing, evidenced by the increase in the activity of local air-taxi operations, outfitters and commercial guides.

8. Hunting

Hunting is a major public use of Becharof NWR. Commercial guiding includes hunts for world-class trophy moose, brown bear, and caribou. Eleven guiding areas have been designated on the refuge by the State Guide Board. Some hunters partake in overlapping seasons of the three species, however, brown bear seasons occur only one season every year, in either spring or fall (Table 26-27).

Table 26. Brown Bear Harvest for the Alaska Peninsula, 1975-1983.

| Date | Total Bears | %male | Mean age | | % 5 yr. old | |
|---------|----------------|-------|----------|-----|-------------|------|
| | | | M | F | M | F |
| 1975-76 | 261 | 62 | 6.4 | 6.8 | 48.7 | 51.3 |
| 1977-78 | 311 | 64 | 5.9 | 7.1 | 45.3 | 54.7 |
| 1979-80 | 316 | 68 | 6.1 | 6.2 | 46.7 | 53.3 |
| 1981-82 | 339 | 59 | 5.9 | 6.4 | 47.0 | 53.0 |
| 1983-84 | 268 | 62 | 6.7 | 7.4 | 51.3 | 46.1 |
| Mean | 299 | 63 | 6.2 | 6.8 | 47.8 | 51.7 |

Table 27. Brown Bear Harvest for Becharof NWR.

| Date | Total | % male | Mean Age | | % 5 yr. old | |
|------------|-------|--------|----------|-----|-------------|----|
| | | | M | F | M | F |
| 1984-Spng. | 16 | 67 | 5.1 | 7.4 | 25 | 25 |

Waterfowl and ptarmigan hunting usually occur incidental to big game outings. Gross hunting estimates for 1985 include 1,008 visits and 32,315 activity hours.

Harvest of moose and caribou for 1985 are unavailable. The ADF&G in King Salmon has provided 1984 Caribou harvest data for the Alaska Peninsula subunits 9C and 9E, on and off refuges and moose hunter, harvest data for Becharof NWR which are shown in Table 28-29.

Table 28. Estimated Caribou and Moose Harvest for Alaska Peninsula subunits 9C and 9E.

| Species | M | F | UKN | Total |
|---------|-----|-----|-----|-------|
| Caribou | 569 | 166 | 8 | 743 |
| Moose | 16 | 0 | 0 | 16 |



Non-resident hunter with early season caribou. DDM

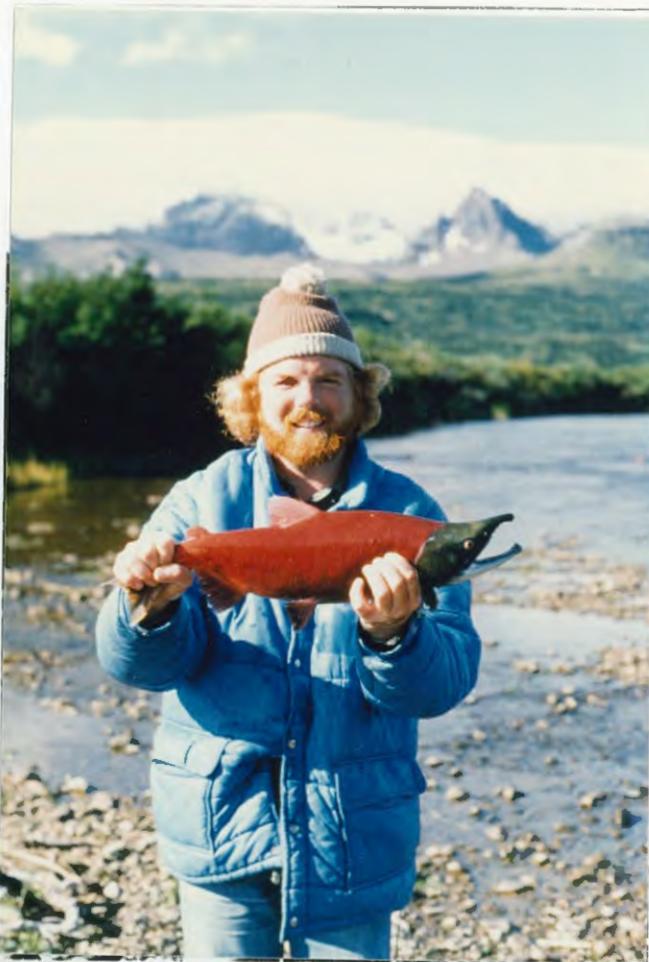
Table 29. Moose Hunter Success of the Becharof NWR.

| Species | Resident ^a | | Non-Resident | | Total |
|---------|-----------------------|----|--------------|---|-------|
| | + | o | + | o | |
| Moose | 12 | 14 | 4 | 7 | 37 |

^a+ = successful, o = unsuccessful.

9. Fishing

Becharof NWR receives only light fishing due to its distance from inhabited areas. The King Salmon River, Gertrude Creek, Big Creek, and Featherly Creek are the main sport fishing areas. Game species include rainbow trout, Dolly Varden, arctic char, arctic grayling and salmon. Pike and Lake trout are also found in most larger lakes and river systems.



Angler with sockeye or "red" salmon in spawning colors. SHL

Gertrude Creek is accessible by wheel (gravel bar) or float plane (Gertrude Lake) and by boat from Egegik. The commercial guide operating in the area books 120 clients per season with the average stay of 4 days. Catch and release fishing ethics are encouraged but clients are allowed to retain a trophy rainbow over 22". Gross estimates of refuge fishing use for 1985 were 390 visits and 3,945 activity hours.



This angler displays a chinook or "king" salmon. The Alaska Peninsula king salmon may reach a weight of 60 lbs. but average 28-32 lbs. TWA



Silver salmon or coho, well into spawning colors. SHL



Angler with an adult Dolly Varden. Many people refer to large Dolly vardens as arctic char, although arctic char are generally found in lakes and Dolly varden in flowing water. SHL



Angler with an average size arctic grayling. The world record arctic grayling was taken at the Ugashik Narrows on Alaska Peninsula NWR in 1981, weighing just under 5 lbs. GMS

10. Trapping

Wolverine, wolf, otter, lynx and beaver must be sealed and recorded by the State Fish and Game Department, Table 30. Red fox, mink and ermine are not required to be sealed, therefore, accurate figures are not available.

Table 30. Furbearer harvest by trap and gun, Becharof NWR and adjacent areas, 1984-1985.

| Species | Date | M | F | UKN | Total |
|-----------|---------|---|---|-----|-------|
| Wolverine | 1984-85 | 2 | 0 | 0 | 2 |
| Wolf | 1984-85 | 2 | 5 | 0 | 7 |
| Otter | 1984-85 | 1 | 0 | 0 | 1 |



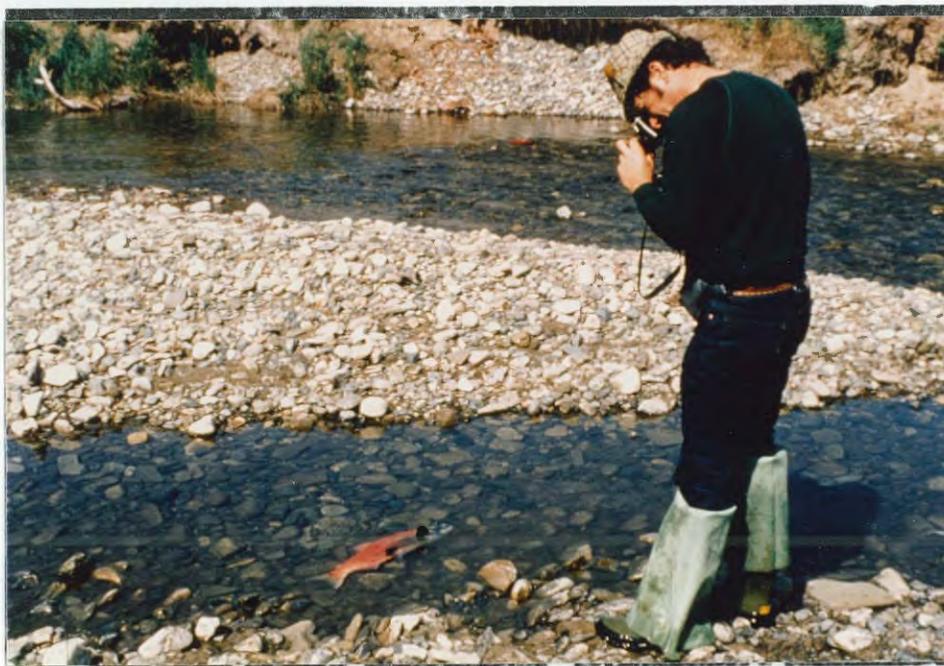
This trapper displays a large female lynx. DDM



Beavers are abundant in most drainages on the refuge. DDM

11. Wildlife Observation

The high cost of travel, lack of support facilities and weather hinders refuge visitors exclusively interested in wildlife observation. Most wildlife observation on the refuge is done via aircraft and incidental to ferry flights for hunting and fishing trips.



Photography also occurs on hunting and fishing trips. DDM

13. Camping

Most camping on the refuge is associated with hunting and fishing. The average trip is usually 4-5 nights. Most commercial guides have cabins on the refuge, but also operate out of spike camps. Gross estimates of refuge camping use in 1985 were 405 visits and 14,110 activity hours.



This camper is preparing a dinner of fried ptarmigan. DDM

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 villagers around the refuge have three-wheelers. ANILCA allows traditional means of surface transportation for subsistence purposes however, use of three-wheelers is not considered traditional. Big Creek having provided traditional access from the local community to the refuge was designated as a public use trail for winter use. This permits the use of any ATV to be used by both native and non-native to get to their winter food supply (caribou). Big Creek is usually used for this purpose during December, January and February. The mild weather precluded such use in December.

17. Law Enforcement

Most law enforcement activities were confined to learning where problems existed on the refuge. Information obtained from local

contacts reveals that some illegal activities do exist, especially during bear season.

Special Agent Roger Parker patrolled the Naknek River during waterfowl season and other remote refuge areas during bear season. One incident was investigated as a possible airborne hunting violation. The refuge staff assisted the Special Agents by transporting part of their construction crew out of Pilot Point. The crew had been repairing ice damage to the LE cabins in that area.

Refuge staff registered marine mammal parts for six people during CY 1985. These included the following:

- 2 Whale vertebrae
- 3 Walrus skull with tusks
- 1 Tip of walrus tusk

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 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. Contention of ownership; the association of cabins with guides, fee schedules, etc. have resulted in the issuance for some cabin/guiding permits on an annual basis to assure all guides are treated equally.

Of the 50 Alaska Peninsula/Becharof cabin sites (excluding the Pavlof subunit) the Becharof refuge currently has 12 cabin sites with standing structures.

The current status of the cabin sites is as follows: four have been permitted; one is in the process of being permitted; one is being handled by BLM; two are used for refuge administrative purposes; and one application has been denied.

On July 6, 1985, the second of two cabins owned by commercial guide Jim Cann with the Kejulik River drainage burned. Mr. Cann's other cabin was destroyed by fire in 1984. Both cabins were located on Mr. Cann's private inholding.

I. EQUIPMENT AND FACILITIES

1. New Construction

Four new lots were purchased during the year in various subdivisions in the King Salmon area for the construction of the four new residences. Since the last lot was purchased in August, there was not enough time for CGS to award the contract for building of the houses and the 1985 construction season was missed. Engineering collected soil samples from all lots for analysis. Bids for the residences were finally opened on December 12, 1985. A total of ten bids were received. The engineering estimate was \$880,880. Only one bidder was higher.

| <u>OFFEROR</u> | <u>BID</u> |
|----------------------------|------------|
| Unlimited Construction Co. | \$ 710,000 |
| Titan Construction Co. | 710,587 |
| KHO Construction, Inc. | 736,000 |
| Gorsuch Construction | 788,900 |
| N & L Construction, Inc. | 825,000 |
| Stanton & Stanton | 834,447 |
| Straub Construction, Inc. | 834,900 |
| G & S Construction | 850,000 |
| Gaston & Associates | 867,869 |
| Copper Valley Construction | 1,110,074 |

Unlimited Construction Company of King Salmon is the apparent low bidder. However, the contract will not be awarded until they can secure proper bonding.

MW Rogers constructed two (2) 10 foot by 10 foot storage areas in the office warehouse section. This will provide more storage area for Fisheries and Refuge equipment and supplies.

The contract for construction of the new aircraft hangar was awarded to Alaska Corporation for a bid of \$232,900. The contract Number is 14-16-007-85-6524. Regional Office Engineering personnel surveyed the lot and established corner markers. Construction footings and some framing for the foundations were completed prior to the onset of winter weather. Work will resume in the spring. This hangar will be shared with the National Park Service (NPS) and will be a welcome addition to the refuge facilities.

In 1984, 2.4 acres of refuge compound was conveyed to the Paug-Vik Native Corporation. Consequently, the wind generator and tower had to be disassembled and moved. MW Rogers aided by the Air Force personnel and their crane re-erected the wind generator tower on refuge property. After the tower was completed, Enertech Representative, Kenny Forest, arrived in King Salmon to install the new 5 KW generator to replace the "lemon" we had before. Bristol Bay Telephone Cooperative employees assisted by MW Rogers installed the

new underground cable from the tower site to the office building for connection to the indicator monitors.



With the help of the Air Force (and their crane), the wind generator and tower were re-erected on refuge property. DDM

After conveyance of the 2.4 acres of refuge compound, a survey was conducted by BLM to reestablish refuge compound boundaries. With the completion and marking of this survey, MW Rogers and YCC crew were able to erect the chain-link fence around the upper portion of the refuge compound that had been removed the previous year.

2. Rehabilitation

Engineering arranged for a U.S. Navy Seabee Reserve unit to complete the rehabilitation of the riverfront bulkhead. A crew of 13 arrived on a Friday evening and with the use of Air Force and refuge heavy equipment, worked for 2 days but were unable to finish the project. MW Rogers and the YCC crew finished the project by removing the old piling and bulkhead and hauling it off to the dump. The area was then graded to the river's edge and seeded.



Old pilings and timbers along the Naknek River
before rehabilitation. DDM



After rehabilitation of the riverfront bulkhead
with dock in place. DDM

During the bulkhead rehabilitation project the AVGAS fuel system that had been installed in 1984, had to be removed. After completion of the bulkhead modifications, the hose stand and fuel dispensing unit were installed closer to the aircraft mooring dock. This sure makes fueling a lot easier for the aircraft during float operations.

The bid for rehabilitation of the old bunkhouse was awarded to Unlimited Construction Company of Kodiak, Alaska. The total cost of the ARMM project was \$216,760 and the contract number was 14-16-0007-84-6432. Several problems were encountered during the project that resulted in contract modification. These included the discovery of dryrotted wood in the building foundation, the removal and disposal of the large walk-in cooler, addition of a rest room for the handicapped, and a new wall in the bunkroom. The contractor was given an extension of the completion date to February 15, 1986. The quality of work by the contractor appears to be quite good but the rate of progress was extremely slow during most of the year.



Bunkhouse before rehabilitation. DDM



Rehabilitation of the old bunkhouse involved almost complete reconstruction. DDM

MW Rogers began major rehabilitation to quarters No. 8 as part of our ARMM program. The project encompassed new subflooring, vinyl flooring, kitchen cabinets, a kitchen window, electrical wiring, carpeting, metal roof and chimney. This should bring the residence up to FWS standards.

3. Major Maintenance

The PA-18 supercub was taken to Anchorage twice during the year for 100 hour inspections. Early in the year a Loran C and a transponder were installed in the plane.

Late in October, due to the high tides and unseasonably heavy ice flows in the Naknek River, the refuge dock broke loose and floated approximately 200 yards upstream and froze in the ice. Refuge and Fisheries staff worked most of the next day to dislodge the dock from the ice and move it back to the FWS property. Refuge staff with the assistance of Air Force personnel and their crane removed the dock from the river for winter storage. Repairs and alterations to the dock will be made in the spring prior to being put back into the river.



Dislodging the dock from the ice after it broke loose from its moorings. GMS

MW Rogers and BT Mumma checked and organized all newly acquired field gear and supplies for the two field camps in the Braided Creek (Meshik) and Herendeen Bay areas.

General maintenance to residences included repairing all windows and frames in quarters #8, installing a new hot water heater in quarters Nos. 9 and 10, installing new cabinets, counter top, hot water heater and floor heater in quarters No. 11 and repairing the roof on quarters No. 14.

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 by the National Marine Fisheries Station (NMFS). MW Rogers and the YCC crew cleaned up the riverfront "boneyard" of rotten lumber, scrap metal and old motors. This area has now been graded and seeded.

The new Chevrolet S-10 pickup that was ordered in FY 1983 finally arrived on station April 25, 1985. This vehicle took a while to get here due to contracting problems but it is a welcome addition to the rolling stock.

6. Computer Systems

In 1984, a Data General 10 SP micro-computer was installed by Information Resource Management (IRM) personnel at refuge

headquarters. At that time, it was a simple unit with only one other terminal and two printers; one dot matrix and one letter quality. During the past year, the staff outgrew the small system and two more terminals were added, along with another letter quality printer and a tape drive unit.

The computer is widely used for word processing. A budget tracking program was added making it more effective to see where and how refuge money is being spent. Currently IRM is working on a new budget tracking program that will be compatible with the one that the Regional Office uses. It will also give a better tracking feature for keeping up with how much money is spent on repairs to equipment and facilities.

There are many fine software programs available for the Data General. We have some of them in our office but have not been able to use them to the fullest potential. The computer is shared with the Fishery Resource Station and we have found it is not capable of handling all the programs that we would like to have available. We have had to unload or "dump" programs from the computer that are not being used to make room for the ones that are used frequently.

The station has a System's Manager who is generally responsible for overseeing the daily functions of the computer such as "bringing it up", and "taking it down" and running "backups" to save all files. The System's Manager is also responsible for troubleshooting minor and sometime major problems that are experienced by all users.

With the installation of a Modem on our system this year we were able to transmit information from our system console to the Regional Office in Anchorage. With the Modem, the IRM office could call into our computer and try to rectify any problems we might be experiencing via the phone line instead of making a trip to King Salmon.

After using the word processing feature on the computer for the last year, we can't help but wonder how secretaries got along without them for so many years.

7. Energy Conservation

In February, Enertech Alaska installed the new 5 KW wind generator which is a replacement for the "lemon" we had before.

Productions figures for the last 10 months have been rather impressive.

| | | | |
|-------|---------|-----------|----------|
| March | 780 KWH | August | 434 KWH |
| April | 400 KWH | September | 733 KWH |
| May | 653 KWH | October | 580 KWH |
| June | 324 KWH | November | 718 KWH |
| July | 277 KWH | December | 1021 KWH |

This is a total of 5,920 KWH of electricity generated for the refuge. If this type of production continues it will be a welcomed savings for the refuge energy budget.

8. Other

The Western Administrative Support Center of the U.S. Department of Commerce sent Realty Specialist, Lane MacKenzie to do a real property inventory of the National Marine Fisheries Service Research Facility (otherwise known as refuge headquarters for the Alaska Peninsula/Becharof NWR's). Lane spent a day inspecting, photographing and measuring the facilities. He was very impressed with the Fish and Wildlife Service improvements.

Refuge Manager Hood met with the Chignik City Council to discuss the RCCP proposal for a subheadquarters to be located in Chignik. The City Council is seeking to broaden its economic base and was particularly interested in the idea that the village corporation could build our facilities and rent them to the FWS. Overall, the Council was receptive to the subheadquarters proposal.

Refuge staff developed and submitted projects to the Regional Office for the new computerized Refuge Needs Information System (RNIS). This is the first time that any systematic needs assessment has been completed for the Alaska Peninsula NWR.

J. OTHER ITEMS

1. Cooperative Programs

Alaska Peninsula/Becharof NWR is continuing to work cooperatively with local ADF&G personnel. ARM Berns assisted State personnel with radio-collaring twelve (12) caribou in the Cinder River/Port Heiden area on April 3rd and 4th. Everything went well until the second day when they had to wrestle several caribou to the ground because of a bad batch of drugs.

On July 17, RM Hood met with Dick Sellers and Dan Timm of ADF&G. Among the topics discussed was a potential cooperative brown bear study among ADF&G, NPS, and FWS. The study would center on population dynamics of an un hunted vs. hunted population of bears. An interagency meeting was held on August 14th in Anchorage to discuss this cooperative bear study. Attendees included Al Lovas (NPS), Layne Adams (NPS), Dave Morris (NPS), Katherine Jope (NPS), Dan Timm (ADF&G), Dick Sellers (ADF&G), Sterling Miller (ADF&G), Larry Calvert (FWS), and Ron Hood (FWS). Sterling Miller agreed to prepare a draft research proposed for review by all.

2. Items of Interest

Confirming what was obvious to the residents of the Alaska Peninsula, AMOCO's western area office issued a public announcement in January that the Becharof No. 1 wildcat well is being plugged and the site abandoned. Oil company officials said the well was drilled to a depth of about 9,000 feet. Company officials declined comment on the status of AMOCO's newly constructed airstrip at the Becharof No. 1 site. State stipulation at the time the company received its permit to drill required the airstrip to be "reclaimed" after AMOCO's operations are complete, although the state's definition of what constitutes a completed operation is neither specific or clear.

On June 13th, Secretary of the Interior Donald Hodel arrived in King Salmon on OAS Goose 780 to meet with Governor Sheffield to discuss such issues as lands selection/TAPS corridor; subsistence; Alaska Land Use Council; and Lease Sale 92. The Secretary's party included Bill Horn, Deputy Under Secretary, Al Powers, Alaska OCS Manager; and Robert Gilmore, Regional Director, FWS. The Governor's party included Lennie Boston, Special Assistant; John Greely, Press Secretary, Commissioner Don Collinsworth; and Commissioner Bill Ross.

The schedule for the day included a briefing for Mr. Hodel at the Fish and Game Bunkhouse followed by a "public" meeting where Bristol Bay residents stood in line to testify against the lease sale. Next the Governor took the Secretary on a tour of the area fishing industry with visits to Leader Creek Marina (boat yard) and Alaska Far East Fish Packing (cannery) in Naknek. RM Hood served as a driver while ARM/P Arment assisted the camera crew. The day ended with the Secretary's party flying to Brooks Camp in Katmai National Park.

Commercial guide Jim Cann owns two sites within the Becharof NWR Wilderness. He had a cabin located on each of these inholdings. On July 6th, the second of these cabin burned down. Arson is suspected.

On July 24th, Don Weathers, Chief of Office of Physical Facilities, Washington, D.C. and Rudy Berus, Regional Engineer, Anchorage, Alaska toured the refuge headquarters and inspected existing facilities and ongoing construction.

Ed White, ARD-Administration, and Diane Kugler, WO-Executive Direction visited the refuge on August 22nd as part of the Executive Direction Programmatic.

On August 29th, Wally Soroka, SRA, Anchorage conducted a firearms qualification session at the Borough Range in King Salmon. ARM/P Arment qualified for the Alaska Peninsula/Becharof NWR, RM Sarvis and ARM Blendon qualified for Izembek and RM Fisher and ARM Hotchkiss qualified for Togiak NWR.

On September 5th, OAS Pilot Carl Downing departed from King Salmon after completing his summer assignment; he flew N716 to Anchorage on its final trip as a Service aircraft. The aircraft was sold by OAS. We understand that the successful bidder was Vern Berns.

Bill Meck, Real Estate Appraiser from Region I and Jim Dooley, from Region III used our office as a base for their investigations of the Northeast end of Lake Illiamna. This is part of Project M--no, that's Project ANWR now! The appraisers were here from October 16th to 24th.

Alaska Peninsula/Becharof NWR's served as hosts for two study teams during October. Bill Butler, Wildlife Assistance, used our facilities while conducting aerial counts of cackling Canada geese. We also provided assistance to Bob Gill, Karen Bollinger and Margaret Peterson, Wildlife Biologists from Research for their ground truthing study of cacklers in the Ugashik River area. They have determined from their study that Ugashik and Cinder River tidal areas are of such great importance to the cackling Canada geese that efforts to acquire privately owned lands in that area should be high priority.

3. Credits

This narrative was a joint effort by all the refuge staff with special kudos to our typist for deciphering our penmanship and working diligently on revising the manuscript.

Section authors are listed below:

| | |
|--------------------------|---|
| Hood | Sections Introduction; A; C; D. 1-4; E. 1, 2, 5, 6; J. 1, 3; and editing. |
| Savery | Sections F. 11; H. 17; I. 1-4, 7, 8; J. 4 and editing. |
| Arment | Sections B; F. 9, 12; H. 20. |
| Wilk | Sections D. 5; E. 4; G. 1-10, 14, 16; editing and typing. |
| Mumma | Sections F. 1, 2; H. 1, 8-11, 13, 15. |
| Collins | Section I. 6; typing, compiling and editing. |
| Fishery Resource Station | Section G. 11. |

RECORD OF DECISION
BECHAROF NATIONAL WILDLIFE REFUGE
Comprehensive Conservation Plan,
Environment Impact Statement, and Wilderness Review

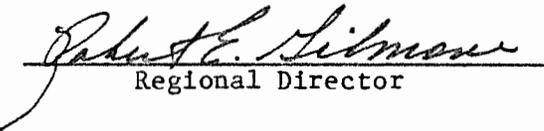
This Record of Decision (ROD) is based upon the Final Comprehensive Conservation Plan, Environmental Impact Statement, and Wilderness Review (CCP) for the Becharof National Wildlife Refuge (NWR) dated April, 1985. It also considers the comments from the public received during the public review period on the draft CCP and the comments received on the final CCP. The CCP described five alternatives for long range management of the refuge including one that would continue current management (Alternative A, the No-Action Alternative). The other four alternatives (Alternative B, The Preferred Alternative, Alternative C, Alternative D, and Alternative E) cover a broad spectrum of management emphasis ranging from maximum to minimum use of refuge resources.

Alternatives A and B offer the highest degree of resource protection; however, Alternative B provides the greatest opportunity for achieving the Alaska National Interest Lands Conservation Act (ANILCA) purposes, balancing conservation of fish and wildlife habitats and populations without precluding opportunities for compatible oil and gas exploration at a later date.

It is, therefore, my decision to select Alternative B, the Preferred Alternative, as described in the Becharof NWR CCP, for implementation with the following modification. Appendix A (attached) further clarifies certain aspects of the Becharof NWR CCP, especially as they relate to the Service's relationship with the State of Alaska. The determination of impacts on subsistence is found in Section IX of the CCP and is in accordance with Chapter 810 of ANILCA. In order to implement some aspects of this ROD, the Service will commence preparation of regulations governing resource protection on Becharof Refuge for public review. The regulations will be published in a proposed form and public hearings will be conducted in the vicinity of the refuge to solicit public comment prior to their finalization.

AUG 1 1985

Date



Regional Director

Attachments:

Appendix - Clarification of issues raised by the State of Alaska

APPENDIX
To the Record of Decision for the
Becharof National Wildlife Refuge (NWR)
Comprehensive Conservation Plan (CCP)

To address the State of Alaska's concerns about the final Becharof NWR CCP. The following clarifications are hereby made a part of the Record of Decision.

Oil and Gas Exploration

Oil and gas exploration may be allowed in the minimal management area in the northwestern and southwestern part of the refuge (see attached map 1) under three conditions;

1.) Applicants must indicate a need to explore on refuge lands to fully assess the potential of off-refuge oil and gas resources. The continuation or discontinuation of this exploration program will be determined by the public report discussed in item #3 below.

2.) Seismic data obtained on refuge lands or other information relating to oil and gas potential obtained as a result of such exploration will be made available to the U.S. Fish and Wildlife Service and other Department of Interior agencies. Data will be used by the Department of the Interior for land management decisions and for the purposes described in Section 1008 of the Alaska National Interest Lands Conservation Act. Data may, upon request, be disclosed to the Congress and any committee or subcommittee of the Congress evaluating the refuge or refuge resources. The data also may be used in the event of litigation concerning resource values.

3.) The U.S. Fish and Wildlife Service, in conjunction with other Department of Interior agencies, will prepare additional studies investigating the oil and gas potential as well as national need to develop such resources. A public report will be prepared within two years after issuance of this Record of Decision. This report will include the following;

a.) a geological and geophysical assessment; including a high, moderate and low potential map;

b.) a description of potential development scenarios and an engineering analyses;

c.) an economic assessment discussing the feasibility of developing in place resources; national need and present viability of development will be addressed.

Decisions related to the future need for oil and gas exploration and leasing on Becharof NWR will be made at that time.

Wilderness

As required under Section 1317 of ANILCA, the Service studied all of the non-wilderness lands in the refuge and made recommendations, as part of the CCP, regarding areas considered suitable for wilderness designation. Each alternative identified lands suitable for wilderness designation. These suitable lands constitute the Service's wilderness proposals associated with each alternative. Opportunities were provided for the public to comment on the Service's proposals in the draft plan, including a public hearing in Anchorage. The Service's new preferred Alternative B includes a well-defined wilderness proposal that reflects public input received on the areas identified as suitable wilderness in the draft CCP.

One could infer from the draft plan that the areas suitable for wilderness designation would constitute the Service's wilderness proposal and in fact that was clearly stated in all public meetings. We do not believe that the actions taken by the Service justify the need for a new wilderness proposal review process. The public was given 60 days, not 30 days, to comment on the Final CCP, including the wilderness proposal. The public will have additional opportunities to provide input as the Secretary, President, and Congress review the wilderness proposal.

The Bristol Bay Native Corporation (BBNC) noted that the Service's wilderness proposal was not included in the Bristol Bay Cooperative Management Plan and therefore was not sanctioned. However, the BBCMP and the Bristol Bay Regional Management Plan specifically avoid making recommendations on additional wilderness proposals, and state that the Fish and Wildlife Service will review non-wilderness refuge lands for possible addition to the National Wilderness Preservation System as part of its refuge comprehensive conservation planning process.

We believe the Big Creek area has values that merit wilderness designation such as important salmon spawning areas, and key moose, caribou and brown bear habitats. The Granite Peaks area have excellent scenic qualities and are a key brown bear denning area. The Gertrude Creek drainage has a significant population of rainbow trout.

Access

The Service will allow all traditional modes of access when utilized for subsistence activities under all management classifications including Congressionally designated wilderness areas. Service regulations prohibit the use of off-road vehicles ("other motorized vehicles") on refuges except in designated areas. We recognize the historic use of off-road vehicles in the Big Creek area and will proceed with the regulatory process to designate this area for off-road vehicle use.

The State noted that there are additional inconsistencies throughout the plan, but did not specify where. We will work with the State to clarify any specific inconsistencies that may be identified.

Land Status

We recognize the presence of non-federal lands within the boundary of Becharof NWR (see pages 68-69 of the CCP), and have stated that classifications and associated management directions applies only to refuge or Service lands.

Fish and Wildlife Management Techniques

The options to use the best fisheries and wildlife management techniques will remain available to both the State and the Service subject to their compatibility with refuge purposes. There is a discrepancy between Tables 18 and 19 in the CCP as relates to certain techniques of wildlife management.

Table 19 currently indicates, wildlife stocking, pest control, disease prevention and control generally would not be permitted in the refuge except in special conditions; predator control may be permitted where biologically justified. Table 18 is incorrect. The Service recognizes the Master Memorandum of Understanding between the Alaska Department of Fish and Game and the Service relating to fish and wildlife management relationships.

Fisheries Enhancement

Fisheries improvement activities may be permitted in special situations with cooperative agreements, subject to compatibility with refuge purposes.

Cabins and Support Facilities

We continue to support the position described in the Becharof Final CCP/EIS which states the following;

Section 304(d) of ANILCA mandates that the Secretary shall permit the exercise of valid commercial fishing rights or privileges obtained pursuant to the existing law unless he finds their exercise to be inconsistent with the purposes of a refuge. Prior to 1979 there were no onshore commercial fishing support facilities on lands now part of Becharof Refuge. To ensure that the level of use remains the same as at the time of creation of the refuge, the Service is restricting development of new facilities. Because there are no valid pre-ANILCA commercial fishing rights, this prohibition is not contrary to Section 304(d).

According to Section 1303 of ANILCA, the construction of new cabins for private recreational use on Becharof Refuge is prohibited. Non-transferable, five-year special use permits may be issued by the Service for a new cabin if a determination is made that the proposed use, construction, and maintenance of the cabin is compatible with the purposes for which the refuge was established, and that the use of the cabin is either directly related to the administration of the refuge or is necessary to provide for the continuation of an ongoing activity or use.

Navigable Waters and the Water Column

The Service acknowledges State ownership of the water column and submerged lands under navigable waters in the refuge. The lands and waters are not the subject of the CCP or the ROD. The Service will acknowledge all adjudicated claims to lands or waters. The Service may seek, where appropriate, cooperative agreements on State waters within or adjacent to the refuge.

RS 2477 Rights-of-Way

The State and FWS will be developing mutually acceptable language to address RS 2477 claims in national wildlife refuges. FWS currently has the following policy:

The FWS will work cooperatively with the State and other adjacent landowners to identify all rights-of-way claims made pursuant to RS 2477 within the Becharof NWR for administrative purposes only. The validity of any claims can only be determined in a court of competent jurisdiction.

This policy is currently undergoing joint review and substitute language may be proposed

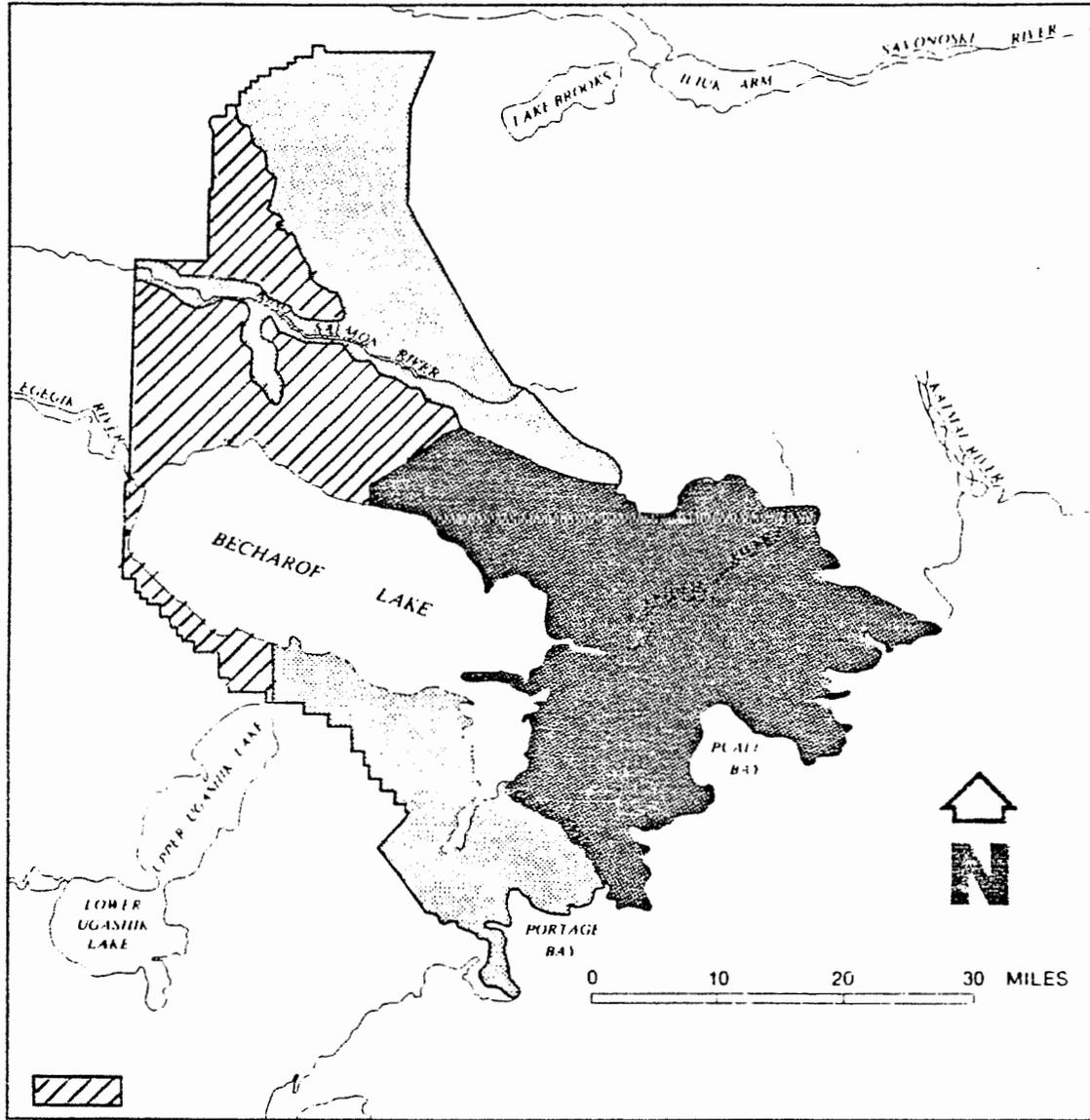
17(b) Easements, Non-exclusive Use Easements and Native Allotments

The Becharof National Wildlife Comprehensive Conservation Plan does not provide policy guidance for the management of 17(b) easements, the use of non-exclusive use easements, or the resolution of conflicts with Native allotments when the allotment conflicts with public use values. The FWS will address these management concerns as part of the development of a land protection plan and prior to taking specific action affecting the use of 17(b) easements or areas where public use areas conflict with private inholdings. The State of Alaska and other interested parties will be involved in the development of these policies.

Tide and Submerged Lands

We recognize the State's ownership and management authority over all tide and submerged lands in the refuge conveyed to the State pursuant to Section 6(m) of the Alaska Statehood Act.

Map No. 1



Areas that may be available for oil and gas exploration activities