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US FISH & WILDLIFE SERVICE--ALASKA



ALASKA PENINSULA/BECHAROF
NATIONAL WILDLIFE REFUGE COMPLEX

King Salmon, Alaska

ANNUAL NARRATIVE REPORT

Calendar Year 1992

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

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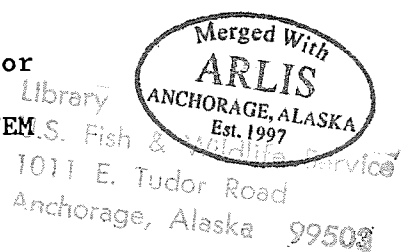
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REVIEWS AND APPROVALS

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King Salmon, Alaska



ANNUAL NARRATIVE REPORT

Calendar Year 1992

Ronald E. Hood 1-25-94 Cefenco 3/30/96
Refuge Manager Date Associate Manager Review Date

[Signature] 4/1/96
Regional Office Approval Date

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INTRODUCTION

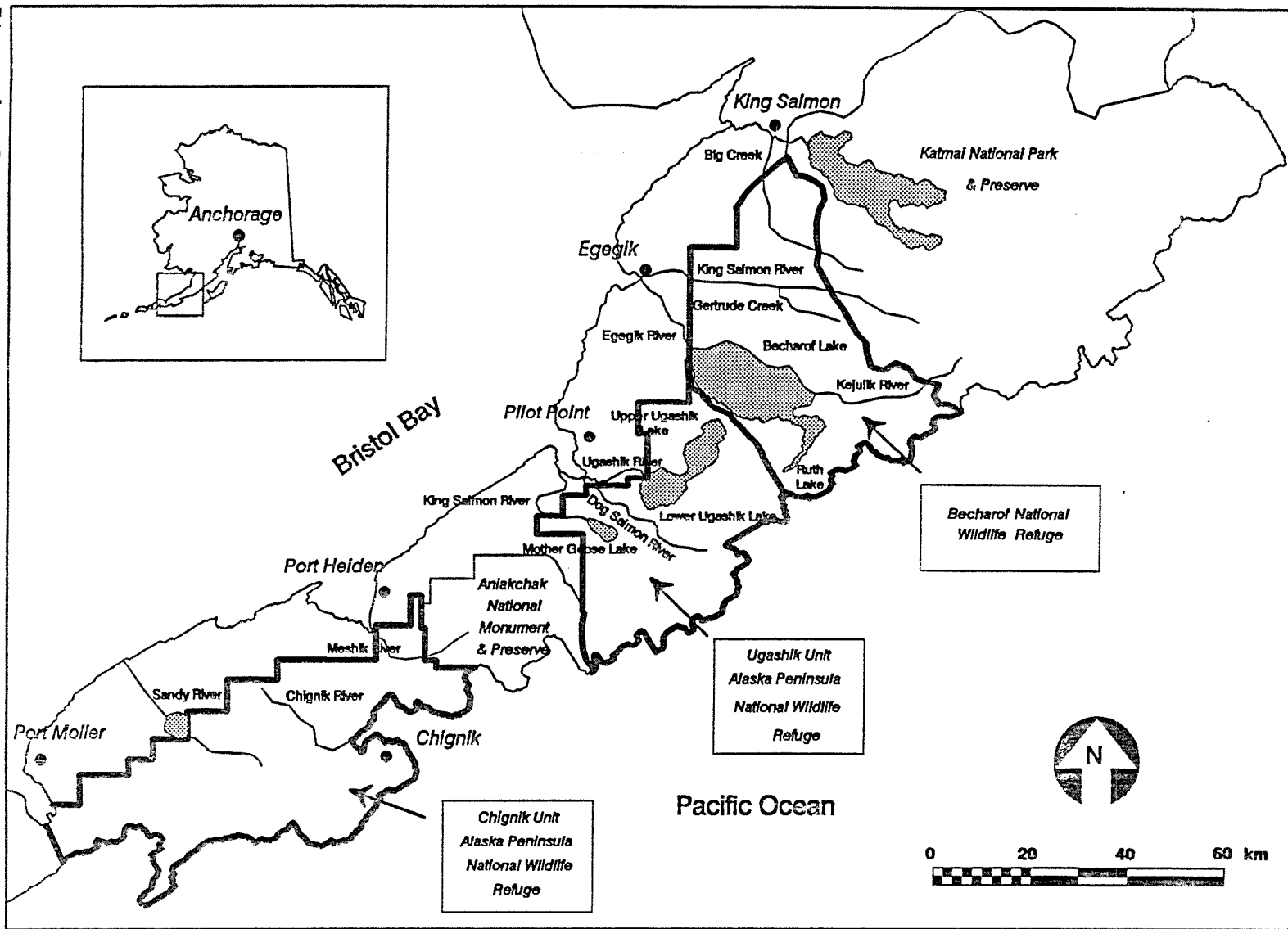
The Alaska Peninsula splits Bristol Bay and the Bering Sea on the north and west from the Pacific Ocean on the south and east. This rugged peninsula juts out in a southwesterly crescent from the mainland beginning at the 59th parallel of latitude and running nearly 400 miles to about the 54th parallel. The southwestward crescent is continued for another 1,500 miles by the Aleutian Islands. The backbone of the Alaska Peninsula is the Aleutian Mountain Range. This volcanic mountain range lies along the Pacific coast on the east side of the peninsula. Numerous peaks rise above 6,000 feet elevation. This creates a Pacific coast that is rocky and heavily fjorded. The Aleutian Range, including the Aleutian Islands, contains nearly 50 volcanoes known to have erupted or vented steam since 1760. They are part of a chain of volcanoes that rim the Pacific Ocean known as the "Ring of Fire". The Alaska Peninsula and Becharof National Wildlife Refuges are superimposed over this rugged range of mountains (Figure 1).



Aleutian Range volcanoes form part of the "Ring of Fire". This classic shot shows, north to south, Mt. Martin (Katmai NP&P), Kejulik Mts., Mt. Peulik (Becharof NWR), and Mt. Chiginagak (Alaska Peninsula NWR). 10/92, DAD

The Becharof Refuge contains approximately 1.2 million acres (Figure 2). It is 10 miles south of King Salmon and 295 miles southwest of Anchorage. The refuge lies between Katmai National Park and Alaska Peninsula Refuge. 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

Figure 1. Location of the Alaska Peninsula and Becharof National Wildlife Refuges.



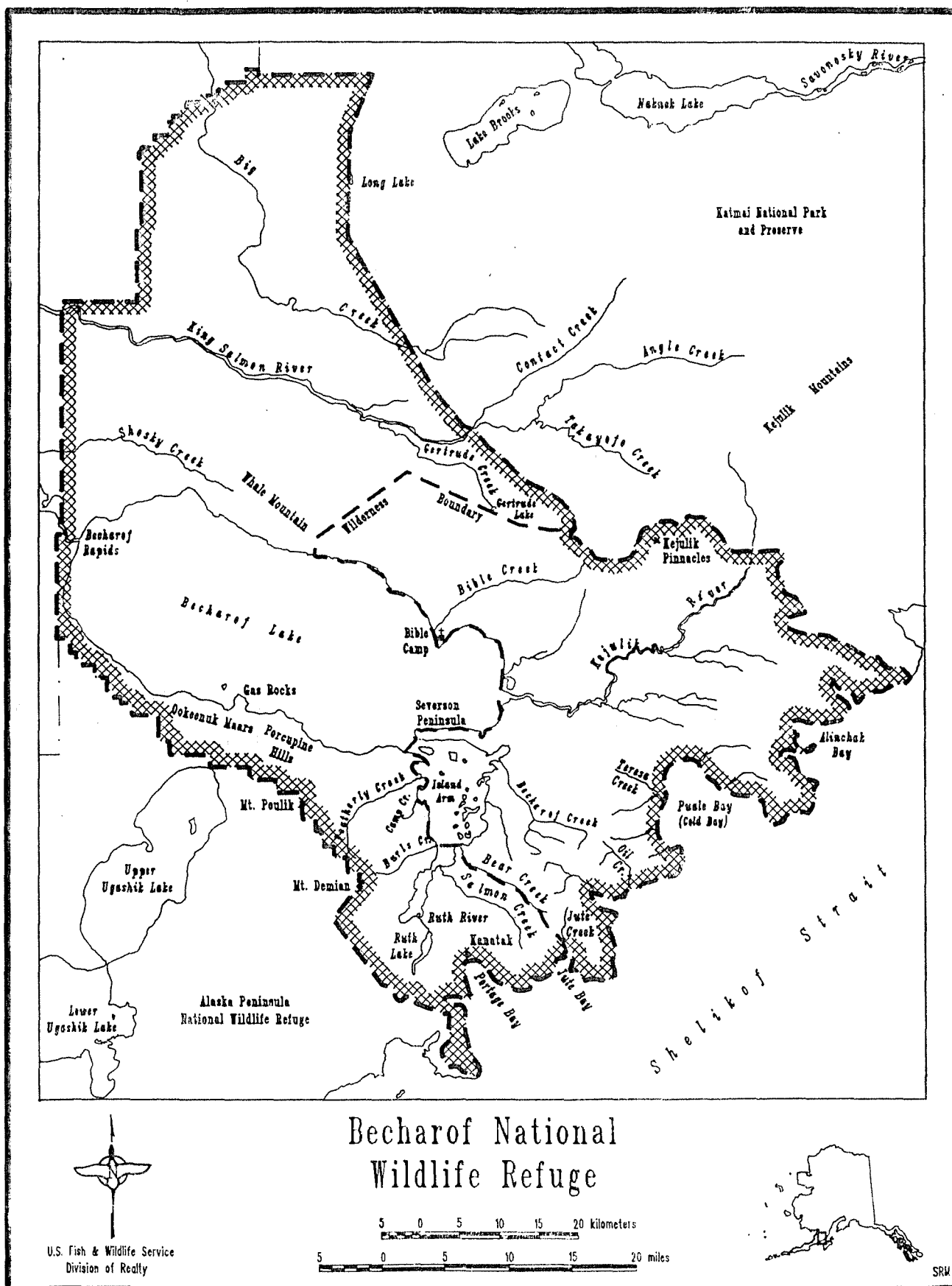


Figure 2. Becharof National Wildlife Refuge.

drops to the edge of the lake about midway along its southern shore. The geologically active Ukinrek Maars bares scars of the eruption that took place in 1977.



Gertrude Creek in the Becharof Wilderness Area offers scenic hiking and outstanding fishing. 7/21/92, MW

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 six 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 on the northeast boundary of the refuge.

Becharof Lake and its tributary streams provide important nursery 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, arctic grayling, rainbow trout, five species of Pacific salmon and other fish are found in refuge streams.

The refuge's fauna includes a large population of brown bears. Moose inhabit the area in moderate numbers and over 15,000 caribou migrate through the area during fall and winter. Other animals found are wolves, foxes, wolverines and lynx. Sea otters, sea lions, and harbor seals inhabit the shorelines as do nesting bald eagles, peregrine falcons, and thousands of seabirds on the rocky sea cliffs of the Pacific coast. Nesting and migratory waterfowl are found on wetlands and lakes throughout the refuge.

The Alaska Peninsula Refuge boundaries encompass about 4.3 million acres of land -- an area bigger than the State of Connecticut (Figure 3). Stretching for nearly 340 miles along the Alaska Peninsula, the refuge is subdivided into three units: the Ugashik, Chignik, and Pavlof units.



The Ugashik Unit contains an abundance of scenic resources. At the south end of Wide Bay, melt water from the Kialagvik Ice Field drains into Kialagvik Creek. 9/92, ME

The Ugashik Unit's northeastern boundary is about 60 miles south of the refuge headquarters at King Salmon and 360 air miles southwest of Anchorage. It is bounded on the north by the Becharof Refuge and on the south by the Aniakchak National Monument and Preserve. The Chignik Unit bounds the Monument's southern boundary with the Pavlof Unit occupying the southwestern end of the Alaska Peninsula crescent. Izembek Refuge adjoins the unit's southwest corner.

Landforms of the Alaska Peninsula Refuge include rugged mountain crests, rounded sub-summits, U-shaped valleys with sheer walls, sea cliffs and fjords, low tundra wetlands, glacial lakes, and moraines. The dominant geographical feature is the rugged Aleutian Range. Eleven major volcanoes, including seven that are active, are inside the refuge. They range from 4,400 feet to 8,300 feet in elevation. Cinder beds radiate from eruptive centers in the volcanic systems, and the volcano slopes are covered with glaciers and summit ice fields.

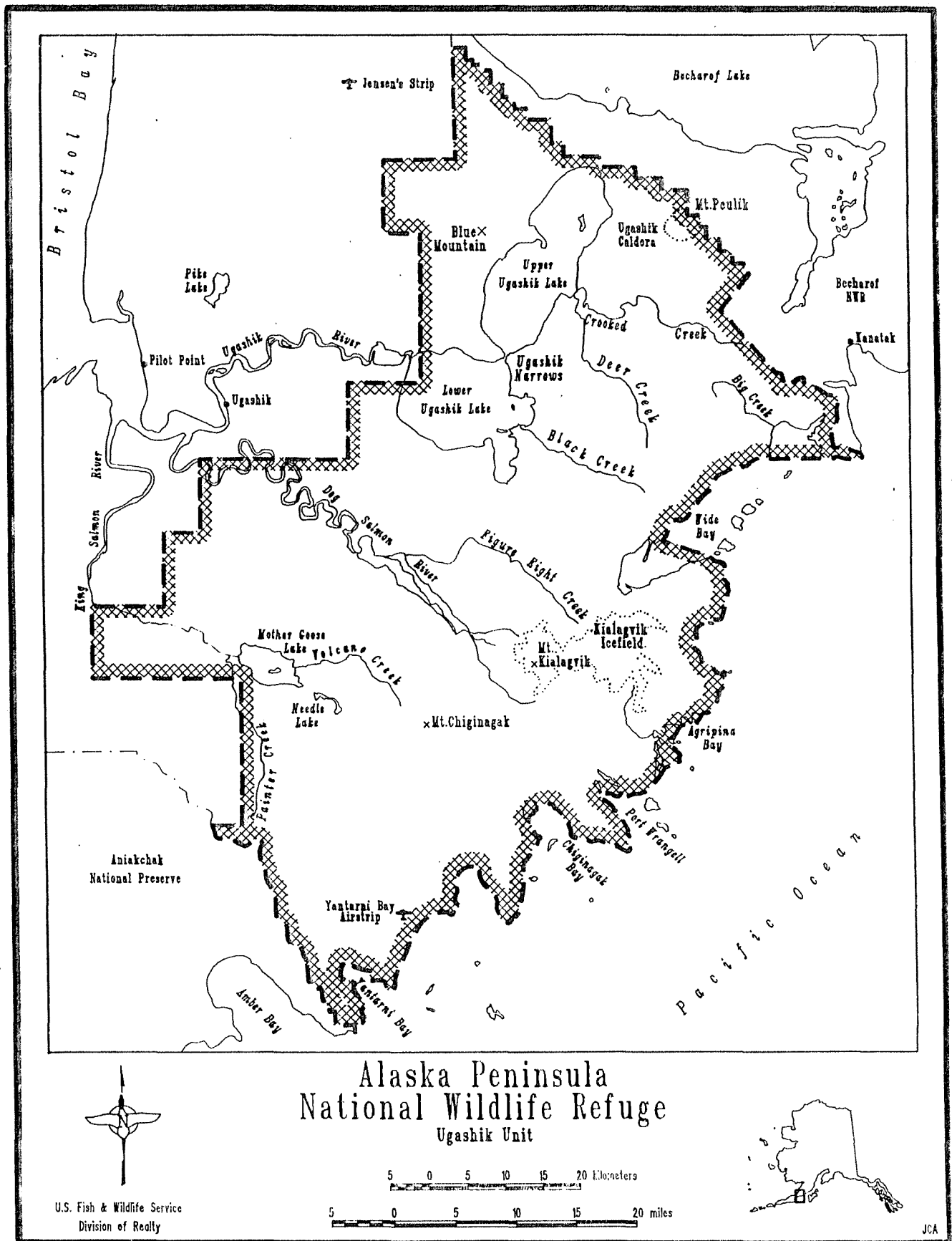
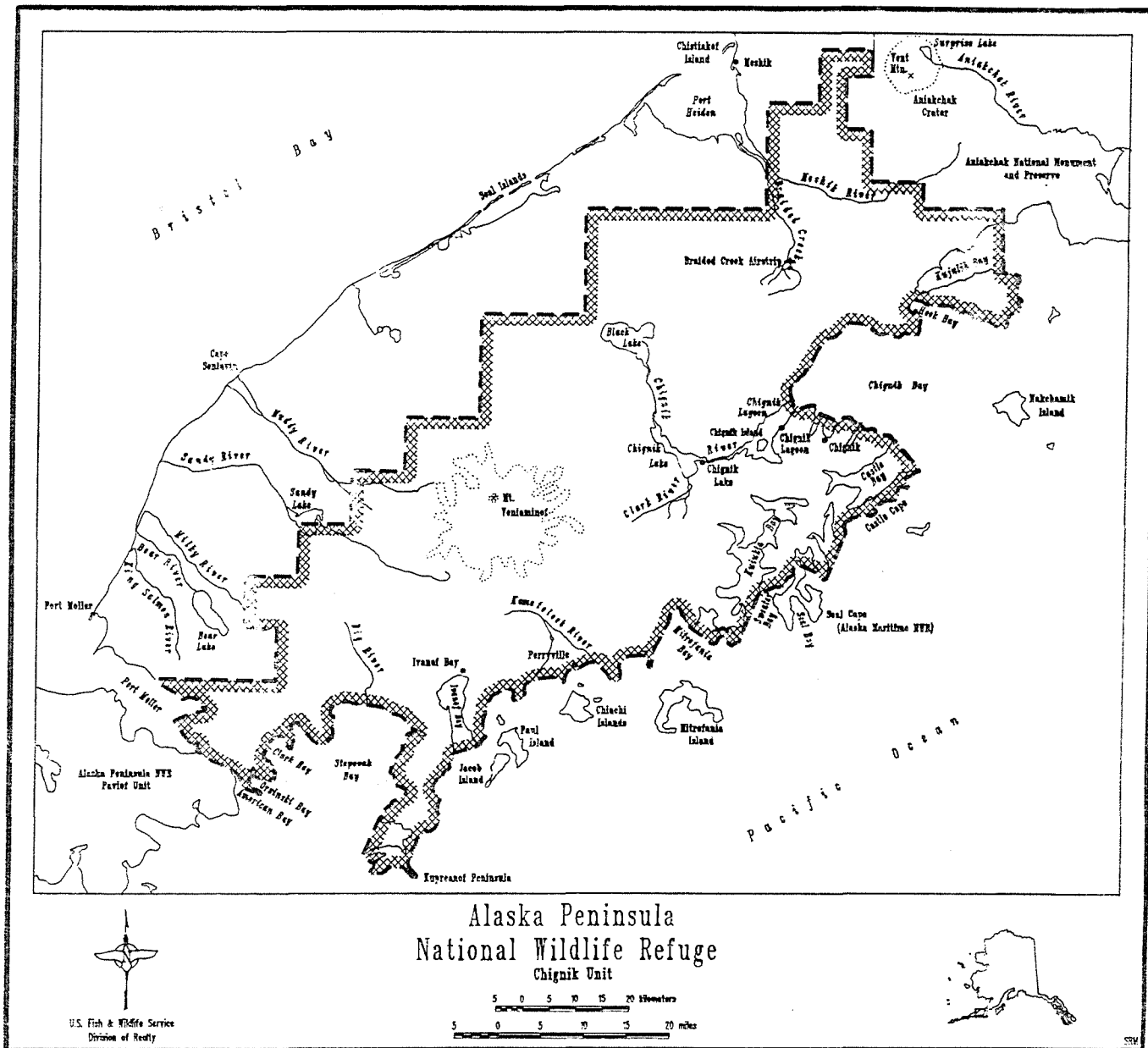


Figure 3. Alaska Peninsula National Wildlife Refuge.

Figure 3 Continued.





The Kialagvik Ice Field is rarely seen by visitors to the Complex. 9/92, ME

The refuge lands on the Bristol Bay side of the range gradually slope toward the Bristol Bay coastal plain northwest of the mountains. The coastal plain terrain is flat, with lakes, and meandering streams. Remnants of glacial moraines provide the only local relief. Toward the tip of the peninsula the southwestern half of the refuge has fewer lakes and assumes a progressively narrower slope.

The Ugashik, Meshik, and Chignik rivers, the Ugashik lakes, Black Lake and many other rivers and lakes provide habitat necessary for the five species of salmon that spawn in the refuge. Over 30 species of mammals are present, including brown bear, moose, caribou, wolf and wolverine. Sea otters, sea lions, and harbor seals inhabit the Pacific coastal area. The refuge's lakes and wetlands are heavily used by nesting and migrating waterfowl.

6

The Alaska Peninsula Unit of the Alaska Maritime Refuge includes all federally owned islands, sea stacks, columns, islets and rocks off the south side of the Alaska Peninsula between the tip of the Alaska Peninsula and Katmai National Park. Seal Cape, a small headland 30 miles south of the village of Chignik, is the only portion of the unit located on the Alaska Peninsula mainland.



Castle Cape in the Chignik Unit is well known to commercial fishermen and other mariners. 8/91, DAD

The extremely rugged coastline of the cape is deeply indented by Seal Bay, Sweater Bay and Devil's Bay. Cliffs line much of the coastline although there are sand beaches in Devil's Bay. The fjord-like bays cut the cape into two principal arms both of which top out at over 2,000 feet. Principal nesting seabird species are cormorants, black-legged kittiwakes, Kittlitz's and marbled murrelets, and glaucous-winged gulls. Murrelets are often encountered in the protected bays around the cape.

The Fish and Wildlife Service plans to reorganize the four Alaska Peninsula refuges (Alaska Peninsula Refuge, Alaska Peninsula Unit of Alaska Maritime Refuge, Becharof Refuge and Izembek Refuge). The Service has submitted draft language which would amend the Alaska National Interest Lands Conservation Act as it pertains to refuge boundaries in Alaska. As written, the Becharof Refuge would be consolidated with the Chignik and Ugashik units of the Alaska Peninsula Refuge. Seal Cape would be removed from the Alaska Maritime Refuge and incorporated into the Alaska Peninsula Refuge. The resulting "Conservation System Unit" would be named the Alaska Peninsula National Wildlife Refuge. The Pavlof Unit of the Alaska Peninsula Refuge would

be incorporated into the Izembek Refuge. The refuges are currently being managed as a refuge complex.

Many other laws, regulations, and congressional mandates influence these refuges. However, the salient authority is contained in the Alaska Lands Act (ANILCA) purposes. The Becharof Refuge purposes state:

i) to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to, brown bears, salmon, migratory birds, the Alaskan Peninsula caribou herd and marine birds and mammals;

(ii) to fulfill international treaty obligations of the United States with respect to fish and wildlife and their habitats;

(iii) to provide, in a manner consistent with the purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents; and

(iv) to insure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i), water quality and necessary water quantity within the refuge. [ANILCA 302(2)(B)]

The Alaska Peninsula Refuge purposes state, "...brown bears, the Alaska Peninsula caribou herd, moose, sea otters and other marine mammals, shorebirds and other migratory birds, raptors, including bald eagles and peregrine falcons, and salmonids and other fish". [ANILCA 302(1)(B)]

Species mentioned in the Alaska Lands Act specific Alaska Maritime Refuge (Seal Cape) include, "...marine mammals, marine birds and other migratory birds, the marine resources upon which they rely, bears, caribou and other mammals". [ANILCA 303(1)(B)]

A key authority in the management of the Complex is the National Wildlife Refuge System Administration Act of 1966 (Refuge Administration Act). This act authorizes the Secretary of Interior to permit any use of a refuge provided such use is "compatible" with the major purposes for which the refuge was established.

A. HIGHLIGHTS

- Development of the Public Use Management Plan (PUMP) was a major staff goal this year. The draft PUMP was nearing completion at year's end (Section D.2.).
- Proposed hovercraft use determined to be "not compatible" with purposes of the Complex (Section D.4.).
- Special use permit application for helicopter access for commercial sport fish guiding denied (Section D.4.).

- Refuge Information Technicians (RITs) made outstanding contributions to Complex programs (Sections D.2., D.3., E.1., H.1., H.2., H.7., and H.23.).
- YGC staff completed another successful eight week work season (Section E.2.).
- RAPS program became a reality thanks to innovative approach by Complex staff (Section E.2.).
- When brown bear hunters were added to very dry May weather, an instant fire season resulted (Section F.9.).
- Late dry spring resulted in incredible spring waterfowl counts on Naknek River (Section G.3.).
- Duck brood surveys completed for record number of plots (Section G.3.).
- Marbled godwits were found nesting on Alaska Peninsula Refuge (Section G.5.).
- The Exxon Valdez oil spill assessment study for seabird colonies at Puale Bay continued into the fourth year (Section G.6.).
- Seasonal field camps on the Alaska Peninsula in 1989-1992 enabled documentation of 648 human/brown bear interactions, with no hostile encounters (Section G.8.).
- Goat skull discovered in "odd" location (Section G.8.).
- 1993 Goose Calendar Literature Contest grand prize winner was from Bristol Bay school (Section H.2.).
- Environmental education and public outreach program made outstanding gains this year (Section H.2.).
- Grand Opening and Ribbon Cutting Ceremony to dedicate the new King Salmon Inter-agency Visitor Center held on May 16th (Section H.7.).
- Emergency closure of bear season instituted on Big Creek (Section H.8.).
- Parachutists dropped in for moose hunt on Becharof Refuge and got more than they bargained for (Section H.8.).
- Law enforcement staff assisted in "Operation Whiteout" (Section H.17.).
- The Service implemented a new guide-outfitter policy for Alaska. Intense effort by Complex staff throughout the year was required (Section H.21.).

- Application for a special use permit by a commercial big game guide-outfitter denied (Section H.21.).
- "Take Pride in America" projects made great progress in cleaning up the Complex (Section H.22.).
- Exxon and Mobil completed two "Take Pride In America" projects on Becharof Refuge (Section H.22. and J.3.).
- Mother Goose cabin replacement project completed (Section I.1.).
- Two underground fuel tanks fail tightness tests (Section I.2.).
- Data collection for two contaminants projects completed (Section J.3.).

B. CLIMATIC CONDITIONS

1. General

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



A Pacific fog bank rolls over the Aleutian Mountain Range.
7/2/92, DAD

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 develop into precipitation. High winds and turbulence are especially common near the rugged terrain. The heaviest precipitation occurs on the Pacific Ocean side of the Complex. The Bering Sea side enjoys more clear weather but lower average temperatures. From fall to spring, the skies are clear to partly cloudy 40 percent of the time. In summer, this occurs only 20 percent of the time. King Salmon averages 50 clear days per year. See Table 1 for yearly synopsis.

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

Temperatures are generally moderate throughout the year. Daily maximum temperatures may exceed the freezing mark in all months while daily minimum temperatures drop below freezing on approximately one-half the days of the year. The King Salmon temperatures average 12° Fahrenheit (F) in December, the coldest month, and 54° F in July, the warmest month. Extremes range from -48 to 88° F.

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

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

January - exhibited normal temperatures with a monthly average of 18° F. The high of 42° F occurred on the 13th, while the low of -18° F was recorded on the 31st. The Naknek River remained relatively safe for crossing throughout the month.

Total monthly precipitation of 0.79 inch(es) is 0.25 inch(es) below normal. Only two clear days were recorded during the month. The greatest snow depth of six inches was recorded on the 2nd-5th. The month started and ended with four inches of snow on the ground.

Winds gusts in excess of 40 mph on four days, and exceeded 50 mph on two of those days. The peak winds were recorded at 69 mph on the 16th.

February - exhibited colder than normal temperatures with a monthly average of 3° F, which was 12° below normal. The high of 35° F occurred on the 9th, while the low of -31° F was recorded on the 3rd. A total of 18 days had recorded temperatures of zero degrees F or below. The Naknek River remained safe for crossing throughout the month.

Total monthly precipitation of 0.92 inches was 0.04 inches above normal. Nine clear days were recorded during the month. The greatest snow depth of 8 inches was recorded on the 29th. Total snow fall for the month was 9 inches.

Winds gusts in excess of 25 mph on six days. Peak winds were recorded at 29 mph on the 23rd.

Table 1. 1992 Climatological Data - National Weather Service, King Salmon, Alaska.

Month	Temperature (degrees F)				Precipitation (inches)			Wind (mph)		Sky Cover ^a (days)		
	High	Low	Avg.	Norm.	Total	Norm.	Snow	Avg.	Peak	Clear	Pt. Cldy.	Cldy.
Jan	42	-18	18	13	0.79	1.04	7.2	12	59	2	11	18
Feb	35	-31	3	15	0.92	0.88	8.6	9	29	9	6	14
Mar	42	-34	22	19	1.40	1.13	8.7	11	44	7	5	19
Apr	56	1	32	31	0.19	1.05	0.5	11	43	8	11	11
May	73	14	43	42	0.74	1.18	-	10	39	12	9	10
Jun	66	34	53	50	2.53	1.50	-	11	39	0	3	27
Jul	75	39	56	55	3.02	2.08	-	9	38	0	3	28
Aug	70	38	54	54	4.73	3.13	-	10	39	0	5	26
Sep	61	17	41	47	1.35	2.78	-	10	39	3	13	14
Oct	54	6	32	32	1.11	1.92	0.9	11	53	6	7	18
Nov	46	-10	24	23	1.45	1.40	7.9	11	55	2	6	22
Dec	44	-18	19	12	1.77	1.24	8.0	9	64	5	1	25
Totals					20.00	19.33	41.8			54	80	232

^aSky cover: clear = 0 to 30% cloud cover; partly cloudy = 30 to 70% cloud cover; and cloudy = 70 to 100% cloud cover.

March - exhibited normal temperatures with a monthly average of 22° F, which is 3° above normal. The high of 42° F occurred on the 7th, while the low of -34° F occurred on the 1st. The Naknek River began to open up and became unsafe for crossing at the end of the month.

Total monthly precipitation of 1.40 inches was 0.27 inches above normal. The greatest snow depth of 9 inches was recorded on the 3rd and 4th. Total snowfall for the month was 9 inches. Seven clear days were recorded during the month.

Winds gusts in excess of 40 mph on two days. Peak winds were recorded at 44 mph on the 22nd.

April - exhibited normal temperatures with a monthly average of 32° F, just 1° above normal. The high of 56° F occurred on the 25th, while the low of 1° F occurred on the 12th. The Naknek River and Upper Ugashik Lake both opened up by the end of the month, while Lower Ugashik Lake and Becharof Lake remained over 90 percent ice covered during the month.

The total monthly precipitation of 0.19 inches was 0.86 inches below normal. Measurable precipitation occurred on only three days. Total snowfall for April was 0.5 inches. The month began with one inch of snowcover, with no snowcover recorded after the 3rd. Only 11 cloudy days were recorded during the month -- the normal year exhibits 247 cloudy days. Peak winds gusts to 43 mph on the 14th.

May - exhibited slightly warmer temperatures with a monthly average of 43° F, 0.4° above normal. The high of 73° F occurred on the 23rd, while the low of 14° F occurred on the 5th. We enjoyed a total of 3 days with temperatures above 70° F.

It was another sunny month in King Salmon with a total of 12 clear days and 9 partly cloudy days recorded. The normal year has 247 cloudy days. We have been enjoying all of these nice days and some of us are even sporting a new tan! The total monthly precipitation of 0.74 was 0.44 inches below normal. A trace of snow was recorded on the 13th. Peak winds gusts to 39 mph on the 6th.

June - exhibited above normal temperatures, with a monthly average of 53° F, 3° above normal. The high of 66° F occurred on the 10th and 12th, while the low of 34° was recorded on the 20th.

The total monthly precipitation of 2.55 inches is 1.05 inches above normal. The damp weather resulted in 27 cloudy, 3 partly cloudy and 0 clear days! Peak winds gusts to 39 mph on the 3rd.

July - exhibited near normal temperatures, with a monthly average of 56° F, 1° above normal. The high of 75° F occurred on the 1st, while the low of 39° F occurred on the 1st and 24th.

The total monthly precipitation of 3.02 is .94 inches above normal. The damp weather resulted in 28 cloudy, 3 partly cloudy and 0 clear days! Peak wind gusts reached 38 mph on the 4th.

August - exhibited near normal temperatures, with a monthly average of 54° F, just 0.1° below normal. The high of 70° F occurred on the 1st and 8th, while the low of 38° F occurred on the 2nd.

The total monthly precipitation of 4.73 inches, is 1.60 inches above normal. The damp weather resulted in 26 cloudy, 5 partly cloudy and 0 clear days! Peak wind gusts reached 39 mph on the 5th.

September - exhibited cooler than normal temperatures, with a monthly average of 41° F, 6.1° below normal. The high of 60° F occurred on the 8th, while the low of 17° F was recorded on the 24th.

The total monthly precipitation of 1.35 inches, is 1.43 inches below normal. This weather resulted in 14 cloudy, 13 partly-cloudy, and 3 clear days. Peak wind gusts reached 39 mph on the 27th.

October - exhibited slightly cooler than normal temperatures, with a monthly average of 31.7° F, 1.5° below normal. The high of 54° F occurred on the 5th, while the low of 6° F was recorded on the 23rd. A total of 22 days had temperatures at or below 32° F. The second week of the month brought bone chilling temperatures and started freezing-over the Naknek River. A warm spell completely removed all ice and by months end the river had nearly frozen completely over again.

The total monthly precipitation of 1.1 inches, is 0.81 inches below normal. A total of 0.9 inches of snow fell on the 3rd, and lasted most of the day. It was the first real snowstorm of the year. There were a total of 18 cloudy, 7 partly-cloudy, and 6 clear days. Peak wind gusts reached 53 mph on the 15th.

November - exhibited slightly warmer than normal temperatures, with a monthly average of 23.5° F, 0.5° above normal. The high of 46° F occurred on the 23rd, while the low of -10° F was recorded on the 15th. Even with the cool temperatures the Naknek River did not freeze sufficiently for safe crossing, but did freeze over completely (at headquarters) on the 4th.

The total monthly precipitation of 1.45 inches, is 0.05 inches above normal. The greatest snow depth of 4 inches was recorded on the 11th and total snowfall for the month was 8 inches. This weather resulted in 22 cloudy, 6 partly-cloudy, and 2 clear days.

Winds gusts to excess of 40 mph on four days. Peak winds were recorded at 55 mph on the 28th.

December - exhibited much warmer than normal temperatures, with a monthly average of 19.2° F, 7.2° above normal. The high of 44° F occurred on the 1st, while the low of -18° F was recorded on the 11th. Naknek River conditions remained on the marginal side for operation of snowmobiles and four-wheelers, too many thin spots with the warm temperatures.

The total monthly precipitation of 1.77 inches, is +0.53 inches above normal. The greatest snow depth of 4 inches was recorded on the 22nd,

and total snowfall for the month was 6.7 inches. This weather resulted in 25 cloudy, 1 partly-cloudy, and only 5 clear days.

Winds gusts in excess of 35 mph on 6 days. Peak winds were recorded at 64 mph (SE) on the 1st.

C. LAND ACQUISITION

1. Fee Title

The Alaska Statehood Act and the Alaska Native Claims Settlement Act (Claims Act or ANSCA) has had profound effects on Alaska Peninsula Refuge Complex (Complex) land status. Both pieces of legislation provided a legal means of transfer of lands under Federal trusteeship to State and Native ownership. The implementation of these acts continues to create a dynamic land status on the Complex due to selections, transfers and relinquishments by Natives, Native Corporations and the State of Alaska.

The Complex is divided into three management units: Becharof Refuge (Figure 2) and the Ugashik and Chignik units of the Alaska Peninsula Refuge (Figure 3). The Ugashik and Chignik units contain nearly 3.0 million acres within refuge boundaries. Approximately 2.5 million acres are under Service jurisdiction at present. The remaining acreage has selected by or conveyed to 23 Native villages in three Native regions (Koniag, Aleut, and Bristol Bay), the State of Alaska, individual Native allotments and other private interests.

Reconveyance of the Yantarni Bay area lands from the Afognak Village Corporation to the U.S. Fish and Wildlife Service is nearing a successful conclusion (albeit slow). Accomplishments in 1992 included:

- On May 27th, Regional Contaminants Coordinator Everett Robinson-Wilson, Contaminants Specialist Sonce DeVries (Ecological Services, Anchorage), Refuge Volunteer Dave Anderson, and Refuge Manager (RM) Ronald Hood conducted a Level II contaminants survey at the abandoned oil exploration well, Koniag No. 1, at the Yantarni air strip. They sampled the mud pit (soil samples taken to a depth of 12 feet) and took water samples down slope from the well site. Analysis of these samples demonstrated that contaminants were below threshold levels. Certification that no contaminants are present was completed and the Region has received required approvals from the Assistant Secretary to proceed with accepting title.



Everett Robinson-Wilson extracting sample of mud pit at Koniag No.1. oil exploration well.

5/27/92, REH

- On November 20th, a meeting was held in the Regional Director's Office to discuss management implications and actions needed following the transfer. In attendance, were Regional Director (RD) Walt Stieglitz, Deputy Regional Director (DRD) Dave Allen, Assistant Regional Director (ARW) Rowan Gould, Acting Deputy ARW Ron Perry, Associate Manager (AM) George Constantino, Deputy AM (DAM) Jerry Stroebele, Chief of Realty Sharon Janis, and RM Hood.
- At year's end, the Regional Solicitor's Office was reviewing a "Request for a Preliminary Title Opinion." The transfer will be finalized once this opinion is received. Continued in 1993.



The 5000-foot Yantarni runway is being shortened by Mother Nature. The runway is an attractive access point for public use for fishing and hunting.

5/27/92, REH

Other land acquisition activities included:

- In late 1992, RM Hood and DRM Poetter attended a briefing session on the implementation of Section 1410 of the Alaska Lands Act. The meeting was conducted by Realty in the Regional Office (RO) on the 18th. The Secretary of the Interior is implementing his authority under Section 1410 to withdraw lands in Alaska National Wildlife Refuges which are within the original Alaska Native Claims Settlement Act (ANSCA) withdrawals. This action is being undertaken to satisfy ANSCA entitlement of underselected village corporations. Underselected villages that have deficiency lands on Alaska Peninsula Refuge are Nelson Lagoon, Pauloff Harbor (both on Pavlof Unit) and Manokotak (on Chignik Unit).
- On November 20th, Chief of Realty Sharon Janis and Realty Biologist Susan Schulmeister briefed RMs Hood, Martin (Alaska Maritime), Boone (Aleutian Island Unit), and Zeillemaker (Izembek) regarding Aleut Corporation's Section 1410 of ANILCA underselections. The bottom line is that more refuge lands will be lost. The meeting was held in the regional office.
- Mr. Bernard R. Guild's Trade and Manufacturing (T&M) site at the Becharof Lake outlet suddenly became an issue for the local

community in December. A legal notice was published by BLM in the November 25th issue of The Bristol Bay Times & Dutch Harbor Fisherman. The notice advised that 22 acres in three lots were being sold to Mr. Guild and anyone with an "adverse interest in or claim to" the land needed to file a claim with BLM. The Becharof Native Corporation and several individuals have written BLM to object to the T&M site. Bob Rice, Reality, checked into the matter for the Complex. He found that this is a legal hoop that BLM is jumping through before final conveyance, with no meaningful opportunity to impact the action. The Becharof Corporation has raised one point that may delay final action -- Section 106 of the National Historic Preservation Act and provisions of the Native American Graves Protection and Repatriation Act have not been properly followed.

- The Bristol Bay Native Corporation (BBNC) Section 14(h)(1) selection at the Ugashik Narrows (Narrows), Alaska Peninsula Refuge, has taken an interesting turn. As the Bureau of Land Management (BLM) was nearing conveyance of these lands, the State of Alaska appealed the lack of Section 17(b) easements to allow for the public to tie up float planes and traverse the west bank of the Narrows. On August 26th, DRM Poetter accompanied representatives of the Alaska Department of Fish and Game (ADF&G) to the Narrows. Sport Fish Division Director Norvill Netsch, Habitat Division Regional Supervisor Lance Traskii and Habitat Division staffers Robin Willis and Kevin Delany travelled to the Ugashik Narrows for an on-the-ground evaluation of the need. Refuge Manager (RM) Hood signed an affidavit for the Office of the Regional Solicitor in the matter on December 30th. We support the State's position in this one.

2. Easements

Refer to Section C.1.

3. Other

Refer to Section C.1.

D. PLANNING

2. Management Plan

Fishery Resource Management Plan. The King Salmon Fishery Assistance Office (KSFAO) has the lead in developing a Fishery Resource Management Plan (FRMP) for the Alaska Peninsula/Becharof Refuge Complex. This planning effort was initiated in 1984. A draft plan was submitted to the Regional Office in late 1991 for review comments. The plan was not returned to KSFAO in 1992.

Public Use Management Plan (PUMP). Work on this planning effort was initiated in 1989. The Exxon Valdez oil spill, the almost total loss of

Regional Office planning assistance, lack of Complex staff planning experience, extremely heavy field season work loads and changing Regional priorities have served to delay the production of a plan. However, significant progress was made this year. Highlights of this year's activities included:

January - The week of the 13th-17th was spent developing five alternatives for the PUMP. In attendance were Public Use Planner (PUP) Helen Clough and Natural Resource Planner (NRP) Maggi Arend from the Resource Support Planning Section; Fishery Biologist (FB) Jeff Adams, KSFAO; and Refuge Manager (RM) Ronald Hood, Deputy Refuge Manager (DRM) Rick Poetter, Wildlife Biologist (WB) Donna Dewhurst, Refuge Operations Specialist/Pilot (ROS/P) Randall Arment, Refuge Ranger (RR) Angie Terrell-Wagner, Refuge Information Technician (RIT) Shirley Kelly, RIT John Knutsen, RIT Orville Lind, Maintenance Worker (MW) Gary Terry, Maintenance Helper (MH) Moose Mumma, and Volunteer Toby Burke from the Complex. A week of spirited discussions left everyone exhausted. A long laundry list of tasks and work assignments were given out that need to be completed by mid-February.

February - Staff members worked on various data/information gathering assignments throughout the month. A work group meeting was held on the 18th-20th. Participants included PUP Clough, FB Adams, RM Hood, DRM Poetter, ROS/P Arment, WB Dewhurst, RR Terrell-Wagner, RITs Kelly and Knutsen, MW Terry and MH Mumma. On the 18th and 19th, PUP Clough conducted National Environmental Act (NEPA) training. The session focused on the NEPA process, including legal requirements and how to conduct an environmental assessment. On the 19th, PUP Maggi Arend and Dick Marshall, Chief, Resource Division, Subsistence Management joined the group. The group continued to flesh out alternatives, with emphasis on subsistence issues. A proposed tent frame (temporary structures) policy was developed.

March - On the 2nd, PUP Clough conducted a planning session on the PUMP with RM Hood, DRM Poetter, WB Dewhurst, RR Terrell-Wagner and RIT Knutsen. Topics discussed included biological and subsistence data needs, data sources (published, unpublished, raw, key informant, etc.), and Section 810 evaluation procedures. On March 31 - April 1, another PUMP team meeting was held. Attending were PUP Clough, RM Hood, DRM Poetter, ROS/P Arment, WB Dewhurst, RR Terrell-Wagner, RITs Knutsen, Lind, and Kelly, and FB Adams. The guide areas and their impact on the PUMP was discussed, a study plan developed, and tasks assigned with due dates for completion.

April - A PUMP planning meeting was conducted on the 15th. The briefing for the Regional Director (RD) and assignments for the team were reviewed. On the 22nd, PUP Clough and RM Hood briefed RD Walt Stieglitz on the five alternatives developed by the planning team. Others attending the briefing included Acting Assistant Regional Director (ARW) Paul Schmidt, Associate Manager (AM) George Constantino, Acting Chief of Planning Section Maggi Arends, and Fishery Biologist Larry Peterson.

May - A PUMP planning meeting was conducted on the 5th. PUP Clough reviewed the results of the Regional Director's briefing last month with

planning team members. The status of team assignments were reviewed and updated. An opportunity to use the Fire Management Program contract helicopter (Alaska Helicopters, Bell 206 Long Ranger, N3928B, piloted by Jack Cunningham) was utilized to review proposed hiking routes and other public use attractions by planning team members on the 4th and 5th.

June - The monthly PUMP meeting was conducted on the 24th. PUP Clough conducted the meeting. RITs Kelly and Knutsen attended during a break in salmon fishing openings (all RITs were on their annual furlough during the fishing season). Fine tuning of the alternatives and document preparation were discussed.



Volunteers Mirijam Wurth and Urs Roth hiked the proposed Gertrude Creek-Bible Creek route to test its feasibility. Bible Creek headwaters at the scenic Kejulik Mountains and flows south into Becharof Lake. 7/24/92, UR

July - The monthly planning team meeting was conducted on the 18th. Team assignments, the newsletter, and upcoming milestones were discussed. On the 21st, PUP Clough briefed State of Alaska representatives on the PUMP. Attending from the State were Tina Cuning, Alaska Department of Fish and Game (ADF&G), Alice Iliff, Department of Natural Resources (DNR), and Sally Gibert Division of Governmental Coordination (DGC). Regional Office representatives included Deputy Associate Manager - Line Jerry Stroeble, NRP Arend, and Public Involvement Specialist Bob Stevens. RM Hood was unable to attend due to the air travel disruption caused by the eruption of Mt. Spurr. On the 24th, RM Hood and PUP Clough briefed RD Stieglitz on the PUMP. The primary purpose of the meeting was to review key parts of our preliminary alternatives that will be presented to the public in a

forthcoming newsletter. Approval to proceed with the project was received. Others present included AM Constantino, Acting ARW Schmidt, and Chief of Planning Leslie Kerr.

August - The staff continued drafting assigned sections of the PUMP throughout the month.

September - A PUMP planning team meeting was held on the 6th and 7th. Attending were PUP Clough, Regional Fish and Wildlife Biologist Bill Kirk, temporary (30-day) Wildlife Biologist Elaine Rody, and Public Involvement Specialist Bob Stevens from the Regional Office. Complex team members included RM Hood, DRM Poetter, RR Terrell-Wagner, WB Dewhurst, and RITs Lind and Knutsen. RIT Kelly was able to join us on the 7th. On the 6th, the planning team reviewed and discussed the environmental impacts of all proposed alternatives. On the 7th, a proposed preferred alternative was constructed by the team. Final writing assignments were made. PUMP Update Newsletter was mailed to all listed on Regional Office mailing list in mid-month. A mailing was also made to all box holders in the twelve villages on or near the Complex. Approximately 3000 copies were mailed.

October - RM Hood updated the Naknek-Kvichak Fish and Game Advisory Board on the Complex PUMP on October 9th. On October 20th, RIT Lind attended a Village Council meeting in Port Heiden to explain and answer questions concerning the newsletter. On October 23rd, RIT Kelly attended a village meeting in Egegik to discuss the PUMP.

November - The staff completed drafting assigned sections of the PUMP throughout the month.

December - PUP Clough neared completion of the draft PUMP. Her biggest problem had been getting the "current situation" to remain steady long enough to get it into written word. It changes on a daily basis. A Regional Director's briefing to have the draft PUMP approved for internal review was scheduled for January 1993.

Station Facility Plan. This planning effort was initiated in June. The plan was to be written by Construction Coordinator (CC) Art Wemmerus and Landscape Architect (LA) Paul Schrooten. On the 11th-13th, a planning workshop was held in King Salmon with Regional Engineer (RE) Rudy Berus, CC Wemmerus, LA Schrooten, KSFAO Project Leader Jim Larson, RM Hood, DRM Poetter, MW Terry and other Complex staff attending. The workshop was used to discuss present and future facility needs, to determine how existing buildings can meet those needs, and to identify/prioritize construction and maintenance needs. A plan that will project administrative site needs for the next 10 years is being developed. Once the plan is approved, a series of construction and Maintenance Management System (MMS) projects that are fully supported by local and regional management will be developed. The planning exercise produced some interesting results and provided a rare opportunity for dialogue among the participants. The draft plan was completed on August 28th. The draft was reviewed by staff and comments submitted to the Regional Office on September 21st. A final plan is being written.

Operational Plan. Work has been suspended on this planning effort.

Office Automation Plan. DRM Poetter completed a revision of our Office Automation Plan on March 16th. It was submitted to the Division of Information Resources Management, through the Associate Manager.

Environmental Education Plan. An updated version of the Complex's Environmental Education Plan was submitted on March 30th. This plan gives direction to our environmental education program for the next five years.

Scope of Collection Statement. This plan which defines the Complex's current and anticipated museum property was prepared for the Complex by Assistant Regional Archaeologist Debbie Corbett. RM Hood requested and received assistance in the preparation of this required plan (see Section K.).

3. Public Participation

The Complex augmented the Region's distribution of the "Draft Policy for Commercial Big Game-Outfitters and Transporters on National Wildlife Refuges in Alaska" by mailing out over 35 copies to individuals and village corporations on the Alaska Peninsula. Also, the RITs met with village corporations to discuss the proposed policy and answer questions.

On March 5th, a public hearing was held in Naknek to gather public comments on subparts A, B and C of the proposed federal subsistence management regulations. Cheryl Kline and Mike Lockhart of the Regional Subsistence Office conducted the meeting with assistance from this office. We were very pleased with the turnout of approximately 35 people, especially considering the -20 degree (F) temperatures and drifting snow causing hazardous driving conditions on the King Salmon-Naknek Road (See Section H.23.).

During February and March, Complex public use staff gathered a 70+ public comments regarding the Migratory Bird Treaty amendment. The public comments were submitted to the Migratory Bird Coordinator in the regional office. Comments were gathered from residents of Chignik Bay, Chignik Lagoon, Chignik Lake, Egegik, Ivanof Bay, Perryville, Pilot Point and Port Heiden (See Section H.23.).

A PUMP Update Newsletter was mailed to all listed on Regional Office mailing list in mid-September. A mailing was also made to all box holders in the twelve villages on or near the Complex. Approximately 3000 copies were mailed.

On October 8th and 9th, public meetings were held in Naknek to talk with subsistence users about local and regional issues, submitting proposals for 1993-94 federal regulations, submitting nominations for regional council members and applying for the five regional coordinator positions. Even with extensive advertising efforts by RIT Knutsen only four subsistence users attended the meeting the evening of the 8th, and no one attended the afternoon of the 9th. Conducting the meetings were

Subsistence Office staff Bill Knauer, Dick Marshall, Ray Corning and Moses Dirks, and BLM representative Van Waggoner (see Section H.23.).

On October 20th, RIT Lind attended a Village Council meeting in Port Heiden to explain and answer questions concerning the PUMP Update Newsletter sent out in October. He also talked with villagers about proposals they might want to submit concerning 1993-94 federal subsistence regulations. Nine villagers attended the meeting. On October 23rd, RIT Kelly attended a village meeting in Egegik to encourage villagers to submit proposals for the 1993-94 federal subsistence regulations and to discuss the Complex's PUMP (see Sections D.2. and H.23.).

4. Compliance with Environmental Mandates

On January 10th, a compatibility determination for use of hovercraft on Becharof and Ugashik lakes tributaries was provided to the King Salmon Fishery Assistance Office. Based on staff analysis, the proposed action was found to be "not compatible" with the purposes of the Alaska Peninsula and Becharof refuges. This determination was upheld by the Regional Office.

In early January, an application requesting a special use permit for helicopter access for commercial sport fish guiding was received. The designated landing sites were on Big Creek and Gertrude Creek within the Becharof Refuge. Both areas are within the boundaries of "proposed wilderness". An Action Documentation Form was completed and consultations conducted with the Associate Manager and his staff, a number of refuge managers, KSFAO staff, and ADF&G Sport Fish and Big Game Biologists. On March 17th, RM Hood issued a letter of denial. We determined that helicopter use to access refuge lands for commercial sport fish guiding was not an established use at the time the Becharof Refuge Wilderness area was designated by Congress. Pursuant to policy found in 6 RM 8.1, the application was denied (see Section H.21.).

Regional Archaeologist Chuck Diters traveled to King Salmon on May 26th and was flown to Mother Goose Lake to conduct a National Historic Preservation Act (Section 106) compliance survey of the construction site for our new administrative cabin (see Section I.). Chuck completed a report of his findings (negative) before he departed on the 28th.

5. Research and Investigations

Alaska Peninsula NR92 - "Brown Bear Studies at Black Lake" (74510-88-01). In 1988, a ten-year cooperative interagency study was initiated on brown bears in the Black Lake area of Alaska Peninsula Refuge. The project involves the National Park Service, the Fish and Wildlife Service, and the Alaska Department of Fish and Game as the lead agency. Each agency contributes approximately one-third of the necessary funding each year, along with personnel for assistance. See Section G.8. for data results.

6. Other

The National Park Service (NPS) is preparing an "Interpretive Prospectus" for Katmai National Park and Preserve. One element of this planning process is the Inter-agency Visitor Center in King Salmon. On July 13th, RM Hood and Dave Patterson, Outdoor Recreation Planner, Associate Manager's Office, met with NPS representatives Mark Wagner, Chief of Interpretation, Katmai National Park; Glen Clark, Regional Chief of Interpretation, NPS Regional Office; and Connie Rudd, Interpretative Planner, NPS Planning Division to discuss the interpretative needs of the center.

The Guide-Outfitter Work Group met in Anchorage on July 21st in the Subsistence Management's conference room. In attendance were Refuge Managers Jay Bellinger, Glenn Elison, and Ronald Hood along with Staff Specialist Daryle Lons. The evaluation of guide area proposals was discussed. Additional topics discussed include establishing a selection panel, scheduling, guidance, and the award process (see Section H.21.).

E. ADMINISTRATION

The Fish and Wildlife Service (Service) plans to reorganize the four Alaska Peninsula refuges (Alaska Peninsula Refuge, Alaska Peninsula Unit of Alaska Maritime Refuge, Becharof Refuge and Izembek Refuge). To accomplish the proposed reorganization, the Service submitted draft language which would amend the appropriate sections of the Alaska National Interest Lands Conservation Act as it pertains to refuge boundaries in Alaska. As written, the Becharof Refuge would be consolidated with the Chignik and Ugashik Units of the Alaska Peninsula Refuge. Seal Cape would be removed from the Alaska Maritime Refuge and incorporated into the Alaska Peninsula Refuge. The resulting "Conservation System Unit" would be named the Alaska Peninsula National Wildlife Refuge. The Pavlof Unit of the Alaska Peninsula Refuge would be incorporated into the Izembek Refuge. The Alaska Peninsula and Becharof refuges are currently being managed as a refuge complex under this administrative decision pending legislative action.

1. Personnel

PERMANENT STAFF

1. Ronald E. Hood; Refuge Manager (RM); GS-485-12; 09/15/85; PFT
2. Rick Poetter; Deputy Refuge Manager (DRM); GS-485-11; 04/23/89; PFT
3. Randy Arment; Refuge Operations Specialist/Pilot (ROS/P); GS-485-12; 10/03/82 - 05/08/92; PFT
4. Donna Dewhurst; Wildlife Biologist (WB); GS-485-11; 02/26/89; PFT
5. Angie Terrell-Wagner; Refuge Ranger (Public Use Specialist) (RR); GS-025-07; 12/29/91; PFT
6. Gary Terry; Maintenance Worker (MW); WG-4749-08; 07/31/88; PFT
7. Dwight (Moose) Mummma; Maintenance Helper (MH); WG-4749-04; 02/19/84; PFT
8. Janice Collins; Administrative Technician (AT); GS-303-06; 06/11/84; PFT
9. Kim Desmarais; Clerk/Typist (CT); GS-322-03; 10/07/91 - 04/16/92; PFT



10 8 4 5 3 2 1 6 7 11 12
09/11/91, JPL

TEMPORARY STAFF

10. Shirley Kelly; Refuge Information Technician (RIT); GS-1001-06; 09/08/91; Intermittent; Term (NTE 2 years)
11. John (Smiley) Knutsen; Refuge Information Technician; GS-1001-06; 09/08/91; Intermittent; Term (NTE 2 years)
12. Orville Lind; Refuge Information Technician; GS-1001-06; 09/08/91; Intermittent; Term (NTE 2 years)
13. Kevin Boden; Biological Technician (BT); GS-404-05; 05/17 - 10/02; Puale Bay Camp Leader

STUDENT CONSERVATION ASSOCIATION (SCA) VOLUNTEER

14. Nancy Cook; Olympia, Washington; 03/18 - 06/05; (FT); Spring Waterfowl Survey
15. Andrew Schenck; Valparaiso, Indiana; 03/16 - 06/05; (FT); Public Use Program

SERVICE VOLUNTEER

16. David Anderson; Aurora, Colorado; 05/15 - 08/14 (FT); Neotropical Bird Project
17. Nikki Benjamin; Dartmouth, Nova Scotia; 05/25 - 12/04 (FT); Puale Bay Field Camp
18. Patty Bliss; Anchorage, Alaska; 09/08 - 11/19; (FT); Public Use Program
19. Toby Burke; Brielle, New Jersey; 01/09 - 05/23; (FT) Biology Program
20. Laurie Cleary; Findlay, Ohio; 06/01 - 08/20; (FT); Puale Bay Field Camp
14. Nancy Cook; Olympia, Washington; 08/28 - 10/07; (FT); Puale Bay Field Camp

21. Brenda Eliason; King Salmon, Alaska; 05/28 - 06/15; (PT); Public Use Program
22. Jim McCarthy; Pictou, Nova Scotia, Canada; 05/11 - 12/09; (FT); Biology Program and Puale Bay Field Camp
23. Urs Roth; Allschwil, Switzerland; 05/18 - 08/07; (FT); Maintenance & Public Use Programs
24. Mirijam Wurth; Allschwil, Switzerland; 05/18 - 08/07; (FT); Public Use Program

STUDENT INTERN (SI)

25. Meredith Bridgers; Charlotte, North Carolina; 05/21 - 09/10; (FT); Public Use Program
26. John Gerlach; Fridley, Minnesota; 05/21 - 09/03; (FT); Public Use Program

YOUTH CONSERVATION CORPS (YCC)

27. Zoelle Clark; Naknek, Alaska; 06/01 - 07/24; Maintenance Program
28. Lisa Dion; Zephyrhills, Florida; 06/01 - 07/24; Maint. Program
29. Dawn Melvin; King Salmon, Alaska; 06/01 - 07/24; Maint. Program

RESOURCE APPRENTICESHIP FOR STUDENTS (RAPS)

30. Johanna Young; Pelican, Alaska; 06/01 - 08/14; Management Program
31. Abigail Anasogak; Koyuk, Alaska; 06/10 - 08/12; Management Program

A revised staffing plan for the Complex was approved by Regional Director Walter Stieglitz on August 17, 1992 (Figure 4). A Subsistence Coordinator position (permanent full time) was added along with technical changes to reflect pay grade/position title modifications.

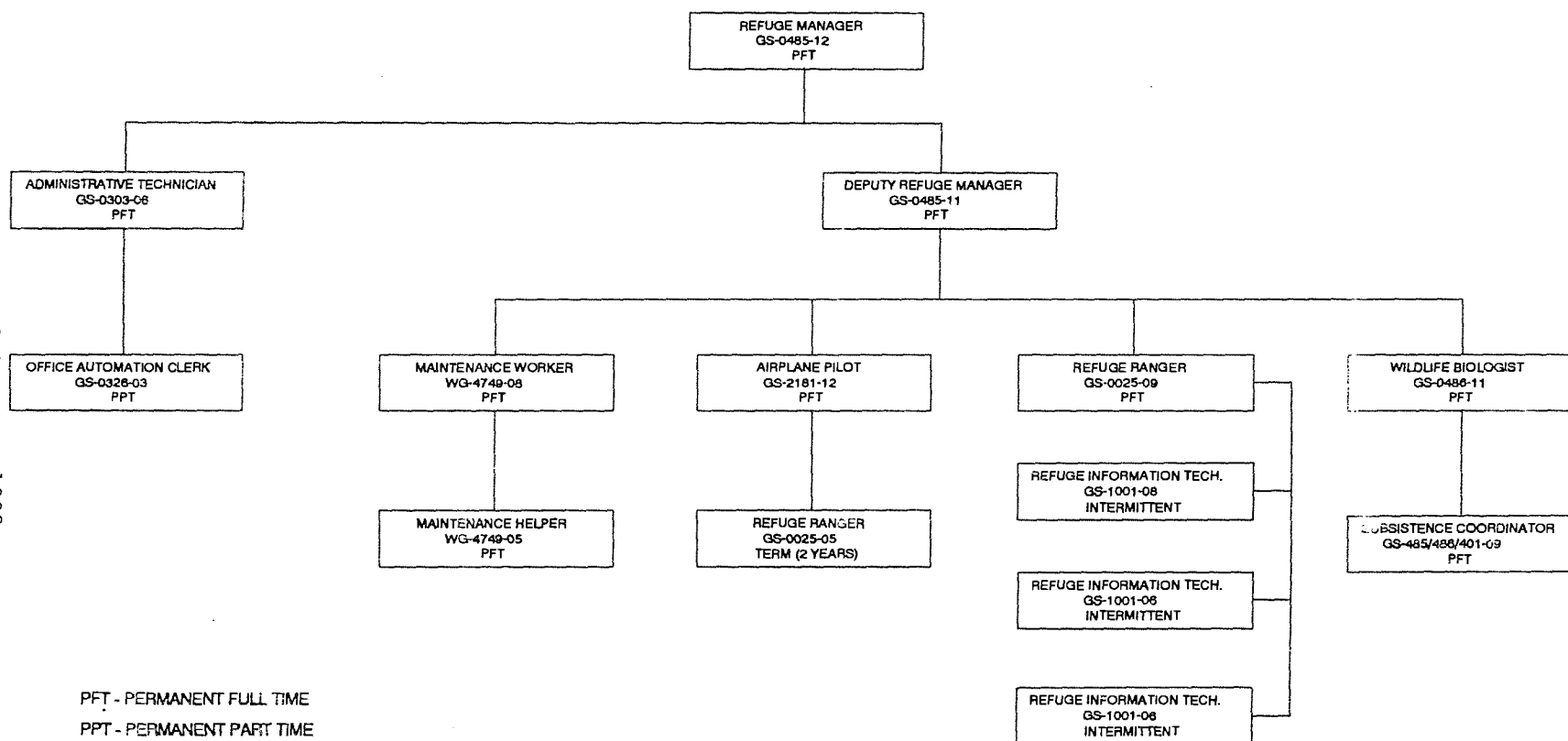
The positions funded in 1992 required 8.8 full-time equivalents (FTE). The three RIT positions are local-hire and do not count against FTE ceilings. The lower than projected FTE use is a reflection of the clerk-typist vacancy (Table 2).

Table 2. Historic record of full-time equivalent allocation and use.

FISCAL YEAR	FULL-TIME EQUIVALENT	
	AUTHORIZED	TOTAL USED
92	8.8	8.32
91	9.3	8.26
90	9.0	7.93
89	9.0	6.68
88	9.0	8.06

Figure 4. Staffing Plan approved August, 1992.

ALASKA PENINSULA/BECHAROF NATIONAL WILDLIFE REFUGE COMPLEX ORGANIZATIONAL CHART



PFT - PERMANENT FULL TIME
PPT - PERMANENT PART TIME

APPROVED: 08/17/92

Effective May 3rd, Refuge Secretary Jan Collins was promoted (accretion of duties) and her job series/title changed to GS-303-06, Administrative Technician (AT). This culminates an effort first started in 1988 and re-submitted in September 1991. It is a well-deserved promotion, congratulations Jan!

May 8th was ROS/P C. Randall (Randy) Arment's last workday with this station and the U.S. Fish and Wildlife Service. Randy resigned to venture back to the Lower 48 and pursue his dreams of being a land baron in the Sandhills of Nebraska.

Associate Manager (AM) George Constantino conducted a station review on June 10th and 11th. He was able to observe field crew training and our efforts to demobilize the Mother Goose Lake cabin construction crew while mobilizing the Puale Bay field camp -- and deal with the normal Alaska Peninsula weather. George implemented the new "Spot Award" program with cash awards made to DRM Poetter for his innovative action in the Resource Apprenticeship Program for Students; to RR Terrell-Wagner, MW Terry, and RIT Knutsen for their contributions to the new visitor center; and to WB Dewhurst for an inventive approach in developing a Alaska Peninsula bird list.

DRM Poetter was presented with a sustained performance award by RM Hood on September 8th. Great job, Rick!

RR Terrell-Wagner was presented, on September 14th, with a sustained performance award for her outstanding year of efforts in starting up the King Salmon Interagency Visitor Center, and for her work with the Refuge Information Technicians and associated public information program. We are fortunate to have such a dedicated and talented person on the staff.

BT Kevin Boden received a Special Achievement Award for his extra efforts as Camp Leader of the 1992 Puale Bay Field Camp. Kevin supervised four volunteers in the field, conducting oil spill related seabird research along the rugged Pacific Coast of the Complex. Despite the challenges of abundant bears, frequent bad weather, and hazardous boating conditions, Kevin did an excellent job as a first-time supervisor.

On September 23rd, the Puale Bay field camp was removed from the Pacific coast of Becharof Refuge and returned to King Salmon headquarters. This operation normally takes two days, but with favorable weather conditions and excellent staff teamwork was completed this year in just six hours! In recognition of this outstanding effort, several staff members were presented "On-the-Spot" cash awards and volunteers received ivory carving gifts. The awards were presented to staff at an "End of the Field Season" potluck dinner held at the bunkhouse on October 3rd. The evening was capped with a slide show highlighting the past four years of field camps at Puale Bay. Awards were presented as follows:

- \$100.00 to WB Donna Dewhurst for planning/supervising camp evolution.
- \$50.00 each for team members: AT Janice Collins, BT Kevin Boden, MH "Moose" Mumma, and MW Gary Terry.

-- Ivory art awards for Service Volunteers: Nicola Benjamin, Nancy Cook and James McCarthy, and Fisheries Assistance Office volunteer Pete Anselmo.

AT Janice Collins was given a \$250.00 "On-the-Spot" cash award on October 5th, for her efficient handling of 1992 end-of-year procedures. She dealt with a myriad of issues/problems/procedures promptly and effectively.

Attempts to fill the vacant pilot position have had limited results. After advertizement of the position as Park Ranger/Pilot (GS-025-12), we received certificates with only two names in October. The "green sheet" produced both the names out of six applicants. The Office of Personnel Management (OPM) register produced one of the same names out of 16 applicants. The main problem resulted from most of the applicants not meeting the Park Ranger criteria. Apparently, they had to be qualified at the GS-11 level as a Park Ranger. Due to this criteria, which was not intended to be so high, the certificates were rejected and the position will be re-advertized as an Airplane Pilot (GS-2181-12). The primary duties will be the same; piloting, law enforcement and administering the special use permit program; but the series will be different.

Our pilot position still remained unfilled by year's end. All paperwork had been approved and ready for advertizement. Now we wait until the Washington Office freeze on filling GS-11 and 12 positions is lifted. The freeze stemmed from the changing of presidents and administration.

Summary of Complex Staff Training and Conference Attendance:

Refuge Manager Ronald Hood:

- * attended a "Subsistence Orientation Workshop" in Anchorage on June 2nd and 3rd.
- * participated in the Aviation Safety Meeting held in the Regional Office on August 26th and 27th.
- * attended the Project Leader's meeting on November 17th to 20th, in the Anchorage Regional Office.

Deputy Refuge Manager Rick Poetter:

- * as a volunteer Hunter Education Instructor with the Alaska Department of Fish and Game, Rick was invited to attend the first annual Hunter Education Instructor workshop in Anchorage, Alaska. The workshop was held the 21st-23rd of February.
- * attended the annual Law Enforcement Refresher training held March 18th-24th.
- * attended train-the-trainer sessions in Seward, Alaska beginning on April 6th-10th. A three day course in Watercraft Operator Certification was presented by Alaska Vocational Technical Center and FWS staff. A two day course in Bear Behavior and Firearms Certification was presented by FWS staff.

Refuge Operations Specialist/Pilot Randy Arment:

- * attended the annual Law Enforcement Refresher training held March 2nd-6th.

Wildlife Biologist Donna Dewhurst:

- * completed Emergency Medical Technician (EMT) Level III training and testing on February 3rd. Training was provided by Bristol Bay Borough and Camai Clinic staff in Naknek. Certification at the EMT-III level will enable station personnel to provide advanced cardiac care during cooperative search and rescue missions. These accomplishments were undertaken on their own initiative, with the support of the Complex.
- * attended the annual Law Enforcement Refresher training held March 18th-24th.
- * completed an Advanced Cardiac Life Support (ACLS) course on the September 26 and 27, sponsored by the American Heart Association and the Bristol Bay Borough.
- * during the week of August 24th, Donna attended the OPM course, "Introduction to Supervision" in Anchorage. The course was valuable in providing new insights into the complexity of performing good personnel supervision.

Refuge Secretary Janice Collins:

- * on February 12th-13th, attended a seminar on personal computers and received training in CompuServe from Refuges and Wildlife Secretary Nancy Braun. As a direct result of the training our CompuServe is now fully functional.
- * completed correspondence course, "Programmed English Usage," in December.
- * attended "Stress Reduction Workshop for Women" on July 29th.

Maintenance Worker Gary Terry:

- * none.

Maintenance Helper Dwight "Moose" Mumma:

- * attempted to get "safety manager" training; disapproved by RD.

Refuge Ranger Angie Terrell-Wagner:

- * during the week of January 28th to February 3rd, Angie attended the annual Refuge Information Technician Workshop in Anchorage. Topics discussed most pertinent to this Complex included: status of the Migratory Bird Treaty Act Protocol Amendment; Aerial Waterfowl Surveys; Marine Mammals Management; lead poisoning in waterfowl; use of steel shot and a practical exercise using steel shot at the firing range.
- * completed Emergency Medical Technician (EMT) Level III training and testing on February 3rd. Training was provided by Bristol Bay Borough and Camai Clinic staff in Naknek.

- * attended a "Subsistence Orientation Workshop" in Anchorage on June 2nd and 3rd.
- * during the week of August 24th, Angle attended the OPM course, "Introduction to Supervision" in Anchorage.
- * attended the annual Alaska Natural History Association (ANHA) Branch Manager's Workshop in Anchorage on December 7th-9th.

Refuge Information Technician Shirley Kelly:

- * during the week of January 28th to February 3rd, Shirley participated in the annual Refuge Information Technician Workshop in Anchorage.

Refuge Information Technician John "Smiley" Knutsen:

- * attended the Arctic Survival Training Course at Eilson Air Force Base in February. Smiley received the coveted "Polar Bear Award", which is given to the person with the best attitude and who contributes the most towards helping others during the three day outdoor survival adventure.
- * during the week of January 28th to February 3rd, Smiley attended the annual Refuge Information Technician Workshop in Anchorage.
- * during September 21st-25th, Smiley also attended the 2nd annual "Environmental Education Workshop" sponsored by the regional office.

Refuge Information Technician Orville Lind:

- * during the week of January 28th to February 3rd, Orville attended the annual Refuge Information Technician Workshop in Anchorage.

2. Youth Programs

a. Youth Conservation Corps (YCC)



On April 8th, a press release was written advertising the availability of three summer YCC enrollee positions. A total of 8 applications were received (4 male and 4 female). Only two male applicants were eligible due to age requirements and neither were from the King Salmon/Naknek area. Suitable housing could not be secured for them so the decision was made to hire three female candidates. Selected to fill the positions are Dawn Melvin, King Salmon; Zoelle Clark, Naknek; and Lisa Dion, Zephyrhills, Florida. The program ran from June 1st through July 24th this year.

RR Terrell-Wagner served as the program coordinator, this year, with MW Terry providing the day-to-day supervision; stand-by assistance from MH Mumma. An indoctrination was provided by MW Terry and RR Terrell-Wagner. Program work rules, safety rules, program purposes, etc. were covered. The first two weeks involved a significant amount of safety training described in Section E.6.

The Complex headquarters site receives a lot of compliments for looking good. The YCC program is an important contributor to our maintenance effort. YCC grounds maintenance projects accomplished this year included mowing and trimming the lawn; removing an old wooden walkway, then planting grass and fertilizing the area; straightening grass edge adjacent to the gravel pad at the heliport and trimming with larger rocks to keep vehicles off the lawns; and planting grass, where needed, throughout headquarters area. A major effort was made to catch up on painting needs. These efforts included painting diesel, gas, shop and Residence No. 8 fuel tanks; fuel safety barriers at the fuel shed and aviation gas area; dock ramp; water sealer on wood privacy fences at Residence Nos. 26 & 27; above-ground fuel tanks at Residence Nos. 1, 8, 9, 10, & 11 and the tanks behind the shop; the above-ground diesel and vehicle fuel tanks; the protective barriers by fuel-fill standpipes, bright yellow so they can easily be seen; walls of storage areas in the main warehouse; and trim on Residence Nos. 9, 10, and 11. The YCC crew participated in our "Take Pride in America" program by painting and cleaning the Kejulik River cabin (see Section H. 22.).

These young ladies worked well together and did an excellent job!

b. Resource Apprenticeship for Students Program (RAPS)

This year the Complex sought to fill two Resource Apprenticeship Program for Students (RAPS) positions. RAPS is a program that affords opportunities to 11th and 12th grade students (primarily Alaska Natives) of low income families around the state to work for a federal resource agency. The students earn \$5.00/hour and have all room and board and travel costs paid for. Applications were widely distributed in April, but we soon found out that the majority of students in this area, who are eligible for employment, usually commercial fish in the summer. They have the opportunity to make considerable more money fishing than can be made working for the Service, thus we are having difficulty recruiting students to fill the RAPS positions. Also, the families on the Alaska Peninsula have too high of incomes to qualify for RAPS funding.

Early in May it looked as if efforts to get into the RAPS program were going to be a bust for the second year in a row. This station was slated to have two students working this summer. But, the same story as last year, no host families could be found in King Salmon or Naknek. This also applied to the Katmai National Park, which was to have another two students working with them. DRM Poetter received a phone call from Jeff Brune, a VISTA Volunteer working for the Bureau of Land Management in Anchorage as the Assistant RAPS Coordinator for all the Department of the Interior agencies. These two scheming fellows worked out an innovative plan for the two Complex and two National Park RAPS students to be housed in the Complex's bunkhouse under the supervision of a paid RAPS program counselor. This idea took massive creative maneuvering within the RAPS program guidelines to accomplish, since it is the first resident RAPS program for any of the Alaska agencies. For instance, normally \$24.00/day goes to the host family for housing the student. Being a federal agency this money had to be handled much differently. Two female students, Johanna Young and Abigail Anasogak, were selected for the Complex's positions, and two male students, Shane McHale and Brian Stefanoff, for the National Park. Johanna was a 11th grader from the southeast Alaska village of Pelican; Abby was a 12th grader from Koyuk, a village near Nome; Shane just graduated and was from Anchorage; and Brian was an 11th grader from Russian Mission near Bethel. The counselor position was filled by Student Intern Meredith Bridgers (see Section E.3.). This was an excellent opportunity for her to gain valuable supervisory experience. The RAPS program will be funding her for 40 hours per week at \$9.00 per hour. Hopefully, this innovative approach will be a model for future efforts by other stations throughout the state. It is hoped that some of these students will continue on and become leaders, perhaps refuge managers and park superintendents, in the various agencies.

Johanna Young - Johanna worked for the Complex beginning on June 1st and ended on August 14th. Johanna's duties included: safety training; three days at Mother Goose Lake; loading airplanes; assisted with the Bear Creek soil sampling, for contaminants; and compiled and computer entered special use permit data for the Public Use Management Plan.

Abigail Anasogak - Abby worked for the Complex from June 10th through August 12th. Abby's work duties included: safety training; three days at the new Mother Goose Lake administrative cabin preserving the outside and breaking down the weatherport camp; loading airplanes; assisted with some YCC maintenance projects; assisted at the visitor center; served as receptionist; and typed misc. documents into the computer.

Summary - This station went the extra mile this year to become active in the RAPS program. This was done by being the first in Alaska to house the students in a bunkhouse type setting, rather than with host families (which could not be found for the second year in a row) and by having a paid counselor. Without housing them on station the NPS and FWS, in King Salmon, would not have had a RAPS program. Student Intern Meredith Bridgers, the Complex's RAPS counselor, did an excellent job under sometimes trying circumstances. She provided the necessary guidance and supervision that each individual needed and kept up with the paperwork demands that were placed on the station because we were an agency rather

than a host family. Basically, host families are provided \$24.00/day for each student and there is no accountability. Meredith was required to track and obtain receipts for every penny spent. The Complex received some very good work from the students, but this is a very demanding program on staff time and extensive thought will have to be put into whether this station can afford to have a similar program next summer.

3. Other Staffing Programs

A new program developed this year by DRM Poetter was the Student Intern Program. The students work with their respective college or university professors to set up a program in which they receive course credits or complete an assignment in order to graduate. The requirements vary with each professor. The agency/station provides the student with a well-rounded background of duties to enhance their experience.

Meredith Bridgers - Student Intern Meredith Bridgers from Charlotte, North Carolina began working at the Complex on May 21st, ending September 10th. Meredith's intern program at East Carolina University was required for her to graduate with a degree in Recreation and Park Administration. Her work assignments included: safety training; a week assisting with the Dog Salmon River "Take Pride in America" clean-up project; loading planes with materials for the Mother Goose cabin and Puale Bay field camp; spent three days at the Mother Goose cabin project with the RAPS students; spending a week at the Puale Bay field camp; and staffing and developing the visitor center. Meredith was also kept extremely busy administering the paperwork end of the RAPS program.

Meredith took on the unenviable paid assignment, with the RAPS program, as Counsellor for all four RAPS students during their evenings and week-ends off duty. She did an excellent job of getting the RAPS program off the ground. Without her there would not have been a RAPS program in King Salmon for the NPS or FWS.

John Gerlach - Student Intern John Gerlach from Fridley, Minnesota began his internship on May 21st, ending September 3rd. John's University of Minnesota intern program was much less structured than Meredith's. He was working for course credits and had to present a work project that was completed while in King Salmon. He submitted his efforts in creating an introductory guide for new employees of the visitor center. Other projects he worked on include: safety training; a week assisting with the Dog Salmon River "Take Pride in America" clean-up project; worked extensively weighing materials and loading planes for the Mother Goose cabin and Puale Bay field camp; staffing and developing the visitor center; served as bear guard for the Bear Creek contaminants sampling crew; and spending a week at the Puale Bay field camp

4. Volunteer Programs

a. Student Conservation Association (SCA)

The Student Conservation Association (SCA) program proved again to be an good source of energetic and dedicated resource assistant volunteers.

Utilization of this organization costs the Complex an additional \$900.00 per volunteer due to administrative costs of SCA. On the flip side, SCA has an established network for obtaining names of applicants.

Nancy Cook - SCA Volunteer Nancy Cook began duties on March 16th, ending June 5th. She came from Olympia, Washington, having recently received a bachelors degree at Evergreen State College. Nancy monitored waterfowl staging along the Naknek River during the spring, including a migration watch for banded and radio-collared white-fronted geese.

Nancy returned as a Service Volunteer on August 28th to replaced Laurie Cleary at the Puale Bay field camp until the conclusion of the project in late September. Nancy departed King Salmon on October 7th, after completing her report on spring waterfowl staging along the Naknek River.



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05/02/92, DAD

Andrew Schenck - On March 3rd, Andrew Schenck was selected to fill a spring SCA Volunteer position. Andrew was from Valparaiso, Indiana and reported for duty on the March 16th and terminated on June 5th. He assisted in developing the inter-agency visitor center, which opened mid-May. Once open Andrew staffed the center five days per week, providing information to the public about the Fish and Wildlife Service, the National Park Service, and the Bristol Bay Borough.

b. Service Volunteers

Our policy this year was to continue to pay the airfare of volunteers. We modified our policy this year: first year volunteers are provided

transportation from Seattle, Washington. Returning volunteer's would be provided transportation from anywhere in the U.S. A returning foreign volunteer's airfare is paid from the point they enter the U.S. This allows lower 48 volunteers an equal opportunity to gain the Alaska experience, without economic discrimination, but also places some of the burden on them. Each volunteer must commit to at least 12-weeks of full-time work for us to pay for any of their travel. The Complex also provides their food, housing and \$3.00/day for miscellaneous expenses.



17 22 20 13
6/20/92, DAD

David Anderson - Service Volunteer Dave Anderson of Aurora, Colorado worked at headquarters on the neo-tropical bird data-base. His tenure was from May 15th through August 14th, detailed in Section F.14.

Nikki Benjamin - Service Volunteer Nikki Benjamin from Dartmouth, Nova Scotia helped staff the Puale Bay field camp from May 25th through December 4th, detailed in Section F.14.

Patricia Bliss - Service Volunteer Patty Bliss, (former volunteer at Chugach State Park) came on board September 8th through October 19th to fill a volunteer position for the fall in the public use program. She staffed the visitor center and assisting with the Complex's Environmental Education program. She assisted by staffing the King Salmon Visitor Center, managing the Alaska Natural History Association

(ANHA) sales outlet, answering information requests, writing several wildlife factsheets, etc. We are starting a "Resource Lending Library" for use by teachers in this area and Patty's help in reviewing video tapes and writing a short narrative describing each one was very helpful. Patty returned to Anchorage to seek employment, and enter marital bliss. We greatly appreciate all of her hard work and dedication, especially while trying to make long distance arrangements for her wedding.

Toby Burke - Service Volunteer Toby Burke continued his tour from the beginning of the year until mid-April. He worked on compiling a report on brown bear hazing efforts conducted over the past three years, and assisted SCA Volunteer Nancy Cook with the Spring waterfowl surveys. Toby also assisted the KSFAO with radio telemetry flights for tagged rainbow trout on Becharof Refuge.

On May 23rd, Toby converted from volunteer status to a paid position with the University of Arizona Co-op Unit, working with the King Salmon Fishery Assistance Office. He assisted in conducting grayling research along the tributaries of Becharof and Ugashik Lakes on the Complex.

Laurie Cleary - Service Volunteer Laurie Cleary of Findlay, Ohio. Laurie helped staff the Puale Bay field camp from June 1st through August 20th, detailed in Section F.14. Laurie left for a volunteer position at Cape May, New Jersey recording the raptor migration.

Brenda Eliason - Service Volunteer Brenda Eliason of King Salmon, who worked as a volunteer last summer at the Jute Peak field camp, worked a few weeks staffing the new visitor center. Her assistance during "training week" for the rest of the volunteers was most beneficial. She came on duty May 28th and helped out until June 15th.

James McCarthy - Service Volunteer Jim McCarthy, from Pictou, Nova Scotia, Canada started working for the Complex on May 28th. Jim served as an integral member of the Puale Bay field camp crew. He was the only returning member of the team and as such served as Assistant Camp Leader. Jim also conducted a brown bear/human interactions study, and a Pacific Coast creel survey of local streams while at the camp. He returned to Newfoundland on October 6th.



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07/20/92, RDP

Mirijam Wurth and Urs Roth - Service Volunteers Mirijam Wurth and Urs Roth from Allschwil, Switzerland traveled together to King Salmon to assist with public use programs and maintenance. They arrived on May 18th and on August 7th they departed King Salmon to continue a year long tour of the 49th state. These two talented and hard working folks provided a valuable service to us by staffing the King Salmon Inter-agency Visitor Center for a 2-month period. They also completed a 10-day backpacking trip ground truthing a proposed hiking route, for bear viewing, from Gertrude Lake to Becharof Lake as part of our Public Use Management Plan (PUMP). Urs assisted with the construction of the Mother Goose Lake administrative cabin. Mirijam provided tireless efforts during the "Take Pride in America" clean-up projects based out of the Mother Goose Lake cabin.

5. Funding

Since FY 1987, a disturbing pattern has become the normal expectation - our funding has not been finalized until near mid-fiscal year. This pattern continued in FY 1992. Funding figures were received in late January. Tables 3 to 5 provides an overview of Complex funds.

Table 3. Base funding history for Alaska Peninsula Refuge Complex (in thousands).

FY	AKP	BCH	TOTAL
92	\$686.0	----	\$686.0
91	\$739.0	----	\$739.0
90	\$352.0	\$314.0	\$666.0
89	\$368.0	\$335.0	\$703.0
88	\$234.5	\$280.0	\$514.5

Table 4. Funding history for 1261 funds for Alaska Peninsula National Wildlife Refuge Complex (in thousands) beginning in FY 1991.

FY	FIXED	OVHED	PROJ	SUBSIST	YCC	CONTAM	SUBTOT
92	\$291.0	\$48.0	\$ 93.0	\$14.0	\$6.0	\$46.0	\$498.0
91	\$299.5	\$37.5	\$160.0	----	---	----	\$497.0

Table 5. Funding history for 1262 and other miscellaneous funds for Alaska Peninsula National Wildlife Refuge Complex (in thousands) beginning in FY 1991.

FY	1262				6320	8610	GRAND TOTAL
	FIXED	PROJ	MMS	SUBT			
92	\$254.0	-----	\$118.0	\$372.0	\$63.0	\$26.2	\$959.2
91	\$222.0	\$20.0	\$ 28.0	\$270.0	\$61.0	\$34.8	\$862.8

An austere base funding level was expected and received. However, soft money from a number of sources came through at the last minute and provided the funding stimulus for a very busy year. The Exxon Valdez oil spill continued its fiscal impacts into FY 1992. Authorization was finally received from the Assistant Regional Director - Oil Spill to spend \$63,000 (4650 subactivity) for sea bird colony assessment work at Puale Bay (Section G.5.). Funding for two oil exploration related contaminants projects (Section J.3.) and three Maintenance Management System (MMS) projects (Section I.3.) produced a very busy field season.

The Fiscal Year 1993 Work Plan request was submitted on October 19th. This submittal represented a team effort on the part of all Complex staff. Amid other high priority work, we dedicated several days to reviewing our fixed costs requirements, overhead needs, and Refuge Needs Information System (RNIS) projects. A team approach was taken on setting project priorities. We feel that a conservative, real world request resulted.

6. Safety

This station supports all aspects of safety. Our last lost time accident occurred in 1985. This record continued in 1992. Annually, funding is set aside for this purpose. An active safety committee comprising MH Mumma as chairperson, RR Terrell-Wagner as member, and KSFAO Biologist Jeff Adams as secretary/member, provide the foundation for an aggressive safety program.

A successful and safe field season demonstrated our commitment to safety. We are always up against major safety factors when conducting field operations. Unpredictable weather dictates when field camps are transported to and from their various locations. These locations are remote and in areas of high brown bear densities.

The Puale Bay field camp has completed its fourth season with a very successful safety record considering the unforgiving, harsh coastal weather conditions that control when and if the seabird colony population/productivity counts are conducted (on the cliffs or on the ocean waters in a Zodiac); or when re-supplies can be flown in (planned 10-day intervals). Brown bear safety keeps everyone on their toes with never a dull moment. Human/bear interaction is a constant hazard. Electric fencing, hazing using rubber slugs, cracker shells and flares are used to keep bears out of camps and from damaging equipment. The trash burn-barrel seemed to be a primary source of conflict. Efforts were increased to promptly remove unburnt cans and debris, and seal them in a bear proof barrel until back-hauled to King Salmon.

The transportation of materials and the construction of the Mother Goose Lake cabin without a single incident was amazing. See Section I.1. for details.

In July, individual smoke detectors were purchased and installed, by MH Mumma, throughout the Complex bunkhouse. The present smoke detectors and associated alarm system was discovered to be dysfunctional, again, during the quarterly safety inspection.

See Section I.3. for details of the aviation gas fueling system safety problem and solution.

SAFETY MEETINGS

January - A 30-minute video, Fighting Fat, detailed facts about gaining/loosing weight. This was a very good film to see, especially during the less active months of winter and the holidays.

February - Cardio-Pulmonary Resuscitation (CPR) course - RR Terrell-Wagner instructed an eight hour CPR (American Red Cross, Basic Life Support for the Professional Rescuer) course. All 13 participants scored well on the practical and written tests, obtaining their certification for another year.

March - Static Electricity - A 30-minute video was shown detailing proper grounding when refueling vehicles, aircraft, boats, etc. Even

though the video was extremely old and dated, the staff gained a new appreciation for static electricity.

A sample video tape was shown promoting the "Safety Short" safety program. These general safety motivation video tapes can be used as part of an on-going safety program to decrease/prevent accidents, promote healthier and more safety conscious employees, and help ensure compliance with OSHA standards. The safety committee promoted the idea of the regional office purchasing the "Safety Shorts" video tape programs for all stations to utilize. This would be one step towards updating the regional safety audio-visual library, which is lacking in recent and applicable materials.

April - Defensive Driving - A video of the California Highway Patrol showed the effects of alcohol on drivers. Alcohol drinks were given to participants and were monitored while attempting to negotiate a driving course. All became impaired and had difficulty with the course. Another video was taken from the TV program 60-Minutes. Victims of drunk driving accidents were interviewed. Discussed the M.A.D.D. (Mothers Against Drunk Drivers) program and how it got started.

May - The video entitled, "Think Back" was viewed. It was an excellent video on how to lift properly and how to take good care of your back. This was a very relevant video to view due to the massive amount of loading and unloading of aircraft due to occur in the upcoming summer months, especially for the cabin re-construction project.

June - Seasonal Training. Seasonal safety training was conducted from the 1st through the 10th. Topics covered include: bear behavior/firearms certification, watercraft operation and safety certification, wilderness first aid, cardio-pulmonary resuscitation, immersion suits, hypothermia, cold water near drowning, shore survival, ATV use, radio system usage, and EEO and prevention of sexual harassment. Pilot Mike Vivian from Yukon Flats Refuge was gracious enough to come down on the 9th to conduct aircraft safety training. The other portions of the training were conducted by the Complex staff.

July - The monthly safety meeting was conducted on the 9th. Proper use of fire extinguishers was discussed and a video from the regional safety library was shown. The video is very old, but the information is still pertinent. The staff discussed fire procedures and MW Terry instructed the rest of the staff on how to shut off the main circuit breakers, in the event of an emergency. A fire drill was conducted prior to the safety meeting and all made it to safety!

August - The safety meeting was conducted on the 27th. Videos we requested from the Regional Safety Office did not arrive, so a video on hunting safety, (from the Complex's video library) was reviewed instead. Hunting and gun handling issues were discussed in anticipation of the upcoming hunting season.

September/October - The September and October monthly safety meetings were combined due to staff traveling and office meeting conflicts. The

meeting was held on October 30th. Video films borrowed from the National Park Service were reviewed. These videos are produced by the Safety Shorts Company. Topics covered during the meeting included: hearing loss, hand and finger safety, and stress reduction.

November - KSFAO Biologist Jeff Adams (safety committee member) presented two new videos from the regional office on office safety on the 6th. The videos entitled, "Trill Seekers" and "Office Safety" were humorous yet but drove the points home. The films give some good tips on creating a safe work environment in the office.

December - The safety meeting was conducted on the 23rd. Since many residential fires occur in winter and especially during the holiday season, we chose to highlight "fire prevention and survival" this month. A very informative and dramatic 45 minute video tape entitled, "Plan to Get Out Alive" was shown to both Complex and KSFAO staff. The film highlighted fire prevention and life-saving techniques used to survive and escape fires. Staff completed a pre-test prior to viewing the video and then participated in a surprise fire drill.

Highlights of safety committee and station safety inspections:

March - The quarterly safety committee meeting was held on the 13th. Old business items addressed: quarterly safety inspections; ventilation fan and pump installed in the laboratory; smoke detector inspection forms to be signed by staff occupying government quarters; and two proposals for a tundra survival course in King Salmon. New business items addressed: RR Terrell-Wagner was welcomed as a new committee member; new sources of instructional materials for safety meetings to be researched; promotional videos from "Safety Shorts" have been requested; and nominations for the bear and water safety "Train The Trainer" program.

The Quarterly safety and health inspection was conducted on the 11th by Safety Officer Mumma and safety Committee Member Terrell-Wagner. Findings are listed below using the inspection reporting format:

- * Training needs include hazardous material handling and disposal for the collateral duty safety officer. Training is needed in basic safety and health hazards, and inspection of government facilities.
- * DI-134 filled out in March. An employee fell on snow covered ice, no work time was lost. The employee injured the right knee.
- * A fire drill was conducted on March 11th.
- * Fuel safety cans have been ordered.
- * Maintenance workers Mumma and Terry will be checking the fire alarm system in the office and bunkhouse to be sure it is operational.
- * Fire extinguishers have been mounted in the lab and shop.
- * New metal garbage cans are on order for shop.
- * Non-slip bases for ladders are on order.

June - The inspection was conducted on the 19th by Safety Officer Mumma, assisted by Student Intern Meredith Bridgers. Current safety issues are as follows:

- * New Regional Safety Officer Linda White was contacted regarding the need to update the Regional safety video library utilized for monthly station safety meetings. There has been a problem in the past with outdated videos that have been available. The Complex/Fishery Assistance Office Safety Committee was making efforts to initiate an updated and more effective station safety program.
- * During the rush of getting field camps out, more emphasis needs to be placed on ensuring fuels and batteries are kept properly stored in their respective areas, until the actual time of shipment. They also need to be returned immediately, upon return from the field, to their proper storage locations.
- * Safety fuel cans were received for use with lawn mowers, chain saws, weed-eaters, etc. All non-safety type fuel containers previously used have been disposed of.
- * The fire alarm systems in the bunkhouse and office buildings continue to not function properly. An evaluation needs to be made as to whether to dump these expensive "high tech" systems and go with numerous individual "First Alert" type units, or have another Anchorage based repairman come out and fix the "high tech" system.
- * All power tools need to be checked over for faulty cords. Tools needing repair need to be identified and repaired or new ones purchased.
- * MW Terry is planning on servicing all furnace systems during the month of July.
- * The biologist's and deputy manager's offices need extra outlets installed to eliminate extension cords which are causing minor tripping hazards. The flat-type cords are partially doing the job but need to be eliminated completely.
- * Extra effort is being placed on keeping trash can lids in place in the shop areas, in regards to fire safety rules.
- * Oxygen and acetylene tanks need to be removed from the Complex's hangar and returned to their cart in the shop.
- * Formaldehyde stored in the Fishery's section of the warehouse needs to be put in its proper storage area of the laboratory, or an area should be developed for proper storage in the fuel shed.
- * Water sealant and Blazo was improperly stored in the Fishery's section of the warehouse.

September - The meeting was held on the 27th. Old business items addressed: quarterly safety inspections; all ELT's were checked before field season; safety training was conducted in June for seasonal personnel and all appropriate personnel were certified in watercraft and bear/firearms safety; smoke detectors were inspected in all staff housing in June; a fire drill was conducted during the July monthly meeting; and procedures for emergency shutdown of electrical systems on the compound were reviewed during the July monthly meeting. New business items addressed: battery powered smoke detectors were installed in the bunkhouse; all fuel tanks and associated barriers were inspected and painted; the aviation fuel system of the boat dock was replaced; the Regional Safety Officer was contacted concerning training for station

safety officers and future upgrading of instructional materials; reiteration of the need for checking and using the kill switch lanyard on outboard motors; review of new policy concerning recycling waste and use and storage of formaldehyde; review of updated policy for FWS national safety program; review of safety alerts concerning aviation fuel quality and use of a helicopter litter for gear transport; and committee will research proper methods for disposal of hazardous materials.

December - The quarterly safety committee meeting was held on the 14th. New business addressed included: Station Safety Management Plan was reviewed and is currently being updated; names of seasonal employees certified in watercraft and bear/firearms safety submitted to the Regional Safety Officer; CPR re-certification training is scheduled for February 1993; suggestions for dates to conduct a barren land (tundra) survival course will be solicited from Complex and KSFAO staff; Safety Committee will continue researching proper procedures to dispose of hazardous material; battery operated smoke detectors will be ordered for Complex housing; a memo will be written to remind staff to replace batteries in smoke detectors in their residences; and ice cleats will be provided to all staff.

The Quarterly Safety and Health inspection was conducted by Safety Officer Mumma on the 7th. The following deficiencies discovered will be, or have already been, abated in accordance with 24AM1.11E and G:

- * Safety training needed for the Station Safety Officer is being formulated at the Regional Office.
- * "Emergency Exit" sign needs to be replaced at the office warehouse.
- * Smoke detectors need to be tested at the bunkhouse.
- * Staff members are currently certified in CPR, but need to be updated in first aid. Two staff members are trained EMTs.
- * Facility heating systems have been inspected by Maintenance Worker (MW) Gary Terry within the last two months.
- * Computer cords extending across the floor in the biological work area present a navigation hazard. The cords need to be covered.
- * Shop trash receptacles are emptied regularly, but the can lids need to be replaced after each use.
- * Empty oxygen tank in shop needs to be secured in warehouse.
- * Non-slip bases for ladders have been received. They need to be installed.
- * All staff members need to assist in making certain that emergency gear placed in the vehicles remains there. First aid kits, fire extinguishers, shovels and flares are placed in each vehicle, but items are often missing during quarterly inspections (11.H.).

8. Other Items

On January 22nd, DRM Poetter attended a meeting with a tourism group from Anchorage. The public meeting entitled "Destination Alaska" was held in the Comserfac Building in King Salmon. In addition to Complex staff, representatives from the Park Service and the Bristol Bay Borough also attended. Several positive comments were made by the public concerning the proposed inter-agency visitor center.

During the week of January 28th to February 3rd, PR Terrell-Wagner and RITs Kelly, Knutsen and Lind attended the annual Refuge Information Technician Workshop in Anchorage. Topics discussed most pertinent to this Complex included: status of the Migratory Bird Treaty Act Protocol Amendment; Aerial Waterfowl Surveys; Marine Mammals Management; lead poisoning in waterfowl; use of steel shot and a practical exercise using steel shot at the firing range. The attending staff especially enjoyed the day spent using steel shot on the range. The workshop provided an excellent opportunity to meet and share work experiences with RITs from other refuges.

On the January 30th, DRM Poetter attended a Naknek/Kvichak Advisory Committee meeting in Naknek. Elections for several positions were held. Later, the committee reviewed game and commercial fishing proposals, making recommendations as to their support or non-support. The main proposal, relating to the Complex, dealt with moose hunting in Unit 9C. The State had proposed to not allow the taking of cow moose, but the committee wanted it allowed and if the population counts determined it, then close the December hunt to the taking of cows by emergency closure procedures.



RITs Knutsen, Kelly, and Lind, and RR Terrell-Wagner share work and life experiences with other RITs during a week long conference in Anchorage. 1/28/92, CH

On February 9, 1992, selected employees became responsible for payment of utility charges for their rental housing. To assist them and the utility companies in this transition, AT Collins obtained application/membership forms from Naknek Electric. Residents completed the forms and then returned them to the Electrical Company. Arrangements were made for final meter readings and filling fuel oil tanks.

WB Dewhurst attended a series of waterfowl meetings in Anchorage March 3rd through 6th. A sea duck workshop was held on the 3rd and 4th, presenting the status of current sea duck knowledge and outlining a future plan for new research and management. A coordination meeting was held on the 5th for those involved in the annual waterfowl brood surveys across the state. A very informative discussion was held on logistical problems, budget constraints, and Office of Aircraft Services (OAS) procedures for helicopters. On the 6th, a banding workshop was held in the regional office focusing on pintails and white-fronted geese.

On March 18th, RM Hood held coordination meetings with Alaska Department of Fish and Game (ADF&G) Sport Fish Biologist Mac Minard and Big Game Biologist Dick Sellers.

On May 21st, RM Hood was interviewed by Steve Rideout and Jim Hanson, analysis team for a "Management Assistance Functional Analysis Review."

On June 2nd and 3rd, RM Hood and RR Terrell-Wagner attended a "Subsistence Orientation Workshop" in Anchorage. The conference was sponsored by the Alaska Department of Fish and Game (ADF&G) and highlighted methods of conducting subsistence research (developing goals, methodologies, conducting surveys, land use mapping, harvest monitoring, report writing, and utilizing the ADF&G Community Profile Database). The two day course was very informative.

Steve Chase, Washington Fish and Wildlife Service Budget Office, visited the Complex on June 9th through the 14th. Steve spent four days helping mobilize the Puale Bay field camp. We gave him a cram course on the logistics of establishing a field camp in remote Alaska. He was stranded afield for four days due to poor weather. Steve was a "good sport" during the entire period.

On July 2nd, Bob Rice, Chief, Operations Branch, Division of Realty, visited the King Salmon Administrative Site to conduct an onsite inspection pursuant to completion of a Utilization Report (5-year cycle) for all buildings. With over 50 people working/living on the Complex, Bob should have found ample data to report complete and total utilization of the site!

Congressman Young offered a substitute wilderness bill into Congress on July 7, 1992. The "Alaska Peninsula Wilderness Designation Act of 1992" will add 1,876,000 acres of wilderness on Alaska Peninsula Refuge and 347,000 acres on Becharof Refuge. Refuge Manager (RM) Hood provided comments on section 4(b) Permits to Region on the 13th. The bill failed to pass.

On July 30th, RM Hood completed and returned 24 questionnaires received from the General Accounting Office (GAO). GAO is reviewing federal management of short-term permits. This review was requested by the Subcommittee on Environment, Energy, and Natural Resources, House Committee on Government Operations.

RM Hood participated in the Aviation Safety Meeting held in the Regional Office on August 26th and 27th.

To assist us with piloting duties, Pilot Chris (J.M.) Christensen spent August 3rd-21st on temporary duty assignment in King Salmon. Chris is an excellent and congenial pilot that is working for this Region on loan from the Department of Agriculture-Animal Damage Control in Utah. His primary mission was to fly the bear/stream surveys (see Section G). We certainly do appreciate his outstanding efforts. We tried to talk him into taking over permanently, but the paperwork side of the collateral duty job drove him away.

In September, Complex staff prepared and assisted Regional Coordinator Bev Grafel in preparation of several "Take Pride in America" award nominations. The Complex is nominating Exxon Exploration Company and Mobil Exploration & Producing U.S. for their clean up of exploration remains at Island Bay and Bear Creek on Becharof Refuge. The region is nominating the Complex for our "Take Pride" efforts over the past five years.

RM Hood attended a meeting of the Naknek-Kvichak Fish and Game Advisory Board on October 9th. The meeting was held in the evening in Naknek. The main thrust of the hastily called meeting was to discuss commercial fishing issues (the Egegik intercept of red salmon). The Board also voted to support the extension of the Unit 9E caribou season proposed by the Alaska Department of Fish & Game (ADF&G).

On October 22nd and 23rd, WB Dewhurst attended a coordination meeting in Anchorage. Attenders were helicopter observers for the waterfowl brood surveys. Topics discussed ranged from data analysis to survey techniques.

RM Hood briefed Alaska Dept. of Fish & Game Biologist Dick Sellers and Alaska Fish and Wildlife Protection Officer Gary Folger on the status of the big game guide-outfitter area award process on December 30th. Refer to Section H.21.

F. HABITAT MANAGEMENT

1. General

Geographically, the Alaska Peninsula extends approximately 450 miles from an area near Lake Iliamna to Isanotski Strait at the beginning of the Aleutian Islands. The peninsula's width varies from about 100 miles at Lake Iliamna to three miles near the southern tip. The Becharof and Alaska Peninsula refuges extend over a wide area of land and variety of habitat types on the peninsula. By "Lower 48" standards, the manipulation of any of these habitats is not possible. The lack of access by any road system places an absolute limit of mechanical manipulation methods. In addition, the peninsula is considered an extremely low fire risk area. However, this year was a highly unusual exception (see Section F.9.). The precipitation and generally wet fuel preclude habitat manipulation using fire.



Port Wrangell Bay, Ugashik Unit, demonstrates the wide range of habitat types found on the Complex. 8/90, DAD

2. Wetlands

A significant area of both refuges having some form of water at the surface. The Becharof Refuge has the second largest lake in Alaska as its dominate landmark. Becharof Lake is some 35 miles long and 15 miles wide covering 293,000 acres. The Refuge also contains 172 other lakes over 25 acres in size and thousands of ponds and potholes under 25 acres along with three major drainages: Big Creek (a tributary of the Naknek River), the King Salmon River and the Egegik River.

The Alaska Peninsula Refuge is truly a land-of-many lakes with 300 lakes greater than 25 acres in size, nine lakes over 1000 acres and thousands of small "pothole" lakes. There are 18 major rivers, several hundred tributary streams and over 80 coastal bays.



Figure Eight Creek area, Ugashik Unit.

9/92, ME

6. Other Habitats

Tundra is the major vegetation type on the Alaska Peninsula. Three general categories of tundra are classified: wet, moist (heath) and alpine.

Wet tundra is generally found below 200 feet elevation. Crowberry, willow and a variety of forbs characterize the vegetation of this zone. Wet tundra is most common on the west side of the peninsula, with much of it lying outside of the refuge boundaries.

Moderately well drained areas are dominated by moist tundra. This type makes up about five percent of the area on Becharof Refuge and is a minor habitat on the Alaska Peninsula Refuge. Moist tundra occurs primarily on poorly drained soils, upland sites and on slopes. These plant communities contain dwarf birch with willow or heath shrub, heath mat and cushion tundra.

On somewhat drier slopes, especially on the lower portions of the Alaska Peninsula Refuge, an open low shrub/graminoid tundra occurs. This tundra is very similar to heath tundra but usually has a dense shrub growth form.

Alpine tundra occurs at higher elevation on slopes and ridges of the Aleutian Range, as well as higher, well drained areas. These areas are dominated by crowberry, lichens and grasses.



Stream-eroded valleys provide lush examples of moist tundra abounding with Kamchatka lilies (Indian Rice) and cranesbill in early summer. 6/91, DAD



This species of Arctic Forget-Me-Nots (*Eritrichium chamissonis*) is a classic "Beringia" species, found only along alpine areas of the Bering Sea coast, extending south to the Alaska Peninsula. 6/20/92, DAD

9. Fire Management

An unusually long period of clear, dry weather during May produced extremely dry conditions on the Alaska Peninsula (see Section B.). When brown bear hunters were added, an instant "fire season" resulted. For the first time in refuge history, the Complex had wildland fires to report. The situation was further complicated by the long distance that smoke jumpers and retardant tankers had to fly to reach the fires (flights originated in Fairbanks and Palmer).

Fire No. 204-052 (A052): About 9:00 p.m. on May 12th, RM Hood was notified by the U.S. Coast Guard about a fire on Cape Kubugakli in Becharof Refuge. He was able, finally, to contact Alaska Division of Forestry personnel to report the fire (the 24 hour contact line was not yet in operation). Since the area was designated "limited suppression", the fire was not jumped. DRM Poetter conducted an aerial inspection of the fire on the 14th, with assistance from Park Ranger/Pilot Stan Steck of Katmai National Park. They discovered that the fire was actually on a spit in Alinchak Bay. It was out and had burned an estimated 500 acres of beach grass. The acreage was updated to 670 on the 18th. The fire was reportedly caused by a bear hunter's mis-managed campfire. Sweet justice in that one of the larger tents of the individuals that started the fire was burnt.



Coastal grasslands burned during a hunter-caused wildfire along Alinchak Bay, greened up quicker than surrounding areas.

6/1/92, DAD

Fire No. 204-070 (A070): At about 5:00 p.m. on the 17th, King Salmon Flight Service contacted RM Hood about a reported fire at Yantarni Bay in the Ugashik Unit, Alaska Peninsula Refuge. The Alaska Division of Forestry was notified. Since the fire was in a "full protection area", it was jumped by eight fire fighters. [Note: These lands are being returned to the Service. When they are finally accepted, the Fire Management Plan needs to be revised to place these lands into the "limited suppression" category.] The fire was reported out at 3:00 p.m. on the 18th, and burned 80 acres. Demobilization was scheduled for 2:00 p.m. on the 19th. However, the fire re-started and burned another 500 acres before being extinguished. The fire suppression crew was completely demobilized on 20th.



Who says the Alaska Peninsula won't burn?...This fire near Yantarni Bay was started by a bear hunter's discarded cigarette.

5/21/92, DAD

Fire No. 204-075 (A072): At about 1:15 p.m. on the 19th, this office received a report of a fire at the head of Ivan Bay in the Chignik Unit, Alaska Peninsula Refuge. The fire was on a Native allotment and endangering a cabin. RM Hood received a call from Richard Larson of Ocean View Native Corporation in Perryville, with a report that a PenAir pilot had just flown over the fire. It was believed to be approximately five (5) acres in size. High winds were driving the fire toward a private cabin. The Alaska Division of Forestry was immediately notified. Since the fire was endangering a private cabin, it was jumped by eight fire fighters. However, they did not arrive in time. The cabin and all facilities/equipment were lost. Mr. Larson stated that the fire was caused by bear hunters who were trespassing on the

allotment. State Troopers are investigating arson allegations. It appears likely that charges will be filed.

Fire No. 204-127 (A127): At about 6:35 p.m. on the 24th, RM Hood was contacted by Bill Beebe, Alaska Division of Forestry in McGrath, concerning a report of a wildfire burning in the Kejulik River drainage on Becharof Refuge. The reported location was questionable, but it appeared to be endangering Big Game Guide-Outfitter Phil Shoemaker's home/lodge, an inholding of the Becharof Wilderness Area. Mr. Beebe made the decision, with RM's concurrence, to deploy a team of smoke jumpers and a retardant tanker (from Palmer). The Chief Ranger of Katmai National Park was contacted requesting an over-flight; however, no aircraft and/or pilots were available. RM Hood then contacted PenAir and arranged for a Piper Cherokee aircraft to over-fly the fire to determine precise coordinates. At 8:01 p.m., PenAir informed us that the fire was located at 57.52.1 N; 155.44.4 W. The fire was northeast of Mr. Shoemaker's lodge and the wind was blowing from the northeast. McGrath Fire Center was contacted, given the coordinates, and requested to have the smoke jumpers/retardant tanker continue the mission to protect Shoemaker's property. The fire was jumped at about 9:00 p.m. and extinguished. On the 25th, the Service assisted the crew demobilization with the Fire Program's contract Bell-206 Long Ranger helicopter (N3928B). Eight smoke jumpers and equipment were transported to King Salmon.

12. Wilderness and Special Areas

Becharof Refuge. Approximately 400,000 acres or one third of the refuge was established under the Alaska Lands Act as the Becharof Wilderness. 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 associations still intact. Wilderness designation insures 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 association within will be the last place on the refuge subject to irreversible development.

Three private inholdings are found within the wilderness area boundary. Two of the inholdings (40 acres and 5 acres) are owned by registered guide, Philip Shoemaker. He has built lodges on both. The third is a Native allotment, consisting of 160 acres.

An additional 347,000 acres (29 percent) of the refuge was recommended for wilderness designation in the November 1, 1988 Record of Decision for the Becharof National Wildlife Refuge Final Supplemental Environmental Impact Statement for the Wilderness Proposal of the Final Becharof Comprehensive Conservation Plan/Environmental Impact Statement/Wilderness Review. No Congressional action has been taken on this proposal to date.



At 5,300 ft, the Kejulik Pinnacles provide a prominent landmark along the northern boundary between the Becharof Refuge wilderness area and Katmai National Park. 9/24/92, ME

Alaska Peninsula Refuge. At present, no refuge lands are designated wilderness. A Record of Decision signed November 1, 1988 for the Alaska Peninsula National Wildlife Refuge Final Supplemental Environmental Impact Statement for the Wilderness Proposal of the Final Alaska Peninsula Comprehensive Conservation Plan/Environmental Impact Statement/Wilderness Review recommended 640,000 acres for wilderness designation. No Congressional action has been taken on this proposal to date.



The stark, volcanic landscape of the Ugashik Caldera is featured in the proposed wilderness area of the Alaska Peninsula Refuge.

9/24/92, ME

Mount Veniaminof National Natural Landmark. Mount Veniaminof was determined to be eligible for natural landmark status in 1967. It was registered in August 1970. This unique active volcano is located in the Chignik Unit of the Alaska Peninsula Refuge. It is located about 20 miles northeast of Port Moller (Bristol Bay side) and 20 miles west of Chignik (Pacific Ocean side) and approximately 450 miles southwest of Anchorage.

Named for Russian Orthodox priest Ivan Veniaminof, who studied Aleutian Chain cones early in the 19th Century, this 8,400-foot volcano is centered on the last wide lobe of the Alaska Peninsula. The climactic eruption that formed the Veniaminof caldera occurred about 3,700 years ago. Mount Veniaminof is massive. The summit crater is about 5.2 miles in diameter and contains a 25-square mile cupped ice field -- the most extensive crater glacier in North America. It is the only known glacier on the continent with an active volcanic vent in its center. The volcano's base is over 30 miles in diameter. The Landmark's boundaries encompass over 800,000 acres.

The "Alaska Peninsula Wilderness Designation Act of 1991" was introduced by Representative Don Young. A hearing on H.R. 1219 was held on March 8th. This brought a flurry of requests for information from all sides. The bill provides for the designation of approximately 2.9 million acres of wilderness in the Aniakchak National Monument and Preserve and the Alaska Peninsula and Becharof National Wildlife Refuges. In addition, the legislation also authorizes the acquisition of approximately 275,000 acres of selection rights of Koniag, Inc. Koniag would give up all subsurface oil and gas rights for "chits" that would give them oil and gas rights elsewhere. At Realty's request, RM Hood provided information to Koniag Inc. regarding guides operating on the Ugashik Unit, Alaska Peninsula Refuge.

On March 31st, RM Hood was contacted by Jack Hession of the Sierra Club concerning a bill introduced by Representative Young that would create designated wilderness on Becharof and Alaska Peninsula Refuges (a total of over 2 million acres). RM Hood was concerned about an amendment to the bill that would exempt sport fishing guide Bill Martin's base camp at Yantarni air strip from receiving the wilderness designation. Mr. Hession requested any background information that we could provide on Martin's operation.

Congressman Young offered a substitute wilderness bill into Congress on July 7, 1992. The "Alaska Peninsula Wilderness Designation Act of 1992" would have added 1,876,000 acres of wilderness on Alaska Peninsula Refuge and 347,000 acres on Becharof Refuge. Refuge Manager (RM) Hood provided comments on section 4(b) Permits to Region on the 13th. The bill looked good, but failed to pass.

14. Exxon Valdez Oil Spill

On March 24, 1989, the oil tanker Exxon Valdez ran aground in Prince William Sound spilling 11 million gallons of crude oil into the Gulf of Alaska. Within two months, prevailing currents carried the oil into the Shelikof Strait impacting shorelines of Kodiak and the Alaska Peninsula. The first documented shoreline oil impacts on the Alaska Peninsula/Becharof refuges occurred on April 30, 1989. Personnel from the Complex, State of Alaska, and Exxon continued to monitor coastal impacts of the oil from May to November 1989. Clean-up activities were conducted by Exxon/Veco on the Becharof Refuge, until September of that year.

Wildlife Impact Damage Assessment. The assessment of oil spill impacts on refuge wildlife went beyond the initial documentation of beached carcasses. On a regional level, specially funded damage assessment projects were initiated in 1989 to emphasize species specific impacts. Of the projects started in 1989 involving the Complex, only the seabird study was continued through FY 1992. This damage assessment study concentrated on continued monitoring of murre populations and productivity. See Section G.5 for further discussion of this study.

Remnants of the Exxon Valdez oil spill continue to haunt us. The Alaska Department of Environmental Conservation (ADEC) advised Exxon Company, USA, by letter dated July 31, 1992, that their clean up of a fuel spill

at the Island Bay Refueling Site located on Becharof Refuge, was inadequate. ADEC stated, "... that high levels of diesel-range petroleum hydrocarbons remain in the soil at the site, the Department is requesting that you conduct additional corrective action Soils at this site should be cleaned up to the numeric soil target cleanup level for the site of 200 parts per million (ppm) and additional analysis of groundwater should be done." Since clean up of refueling sites was included as part of the settlement, a meeting was held on August 14th at the Coast Guard Office to discuss the issue and options. Acting Assistant Regional Director Paul Schmidt and Karen Oakley of the Office of the Oil Spill represented the Service. Representatives from the U.S. Coast Guard, Department of Interior, National Park Service, ADEC, and Exxon also attended. Based on land owner's consideration, the degree of contamination, the presence of clean fill, the limited time constraints, and the estimated expenditures (\$118,000), the participants agreed that no further action was necessary at this time.

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G. WILDLIFE

3. Waterfowl

Naknek River Spring Migration Watch. A spring waterfowl survey was conducted from February 19th to May 29th along the Naknek River of the Alaska Peninsula, by SCA Volunteer Nancy Cook and Service Volunteers Toby Burke and Jim McCarthy. This monitoring continued a series of annual surveys initiated in 1983, with the addition of comprehensive ground surveys starting in 1991. The purpose of these surveys was to determine species composition, abundance, phenology, and distribution and relate these variations to human disturbances along the river and migration phenology. For the first time aerial surveys were also conducted of the Kvichak and Ugashik Rivers to determine how the Naknek River fit into the spring staging distribution along the Alaska Peninsula.

Ground waterfowl surveys continued in May, conducted by Volunteers Cook and McCarthy. Many species peaked early in the month including: pintails - 11,480; green-winged teal - 543; American wigeon - 260; Eurasian wigeon - 23; shovelers - 201; black scoters - 180; and canvasbacks - 38. Species recorded for the first time ever on the river during these spring migration surveys included: ring-necked ducks, Steller's eiders, and ancient murrelets. This late and very dry spring season has produced some incredible concentrations of migrating birds and should make for a very interesting report.

Aerial waterfowl surveys were concluded on May 4th, in a low-level flight along the Ugashik River using the Complex's Cessna 206, piloted by ROS/P Arment with WB Dewhurst and SCA Volunteer Cook as observers. Numbers of birds observed were just a fraction of those staging along the Naknek River, with the exception of 1,243 scaup and 758 greater white-fronted geese.

In 1992, the Naknek River area experienced a late spring and overall waterfowl numbers were unusually high with a record of 17,836 swans, geese, and ducks counted on the April 28th aerial survey. Ground

surveys revealed shifting species composition and considerable variation in individual species phenologies. Total waterfowl use of the river was determined using the total of each species' highest abundance which equaled 27,178 birds of 21 species (Table 6). Ring-necked ducks, Steller's eiders, and a Bewick's race tundra swan were documented on the river for the first time this spring. Eurasian wigeons and canvasbacks were encountered regularly in small numbers suggesting their status to be "uncommon" rather than "rare" migrants to the Alaska Peninsula. Northern pintails were present in numbers more than double their previously recorded highest abundance. White-fronted geese numbers were more than double the 1991 counts but still considerably down from surveys in 1984-86. The probable cause for the 1992 high abundances was displacement of birds from other local and regional areas due to a late spring and limited open water. The Kvichak and Ugashik Rivers contained approximately 8,000 and 4,000 total staging waterfowl on April 30th and May 4th respectively.

Table 6. Highest recorded abundance of waterfowl by species on surveys of the Naknek River, Alaska Peninsula, Alaska, March-May 1983-1988, 1991-1992. Species that peaked in 1992 are underlined.

Species	Number	Year
<u>Tundra Swan</u>	4169	1992
Gr. white-fronted goose	2453	1984
Emperor goose	1	1985
Brant	4	1991
Canada goose	846	1985
<u>Green-winged teal</u>	543	1992
<u>Mallard</u>	788	1992
<u>Northern pintail</u>	11480	1992
<u>Northern shoveler</u>	201	1992
Gadwall	25	1985
<u>Eurasian wigeon</u>	23	1992
American wigeon	375	1985
<u>Canvasback</u>	38	1992
<u>Redhead</u>	16	1992
<u>Ring-necked duck</u>	2	1992
<u>Greater scaup</u>	796	1992
Common eider	75	1991
King eider	5000	1991
<u>Steller's eider</u>	1	1992
<u>Harlequin duck</u>	7	1992
<u>Oldsquaw</u>	3200	1992
Black scoter	357	1991
White-winged scoter	25	1991
<u>Surf scoter</u>	36	1992
Bufflehead	25	1984
Common goldeneye	1102	1984
<u>Barrow's goldeneye</u>	6	1992
<u>Common merganser</u>	3248	1992
<u>Red-breasted merganser</u>	833	1991

Spring waterfowl surveys became interesting in March as the ice receded along the Naknek River. The mouth of the river became ice free early in the month and large rafts of sea ducks were soon observed. Peak numbers included 4,100 oldsquaw, 2,100 common mergansers, 40 common goldeneyes and 10 king eiders. The river's headwaters, near Naknek Lake, opened on the 9th and were quickly utilized by small numbers of goldeneyes and mergansers. The first tundra swans were sighted on the 19th, with 39 present at month's end. Other noteworthy observations included positive identification of male McKay's buntings occurring among flocks of snow buntings at both Naknek and King Salmon. This is the third consecutive winter this behavior has been observed.



An all-time high of 4,100+ tundra swans was recorded staging on the Naknek River in April and May.

4/29/92, DAD

The most valuable staging area on the Naknek River remained the Big Creek to Paradise Point area. Portions of the river in King Salmon proper near Eskimo Creek were favored by white-fronted geese throughout staging, and the Rapids Camp vicinity was heavily used by dabbling ducks in the first two weeks of May. Boat traffic, military and civilian aircraft, and human presence along the shorelines were noted to disturb waterfowl.

Emperor Geese. Emperor geese are a northern flyway species, with 80-90% of the population remaining within Alaska throughout the year. This Alaska contingent nests along the coastal fringe of the Yukon-Kuskokwin Delta and the eastern coast of Siberia. Thousands of geese stage along the Bristol Bay coastline each spring and fall enroute to and from their Aleutian Island and Alaska Peninsula wintering areas.

"Migration watches" for emperor geese were initiated in 1986 during fall staging on the lagoon at Cinder River, along the Bristol Bay side of the

Alaska Peninsula. In 1988, the Alaska Fish and Wildlife Research Center (Research Center) initiated a six-year study of neck-collared emperor geese to examine mortality, behavior, and migration routes. In past seasons, geese were monitored at two sites, Cinder River and Nelson Lagoon (discussed in Izembek's Annual Narrative). In autumn 1990, two sites were added to the survey: Port Heiden/Strogonof Point and Seal Islands. Spring 1992 was the last season monitored, terminating the migration watch for the time being.



Emperor goose numbers are back on the rise in Alaska, and the Alaska Peninsula emperor goose migration study ended with the spring 1992 season - one year earlier than originally planned. 5/92, DAD

WB Donna Dewhurst participated in the spring 1992 emperor camp at Cinder Lagoon for a week starting on May 4th. Donna assisted Biological Technicians Jennifer Pratt and Mike Fedorka in reading goose collars and becoming familiar with the research. Overall, during the spring season 238 uniquely banded geese were observed, many of which were sighted multiple times. Area breakdown of banded birds observed included: 35 - Cinder River; 44 - Strogonof Point; 50 - Seal Islands; and 126 - Nelson Lagoon. As in previous seasons, there were few birds (<10%) observed at multiple sites, perhaps indicating that emperors exhibit some philopatry to previously visited staging areas. Annual survival rates of adult geese was estimated at 65%, with survival being the lowest for juveniles over their first winter (Table 7).

Table 7. Estimates of seasonal and monthly survival for adult and juvenile emperor geese (J. Schmutz, Pers. Commun.).

Period	Seasonal Survival		Monthly	
	ϕ	SE	ϕ	SE
Adults				
Over-Winter 1988-90	0.682	0.024	0.943	0.005
Over-Summer 1989	0.755	0.082	0.948	0.020
Over-Summer 1990, 1991	0.925	0.033	0.985	0.007
Juveniles				
Over- 1st Winter	0.121	0.019	0.712	0.018
Subsequent Over-Winter	0.719	0.045	0.712	0.018
Over-Summer	0.716	0.045	0.944	0.010

More specific results of this nature are pending completion of additional analyses. Those interested in a copy of the final report should contact: Wildlife Biologist Joel Schmutz, Alaska Fish and Wildlife Research Center, 1011 E. Tudor Road, Anchorage, Ak 99503.

Greater White-fronted Geese. The Pacific Flyway population of greater white-fronted geese is currently recovering from a population decline of 80 percent. The major breeding areas of these geese are in western Alaska and include the Bristol Bay lowlands. For the past three years, the Complex has assisted the Alaska Fish and Wildlife Research Center in a study of subpopulations of greater white-fronted geese on the Alaska Peninsula. Based on observations of white-fronts in the Ugashik drainage, in early summer, it was determined that a small population of molting geese (both greater white-fronts and Taverner's Canada geese) uses the habitat in the vicinity of Hook Lagoon, along the Bristol Bay coast. An effort to band the molting geese was successfully initiated in 1988 and continued through the summer of 1990. Parallel banding efforts were done on the Nushagak Peninsula by Togiak Refuge personnel from 1988 through 1991.

Identification of individual white-fronted geese was possible this spring using both radio telemetry and by reading neck collars and/or leg bands. Serice volunteers monitored for white-fronts during the spring waterfowl surveys along the Naknek River, near King Salmon. One radio telemetry signal (166.765) was documented along the upper river on 16 April. Yellow plastic neck collars documented included: 020 - 22 April; 878 - 23-28 April; and 4G8 - 24 April. In addition, two local King Salmon residents read a metal leg band (1137-98208) with a spotting scope on 3 May.

All the collared/banded geese sighted were originally banded on Kikertalik or Banding Lakes on the Nushagak Peninsula on Togiak National Wildlife Refuge. One of the collared birds was banded in June 1990, the other two were banded in July 1991. The goose identified by leg band was banded in 1988.

The complete history since banding for the radio-tracked, adult female white-front was as follows:

<u>Date</u>	<u>Location</u>
7/1/91	Kikertalik Lake, AK (banding date)
8/28/91	Agency Lake, OR
9/5/91	Tule Lake, CA
10/4/91	Chihuahua, Mexico (probably arrived mid-Sept)
1/23/92	Leaves Mexico
2/5/92	Sacramento River Delta, CA
4/13/92	Agency Lake, OR
4/16/92	King Salmon, AK

No new white-fronted geese were banded on the Alaska Peninsula or on Togiak Refuge in 1992, due to budget cuts and changing priorities. Information on bird movements and survival will now solely depend on geese banded in 1991 or older.

Duck Production Surveys. The new state-wide plan for duck brood surveys was initially implemented in 1990. The Alaska Peninsula/Becharof refuges became one portion the Bristol Bay Lowlands - Waterfowl Production Area, also including Togiak and Izembek refuges and all State and Native lands from Togiak Bay south to False Pass.

The entire production area, 22,020 square miles, was classified as "low strata" for waterfowl brood densities. In 1992, it was again decided to reselect survey plots and increase the number of plots, due to past years' coefficients of variance (CV) being higher than targeted in the survey's objectives. A record one-hundred new one-mile-square sampling plots were chosen using a computer program that randomly selects latitude-longitude coordinates within the study area boundaries. Sampling plot distribution was: Kvichak River west to Togiak River (Togiak Refuge, Bureau of Land Management lands) - 30 plots; Alaska Peninsula, Kvichak River to Port Moller (Becharof Refuge, and Ugashik and Chignik units, Alaska Peninsula Refuge) - 56 plots; and the Alaska Peninsula, Port Moller to False Pass (Pavlof Unit, Alaska Peninsula Refuge, Izembek Refuge) - 14 plots. Of the 56 plots in this station's management area, 12 were actually on refuge lands. Four plots occurred within the boundaries of Katmai National Park and Preserve.

In 1990, a standard operating procedure was developed for brood surveys across the State, with the low density strata of Bristol Bay to be surveyed by helicopter only. WB Dewhurst has been the primary observer for the entire production area during all survey years, with Service Volunteers Jim McCarthy and Nikki Benjamin serving as secondary observers in 1992. Surveys were conducted on July 11th-20th. Of the 340 broods observed, primary species included: 81 green-winged teal, 61 Mallards, 44 American wigeon, 40 northern pintails, 34 greater scaup, 16 tundra swans, and 11 black scoters and white-fronted geese. Broods were also observed in lesser frequencies of northern shovelers, red-breasted mergansers, oldsquaw, harlequin, Canada geese, common eiders, common goldeneye, sandhill cranes, red-necked grebes and red-throated, common and Pacific loons.

Expanding the survey results using statistics yielded estimates of higher overall production than in 1990, but not as high as in 1990 for many species (Table 8). Bristol Bay waterfowl production was estimated at (in thousands of broods): 51.4 dabblers, 7.7 divers, 4.8 seaducks (63.9 total ducks), 3.5 tundra swans, 2.6 loons, 2.4 geese, 1.5 sandhill cranes totalling overall 73.2. Several species were documented for the first time with broods including white-fronted and Canada geese, common goldeneyes, black scoters, common eiders, and harlequin ducks. The higher number of survey plots in 1992 likely accounted for this increased detection of the rarer species.

Table 8. Estimates of waterfowl young produced, expanded for the Bristol Bay Lowlands survey area, 1990-1992.

	Year		
	1990	1991	1992
Dabbling Ducks	344,437	202,804	248,659
Diving Ducks	13,014	22,097	45,826
Seaducks	38,590	25,874	27,734
Geese (Canada, White-fronted)	0	0	11,671
Tundra Swans	5,505	6,606	11,450
Sandhill Cranes	5,505	1,652	1,674
Loons	0	1,101	4,135
Grebes (Red-necked)	4,404	0	374
Totals	411,455	260,134	351,523
# Survey Plots	20	40	100
Overall Duck C.V.	.20	.26	.16

As of the end of CY92, it appears that waterfowl brood surveys will not be conducted for Bristol Bay in 1993, due to budget cuts.

5. Shorebirds, Gulls, Terns and Allied Species

Spring Shorebird Counts. In a cooperative effort for the Point Reyes Bird Observatory shorebird counts were coordinated by WB Dewhurst to collect data for the Pacific Flyway spring shorebird survey. Spring shorebird counts were coordinated among the four emperor goose camps along the Bristol Bay/Bering Sea coast (Cinder Lagoon, Strogonof Point, Seal Islands and Nelson Lagoon). The Cinder River survey yielded some fun counts of: 11,300 dunlin, 1,425 godwits (marbled and bar-tailed), 4,800 rock sandpipers, 780 black-bellied plovers, and several other less abundant species. Strogonof Point yielded the only other high counts with 11,200 rock sandpipers and 10,500 dunlin. On a side note, this spring, bristle-thighed curlews were observed in small numbers at all of the emperor camps for the first time, along with the more common whimbrels.

On May 4th, WB Dewhurst was dropped off at the Cinder River emperor goose field camp for a five-day visit. WB Dewhurst assisted Biological Technicians Jennifer Pratt and Mike Fedorka in reading goose collars and

becoming familiar with the research. A shorebird count was coordinated among all the four emperor goose camps in cooperation with the Point Reyes Bird Observatory. The Cinder River survey yielded some fun counts of: 11,300 dunlin, 1,425 godwits (marbled and bar-tailed), 4,800 rock sandpipers, 780 black-bellied plovers, and several other less abundant species. This spring, bristle-thighed curlews were observed at all of the camps, along with the more common whimbrels.



Over 1,400 staging marbled (pictured) and bar-tailed godwits were counted on the mudflats of Cinder Lagoon. 5/8/92, DAD

Marbled Godwit Production. Marbled godwits were first discovered in Alaska in 1881 near the village of Ugashik, on the Alaska Peninsula, but were not documented in the state again until 1967. In 1982, marbled godwits were rediscovered at Ugashik Bay during aerial waterfowl surveys. University of Alaska Ornithologists Dan Gibson and Brina Kessel documented possible breeding behavior and recently fledged young near Ugashik in the early 1980's, and spring and fall staging was confirmed in the Ugashik Bay and Cinder River Lagoon.

Alaska's marbled godwits were recently described as a new subspecies (*limosa fedoa beringiae*) by Gibson and Kessel in 1989. The Alaska population is distinguished from other populations by shorter tarsi, culmens and wings, and more massive bodies. The population is thought to winter along the northern Pacific coast from San Francisco Bay to Washington, but definitive data is lacking.

On May 29th - June 3rd of this year, Fish and Wildlife Biologists (Western Alaska Ecological Services - Anchorage) Mike North and Sandra

Tucker visited the Ugashik Unit, Alaska Peninsula Refuge to search for marbled godwit nesting. Based on published sightings by M. E. Isleib in 1989, Biologists North and Tucker decided to camp and hike a study site south of the Dog Salmon River. Numerous pairs of godwits were encountered as well as many other shorebirds (dowitchers, least sandpipers, greater yellowlegs) and waterfowl. The godwits displayed probable breeding behavior including territorial and interspecies aggression and anxiety behavior, but no nests were confirmed. Mike felt they had searched too early and requested that the Complex staff recheck the site in a couple of weeks.



This marbled godwit nest, discovered on June 23rd near the Dog Salmon River, was the first ever documented in Alaska.
6/23/92, DAD

On June 23rd, WB Dewhurst revisited the study site along with Service Volunteer Dave Anderson and YCC Enrollee Lisa Dion. During 3.5 hours of searching, one nest was found containing two mostly-intact eggshell fragments, with the largest fragment measuring 54mm in length. However, both yellowlegs and godwits acted possessive of the site, so positive nest ownership had to be determined on the basis of nest and eggshell dimensions. The nest was a shallow depression 6 cm deep on a grassy tussock adjacent to a flooded stand of buckbean and horsetails. The depression measured 20 cm in diameter and was sparsely lined with dried grass and grayish down feathers. The egg fragments were sent to the Western Foundation of Vertebrate Zoology where Dr. L. Kiff confirmed their identification as marbled godwit. This confirmed the first ever marbled godwit nest found in Alaska and provided valuable information on nesting habitat!

Based on these findings, the following recommendations were made for follow-up studies: 1) attempt to locate additional nests in the study area during 10-25 June, quantifying vegetation and other nest site characteristics; 2) use satellite imagery to quantify availability of similar habitat along the peninsula; 3) conduct aerial and ground population counts of godwits staging in Ugashik Bay and Cinder Lagoon during spring and fall; 4) capturing and fitting godwits with color tarsal bands to investigate the winter range of the Alaskan population; and 5) collecting further morphological information on the Alaska population. These recommendations would seem to lend themselves to an excellent Masters or PhD project that could be pursued through the Challenge Cost-Share program, but as of this time no follow-up work was funded for 1993.

Seabird/Oil Related Studies: Puale Bay Field Camp.

Sponsored by Exxon Valdez oil spill restoration monies for continuing the wildlife damage assessment projects in 1992, the Complex operated a remote field camp, from June 13th to September 23rd, in Puale Bay, along the Pacific coast of Becharof Refuge. This was the fourth year for this field camp, located near the mouth of Teresa Creek, on the south side of the bay (Figure 5). The camp was staffed by four volunteers (both SCA and Service) with a seasonal biological technician as camp coordinator. Camp objectives included: 1) Population censusing seabird colonies from Puale Bay to Cape Unalishagvak; 2) productivity monitoring of murre and cormorant colonies; 3) beached bird surveys; and 4) collecting murre eggshells for hydrocarbon analysis.

Camp Logistics. The Puale Bay field camp made it out on June 13th, after only two days of delays due to fog and rain. We attempted to prevent last year's expensive false starts by setting out a spike camp on the 9th, using a chartered Cessna 185 on wheels (Windy's Mag Air). MH Mumma and Steve Chase (Washington Office/Budget & Finance) established the spike camp in order to provide current weather reports for the move day; however, a fox chewed through the coax cable, preventing any radio contact! On the 11th, the Katmai National Park Grumman Goose and Pilot Joel Collins were used to begin ferrying loads to the Island Arm portion of Becharof Lake. When the weather began to deteriorate, the decision was made to have Service Volunteer McCarthy and BT Boden camp with the equipment at Island Arm, to prevent theft or bear damage. Finally on the 13th, we were able to continue work and even managed to snag a second helicopter to speed up the slinging efforts to the Puale Bay campsite. Using the two helicopters (Tom Housted - Trans-Alaska Helicopters and Jerry Gray - Kenai Helicopters), we were able to move everything in a record time of five hours. The spike team then switched out with WB Dewhurst and the summer crew consisting of BT Boden and Volunteers McCarthy, Benjamin and Cleary. WB Dewhurst remained at the Puale Bay camp until the 19th to get the study efforts on line.

The usual brown bear precautions were taken in setting up the Puale Bay camp including erecting an electric fence (8.3 kvolts) around the Zodiac boats and four-wheel ATV. These efforts were not in haste, as three sub-adult bears wandered into camp on the 20th of June. The bear trio,



Aerial view of Puale Bay looking north from the mountains along Trail Creek, showing the camp site (white dots on the right) and the seabird cliffs behind camp. 9/6/92, NLB

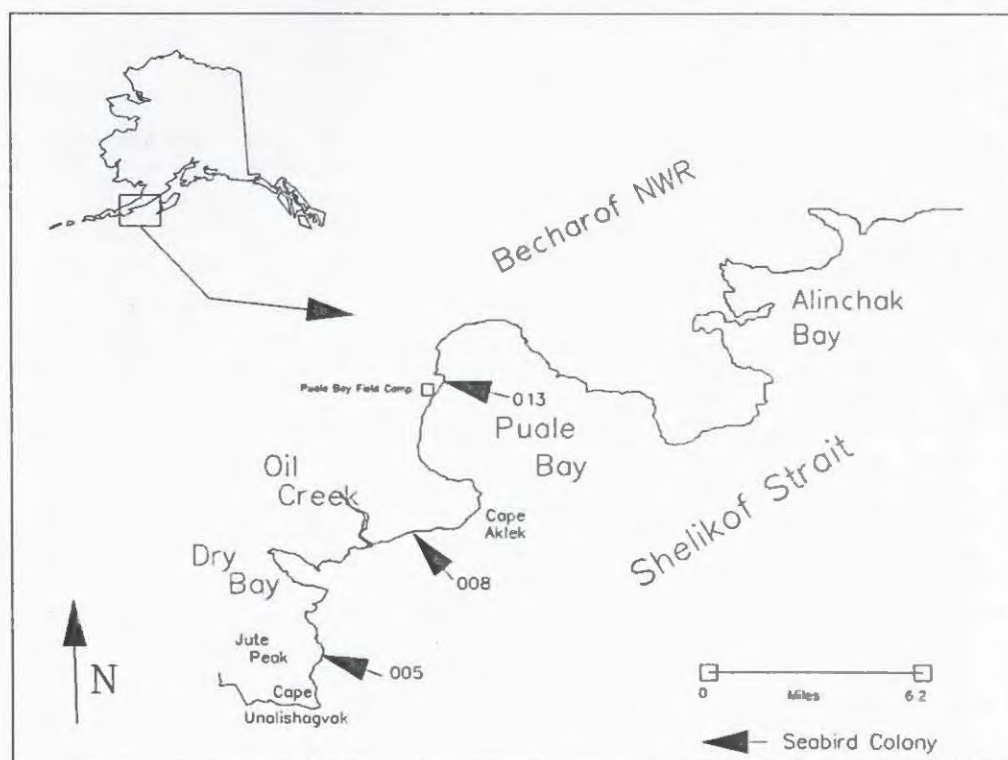


Figure 5. Map of the Puale Bay study area, highlighting the field camp and locations of seabird colonies, Becharof National Wildlife Refuge.

dubbed "the Good, the Bad and the Ugly" had to be hazed from camp using cracker shells.



Horned puffins provide comic relief as one of the more popular, but difficult to monitor, seabirds at Puale Bay.

8/21/92, JHM

Pulling the Puale Bay field camp on September 23rd went smoothly and efficiently this year. A Bell 206 helicopter (Trans-Alaska Helicopters) was used to sling equipment from Puale Bay through the Aleutian Range to a float-plane landing site in the Island Arm portion of Becharof Lake. The mainland beach across from the Complex's administration cabin was chosen as the rendezvous point. From there, the National Park Service's Grumman Goose and a chartered DeHavilland Otter (Katmai Air) were used to transport the gear to King Salmon... all in a record time of six hours. For the staff's super effort, all participants were presented "Spot Awards."

Population Censusing of Seabird Colonies. Approximately 156,580 murres have been reported to breed along the Alaska Peninsula, with most of these birds (74,000 to 93,000) concentrated in colonies around Puale Bay. Censusing of seabird colonies on Becharof Refuge was conducted from July to August to determine if numbers of selected species of breeding colonial seabirds in oiled areas have significantly changed from pre-spill surveys. Species studied emphasized common and thick-billed murres, but also included black-legged kittiwakes, tufted and horned puffins, and red-faced, pelagic and double-crested cormorants. Data from Alaska Peninsula colonies was incorporated into a larger study encompassing the entire spill area. Survey methods involved a combination of land-based plots and total counts from boats. Inflatable boats were used to conduct replicate counts of all colonies.

Replicate counts were initiated for the Puale Bay colonies in 1989, with the establishment of population plots. Counts have been consistently conducted in late July or early August for all years of this study. This corresponded with the time between the peak of egg laying and the peak of chick hatching. Initial counts made in 1989 resulted in a total of 36,433 murres, suggesting a significant decline of 50-60% from pre-oil spill estimates. Four-year trends varied among the 3 colonies (005, 008, 013) monitored. The Jute Peak colony (005) remained around 14,000 birds from 1989-1991, and when the counts of Plots 1-8 and 21 are compared from 1992 with the previous 3 years, the population still seemed stable. The Cape Aklek colony (008) has fluctuated between 20,000 and 17,000 birds over the 4 years (Appendix I). At the same time, the Puale Bay colony (013) increased steadily from 1,976 murres in 1989 to 2,980 murres in 1991. The 1992 count of Colony 013 showed a drop in population to 2,425. The net result was that these yearly fluctuations did not appear significant relative to the overall difference from pre-oil spill estimates, but lack of a complete count of Colony 005 in 1992 prevented actual statistical testing.



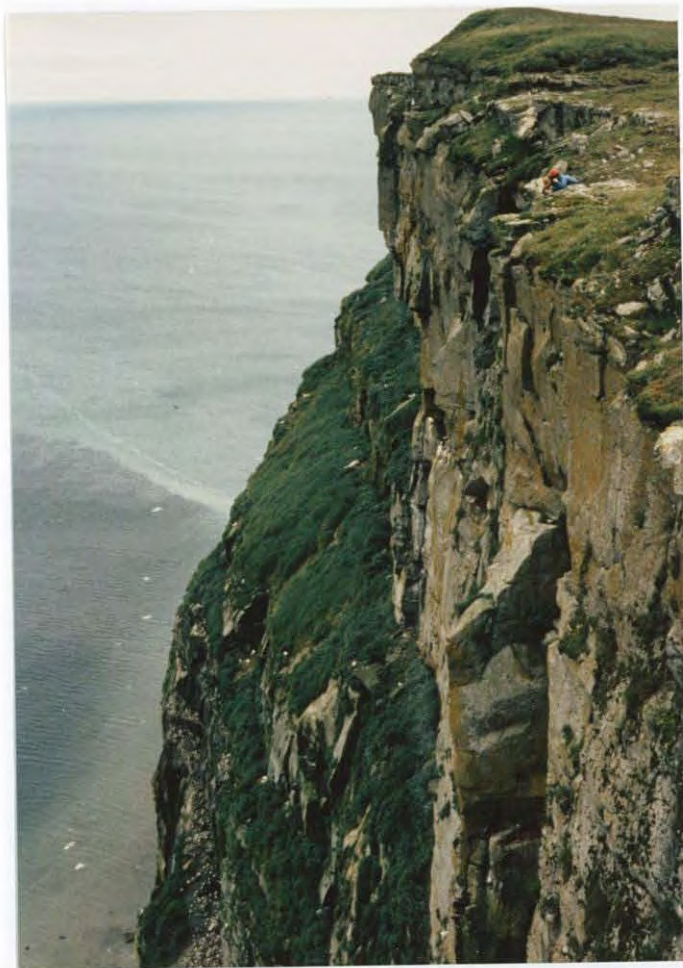
View from a Zodiac of Seabird Colony 008, Cape Aklek showing masses of murres on the water and on the wing prior to settling down to lay eggs.

6/29/90, CJS

Breeding Phenology - Murres. The 1992 murre breeding schedule for Puale Bay was the earliest recorded during the 4-year study with a mean laying date 11-19 days earlier for common murres and 6-16 days earlier for thick-billed murres. In comparison, the Puale Bay murre phenology was still 21-31 days later than that reported for murres in the Semidi Islands and 15-23 days later than at Cape Peirce. Increased fledging success combined with the earlier fledging dates permitted actual

observations of fledging dates. With a sample size of 274 common murre fledglings, the actual mean fledging date was 3 days earlier than the extrapolated date. As an anecdotal note, the evening of 10 September was a clear, calm night with a full moon and the field crew could hear adult murres calling from a distance. That night corresponded to an estimated 50 chicks fledging.

The earlier breeding phenology allowed more observations of murre chicks fledging during the field season. In previous years, field camps departed at the point when remaining chicks were 15 days old with the assumption that these chicks would successfully fledge. The average age of successful fledging increased from 16.2 ± 3.2 days in 1989 to 22.6 ± 3.8 days in 1992 showing a significant increase in chick age at fledging ($p < 0.025$), paralleling increased fledging success and productivity. Since 1989, the breeding phenology has shifted 2-3 weeks earlier corresponding with the increase in time spent chick rearing to create a negative correlation. Given the lateness of the chick rearing period (mid- to late September), the potential existed for survival conflicts between the interests of the parents and offspring.



Not being afraid of heights is a prerequisite for studying seabirds at Puale Bay. Note the safety ropes for observers. 7/26/92, DAD

Productivity - Murres. Reproductive performance was monitored on 10 mixed species (common and thick-billed murres) plots at Puale Bay. Hatching success, fledging success and productivity increased from 1991 to 1992. Productivity at Puale Bay was, for the second time in this study (1991 and 1992), comparable to that previously reported in the Semidi Islands, which averaged around 50%. The increase in productivity from 1989 to 1992 was found to be significant for both common (Fig. 6) ($p < 0.025$) and thick-billed (Fig. 7) ($p < 0.05$) murres. This increasing trend would likely be expected to level off in the near future. If, when, and at what productivity value this might occur still remains to be seen.



Hoary marmots often kept observers company on mountain plateaus over-looking seabird cliffs. 8/23/92, NLB

Populations and Productivity - Cormorants. In 1992, the only nesting cormorants were found in Puale Bay (013) with all 3 species present. Cormorants were seen throughout the colony during boat-based population counts with the majority found in population Plots 3, 6, 4, 9, 10, above Plot 15, and the new Plot 21. Eighty-three cormorant nests were recorded from boat-based surveys, while only 34 nests were visible from land-based observation points. Of the 34 nests where productivity was monitored, species composition included 47% red-faced, 26.5% pelagic and 26.5% double-crested. No apparent pattern was observed for species distribution among the colony groups. No sign of current activity was noted for the large red-faced cormorant colony north of the murre cliff face, which was abandoned in 1991. The nests monitored for productivity this year were on the same face of the colony as the murre productivity plots.

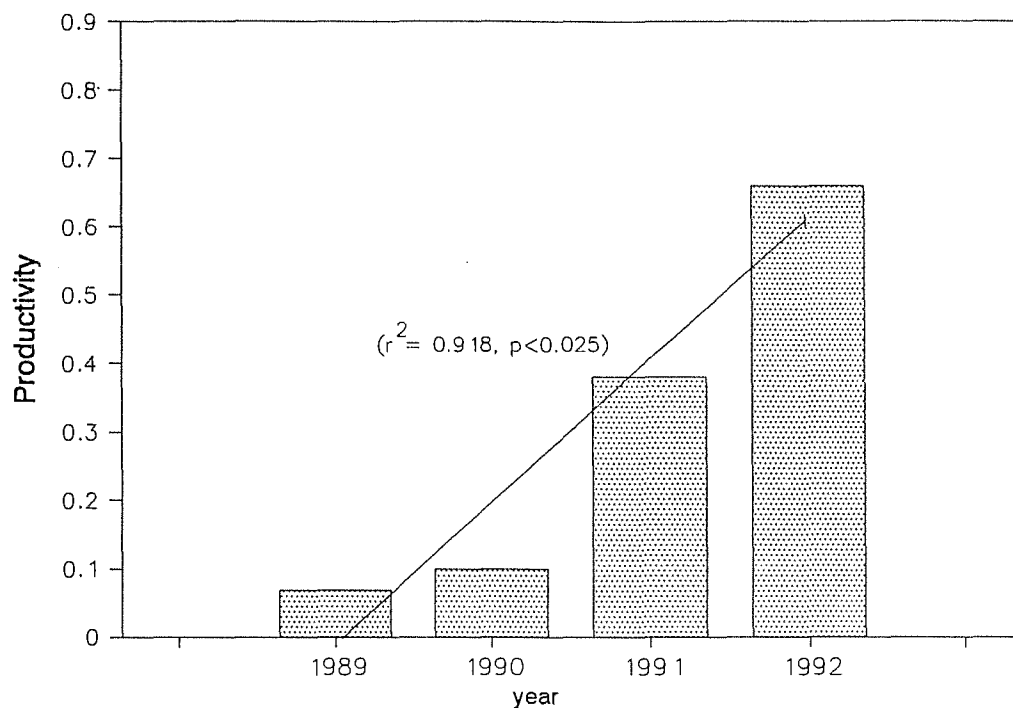


Figure 6. Common murre productivity, Colony 013, Puale Bay, Becharof National Wildlife Refuge, Alaska Peninsula, Alaska, 1989–1992.

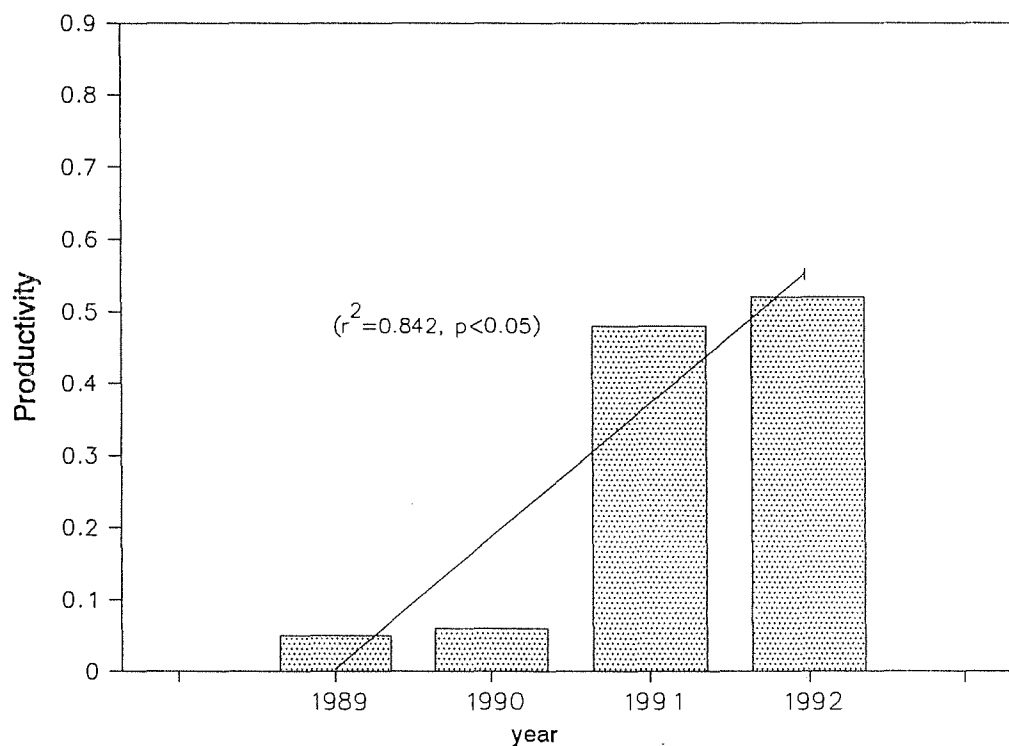


Figure 7. Thick-billed murre productivity, Colony 013, Puale Bay, Becharof National Wildlife Refuge, Alaska Peninsula, Alaska, 1989–1992.

Cormorant productivity plots were initially established on 7 July, with new plots discovered on 5 August after most of the cormorants had built nests. Four plots consisting of groups of nests were established this year. Cormorant fledging was documented for the first time in this 4-year study, providing the only complete look at local reproductive phenologies. However, sample sizes were small for calculations of brooding times and fledging dates



This double-crested cormorant conveniently nested only about 10 feet below one of the productivity observation points.

8/31/92, NLB

Productivity of all 3 species was the highest ever seen at Puale Bay, although with such few nests, eggs, and chicks observed, the 90% confidence limits associated with reproductive success were very large.

Double-crested cormorants showed the highest productivity with 2.8 fledglings/nest. Productivity from other colonies could not be found for comparison, although if we compare the fledging success (chicks fledged/nests with eggs) of Puale Bay with the average fledging success of 0.82 chicks fledged/nests with eggs from 1982 to 1985 found at Lake Louis and Skilak Lake, Puale Bay's fledging success was higher.

Conclusions of Puale Bay Seabird Studies. At this time, no funding has been approved to continue the Puale Bay seabird study in 1993. Murres appear to be on the road to recovery in the Puale Bay area colonies. Productivity has steadily increased since 1989, with an earlier reproductive phenology and longer chick brooding prior to fledging. However, timing of murre reproduction was still weeks later than similar colonies in Alaska. Cormorant colony attendance was too variable over

the study period to determine any population trends, but good productivity was recorded in 1992. The black-legged kittiwake population at Jute Peak (Colony 005) has remained relatively constant and has expanded into new sections of the colony cliffs. Yet no work was ever accomplished on kittiwake productivity. Continuing population and productivity monitoring will be essential to evaluate the long term effects of the oil spill to these populations.



Despite frequent challenging weather, the Puale Bay field camp, over the past four years has provided invaluable biological experience for over 25 volunteers and seasonal staff and many fond memories.

9/11/92, NLB

7. Other Migratory Birds

The 7th annual King Salmon-Naknek Christmas Bird Count took place on January 3rd, 1993. Local results were submitted to the National Audubon Society, which sponsors and publishes results in the ornithological journal American Birds. Even though the count is not held on Complex lands, Alaska Peninsula Refuge coordinates this event. Eight volunteers donated their Sunday to seek out birds from Lake Camp to Pederson Point.

The weather was exceptionally good, but the Naknek River was mostly frozen limiting the amount of waterfowl wintering locally. A low of 15 different species were spotted with a total count of only 576 individuals. One new species (McKay's buntings) was observed and high counts were recorded for two species (adult bald eagles, snow buntings) (Table 9).

Table 9. Species composition and numbers of birds recorded in the King Salmon-Naknek Christmas Bird Count, 1986-1992.

Species	1986	1987	1988	1989	1990	1991	1992
Greater scaup	0	0	0	2	0	0	0
King eider	0	0	0	2	0	0	0
Oldsquaw	0	0	1	0	0	0	0
Common goldeneye	30	0	2	340	0	19	12
Common merganser	293	1,259	44	827	767	124	141
Red-breasted merganser	0	0	1	147	70	0	0
Merganser sp.	125	0	0	117	49	484	26
Duck sp.	0	0	0	36	0	0	0
<u>Bald eagle</u> - <u>adult</u>	8	14	4	8	5	11	16
immature	2	2	2	4	3	6	6
unknown	0	3	1	4	1	0	0
Northern goshawk	0	0	1	0	0	1	0
Peregrine falcon	1	0	0	0	0	0	0
Willow ptarmigan	0	1	0	24	47	3	1
Glaucous-winged gull	0	60	80	107	0	101	2
Mew gull	0	0	0	0	0	26	0
Gull sp.	0	0	3	2	0	535	1
Rock dove	1	0	0	0	0	0	0
Boreal owl	0	0	0	0	1	0	0
Northern hawk owl	0	0	0	0	0	1	0
Owl sp.	0	0	0	0	2	0	0
Downy woodpecker	0	0	0	0	2	0	1
Three-toed woodpecker	0	0	0	0	0	1	0
Gray jay	0	0	21	38	11	9	7
Black-billed magpie	42	26	41	40	65	37	28
Common raven	231	246	285	237	226	231	187
Black-capped chickadee	20	5	18	23	63	26	36
Boreal chickadee	4	3	0	7	9	7	6
Chickadee sp.	0	6	0	29	0	0	0
Northern shrike	1	3	0	1	0	3	3
White-crowned sparrow	1	0	0	0	0	0	0
<u>Snow bunting</u>	0	0	0	1	31	1	38
McKay's bunting	0	0	0	0	0	0	2
Pine grosbeak	4	0	10	36	0	4	32
White-winged crossbill	0	0	0	175	0	0	0
Common redpoll	19	0	60	71	4	0	13
Hoary redpoll	0	0	0	0	3	0	0
Redpoll sp.	0	0	0	99	12	9	18
Fringillidae sp.	0	0	0	85	0	0	0
Totals	782	1,628	574	2,467	1,399	1,639	576

^aNew species recorded during 1992 count are highlighted in bold print.

^bSpecies recorded in record high quantities are underlined.

The 1st annual (officially) Christmas Bird Count was conducted in the Kejulik River Valley of Becharof Refuge this year by area residents Phil Shoemaker, his wife Rochelle Harrison and kids (Tia and Taj) on January

1st, 1993. Phil Shoemaker and his family homestead on a private inholding in the valley. Both he and his wife have college degrees in biology. Their count results included: 6 - mallards; 2 - bald eagles; 16 - willow ptarmigan; 1 - rock ptarmigan; 1 - black-billed magpie; 4 - ravens; 3 - black-capped chickadees, 2 - northern shrike; 1 - American dipper; 30 - snow buntings; and 12 redpoll spp. This was the first Christmas Bird Count ever conducted on the Complex, and hopefully next year, some of our staff will be able to participate to support its continuation.

8. Game Mammals

Both the Alaska Peninsula and Becharof refuges are open to sport and subsistence hunting of game animals. A complete discussion of harvest is found in Section H.8. This section deals with the population biology of several large game mammals found on the refuges.

Brown Bear: Black Lake Bear study - Alaska Peninsula.

The need for baseline data on brown bear population parameters on the Alaska Peninsula was the primary motive for this study. The bear population at Black Lake in the Chignik Unit, Alaska Peninsula Refuge was chosen as the study site. Earlier studies in this area provided an opportunity to compare characteristics of a heavily overexploited population with those of the current population. Bears in the earlier study were tagged during 1970-1975, excluding 1973, by Alaska Department of Fish and Game (ADF&G). During these studies 344 bears were handled 489 times and 136 of the bears were taken by hunters. The number of bears captured in the current study by years were 59, 40 (including 7 recaptures), 5, and 43 (including 26 recaptures) in 1988-1991 respectively. In total, 102 radio collars, including 22 with break-away features and 19 glue-on radios were deployed. As of the end of 1992, 28 females and no males still have working telemetry collars. Seven collared bears were taken by hunters during the 1992 spring season. As a side note, all but one of the marked bears taken by hunters have been associated with commercial guiding activities.

The Capture-Mark-Resight estimate of population density was completed in 1989 with a calculated density of 191 bears/2.02 mi², ranking this population the 5th highest among nine areas in Alaska where these estimates have been made. Bear densities at Black Lake ranked behind Katmai Coast, Admiralty Island and two areas on Kodiak Island. Bears at Black Lake were over seven times more dense than in any study in interior Alaska.

Preliminary survival rates were calculated to be: 55% - newborn cubs; 84% - yearling cubs; 89% - adult females; and 79% - adult males. Over 1,700 relocations have been recorded since 1988, and 28 bears (all females) with functioning radio collars entered dens in the winter of 1992/93.

Bear/Stream Surveys. Annual bear/stream surveys were initiated on August 5th, utilizing Pilot Chris (J.M.) Christensen, on loan from the Department of Agriculture-Animal Damage Control in Utah and the National Park Service's supercub. Maintenance Helper Mumma served as observer for the first week to orient the new pilot to the survey methodology.

Sometime during the dark, early, morning hours on the 11th, a bear caused minor fabric and structural damage to the plane's elevator. The plane was fitted with a new elevator and put back into service. The crew had been operating out of "Bible Camp" on the shore of Becharof Lake when the plane was attacked. The Bible Camp participants, during the weeks before our use of the area, had created a problem bear (unknown to the crew) by allowing it into garbage and to loiter near the buildings. It should have been harassed away from the area, but they were "enjoying" the bears presence. The plane had been parked next to the building and for several nights had not been bothered. It was obvious we could not put an aircraft at risk again by continuing to base out of that airstrip/location.



Not all bears were as active of fishermen as these two sub-adults. Salmon provide the primary food for bears in August. 8/10/92, NLB

The camp was moved to the Island Arm administrative cabin site and the surveys commenced again on the 15th using a Supercub w/floats on loan from Yukon Delta Refuge. WB Dewhurst took up the duties as observer. Bad luck again struck when a hole was discovered in one of the plane's floats, causing termination of the surveys on the 20th.

Despite all the misfortunes and a run of bad weather, sixteen replicates were conducted over the survey area (Becharof Lake/Island Arm, Ugashik Lake, and Bible Creek/Kejulik River drainages). Survey techniques were modified in 1990: a) to standardize the distance traveled up each stream; and b) to add streams omitted in previous years' surveys.

Additions included Bible Creek, the Kejulik River drainage, Ore creek, Lodge Creek, and the side branches of Mumma Creek. High counts were: Island Arm - 92; Ugashik Lakes - 33; Kejulik Valley - 56; and Bible Creek - 24. No high count records were broken, but the counts did average above the median on all survey years combined.

Comparisons from previous year's surveys showed an increase in the number of single bears observed with an overall second only to last year (Fig. 8). Red salmon escapement into the Becharof Lake system was very high this year, despite intensive commercial fishing around Egegik Bay. This year's salmon catch at Egegik broke all previous records, exceeding the capacity of local canneries and offshore processing. This record number of fish likely helped support above average numbers of bears feeding along the Island Arm spawning streams.

Field Camp Bear Encounters. During the 1992 field season, June through October, detailed records of encounters and observations of brown bears were kept by Fish and Wildlife Service field camps at Puale Bay, Becharof Lake/Island Arm and Ugashik Lakes, continuing a four-year study. Seasonal field camps on the Alaska Peninsula in 1989-1992 enabled documentation of 648 human/brown bear interactions, with no hostile encounters. Visual observations of bears comprised 68% of the interactions and required no bear hazing. Hazing was conducted only when bears immediately threatened personnel or where found within the field camp parameter. When away from camp, field crews always practiced avoidance as the first action, followed by hazing only if avoidance was not possible. During the study, 155 human/bear interactions required use of hazing techniques including waving/shouting, cracker shells, flares, flare/cracker shell combinations, shots in the air, rubber slugs, loud music, and 4-wheeler noise with an overall 65% effectiveness resulting in bear avoidance. Variations in voltage were determined to cause no difference in electric fence effectiveness of deterring brown bears. When comparing the sex/age distribution of interactive bears, subadults were found to be the most common in both hazing encounters and general observations. The effects of bear habituation, habitat type, time of day, and interaction distances were also evaluated relative to hazing need and success.

The peak of bear activity on the Alaska Peninsula, as recorded by frequency of observations, not surprisingly coincided with the peak salmon spawning in coastal streams and inland tributaries (Fig. 9). Generally, as salmon abundance increased and peaked in early to mid-August, so did bear encounters. The frequency of hazing encounters also peaked in late July/early August, but also displayed a second peak in mid-September (Fig. 10). The July/August peak likely corresponded to the peak of bear abundance and since field camps were usually located near salmon streams, hazing encounters occurred at a high frequency. The second peak in September probably related conclusion of the salmon runs, forcing bears to seek other food sources. During September, bears seemed to become increasingly bold and approached camps with greater frequency and intensity. September hazing encounters typically required more hazing responses, required more severe hazing methods, and hazing success was often short lived as these bears usually displayed remarkable persistence by returning repeatedly.

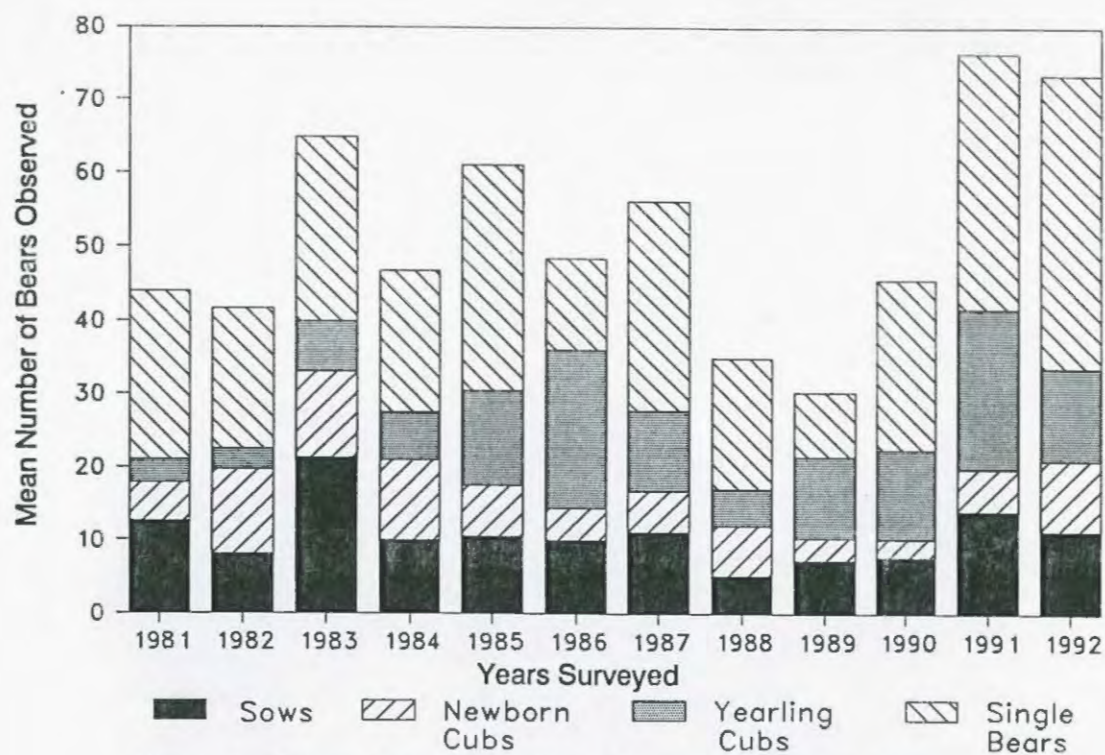


Figure 8. Sex and age composition of bears observed on bear stream surveys in the island arm portion of Becharof Refuge, 1981-1992.



Salmon streams around Becharof Lake still supported higher than average densities of brown bears feeding on sockeyes.

8/13/92, NLB

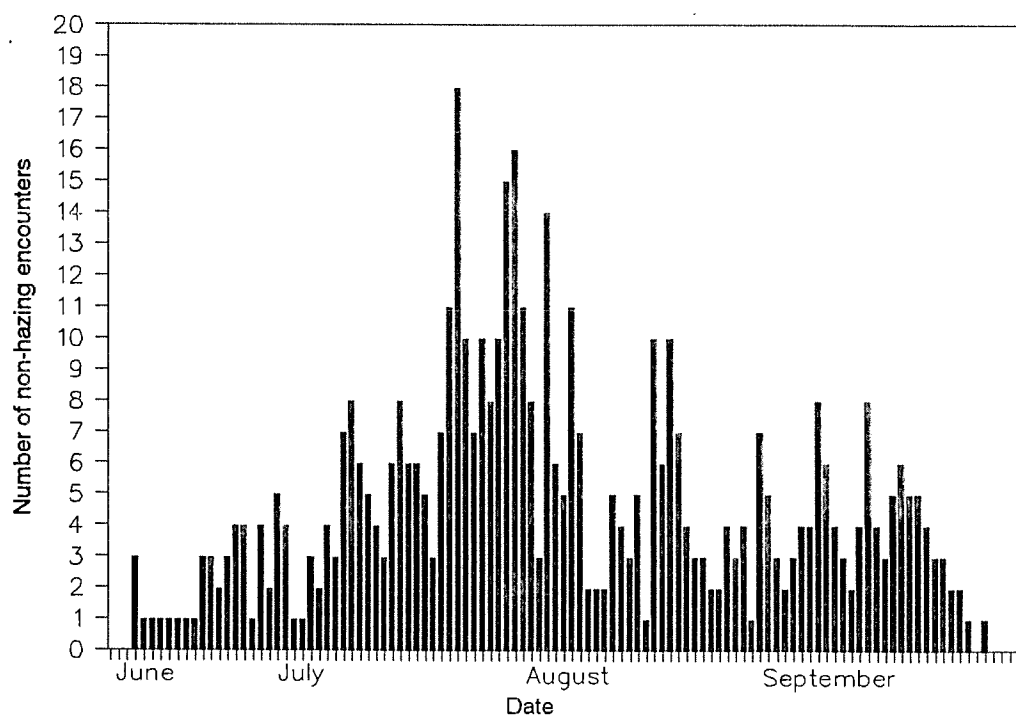


Figure 9. Seasonal distribution of brown bear non-hazing encounters, Alaska Peninsula, Alaska, 1989-1992.

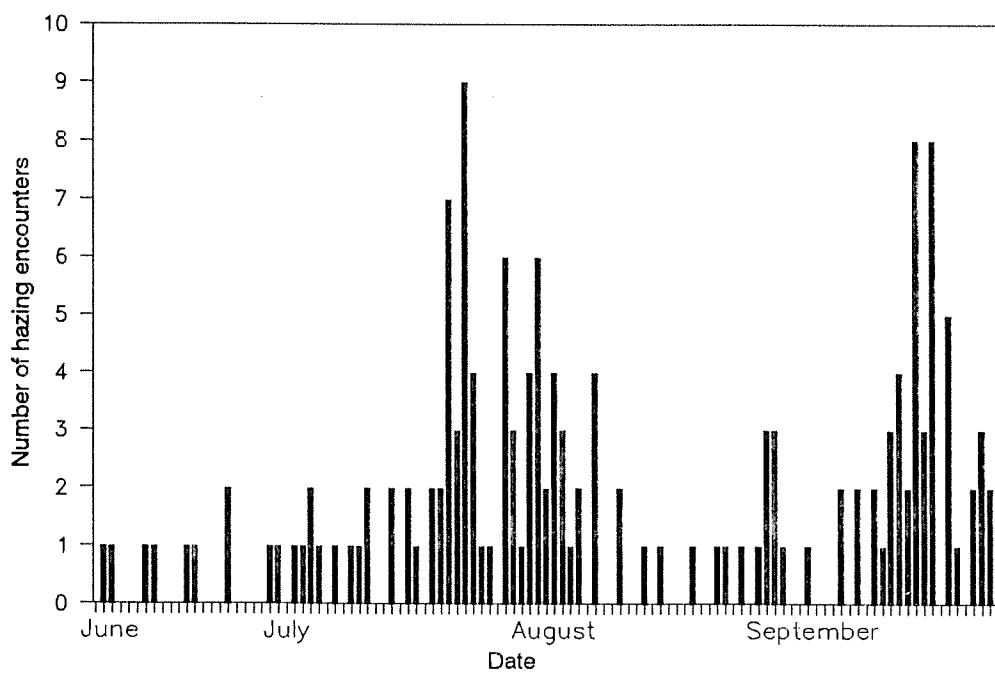


Figure 10. Seasonal distribution of brown bear hazing encounters, Alaska Peninsula, Alaska, 1989-1992.

Bear activity patterns usually showed the greatest activity during early morning and late evening hours. Most bear observations were limited to 0700-2300 during the period of greatest human activity and also when adequate daylight permitted observation. Bear hazing encounters were generally more common during early evening especially between the hours of 1600 and 1900, coinciding with the time of day field crews usually return to camp to cook supper.

The distance with which an encounter occurred had a strong influence on whether or not the bear encountered was hazed (Fig. 11). Beyond 400 yards no hazing was attempted. Sixty-eight percent of all encounters <50 yards were hazed while only 15% of all encounters >50 yards had hazing involved. These hazing situations do not necessarily reflect aggression from bears at these distances but rather the decision of camp personnel to haze.

Personal preferences with hazing methods from 1989 to 1992 showed that shout/talk/wave and shots fired in the air were used most at 51-100 yards, flares were used most at 51-300 yards, and cracker shells and rubber slug/bird shot were used most at <25 yards. Each hazing encounter has different situations which should dictate what hazing method is most appropriate. Common sense and proper training should be used in every hazing encounter. The success of all hazing methods mentioned was high, however, all hazing methods were unsuccessful at ranges >300 yards. These hazing distances should be taken only as general guidelines for effective use of the specific hazing techniques.

Barren-ground Caribou. The Alaska Peninsula caribou herd is subdivided into northern and southern herds. The southern herd remains south of Port Moller and ranges to Cold Bay, and is monitored by ADF&G, assisted by Izembek Refuge. The northern herd ranges from Port Moller northward to the Naknek River drainage, utilizing both the Alaska Peninsula and Becharof refuges. The northern herd is managed by ADF&G, assisted by Complex staff.

Historically, the size of the northern herd fluctuated widely with apparent peaks just prior to the turn of the century, and again in the early 1940's when the population was estimated at 20,000 caribou. The last population low occurred during the late 1940's with an estimated 2,000 caribou. Since that time the herd experienced steady growth until 1984 when the population peaked at 20,000 (Figure 12). The population experienced a small decline started in 1989, but has started to increase again in 1992. ADF&G management objective for the herd has been to maintain stability in the range of 15,000-20,000 animals. Counts recently have gone from the top of that range to the bottom in three years. Factors theorized to be involved in the decline include: decline in productivity of the herd and increased harvest pressure due to caribou being available along the road system.

Composition of the northern Peninsula herd (bull/cow/calf), surveyed in the fall, has demonstrated a decrease in productivity from 1987 to 1990; however, productivity increased in 1991 and has remained stable through 1992 (Figure 13).



The Puale Bay field camp crew hazed this radio-collared sow and yearling cubs with cracker shells after discovering them playing around the camp's trash burning barrel.

7/92, LC

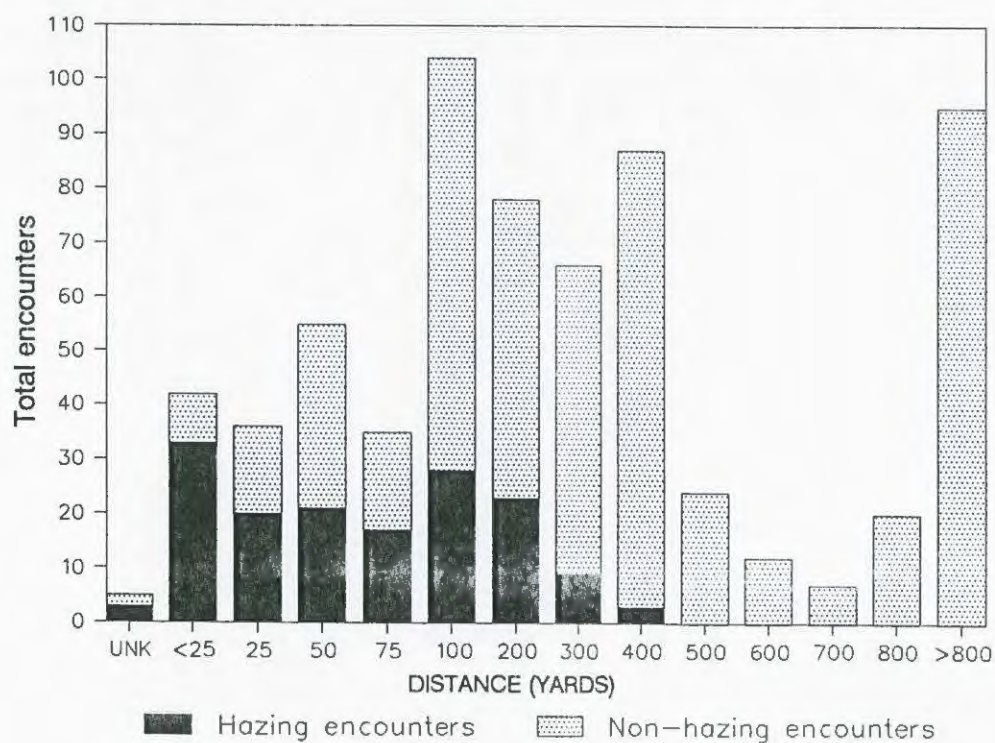


Figure 11. Total bear/human encounters for each estimated distance range, Alaska Peninsula, 1989-1992.

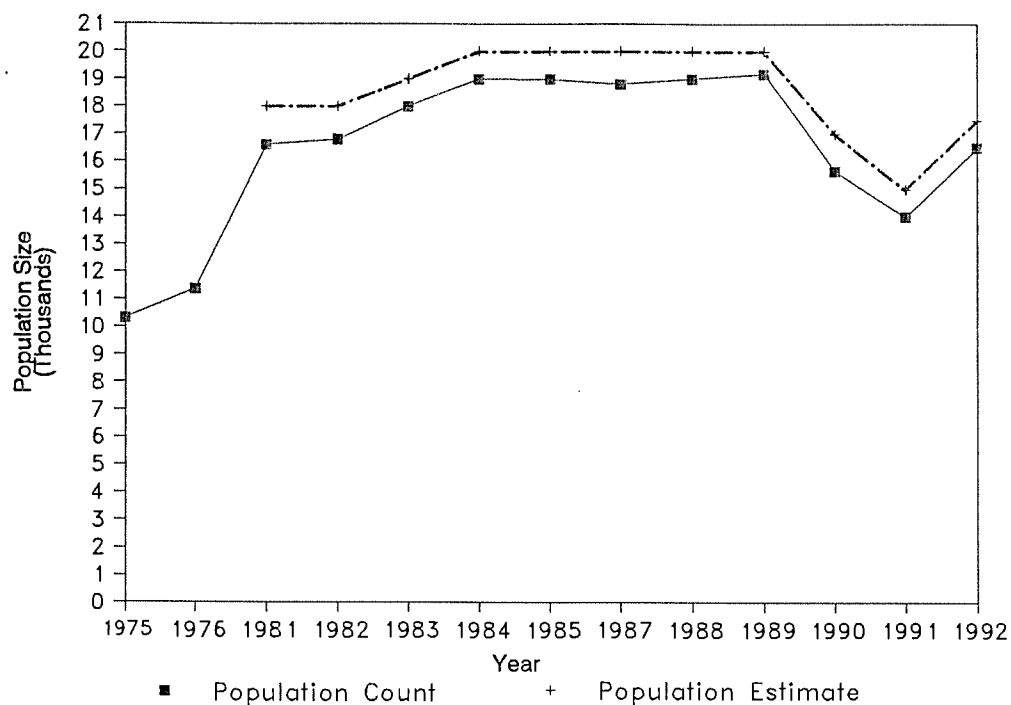


Figure 12. Observed and estimated population size trends of the Northern Alaska Peninsula caribou herd, 1975–1992.

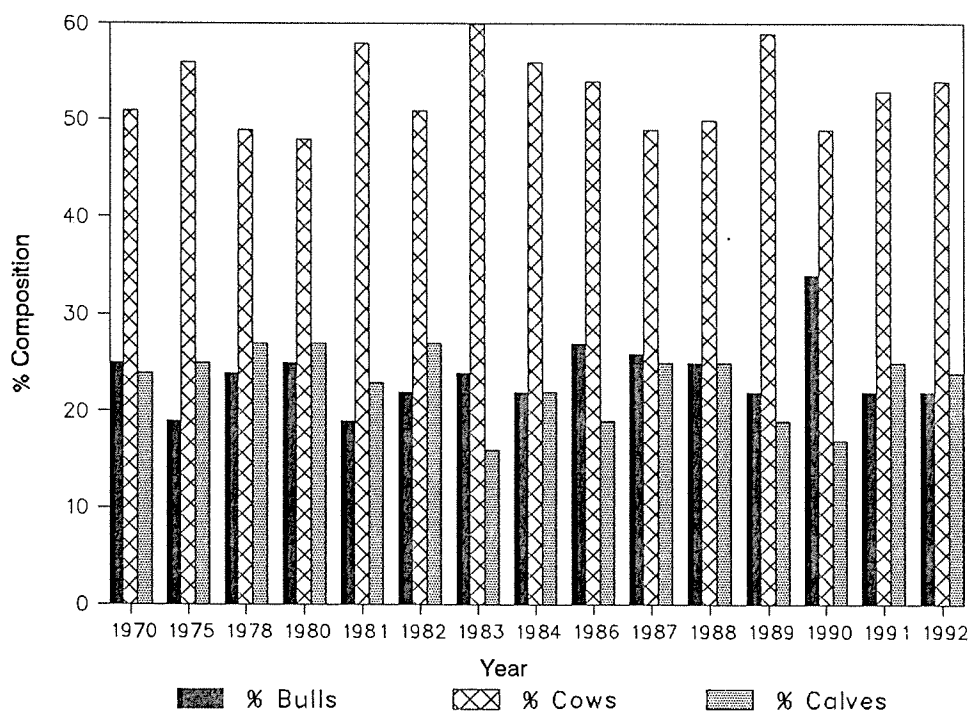


Figure 13. Composition changes of the Northern Alaska Peninsula caribou herd, 1970–1992.



The average-sized caribou in front is dwarfed by the trophy-sized bull following him. 8/92, ME

The northern herd's primary calving grounds are in the Bering Sea flats between Cinder River and Sandy River. Historically there had been no caribou spending the summer in the Alagnak/Big Mountain area, but in recent years several groups of mostly bulls have been seen. During 1989, for the first time, calving was documented in the hills between King Salmon Creek and the Alagnak River; however, it is not known if these caribou were originally from the Mulchatna or Northern Peninsula herd.

In recent years the post calving migration north has progressed earlier, with most of the herd moving north of the Egegik River by August 1. Traditionally this herd wintered between the Egegik and Naknek Rivers. However, starting in 1986, the northern herd expanded their winter range across the Naknek River northward to the Alagnak River, eventually overlapping with the Mulchatna herd. During the mid-winter months, the Northern Peninsula herd intermingles with virtually the entire Mulchatna herd between the Naknek River and Lake Iliamna. Radio collared caribou from both herds confirmed to be associated in the large groups. The presence of perhaps 40,000-50,000 caribou of both herds within this area represented a major shift in winter distribution. A combination of deteriorating range conditions and deep snow are speculated to have caused the shift in distribution. In 1992, caribou migration paralleled 1991 with the herd bypassing the King Salmon area by crossing near the Naknek Lake outlet and quickly proceeding north of Sugarloaf Mountain,

demonstrating an even further northward push than in recent years. Now there is a growing concern over future depletion of this new common wintering ground. Interestingly, spring radio tracking has revealed that the caribou apparently sort themselves out, back into the original herds prior to migration back to the calving areas.

Moose. Moose did not become abundant on the Alaska Peninsula until the 1940's to 1950's. Range expansion from the Lake Clarke/Lake Iliamna area boosted the Peninsula populations allowing for the first sport moose hunting in the mid 1950's. However, the Peninsula's population declined in the mid-1960's to the early 1970's, attributed to poor browse situations. Beginning in the early 1970's, ADF&G liberalized the moose hunting season to bring the population in line with the carrying capacity of the range (Fig. 14). The liberalized seasons resulted in a composition disparity of many older animals with fewer younger animals. This was attributed to younger animals being more susceptible to the gun. As a result the population decline continued, compounded by loss of recruitment animals to predation by brown bear, especially on moose calves. In the late 1970's, ADF&G instituted trophy only (bulls with greater than 50 inch antler spread or three brow tines) restrictions on hunter take. As a result, the percentage of cows was allowed to increase helping stabilize the population. In 1986, the management goal of 40 bulls per 100 cows was reached, and current efforts are to maintain the population at this level.

Annual aerial moose surveys, by Complex staff, are conducted to supplement similar surveys done since 1981 by ADF&G. The Complex conducts surveys on Bible Creek and the Kejulik River on Becharof Refuge. The ADF&G surveys are done at the extreme northern boundary of Becharof Refuge, partially within Katmai National Park and the Dog Salmon River drainage on the Ugashik Unit. Lack of adequate snow coverage and budgetary support prevented the Complex staff from surveying the Kejulik River Valley in 1992; however, ADF&G was able to survey the Dog Salmon River and the Park boundary area for the first time in a couple of years.

See Section G.18. for efforts regarding subsistence species surveys.

Moose sex/age composition trends from the Dog Salmon River drainage seem to indicate a stable overall population since the 1980's, but this represent only about half of the animals present during the 1960's (Fig. 14). The number of medium-large bulls shows a steady decline since 1983 (note 1988 was only a partial survey) (Fig. 15). Park Boundary moose population size and composition trends during the 1980's closely paralleled that of the Dog Salmon River (Figs. 14 and 16). However, an overall increase was noted along the Park Boundary between 1990 and 1992, making it the highest count since the survey's initiation. This increase occurred for all sex and age classes of moose along the Park Boundary (Figs. 16 and 17). The differences between moose of the Dog Salmon River and along the Park Boundary may be attributed to higher hunting pressure along the Dog Salmon River and that Katmai National Park provides an unhunted reservoir of animals to help support the boundary population.

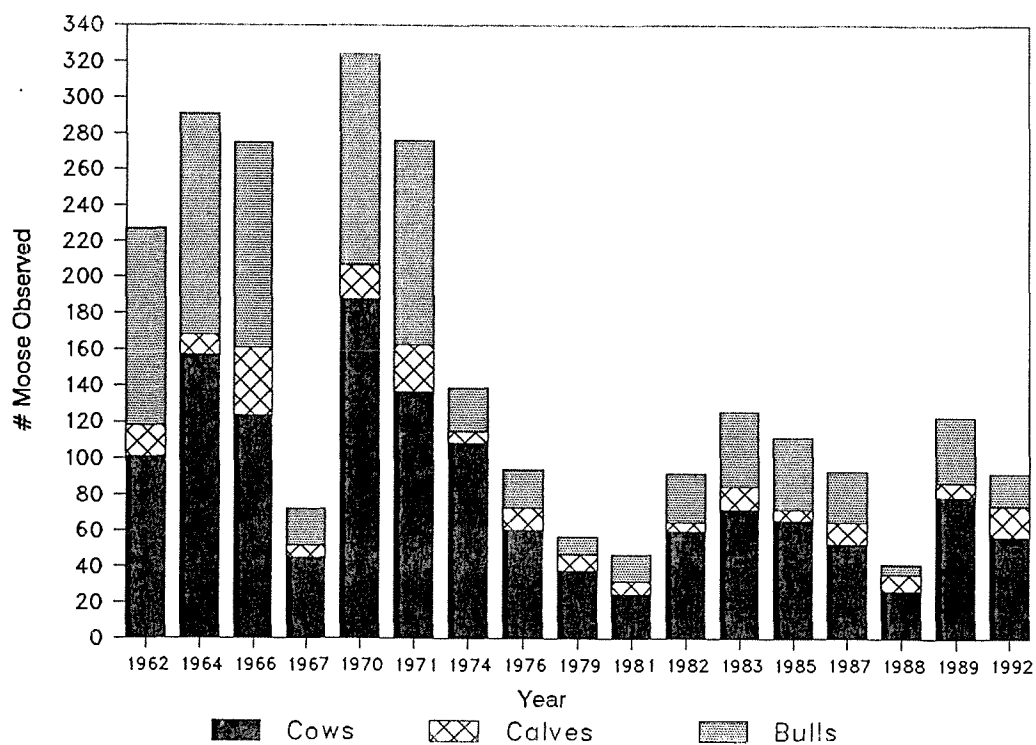


Figure 14. Composition changes in moose surveyed along the Dog Salmon River drainage, 1962–1992.

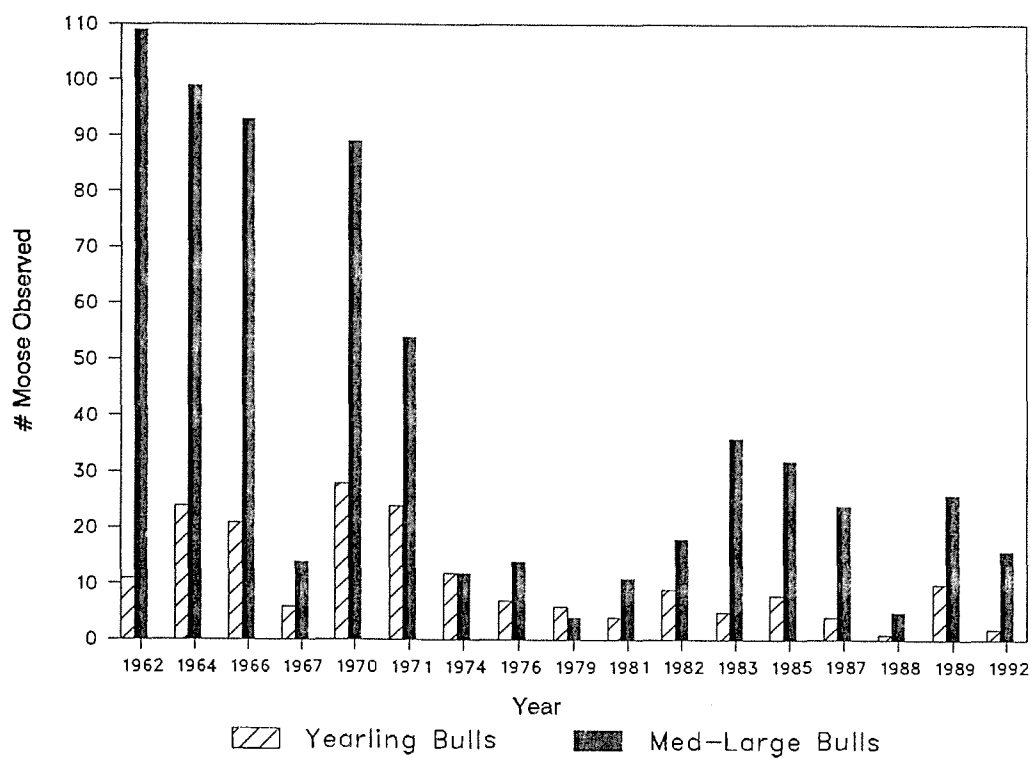


Figure 15. Size class trends of bull moose surveyed along the Dog Salmon River drainage, 1962–1992.

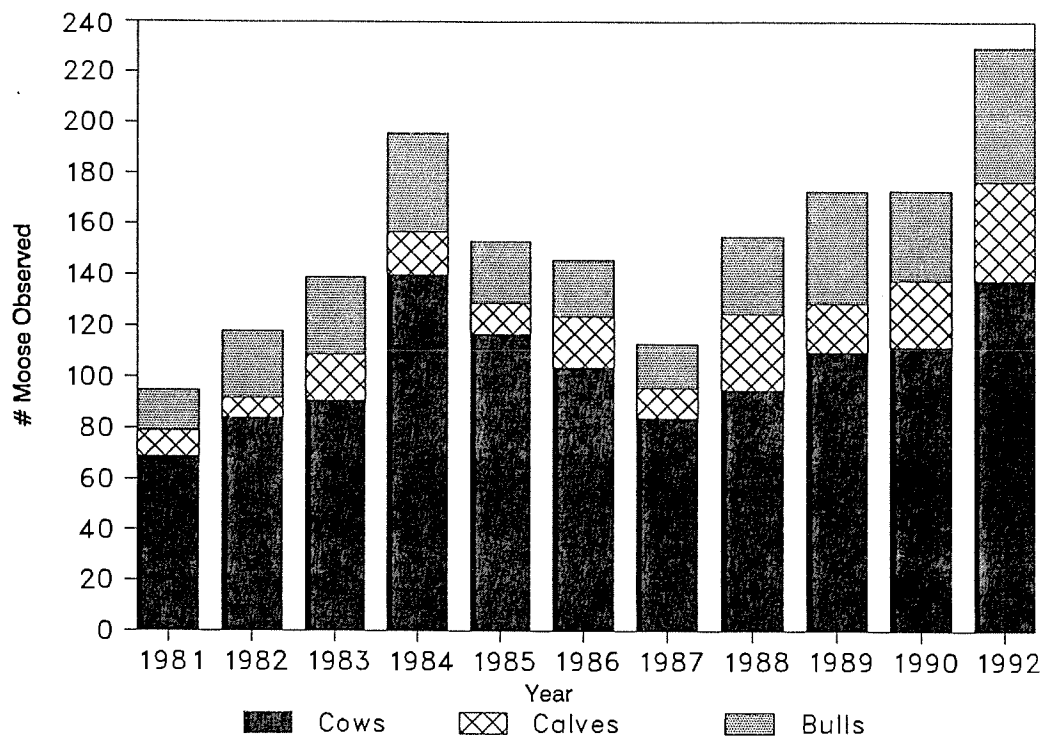


Figure 16. Composition changes in moose surveyed along the boundary between Becharof Refuge and Katmai National Park, 1981–1992.

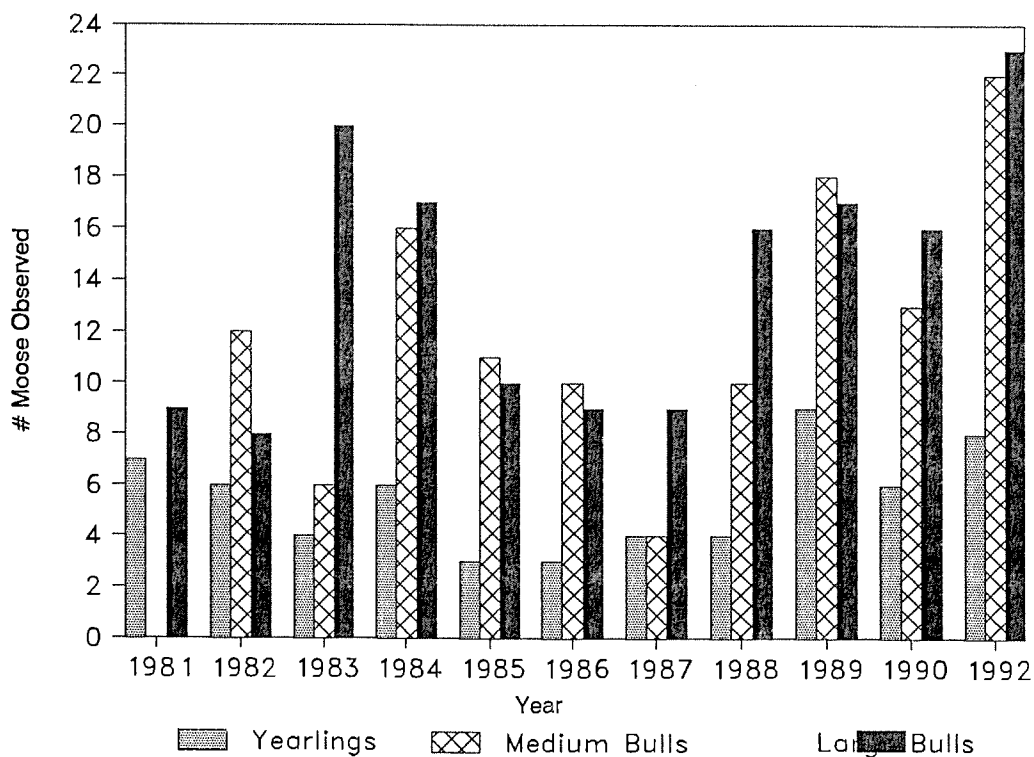


Figure 17. Size class trends of bull moose along the boundary between Becharof Refuge and Katmai National Park, 1981–1992.

Mountain Goats. On May 5th, RIT Knutsen discovered a goat skull on Cape Unalishagvak, approximately 1.4 miles southeast of Jute Peak, along the upper reaches of an un-named stream. The skull was located among some dry leaves, under an alder bush, about 200 feet above sea level. The skull had a small amount of moss growing on one corner, but was otherwise clean from any flesh or other debris. The skull had spike horns, about two inches long.

The skull was sent to the University of Alaska Museum in Fairbanks for positive identification. The museum's Mammal Collection Manager, Gordon Jarrell, confirmed the identification as a mountain goat. Based on the amount of suture closure, the skull was thought to be one of a young adult.

This was quite a find for the Alaska Peninsula... the nearest range for mountain goats is about 50 miles east on the far side of Kodiak Island, where a small introduced population lives. The nearest natural range would be along the Kenai Peninsula (Fig. 18). However, local Aleut elders claim mountain goats existed in what is now Katmai National Park around the turn of the century. Clearly, the discovery of this mountain goat skull poses several questions we can't answer at this time, but are excited about looking into this more in the future.

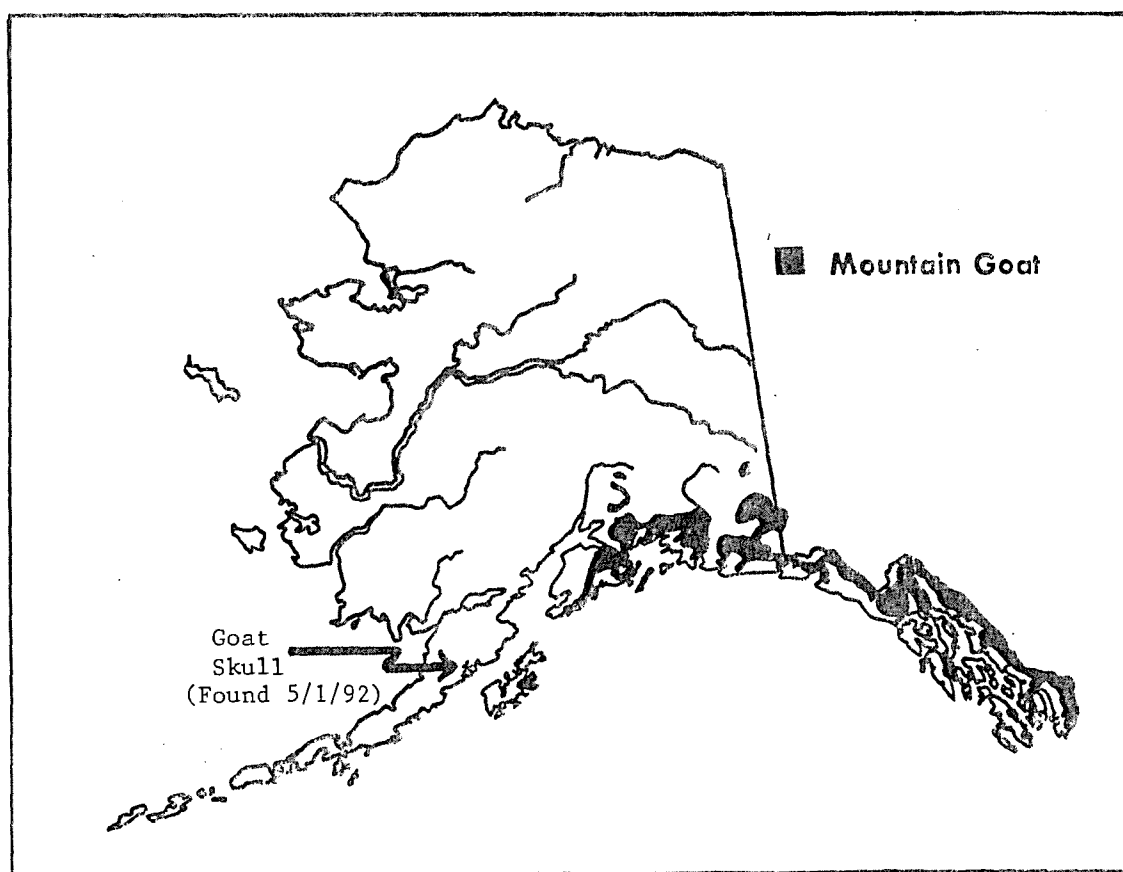


Figure 18. Location of the mountain goat skull relative to the range of mountain goats (shaded areas) in Alaska

11. Fisheries Resources

At the present time, all fishery resource studies are conducted for the Complex by the King Salmon Fishery Resource Office (KSFR0). Even with their assistance, the need for a staff fishery biologist continues to be of paramount need. Wildlife resources and the public, alike, heavily utilize the fish resources and little is known about them.

Southwest Alaska Rainbow Trout Investigations: Gertrude Creek and other tributaries of the King Salmon River (Egegik drainage). Preliminary information indicated that the rainbow trout population in Gertrude Creek, Becharof Refuge, consists of old fish that are vulnerable to over-exploitation. Results from tagging data in 1990-91 indicated that these fish exhibited considerable movements among Gertrude Creek and other tributaries of the King Salmon River. To document the timing of and movement to overwintering and spawning areas, radio transmitters were surgically implanted into 39 rainbow trout during fall of FY91. Monthly aerial tracking surveys indicated that all these fish had moved from the creeks into the river by early January. Most of these fish remained in the river until May when most returned to the creeks for spawning.



Underwater view of a rainbow trout being acclimated prior to release after being tagged. 6/92, KSFR0

The last sampling period of the study was conducted during the end of May when an additional 150 rainbow trout were captured. This increased the total number of rainbow trout captured for the entire study to over 1,000. Lengths of all these fish ranged from 27-656 mm; weights from 1-

2,850 g. Ages ranged from young-of-the-year (age 0) to 10 years. Data analysis continues with a final comprehensive report to be completed in FY93.

Steelhead Trout Investigation. The second year of a 2-5 year project funded by the Fishery Resource Monitoring Program, Global Climate Change Work Group was completed in Fiscal Year 1992. The purpose was to document the effects of global warming on the distribution of steelhead trout on the Alaska Peninsula. It is hypothesized that global warming will increase stream temperatures and allow steelhead trout to colonize watersheds north of their existing range. Four drainages of the Alaska Peninsula Refuge were sampled: the King Salmon River-Mother Goose Lake drainage of the Ugashik Unit; and the Meshik River, Chignik River, and Sandy River drainages of the Chignik Unit. Steelhead trout were captured only from the Sandy River drainage. Twenty-three juvenile steelhead trout exhibited lengths that ranged from 49-158 mm with ages from 0 (young-of-the-year)-2 years. Six adult steelhead trout exhibited lengths that ranged from 328-465 with ages from 5-6 years. All of the adults had spent two years in freshwater before entering the sea. It appeared that most adults were annual spawners. Based on the limited sampling effort, it appears that steelhead trout in the Sandy River are abundant and healthy.

Thermographs were anchored in three of the drainages in 1991. Only the thermograph from the Chignik River drainage was recovered in 1992. The maximum temperature was 12.8 C on 30 July; the minimum was -0.4 C on 31 January. New thermographs were placed in all the drainages in 1992.

Arctic Grayling Investigations: Ugashik Lakes and Becharof Lake. In 1990, the Alaska State Board of Fisheries closed Arctic grayling fishing in the Ugashik Lakes drainage on Alaska Peninsula/Becharof National Wildlife Refuge Complex. The closure was implemented after the Alaska Department of Fish and Game documented a decline in Arctic grayling abundance from historical levels. As the Ugashik lakes drainage supported a trophy Arctic grayling fishery, the closure came as some concern to the general public and resource managers. The exact cause for the decline was not identified, but may be related to over-exploitation or environmental factors such as volcanic activity. To identify the cause of the decline and prevent similar fishing closures to other Arctic grayling populations, the King Salmon Fishery Resource Office (KSFR0), in cooperation with the University of Arizona Cooperative Fish and Wildlife Research Unit, initiated a two year study of the Arctic grayling populations in the Ugashik lakes system and Becharof Lake tributaries in 1991. Becharof Lake is a good parallel system to study because of the proximity and relatively unimpacted population. Comparison of the Arctic grayling population from Becharof Lake tributaries may help to explain the reasons for the population decline in the Ugashik lakes drainage.

Data gathering began in FY91 and sampling progressed smoothly, although several problems related to access and brown bears surfaced. Because stream flows prevent the use of even small jetboats, access at Becharof Lake tributaries was by foot and was limited to the lower reaches. As it is assumed the Arctic grayling migrate further upstream as salmon

concentrations increase, an inaccurate description of distribution will result. This problem was further complicated as larger Arctic grayling seem to migrate further upstream than smaller fish. Different migration patterns between age classes will result in inaccurate estimates of age, length, and weight composition if sampling is limited to the lower stream areas. To avoid access problems in 1992, a helicopter was used to transport crews. This allowed crews to sample the upper portions of the watersheds and minimized contact with bears. The negative side of utilizing helicopters is the operating expense and reduced sampling flexibility. Helicopters had to be scheduled far in advance of the project and unpredictable weather conditions hampered sampling effectiveness. Despite weather problems, adequate data was collected to conclude field activities. Data analysis is in progress and draft thesis are expected in the Spring of 1993.



High, swift-flowing water from a summer storm made made electro-shock sampling for grayling a challenge on Featherly Creek, near Becharof Lake. 7/8/92, KSFR0

Reporting requirements for special use permits from sport fishing guides were modified during FY92. The pre-printed form with areas for date, drainage, number of anglers, effort, catch and harvest by species appeared to be readily accepted by permittees. The new format provides information that is specific to a waterbody and provides information that can be used for management of populations in that drainage.

16. Marking and Banding

On October 26th, WB Dewhurst was contacted by a biologist in south central Oregon concerning a plastic neck collar retrieved by a waterfowl

hunter. The blue collar (P017) belonged to a (then juvenile) tundra swan banded in 1983, three miles southwest of Ugashik Lakes. The band was intact but faded, and found laying by itself on the ground.

18. Subsistence

On February 28th, MH Mumma and Service Volunteer Toby Burke conducted an aerial moose survey using the Complex's C-206, piloted by ROS/P Arment. The area surveyed included the Big Creek drainage, Brooks Hills and Granite Peak. Ninety moose were recorded, including four cows with calves (six calves) and one young bull still toting antlers. Recent heavy snowfall had driven most of the moose from the hills onto the creek and its tributaries.

The Fire Program's contract Bell-206 Long Ranger helicopter (N3928B) piloted by Jack Cunningham was used to conduct a survey of moose within the Big Creek drainage (Unit 9C) on May 5th. RM Hood counted a total of 41 moose.

Subsistence aerial moose surveys of the Big Creek drainage and (Western) Katmai Park Boundary portion of Becharof Refuge in December 1991 to monitor moose movement in the area during the December sport and subsistence hunting seasons. During 1992, two aerial moose surveys were conducted in the Big Creek drainage and Park Boundary portion of Becharof Refuge. On November 30th and December 15th, surveys were conducted cooperatively using the Park Service's PA-18 and Pilot Joel Collins with observers MH Mumma and Park Service Biologist Tom Smith. As typical for December, uncooperative weather conditions, shorter day lengths and logistical problems never permitted a survey of the complete study area in any single day. The more complete survey on the 15th yielded observations of 69 moose including 12 bulls, 40 cows and 17 calves. Of these moose, only 4 cows w/ calves were sighted in the huntable Federal subsistence area. The Granite Peak hills were never completely counted during the surveys, due to poor weather.

During the 1992 special subsistence moose hunt in GMU 9C (Big Creek area), the Complex issued 5 permits, but only one was successful (antlerless bull). Warm weather made the Naknek River unsafe for crossing for most of the month, otherwise more local residents might have participated.

H. PUBLIC USE

1. General

The majority of public use currently occurring on Complex lands involves subsistence and sport hunting of caribou, moose, and bear; game fishing for Arctic grayling, burbot, dolly varden/Arctic char, rainbow trout, lake trout, northern pike, and five species of Pacific Salmon (king, sockeye, silver, coho and chum); trapping furbearing animals and gathering berries.

Complex resources are utilized by residents of 12 villages located on or near the boundaries, primarily for subsistence uses. Other Alaska

residents and out-of-state visitors commonly utilize Complex resources pursuing sport hunting and fishing activities.

Public demand for high quality outdoor and wildlife associated activities continues to increase. Requests for off-Complex programs also continues to increase. We accommodate these requests when time and staffing permits. Expansion of our educational program has been possible with the addition of three Refuge Information Technicians (RITs) in September 1991.

The three RITs were hired to assist with subsistence, public use and environmental education (EE) programs on the Complex. Major duties of the RITs include: facilitating the exchange of information between the Complex and local villages; preparing and conducting environmental education and subsistence programs; acting as liaisons between villages and the Service; and assisting in other Complex programs as needed. We are happy to have Shirley Kelly of Egegik, John "Smiley" Knutsen of Naknek and Orville Lind of Port Heiden on our RIT staff. The RITs work a nine month season (September - May), taking time off in the summer months to pursue commercial fishing activities.



RR Terrell-Wagner and RIT Kelly spent an enjoyable day working with students at Perryville School using the "Teach About Geese" curriculum. 3/7/92, FWS

The RITs are excited about working for the Service and thus far have provided an invaluable service to us by communicating Complex activities in the villages and schools. With all of the excellent work they have

accomplished in just the first one and one-half years of the RIT program, we wonder what we ever did without them!

Public use inquiries continued to increase again this year. There were inquiries from 34 states, 1 territory (Guam), and 13 foreign countries (Canada, England, Scotland, Sweden, Austria, Germany, Switzerland, Italy, Greece, Spain, Korea, Poland, and Africa). Over 150 public use inquiries were answered during the year, representing a 50% increase over 1991!

2. Outdoor Classrooms (Education Programs) - Students



Third-fifth graders in the village of Perryville enjoy working on an art project while learning about declining numbers of Arctic Geese. 100% of the Perryville students attended the workshop given by public use staff." 3/7/92, OL

With the new RIT program in place, staff time and talents are being devoted to developing and presenting environmental education (EE) programs for adults and children in nearby villages. Towards this goal of providing quality education programs, as frequently as staff time and money constraints allow, we were able to present the following EE and outreach programs this year:

January - On the 2nd and 3rd, RIT Kelly presented an EE class for 4th-6th graders in the village of Egegik. She used the curriculum "Wetlands and Wildlife" to instruct ten students in the importance of protecting and managing habitat for wildlife.

February - On the 12th-14th, RR Terrell-Wagner and RITs Kelly and Lind traveled to Chignik Bay to conduct EE programs. Each year, the Lake and Peninsula School District sponsors a three day Academic/Athletic Meet for 7th-12th graders from several different schools. This year, approximately 50 students from Chignik Bay, Chignik Lagoon, Chignik Lake, Egegik, Ivanof Bay, Perryville, Pilot Point and Port Heiden traveled to Chignik Bay for the Academic/Athletic Meet. Complex staff conducted the following presentations during the event:

1. An EE workshop using the "Teach About Geese" curriculum was used to instruct classes for five K-3rd graders, and twelve 4th-6th graders.
2. Students were introduced to Service's Spring Waterfowl Hunting Policy regarding the hunting of migratory waterfowl, especially the four species of Arctic nesting geese, the Yukon-Kuskokwim (Y-K) Delta Goose Management Plan, and the current work being done to amend the U.S./Canadian Migratory Bird Treaty Act. After learning about the proposed Migratory Bird Treaty amendment, the students actively participated in this political process by developing their own written comments. The comments were then submitted to the Regional Migratory Bird Coordinator.

March - We took advantage of a village visit to Perryville on the 6th-8th to conduct two EE workshops for the school children. On the 7th, we instructed a two hour class for ten K-3rd graders in the morning and a two hour class for eight 4th-6th graders in the afternoon. We utilized the "Teach About Geese" curriculum for both groups. The students had fun learning about the importance of protecting the four species of Arctic nesting geese. Even though it was a Saturday, 100% of the school children attend the workshops.

On the 12th, RIT Kelly conducted an EE workshop for the school children in Ivanof Bay. Using the "Teach About Geese" curriculum, Shirley instructed six K-4th graders in a 3 hour session.

To encourage teachers to celebrate "National Wildlife Week" we sent information packets with educational materials on this year's theme, "Endangered Species", to several schools. Information packets were sent out on the 6th to Chignik Bay, Chignik Lagoon, Chignik Lake, Egegik, Igiugig, Ivanof Bay, Kakhonak, Levelock, Naknek, Newhalen, Nondalton, Pedro Bay, Perryville, Pilot Point, Port Alsworth, Port Heiden and South Naknek schools. We also supplied the schools with materials concerning an "Endangered Species Talkback" program, sponsored by the Alaska Department of Education, which aired on public television March 13th.



Perryville students are all smiles after an environmental education class given by RIT Orville Lind. Students are happy to show off their ivory carving projects completed with Orville's guidance.
3/7/92, ART-W

September - The 21st-25th, RR Terrell-Wagner and RITs Knutsen, Lind and Kelly attended the 2nd annual "EE Workshop" sponsored by the regional office. This year they enjoyed learning about "Partnerships in Education" in the outdoor setting of Birchwood Camp in Eagle River. Again, Beverly Farfan and Cathy Rezabeck did an outstanding job of putting together a very worthwhile training week. We greatly appreciate their hard work and enthusiasm!

October - On the 23rd, RIT Lind instructed two EE programs for students at the Meshik School in Port Heiden. He used the "Teach About Geese" curriculum to instruct a class of 10 students (grades K-2nd) and a second class of 11 students (grades 4th-6th). Orville also talked with students about declining populations of Arctic nesting geese and introduced the upcoming 1994 Goose Calendar poster & literature contest.



RIT Lind works with students at the Meshik School in Port Heiden explaining the declining populations of Arctic geese and the upcoming Goose Calendar Contest. 10/23, AT-W

November - On the 2nd, RIT Lind gave an EE class to six 7th-12th graders at the Meshik School in Port Heiden. Orville talked with the students about the role and function of the FWS and local issues especially the declining populations of Arctic nesting geese. He also introduced the upcoming 1994 goose calendar contest.

On the 4th, RIT Shirley Kelly gave a two hour EE class on "Bears" for 15 students in the village of Egegik. She talked about the three species of bears in the state, bear habitat, biology and behavior.

On the 6th and 13th, RIT Kelly gave a one hour EE class on "Salmon" for 6 students grades K-3rd. She used activities from both the "Life of a Salmon" and "Salmonoids in the Classroom" curricula.

On the 11th, RIT Kelly gave an EE class on "Wolves" for 15 students in 1st-6th grade. She used activities from the "Wonder of Wolves."

On November 20th, RIT Kelly gave a one hour class on "Take Pride in America" using the Take Pride coloring book and the video, "The Great Garbage Chase." The 10 students (1st-6th grade) also made posters highlighting what could be done in the village to make it cleaner. The posters were then hung in several public buildings throughout the community.

December - On the 2nd, RIT Lind traveled to the village of Chignik Lake to talk with the students about the conservation of migratory birds, particularly the four species of Arctic nesting geese and to promote participation in the 1994 Goose Calendar Art/Literature contest. He visited all four classrooms at the school and talked with a total of 42 students.

On the 4th, 7th, 8th, and 9th RIT Knutsen talked with approximately 113 elementary and 54 high school students at the Bristol Bay School in Naknek about the 1994 Goose Calendar contest.



A man of many talents, RIT Smiley Knutsen shares his artistic abilities with Bristol Bay School children during an EE class teaching students about declining geese populations. Smiley encouraged students to enter the 1994 Goose Calendar contest.

12/7/92, JCK

On the 10th, RIT Lind visited the Meshik school in Port Heiden. He talked with 9 students in the elementary grades about the 1994 goose calendar contest. He discussed the purpose of the contest and this year's theme of "Conserving and Protecting our Alaskan Heritage." On the same day, Orville also met with the local School Advisory Council to report on the work he has been doing in the school this fall. The council is enthusiastic about the contest!

Western Alaska Goose Calendar - On April 16th, we were notified that the winners of the 1993 Western Alaska Goose calendar poster and literature contest had been selected. RITs Knutsen, Kelly and Lind have been involved in speaking with many students about the importance of conserving the four species of Arctic nesting geese and promoting the

goose calendar contest this year. Their educational efforts and promotion of the contest paid off! We were very pleased to learn that several students from villages on or near the boundaries of the Complex were contest winners. With more than 1,500 students from 37 villages throughout western Alaska entering the contest we are very proud that the **GRAND PRIZE** in the literature contest was Forrest Wentzel, an 8th grader from Bristol Bay School in Naknek. The rewards for his literary efforts included a week long Marine Science Camp experience in Kachemak Bay near Homer.



We were thrilled when Bristol Bay 8th grade student Forrest Wetzel won **GRAND PRIZE** in the 1993 Goose Calendar Literature Contest! RIT Smiley Knutsen's efforts in educating the students about declining populations of Arctic geese paid off! 4/30/92, JCK

Forrest Wentzel's Grand Prize winning literary prose reads:

"Our Children's Children"

*When they look around them
they will see buildings that
reach to the moon.*

*Our grandchildren shall see
people as far as the eye can see.*

*When they look up into the gray sky
Airplanes of all sizes will circle about.*

*But not one goose will appear
in that dismal sky.*

*For if we are not careful
they will all be dead.*

Just another lost image of the past.

Other literature winners in our area included: Yvette Evanoff (9th grade) First Prize and Jerry Hobson (4th grade) Third Prize from the village of Nondalton; and Christijan Draper (11th grade) Second Prize from Chignik Bay. Honorable Mention awards in the poster contest were given to the following students in our two school districts: Sean Carlson (7th), Jacob Draper (9th) and Christian Draper (11th) of Chignik Bay; Yoland Kalmakoff (3rd) of Ivanof Bay; Chrissi Torzillo (1st) Kelsey Blush (4th), and Crystal Morgan (5th) of Naknek; and Stephanie Trefon (5th) of Nondalton. Congratulations to all the winners!! Special thanks goes to RITs Kelly, Knutsen and Lind. Without their extensive and caring efforts, these winners would not have known about this chance to compete and show off their artistic and writing talents.

On the May 26th, RR Terrell-Wagner attended the Bristol Bay School Awards Night Ceremony in Naknek. She gave a brief explanation concerning the Western Alaska Goose Calendar contest and then presented several talented students with awards they won in the contest. Local winners include: Forrest Wentzel (8th grade) Grand Prize, and Chrissi Torzillo (1st grade), Kelsey Blush (4th) and Crystal Morgan (5th) who were presented with Honorable Mention Certificate Awards. Other contest winners in villages were sent the prizes they won, which included several very nice natural history books, maps and day packs.

On June 12th, RR Angie Terrell-Wagner attended a planning meeting for the 1994 Goose Calendar Contest in Anchorage. It was a good opportunity

to meet with other FWS employees, representatives from Alaska Department of Fish and Game, Ducks Unlimited and the Audubon Society. Time was spent developing a new format and designing the 1994 calendar. Angie also participated in a 1.5 hour conference call concerning the calendar on the morning of the 19th, to discuss a theme for the 1994 contest.

3. Outdoor Classrooms (Education Programs) - Teachers

Throughout the year several video tapes were sent to local schools for use in the classrooms. We are actively expanding our audio-visual library and currently make these materials available to village teachers. Beverly Farfan and Cathy Rezabeck in RO Resource Support have been very helpful by providing the Complex with video materials to use.

7. Other Interpretive Programs

Outreach programs given this year included:

February - On the 12th-14th, RR Terrell-Wagner and RITs Kelly and Lind traveled to Chignik Bay to conduct EE and outreach programs. Approximately 50 students from Chignik Bay, Chignik Lagoon, Chignik Lake, Egegik, Ivanof Bay, Perryville, Pilot Point and Port Heiden traveled to Chignik Bay for an Academic/Athletic Meet. The students were given a presentation on "Career Opportunities" with the Fish & Wildlife Service. This gave us a golden opportunity to recruit for the RAPS and YCC. Applications were given to interested students, but we learned that the majority of students eligible for employment usually commercial fish in the summer.

March - On the 6th-8th RR Terrell-Wagner and RITs Lind and Kelly traveled to Perryville and Ivanof Bay to conduct Spring/Summer Waterfowl Hunting Policy discussions. On the 6th, staff visited Perryville and gave a two hour presentation to 14 villagers. On the 7th, 11 Ivanof Bay villagers attended a one and one-half hour presentation. After the presentation the villagers provided personal written comments about how they would like the see the treaty changed.

April - On the 15th, RR Terrell-Wagner participated in an inter-agency outreach effort with Katmai National Park staff at the Bristol Bay Elementary School. A joint presentation was given on the mission and responsibilities of the Fish and Wildlife and National Park Services, and the career opportunities available. A total of 32 fourth, fifth and sixth grade students and four teachers participated.

October - On the 29th, RR Terrell-Wagner participated in an orientation program for new military staff on the King Salmon Air Force Base. A total of 15 military personnel attended the program.

King Salmon Visitor Center:

The need for an inter-agency visitor center in King Salmon has been discussed for a number of years. Starting in September 1991, meetings were held on a regular basis with representatives from the Complex,

National Park Service (NPS) and Bristol Bay Borough to discuss the possibility of cost-sharing space in the MarkAir Airlines terminal building (old Post Office) to house an inter-agency visitor center.

January - On the 6th, a meeting was held with representatives from the Complex, NPS and the Bristol Bay Borough to discuss the proposed inter-agency visitor center. MarkAir set a deadline of the 15th, for us to make a decision concerning leasing the space, otherwise another party interested in the building would be offered the lease option. Assistant Borough Manager Scott Janke took the proposal before the Borough Assembly the evening of the 6th, and received approval for the project and authorization to lease the space for a period of one year. RM Hood followed up with a letter to Borough Mayor Fred Pike confirming the Service's intent to enter into a Cooperative Agreement (CA) for the operation of the interagency visitor center. RR Terrell-Wagner wrote the draft interagency CA to be signed by the three participating agencies.

February - The Bristol Bay Borough agreed to execute an agreement with MarkAir Airlines to lease space in the MarkAir terminal at the King Salmon Airport. A meeting was held on the 12th, to review the draft sub-lease agreement and draft CA. The CA spells out each agency's roles and responsibilities in operating the center. A second meeting was held on the 24th, with representatives from the three participatory agencies. Included in the discussion was a revised version of the CA, Alaska Natural History Association (ANHA) new branch start-up funding, building remodeling needs, exhibit planning and a staffing plan.

March - On the 9th, the Borough signed a one year lease with MarkAir for space to house the inter-agency visitor center. A meeting was held on the 17th, among the three agencies to review the current status of building rehabilitation and remodeling, review the draft CA, and to take a walking tour of the visitor center for a floor plan review.

Preparing the visitor center building for occupancy was an intense remodeling project, and began at a hectic pace on the 19th. A detailed description of rehabilitation and construction on the building is described in detail in Section I.2.

April - To extend the partnership established with the inter-agency visitor center project, the Park Service agreed to dedicate space in their interpretive newspaper "The Bear Facts" to educate the public about the U.S. Fish & Wildlife Service and the Alaska Peninsula/Becharof Refuges. This year two pages of the twelve page paper were donated for Service use. RR Terrell-Wagner and SCA Volunteer Schenck wrote several articles introducing readers to the Fish and Wildlife Service and the special values of the Alaska Peninsula/Becharof Refuges. The newspaper has wide distribution, with a reader audience extending to the Lower 48 and several foreign countries.

May - On the 8th and 14th, inter-agency meetings were held to discuss the Grand Opening and Ribbon Cutting Ceremony to dedicate the new visitor center. After many hours of hard work and preparation, the visitor center opened to greet visitors on the 11th. On the 16th, a

Grand Opening celebration was held, including a Ribbon Cutting Ceremony concluding with refreshments and door prizes. Prizes given away included three round-trip airline tickets to Brooks Camp at Katmai National Park, donated by Katmai Air Inc. and MarkAir Airlines; several books donated by the Alaska Natural History Association; and two wildlife prints donated by a local gift shop owner. Winners of the free trips to Brooks Camp included: Tom Wheeler, Lydia Angiak and Nola Angason. Book winners were Brian Winn, Sam McLain, Tom Winn, Jorja Janke, Darlene Groat and Tom Flynn. Winners of the wildlife prints were Joanne Bradford and Eve Pitts. All prize winners were local residents. We were very pleased with the 350+ people who attended the open house and 200+ present for the Ribbon Cutting Ceremony.



Bristol Bay Borough Assistant Manager Scott Janke (wearing red jacket) was instrumental in making the King Salmon Visitor Center a reality. He is now enjoying his efforts at the Grand Opening and Dedication Ceremony.
5/11/92, ART-W

The center was open the greet visitors the 11th-31st, (Monday through Friday, 8:00 a.m. to 4:30 p.m.). Total visitation for the month was 702. We received many positive comments from the local community regarding the center during the first several weeks of operation. The three agencies were happy to be able to provide this much needed service to the visiting public.

June - This was the first full month of operation for the visitor center. It was open to greet visitors 5 days per week 8:00 a.m. to 4:30 p.m. through the 19th, and then every day starting the 20th. Visitation

ranged from a low of 18 people on the 13th, to a high of 82 on the 20th. Total visitation for the month was 1,321. The main tourist season was just beginning. We received many positive comments about the center from both local, state, national and international visitors. We received a fair number of visitors coming from northern Europe. ANHA sales of educational and interpretative materials totaled \$2,638.00.

July - The center was open to greet visitors seven days per week 8:00 a.m. to 4:30 p.m. Visitation ranged from a low of 34 on the 10th, to a high of 139 on the 18th. The week of the 16th-20th was the busiest, with over 100 people visiting the center each day. Total visitation for the month was 2295. ANHA sales of educational and interpretive materials totaled \$5,224.00.

The National Park Service is preparing an "Interpretive Prospectus" for Katmai National Park and Preserve. One element of this planning process is the King Salmon Visitor Center. On the 13th, RM Hood and Dave Patterson, Outdoor Recreation Planner, Associate Manager's Office, met with NPS representatives Mark Wagner, Chief of Interpretation, Katmai National Park; Glen Clark, Regional Chief of Interpretation, NPS Regional Office; and Connie Rudd, Interpretative Planner, NPS Planning Division to discuss the interpretative needs of the center.

August - The center was remained open to greet visitors seven days per week 8:00 a.m. to 4:30 p.m. Visitation ranged from a low of 23 on the 18th and 25th, to a high of 90 on the 1st. The week of the 3rd-9th was the busiest, with over 325 people visiting the center. Total visitation for the month was 1301. ANHA sales of educational and interpretive materials totaled \$3,380.00.

September - Open hours remained 8:00 a.m. to 4:30 p.m., seven days a week. Visitation ranged from a low of 6 on the 25th, to a high of 41 on the 3rd. The week of the 1st-7th and 8th-14th were the busiest, with 228 people visiting the center each of those two weeks. Total visitation for the month was 720. ANHA sales of educational and interpretative materials totaled \$2,131.00.

October - On the 8th, a meeting was held to officially welcome the Lake and Peninsula Borough as a new member of the inter-agency visitor center. A representative of the Bureau of Land Management (BLM) also attended the meeting to express interest in joining our efforts. Other items on the agenda included an update on the status of the Cooperative Agreement, a report summarizing visitor use at the center to date, and winter operations and projects. Attending the meeting were RM Hood and RR Terrell-Wagner representing the Fish and Wildlife Service, Superintendent Alan Eliason and Chief of Interpretation Mark Wagner representing the National Park Service, Assistant Borough Manager Scott Janke representing the Bristol Bay Borough, Borough Manager Glen Vernon representing the Lake and Peninsula Borough, and Biologist Van Waggoner representing the BLM.

This was the fifth full month of operation for the visitor center. It was open to greet visitors seven days per week 8:00 a.m. to 4:30 p.m. the 1st-4th, and 10:00 a.m. to 4:30 p.m. the 5th-31st (closed on

Columbus Day). Total visitation for the month was 199. ANHA sales of educational and interpretive materials totaled \$443.00.

November - The center was open to greet visitors five days per week 12:00 p.m. to 4:30 p.m. (open Veterans Day, closed on Thanksgiving). Total visitation for the month was 67. ANHA sales of educational and interpretive materials totaled \$242.00.

December - The center was open to greet visitors five days per week 12:30 p.m. to 4:30 p.m. (closed Christmas weekend). The week before Christmas was the busiest, with over 80 people visiting the center. Total visitation for the month was 205. To encourage local residents to visit the center and to promote sales of ANHA educational and interpretive materials, we offered a "Holiday Sale" throughout the month. All ANHA items were discounted 15%. Sales were brisk and we were very happy with the monthly total of over \$1,500. Total visitation for the calendar year at the visitor center was 6810, with ANHA sales of \$17,415.00.



Over 300 local residents attended the GRAND OPENING CEREMONY to dedicate the new King Salmon Visitor Center. Highlights included delicious refreshments and several door prize awards.

5/11/92, ART-W

Summary - The King Salmon Visitor Center is currently operated as a joint inter-agency project with the U. S. Fish and Wildlife Service, National Park Service, the Bristol Bay Borough and the Lake & Peninsula Borough. Other possible partners who have expressed an interest in joining this inter-agency project include the Bureau of Land Management, and the Alaska Department of Fish and Game.

The visitor center facility opened in May, 1992 and presently consists of a staffed information desk, an Alaska Natural History Association sales outlet, a ten seat audio-visual room where informational/educational videos are shown on a large screen television, an interactive video "Bear Quiz" program, a brochure rack with local services and facility information and office space for staff. Thus far, attendance at the visitor center facility has been very good with a total of 6810 people using the facility May - December 1992 and ANHA sales of \$17,415.00.

The visitor center is operated under an agreed upon set of objectives that help meet the goals of each agency. These broad objectives will be used in long-range program planning, exhibit planning and EE and outreach programming, etc.

The primary purpose of the visitor center is to provide information and orientation to visitors before they leave the King Salmon/Naknek communities for local areas administered by the Complex, NPS, and the two Boroughs. During the summer months the King Salmon Visitor Center functions primarily as an information, orientation and trip planning center. During the off season (November through April) the facility functions as an environmental education center to provide both on and off-site programs for community school children. Educational programs can be extended to adults through workshops, seminars and other special programs.



Complex Volunteer Meredith Bridgers did an excellent job staffing the King Salmon Visitor Center this summer. 7/15/92, ART-W



RIT Orville Lind shares his talents of working with ivory in preparing a set of walrus tusks for display at the King Salmon Visitor Center.
5/15/92, ART-W

Visitation Summary: King Salmon Visitor Center

Total visitation May - Dec, 1992:	6810
Total films shown:	281
Total film viewers:	576
Total "Bear Safety" video viewers:	1542
Total signing guest register:	910
Total ANHA sales:	\$17,415.00 (\$2.56/visitor)

Visitors signing the guest register represented 43 states and 21 foreign countries. We were surprised and pleased to see the wide variety of foreign countries represented (Austria, Australia, Belgium, Canada, Chile, China, England, France, Germany, Guatemala, Hong Kong, Indonesia, Italy, Japan, Mexico, New Zealand, Puerto Rico, Spain, South Africa, Sweden, and Switzerland). Approximately 20 -25% of people using the center in the summer months are tourists visiting from foreign

countries. We responded to over 150 public use inquiries during the year (a 50% increase over 1991).

8. Hunting

Hunting is a major category of public use on the Complex. Commercial guiding includes hunts for world-class trophy brown bear, caribou and moose. Some hunters take advantage of overlapping seasons to pursue all three species. Brown bear seasons occur on an 18 month rotation (spring hunt during even years and fall hunt in odd years).

King Salmon is the hub for commercial air service to access the Complex. Once a hunting party arrives in King Salmon, air taxi and charter services are available to most areas on the two refuges. King Salmon is the base of operation for numerous guide/lodge businesses operating on the Alaska Peninsula. Those hunters wishing to hire the services of a guide will generally find that fees can be costly and highly variable depending on the length of the hunt, amenities provided, area, and species of animal hunted. Commercial guide fees for caribou or moose hunts range from \$2,500 to \$3,500 and a brown bear hunt costs \$10,000 to \$15,000.



The Mother Goose Lake area in the Ugashik Unit is very popular with moose hunters. 9/92, DDM

Individuals wishing to go hunting on their own will have to be more prepared, but can save money. According to state law, non-resident hunters are required to be "guided" on brown bear hunts. The fees set by ADF&G for resident and non-resident licenses and tags are listed in Table 10. Once the proper licenses and tags are obtained, the cost of an air charter can range from \$150 to \$625 for each hour of flight time. An average round-trip flight to a hunting location will take three or more hours.

Table 10. Alaska resident and non-resident license and tag fees for 1992.

Type of License	Non-resident	Resident
Hunting	\$ 85.00	12.00
Sport fishing and hunting	\$ 135.00	22.00
Caribou tag	\$ 325.00	0
Moose tag	\$ 400.00	0
Brown bear tag	\$ 500.00	25.00

Alaska resident license and tag fees are scheduled to increase effective January 1, 1993.

Hunters are required to submit a "hunt report" to ADF&G at the close of the hunting season. The report includes information on harvest success. Due to the long hunting seasons, ADF&G lags behind one year in processing the harvest reports, thus hunter success in calendar year 1991 is shown in Tables 11 and 12.

Table 11. Caribou and moose reported harvest for Alaska Peninsula Game Management Units (GMU) 9C and 9E, 1991-1992 (ADF&G data).^a

Species	Bulls	Cows	Unknown	Total
Caribou	688	115	3	806 ^b
Moose	151	3	0	154

^aHarvest reports include both Alaska Peninsula and Becharof refuges. (Reporting dates for caribou are from August 1990 to March 1991. Moose are for the 1991 season only.)

^bOther Alaska residents (not local) took 345 caribou, non-resident hunters took 358 caribou and local resident hunters reported 49 caribou taken (this number is considered to be very low as the majority of local subsistence hunters do not report their success to ADF&G).

Table 12. Brown bear harvest for the Alaska Peninsula, 1975-1992, GMUs 9C and 9E (ADF&G data).

Date ^b	Total Bears	Percent Boar	Mean Age		Percent Harvest ^a	
			Boar	Sow	Boar	Sow
1975-76	261	62	6	7	49	51
1977-78	311	64	6	7	45	55
1979-80	316	68	6	6	47	53
1981-82	339	59	6	6	47	53
1983-84	268	61	6	8	53	46
1985-86 ^c	263	64	7	8	60	37
1987-88 ^d	398	62	6	6	69	29
1988-89	347	66	-	-	66	34
1989-90	328	67	-	-	-	-
1991-92	350	66	-	-	-	-

^aFigure represents bears 5 years of age or older.

^bBrown bear hunting season on the peninsula is on a rest-rotation schedule, e.g., the fall of 1985 was open, followed by a season in the spring of 1986. There was no other open season until the fall of 1987, essentially an 18 month cycle.

^cIncludes seven bears of unknown age and/or sex. Drainages listed on harvest reports indicate 144 (55 percent) of the total harvest was taken either on Alaska Peninsula or Becharof refuges.

^dIncludes 12 bears of unknown age and/or sex.

On September 18th, Emergency Order No. 02-06-92 closing the Big Creek portion of the Naknek drainage in subunit 9C (includes Becharof Refuge) to the taking of brown bears under registration permit became effective. The Naknek drainage hunt is designed to target bears involved in conflicts with people in the villages of King Salmon, Naknek and South Naknek. State Biologist Dick Sellers found that bears were being killed in remote portions of the Big Creek drainage (and on Becharof Refuge). These bears were not causing conflicts with people. Thus Sellers issued the emergency order to prevent over-harvest of Big Creek bears and to concentrate hunting effort within settled portions of the Naknek drainage where several bears were causing problems.



An assistant guide shows off a brown bear trophy taken in the Yantarni air strip area. 5/92, DAD

9. Fishing

The rivers and lakes within the Alaska Peninsula/Becharof Refuge Complex provide world-class fishing opportunities. Game fish include Arctic grayling, burbot, dolly varden/Arctic char, rainbow trout and five species of Pacific salmon (king, sockeye, silver, coho and chum). In large lakes, northern pike and lake trout are common. Flowing-water areas most often utilized for sport fishing include: King Salmon rivers (Becharof Refuge and Chignik Unit, Alaska Peninsula Refuge); Big, Featherly, Gertrude and Painter creeks; and Upper and Lower Ugashik lakes, including the Ugashik Narrows (Narrows). In 1981, the Alaska record Arctic grayling was caught in the Narrows.



Painter Creek (Ugashik Unit) provides an outstanding float trip for sport fishing. 7/7/92, RDP

Based on studies done by ADF&G, the State Board of Fisheries issued a regulation closing the Ugashik lakes' drainage to the taking of Arctic grayling in 1990. The study showed that the Arctic grayling stock at the Narrows decreased significantly from 1,200 fish in 1988 to approximately 500 in 1989. The Narrows is a half mile stretch of stream connecting Upper and Lower Ugashik lakes. The closure remains in effect.

Over 15 guides/lodges and transporters/air taxis offering fishing packages, were "permitted" to operate on the Complex in 1992. Most operators promote "catch and release" angling for resident fish species. A variety of package programs that include lodging and air transportation to the fishing areas are available. These package deals range in price from \$1500 to \$5000, depending on the length of stay and quality of amenities offered by the lodge.



The Ugashik Narrows is very popular for sport fishing.
8/18/92, DAD

To document the winter subsistence harvest of fish in the King Salmon and Egegik Rivers, RIT Kelly has been designated as a "creel clerk" for the ice fisheries that occur near the village of Egegik. The information she is collecting will be used by the KSFAO.

10. Trapping

Historically, the trapping of fur bearing mammals was a full-time winter endeavor on the Alaska Peninsula. Today, trapping popularity is highly variable due to the price fluctuation of raw hides. Fox, mink, ermine and beaver are commonly trapped; and to a lesser extent, coyote, wolf, wolverine, lynx and land otter are caught. As a method of monitoring take, ADF&G requires a sealing tag on the untanned skin of wolverine, wolf, lynx, land otter and beaver. Data from the sealing records is listed in Table 13. No records are available on ermine, fox, mink, or coyote.

Table 13. Furbearer harvest in GMUs 9C and 9E (ADF&G data).

Year (winter)	Number Harvested				
	Beaver	Otter	Lynx	Wolverine	Wolf
1984-85	--- ^a	24	4	14	14
1985-86	166	25	23	20	10
1986-87	240 ^b	112 ^b	27	22	10
1987-88	254 ^b	152 ^b	3	30	14
1988-89	57	53	4 ^c	36	23
1989-90	108	52	2	31	23
1990-91	91	31	2	23	12
1991-92	191	90	16	56	55

^aNo data available.

^bIndicative of increasing prices for short-hair furs.

^cAll taken from Unit 9E.

11. Wildlife Observation

In mid October, a Challenge Cost Share proposal was submitted requesting matching funding to construct a "Watchable Wildlife" viewing area in partnership with the Bristol Bay Borough. Borough staff first approached the Complex about the possibility of cost-sharing construction of a "Watchable Wildlife" viewing area in the Naknek/King Salmon area in late May. The Regional Office staff reviewed a total of 59 Cost Share proposals and ours was ranked 4th in priority region-wide. The Complex was awarded \$7,800.00 in matching funds for a project total of \$15,600.00.

Summary of Challenge Cost Share Project:

In an effort to promote quality wildlife experiences and increase wildlife viewing opportunities the U.S. Fish and Wildlife Service and the Bristol Bay Borough will work in tandem to develop a "Watchable Wildlife" viewing area along the Naknek River, near its outlet into Bristol Bay (west of King Salmon, AK). The viewing area is off refuge lands, with the Bristol Bay Borough holding title to the area. The project will benefit wetlands by increasing awareness and understanding of the value of wetlands, resulting in better stewardship of natural resources. The project will enhance the opportunity to view, photograph, and understand the riparian ecosystem, wetland habitat, wildlife, waterfowl, vegetation and other natural features including geology. The project will increase public understanding, appreciation and enjoyment of the natural world.

The viewing area supports a diversity of watchable wildlife, including a wide variety of waterfowl especially during spring migrations; raptors such as bald eagles, peregrine and gyrfalcons; marine mammals including beluga whales, and harbor seals; and to a lesser extent, fox, river otter, brown bear, caribou and moose.

A viewing platform will be built on land above the Naknek River that offers expansive views of the river, Bristol Bay and surrounding tundra. The platform will be 10 ft x 16 ft and elevated 4 feet above the ground. The platform will be handicap accessible, with a combination gravel/wooden boardwalk and ramp leading from the parking area. An interpretive exhibit will be installed along the front of the viewing area to educate visitors about wetlands, wildlife and waterfowl. Binoculars and spotting scopes will be available to use through a check-out system at the King Salmon Visitor Center. The platform will be used in field activities with school groups to enhance refuge environmental education programs. Currently, there are no "Watchable Wildlife" viewing facilities in the King Salmon/Naknek area. This viewing area will be used by school groups, and local, state, national and international visitors. The project will enhance the opportunity to view, photograph, and understand wetlands and wildlife, and will increase public knowledge, appreciation and enjoyment of the natural world.

The Service will act as the lead agency in coordinating the development of the viewing area, including design and construction of the platform and all exhibits. The Service will provide 50% of the total project cost to purchase building materials, educational equipment and exhibits.

The Bristol Bay Borough will contribute 50% of the total project cost by providing construction materials and equipment (wood & gravel and front-end loader); labor needed to construct the viewing platform including a handicap accessible boardwalk and ramp; and approximately .6 acre for the actual building site.

Target date for completing the "Watchable Wildlife" viewing area project is September 30th, 1993.

15. Off-Road Vehicles

The Alaska National Interest Lands Conservation Act (ANILCA) modified the way we manage off-road vehicles in Alaska. When a person is pursuing traditional activities on Complex lands (including wilderness) they may use snow machines, motorboats, airplanes and non-motorized surface transportation. When rural residents are involved in subsistence activities they may use snow machines, motorboats, off-road vehicles and other means of surface transportation that have traditionally been used.

Some commercial big game guides used tracked all-terrain vehicles before the passage of ANILCA. Refuge policy limits this use to: 1) trails between camps and/or; 2) access to inholdings (43 Code of Federal Regulations (CFR) Part 36.10 and 36.1). Three special use permits have been issued to guides for use of tracked all-terrain vehicles. The use of off-road vehicles currently permitted for these three guides will probably change when the new guide outfitter system comes on line in 1993.

The Alaska Peninsula's ever-changing weather prevents long term snow cover in winter. Thus, snow machines cannot be relied upon for surface

transportation. As a result, the three-wheeled all-terrain vehicle and, more recently, the four-wheeled all-terrain vehicle have become the main method of cross-country transportation for Alaska Peninsula residents. The use of all-terrain vehicles by subsistence users is being examined in the draft PUMP (Section D.2.). New regulations may be promulgated as a result.

16. Other Non-Wildlife Oriented Recreation



The Complex offers unlimited opportunities for hiking in the most scenic part of Alaska. Weather extremes make this a challenge for the visitor. This is the Braided Creek area in the Chignik Unit.

7/27/85, CLK

On July 20th, Service Volunteers Wuerth and Roth were transported by Katmai National Park Pilot Stan Steck, in their Cessna 206 on floats, to Gertrude Lake. The two volunteers then spent 10 days hiking a proposed trail from Gertrude Lake to Becharof Lake. Starting at Gertrude Lake they hiked along the south fork of Gertrude Creek to it's headwaters, then along Bible Creek into the Kejulik Mountain Basin. They set up a base camp and took several hikes during a three day period, and then hiked down to Bible Camp on Becharof Lake. During the hike they spent time learning the terrain, observing wildlife and recording plant phenology. The Complex is exploring the area as a proposed hiking route because of the spectacular scenery and wildlife viewing (particularly brown bear) potential, under our Public Use Management Plan (PUMP). A detailed report on the route was prepared in August.

On March 3rd, Laura Riley, co-author of the Guide to the National Wildlife Refuges, conducted an in-depth telephone interview of RM Hood on recreational opportunities on the refuges. The section of the new edition on Alaska Peninsula and Becharof refuges was reviewed and comments submitted on the 20th.



The Ugashik Caldera offers a challenging hike and rewards the effort with spectacular views. 9/92, ME

In August, the Complex had the opportunity to take advantage of a professional filming crew to get some good video footage of refuge resources. Photographer Steve Maslowski and local "sherpa" Mark Emery working for Maslowski Wildlife Productions (MWP) were spending time filming at Katmai National Park and Preserve for National Geographic. RM Hood contacted Washington Office, Public Affairs Officer Steve Hillebrand and his assistant Nan Rollinson, and Alaska Regional Public Affairs Officer Bruce Batten and learned that MWP was under contract with the Service. Ron was able to work out the administrative details to get filming work completed under the FWS's blanket purchase agreement with MWP. Six days of filming at \$800.00/day was scheduled. The goal of the filming project was to obtain raw footage highlighting as many aspects of the Complex as possible. When funding is available, the footage will be used to produce an introductory video for viewing at the King Salmon Visitor Center. The video footage will provide visitors a glimpse of the special natural wonders of the Complex. The filming crew



The Chiginagak hot springs are another under-utilized resource in the Ugashik Unit.

7/2/92, RDP



The hot springs feed the headwaters of Volcano Creek which empties into Mother Goose Lake.

7/2/92, RDP

of two talented men recorded some very exciting and rare footage. A pack of eleven wolves was captured on film, including six young pups playing, resting and even feeding via regurgitation from the adults. Also, bear, caribou, peregrine falcon, puffin, murre, cormorant and some scenic footage has been obtained.

17. Law Enforcement

On February 1st, during a patrol by DRM Poetter on the ice covered waters of Big Creek, discovered that the Becharof Refuge boundary sign had been violated. It had withstood numerous shootings, by rifle and shotgun, over the first year and a half its life. It was not until a vehicle (assume 4 wheel drive) climbed the relatively steep, six feet high bank that the sign was over-powered and flattened to the ground. The twin, three inch square, steel supports could not bear the weight of this type of public demand. We salute our fallen sentry. A very unfortunate incident, especially since the sign merely identifies where one is located and does not restrict access.

DRM Poetter and WB Dewhurst were detailed to Anchorage February 9th-13th to participate in the culmination of "Operation Whiteout," a federal law enforcement investigation of an ivory-for-drugs poaching ring in Alaska. DRM Poetter boarded a National Guard C-130, loaded with snow machines, with several teams made up of Special Agents and Refuge Officers and traveled to the remote village of Gambell, St. Lawrence Island, to conduct multiple interviews and serve three arrest warrants. WB Dewhurst worked with Special Agents and State Troopers in Anchorage to serve an arrest and search warrant on a marijuana growing operation. Both special details went well, were very educational and provided a different type of enforcement experience from the usual refuge patrol work.

The spring bear hunting season (May 10th to 25th) had its share of resource violations this year. Phone-in tips prompted several interviews. WB/Refuge Officer Dewhurst visited hunting camps in the Yantarni area on the 15th and 20th, via a chartered Cessna 185 on wheels. The Yantarni airstrip, Sutwik Island (Alaska Maritime Refuge) and Alinchak Bay were the hot spots. One case concerned two hunters who flagged down a helicopter, falsely claiming an emergency and then getting a ride to King Salmon. The case was turned over to the State for disposition. The defendants pled guilty and received \$1,000 fines each, but the magistrate suspended all but \$250 of the fines. All other cases are still pending including: an air taxis operating without a permit, a guide operating without a guiding permit, and a camp littering case on Sutwik Island (turned over to Alaska Maritime Refuge).

On September 14th, a local air taxi (Windy's Mag Air) transported two Anchorage men into the Kejulik River Valley, Becharof Refuge, to float the river and to hunt big game. The men wanted to float the river near the headwaters in an area inaccessible to a water or ground landing so the men parachuted out of the Cessna 185 aircraft. This is probably a first on refuge lands! After landing, the men hiked up-river onto National Park Service (NPS) lands where they allegedly shot two bull

moose. NPS staff investigated the incident. Based on information supplied by a big game guide-outfitter and kill site locations from the Alaska Department of Fish and Wildlife Protection, Katmai National Park Rangers borrowed a FWS contract Bell 206 helicopter and confirmed the location of the kill sites (1/2 mile and 1 1/2 miles inside the park boundary). Based on this evidence, two BLM smoke jumpers were issued citations and had their moose meat and antlers seized. Lots of inter-governmental cooperation here!

18. Cooperating Associations

With the opening of the King Salmon Visitor Center, a branch of the Alaska Natural History Association (ANHA) was established. In order to get start up monies for a new branch, a request for such funding must be submitted to the ANHA Board by November of each year. We did not make this cut-off date, so we had to get our branch set up without benefit of these funds. ANHA did agree to purchase a cash register and inventory stock the first year. Sales of educational and interpretive materials at the King Salmon Visitor Center were brisk and far exceeded what first year branches normally take in. We were very happy with our sales which totaled \$17,415.00 for May - December, 1992. We currently offer 100+ book titles, topographic maps, FAA air charts, and numerous posters and notecards. We will be expanding our selection of materials in 1993. A breakdown of sales follows.

Summary of first year AHNA sales:

May:	\$ 1,695.00 (\$2.41/visitor)
June:	2,638.00 (\$1.99/visitor)
July:	5,224.00 (\$2.28/visitor)
August:	3,380.00 (\$2.60/visitor)
September:	2,131.00 (\$3.18/visitor)
October:	442.00 (\$2.22/visitor)
November:	242.00 (\$3.61/visitor)
December:	1,515.00 (\$7.39/visitor) Holiday Sale entire month
Total:	\$17,415.00

20. Cabins

It is the policy of the Service to allow the continued customary and traditional uses of existing cabins (constructed prior to December 2, 1980), provided that the uses are consistent with existing laws and regulations and are compatible with the purposes for which the refuge was established (ANILCA 304(d), 1303(b), 1315 and 1316). Service policy is to limit new cabins to those essential for the continuation of an "ongoing activity" or use allowed within the refuge (ANILCA 304(d), 1303(b)).

The Complex office currently maintains a database of all cabins located within the Complex exclusive of those on private inholdings. The database includes: 55 cabins by Complex Unit, Township, Range and Section(s); a description of each structure in terms of construction material; square footage of floor space; and type of use pattern.

21. Guides-Outfitters

A total of 50 special use permits were issued for commercial big game, sport fish guiding, and transporting activities occurring within the refuges (Table 14).

Table 14. Special use permits issued for Big Game/Fish Guides/Outfitters and Transporters 1982-1991.

YEAR	BIG GAME GUIDING	FISH GUIDING	TRANSPORTER	TOTAL PERMITS
1992	23	14	13	50
1991	27	20	10	57
1990	27	24	9	60
1989	30	20	8	58
1988	36	19	6	61
1987	36	13	4	53
1986	30	8	4	42
1985	33	3	4	40
1984	33	2	0	35
1983	30	0	0	30

In early January, an application requesting a special use permit for helicopter access for commercial sport fish guiding was received. Pursuant to policy found in 6 RM 8.1, the application was denied. Refer to Section D.4. for details. No appeal was filed.

On April 7th, RM Hood denied a request to transfer a special use permit to a third party. Special Use Permit No. 1991-96-48744 was issued to implement RD Stieglitz's final decision on the issue of ownership and operation of the Mt. Peulik Lodge. The lodge is located at the Ugashik Narrows on the Ugashik Unit, Alaska Peninsula Refuge. The permit was mailed to applicant on June 21, 1991. It was never signed and returned to this office for validation. Then in late March 1992, the Complex received a request to transfer the permit to a new corporate owner. We advised the applicant that the Service does not transfer permit privileges if they are sold to a third party. No appeal was filed.

On the 8th, a letter of denial was issued to Mr. David Lazer in response to his application for a special use permit to conduct commercial big game guide-outfitter activities on the Complex. Mr. Lazer was convicted of three violations of State guiding regulations in Palmer District Court. He pled "no contest" to these charges in January 1992. Mr. Lazer appealed the denial to the Regional Director. Mr. Steiglitz concurred with RM Hood's decision to deny the permit.

A total of 39 commercial guide-outfitter permittees recorded approximately 5,478 total client use days within the Complex last year (Table 15). Fishing clients represented approximately 87 percent of the total clients and 68 percent of the total client use days.

A total of 24 big game guide-outfitter permittees were responsible for harvesting 44 brown bears, 35 moose and 78 caribou last year (Table 16). Sows represented approximately 9 percent of the bear harvest, while no cow moose and no cow caribou were harvested.

A total of 10 fish guide-outfitter permittees were responsible for 7,815 fish being caught and 6,654 released, a harvest of 1,161 fish (Table 17). Approximately 93 percent salmon, 5 percent arctic char, 0 percent arctic grayling and 2 percent rainbow trout made up the total reported harvest.

A total of 8 permittees were responsible for the harvest of approximately 569 game birds (Table 18). Game bird harvest was incidental to big game hunting.

Big Game Guide-Outfitter Program

The Alaska State Supreme Court ruled on October 21, 1988 (Owsichuk vs. State of Alaska, Guide Licensing and Control Board) that exclusive guide areas were unconstitutional. After a multi-year moratorium, the FWS took control and implemented a new policy on managing commercial big game guide-outfitting on National Wildlife Refuge System lands in Alaska (RW-26). The objectives of this program are:

- 1) to provide the public with high quality and safe recreational hunting opportunities;
- 2) to ensure commercial big game-outfitter services are compatible with refuge purposes;
- 3) to regulate commercial big game-outfitter services in a manner which does not significantly displace other public uses on refuges;
- 4) to provide equal opportunity to all qualified and interested individuals to compete for refuge special use permits;
- 5) to ensure consistency in the management of commercial big game-outfitter services on all Service lands in Alaska; and
- 6) to manage commercial big game-outfitter services on refuges as consistently as possible with other Federal agencies whenever agencies' policies/mandates allow.

Preparation efforts to implement the new guide-outfitter policy intensified in May! Refuge specific information needed for a programmatic environmental assessment was supplied to the Region on May 8th. This was followed by a review of all public comments (21 total), revision of the proposed use area maps, and preparation of a response to

Table 15. Permittees and total associated client use within the refuges - 1992.

Business	Permittee	<u>Big Game Hunting</u>		<u>Fishing</u>		<u>Total</u>	
		Client	Client	Client	Client	Client	Client
		Clients	Days	Clients	Days	Clients	Days
Aleknagik Mission Lod.	Broady, J.	-	-	0	0	0	0
Mt. Peulik Lodge	Brod, L.	-	-	154	154	154	154
Katmai Adventures Inc.	Chandler, L	-	-	43	43	43	43
King Salmon Lodge	Cusack, M.	-	-	320	1920	320	1920
Ak Outdoor Exper.	Cusack, M. Jr.	-	-	0	0	0	0
Ak Wilder. Outfitters	Flynn, D.	14	91	18	8	32	99
-	Flynn, H.	7	48	2	10	9	58
Ak. Trophy Hunting	Gillis, M.	9	48	0	0	9	48
Painter Creek Lodge	Grasser, E.	6	40	295	75	301	115
-	Hancock, J.	0	0	0	0	0	0
Ak. Trophy Safaris	Harms, D.	0	0	0	0	0	0
Hautanen Enterprises	Hautanen	0	0	0	0	0	0
Alaska Rainbow Lodge	Hayes, S.	-	-	85	85	85	85
Fair Chase Hunts	Hendricks	7	54	4	70	11	124
No-See-Um Lodge	Holman, J.	-	-	25	25	25	25
Johnson Enterprises	Johnson, K.	-	-	0	0	0	0
AAA. Ak Outfitters	Jones, B.	22	285	53	45	75	330
Lee's Of Alaska	Jones, E.	1	12	-	-	1	12
King's Guiding Service	King, J.	2	1	-	-	2	1
Ak. Adventures Ultd.	Kirstein, T.	4	46	-	-	4	46
Katmai Guide Service	Klutsch, J.	37	242	28	40	65	282
Ugashik Lakes Lodge	Lamoureux	16	124	17	55	33	179
Mountain Enterprises	Langvardt	0	0	0	0	0	0
Fish Alaska, Inc.	Martin, B	0	0	37	37	37	37
Enchanted Lake Lodge	Matthews, D.	0	0	0	0	0	0
Wrangell "R" Ranch	McNutt, R.	6	84	-	-	6	84
Ak. Wilderness Hunts	Meredith, J.	3	24	-	-	3	24
Munsey Bear Camp	Munsey, M.	0	0	0	0	0	0
Myers Guide Service	Myers, J	2	10	-	-	2	10

Table 15. Continued.

Business	Permittee	<u>Big Game Hunting</u>		<u>Fishing</u>		<u>Total</u>	
		Client		Client		Client	
		Clients	Days	Clients	Days	Clients	Days
Ak. Pen. Bear Hunts	Pedersen	24	176	0	0	24	176
Rainbow King Lodge	Robinson, T.	-	-	17	17	17	17
Exclusive Ak Hunts	Runyan, A.	0	0	0	0	0	0
Grizzly Skins of Ak.	Shoemaker, P.	3	45	NR	NR	3	45
Rod & Gun Resources	Smith, J.W.	0	0	180	1020	180	1020
Fox Bay Lodge	Steigler, N.	0	0	95	140	95	140
Iliamna Lake Resort	Sugimoto, K.	0	0	0	0	0	0
Alaska Trophy Hunts	Swiss, J.	6	60	0	0	6	60
	Vrem, T.	43	344	-	-	43	344
4 W Air	Woodin, B.	-	-	0	0	0	0
Totals	39	212	1734	1373	3744	1585	5478

Table 16. Permittees, clients use and big game harvested within the refuges - 1992.

		Bear					Moose					Caribou					
		Client		Harvest			Client		Harvest			Client		Harvest			Harvest
Business	Permittee	Clients	Days	M	F	T	Clients	Days	M	F	T	Clients	Days	M	F	T	Unit(s)
Ak. Wild. Outfitters	Flynn, D.	0	0	0	0	0	3	11	3	0	3	11	80	9	0	9	Ugashik
-	Flynn, H.	2	-	0	0	0	3	28	2	0	2	2	20	0	0	0	Mother G.
Ak. Trophy Hunting	Gillis, M.	6	40	5	1	6	1	1	1	0	1	2	7	2	0	2	Sandy R.
Painter Creek Lodge	Grasser	2	30	1	0	1	2	5	2	0	2	2	5	2	0	2	Bech/Ugas
Ak. Trophy Safaris	Harms, D.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	N/A
-	Hancock, J.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Ugashik
Hautanen Enterprises	Hautanen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Mother G.
Fair Chase Hunts	Hendricks	3	22	0	0	0	2	16	1	0	1	2	16	2	0	2	Yantarni
AAA Ak. Outfitters	Jones, B.	9	127	5	0	5	5	65	3	0	3	8	93	5	0	5	D. Salmon
Lee's of Alaska	Jones, E.	1	12	1	0	1	0	0	0	0	0	0	0	0	0	0	Chignik
King's Guiding Ser.	King	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	Chignik
Ak. Adv. Ultd.	Kirstein	4	46	3	0	3	0	0	0	0	0	0	0	0	0	0	Ugashik
Katmai Guide Ser.	Klutch	14	112	7	0	7	6	54	5	0	5	17	76	16	0	16	Bech/Chig
Ugashik Lake Lodge	Lamoureux	4	44	0	2	2	5	60	5	0	5	7	10	7	0	7	Ugashik
Mountain Enterprises	Langvardt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wrangell "R" Ranch	McNutt	6	84	4	1	5	0	0	0	0	0	0	0	0	0	0	Ugashik
Ak Wilderness Hunts	Meredith	3	24	2	0	2	0	0	0	0	0	0	0	0	0	0	Becharof
Munsey Bear Camp	Munsey, M.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Becharof
Myers Guide Service	Myers, J	0	0	0	0	0	1	5	1	0	1	1	5	1	0	1	Becharof
Ak. Pen. Bear Hunts	Pedersen	2	14	2	0	2	0	0	0	0	0	0	0	0	0	0	Chigwik
Exclusive Ak. Hunts	Runyan, A.	0	0	0	0	0	0	0	0	0	0	4	34	4	0	4	Wolf Lake
Grizzly Skins Of Ak.	Shoemaker	3	45	2	0	2	6	46	5	0	5	15	65	12	0	12	Kejulik
Alaska Trophy Hunts	Swiss, J.	4	40	2	0	2	2	20	2	0	2	0	0	0	0	0	-
-	Vrem	6	65	6	0	6	5	55	5	0	5	32	224	18	0	18	Bech/Ugas
Totals	24	71	706	40	4	44	41	366	35	0	35	103	635	78	0	78	-

M = Male; F = Female; T = Total

Table 17. Permittees, client use and sport fish harvested within the refuges - 1992.

Business	Permittee	Clients	Client		Salmon	Char	Grayling	Trout	Total
			Days						
Mt. Peulik Lodge	Brod, L.	154	154		185/45	71/42	0	23/15	279/102
Katmai Adventures Inc.	Chandler, L.	43	43		120/69	74/74	6/6	16/16	216/165
King Salmon Lodge	Cusack, M	320	1920		1241/480	1847/1847	117/117	6/6	3211/2450
Ak. Wildlife Outfitters	Flynn, D.	18	8		131/126	0	0	0	131/126
Painter Creek Lodge, Inc.	Grasser, E.	295	75		1040/956	638/617	176/176	88/88	1942/1837
Ak. Rainbow Lodge	Hayes, S.	85	85		693/693	129/129	3/3	0	825/825
No-See-Um Lodge	Holman, J.	25	25		0	500+/500+	0	0	500+/500+
Katmai Guide Service	Klutsch, J.	28	40		238/198	120/108	63/63	41/31	462/400
Rainbow King Lodge	Robinson, T	17	17		0	97/97	20/20	0	117/117
-	Vrem, T.	23	100		125/125	7/7	0	0	132/132
Totals	10	1008	2467		3773/2692	3483/3421	385/385	174/156	7815/6654

00/00 = Caught/Released

Table 18. Permittees and game birds harvested within the refuges - 1992

Business	Permittee	Ptarmigan	Ducks	Harvest Unit(s)
Painter Creek Lodge	Grasser	45	30	Bech/Ugas
Alaska Trophy Safaris	Harms	12	36	Bech/Ugas
Katmai Guide Service	Klutsch	80	20	Bech/Ugas
Ugashik Lakes Lodge	Lamoureux	7	12	Ugashik
Exclusive Alaska Hunts	Runyan	2	0	Ugashik
Grizzly Skins Of Alaska	Shoemaker	43	12	Bech/Ugas
Alaska Trophy Hunts	Swiss	20	0	Ugas/Chig
-	Vrem	250	0	Bech/Ugas
Totals	8	459	110	

all pertinent comments. This effort was completed on the 15th. Our final revision of use area maps resulted in a total of six areas for Becharof Refuge; seven on the Ugashik Unit; and eight on the Chignik Unit, Alaska Peninsula Refuge (Figures 19-21). Next, we tackled the preparation of draft prospectuses: one for the Becharof Refuge and one for the Alaska Peninsula Refuge. Hard copies and a diskette were hand carried to the Regional Office on May 28th.

On June 12, 1992, a "Dear Reader" letter notified all guides in Alaska that the Service was requesting proposals to conduct commercial big game-outfitter services within all national wildlife refuges in Alaska. The prospectus/ proposal packages were available for public distribution on June 30, 1993. All proposals had to be received by the respective refuge administrative office by October 15, 1992. All of these mailings were handled by the Regional Office.

The selection process accelerated into high gear in October. A trickle of proposals turned into a flood on the 14th, 15th and 16th. A total of 110 proposal packages were received from 60 guide-outfitters. One of these was rejected because it was mailed on the 16th; the rest had to be opened, proposals logged by guide area and client reference lists removed. Next, mailing labels and letters were produced, envelopes stuffed, and letters mailed. By Tuesday, over 850 letters to clients of guide-outfitter applicants had been mailed from this Complex.

RM Hood and DRM Poetter traveled on November 29th to the Anchorage Sheraton Inn to begin the process of evaluating big game guide-outfitter prospectuses. Hood served as chairperson for Selection Panel No. 2, comprised of Donna Powell (Togiak NWR), Mark Chase (Izembek NWR) and DRM Poetter. From November 30th until December 17th, including weekends, the panel evaluated prospectuses from big game guide-outfitters for guide areas on Alaska Peninsula, Becharof, Izembek, and Togiak refuges. This hard-working team evaluated 213 prospectuses for 30 guide areas. For this Complex, 168 prospectuses were reviewed (25 individuals submitted 61 proposals for 6 Becharof areas; 48 individuals submitted 107 proposals for 15 Alaska Peninsula areas). Successful applicants will be notified in January 1993. Appeals and special use permit issuance will follow. Stay tuned for an exciting 1993!

22. Take Pride in America/Alaska

The Complex had an outstanding year in accomplishing a large number of "Take Pride" projects. We worked with the oil industry, the guide industry, and our volunteers, YCCs, and permanent staff to make significant gains in cleaning up Complex lands. These efforts are discussed below.

For several years, RM Hood has been working with Joe Dygas, Chief, Branch of Lease Operations, Bureau of Land Management (BLM) to promote and encourage two oil companies to initiate a "Take Pride In America" project to clean up oil exploration well sites, access roads, and port site at Jute Bay. This includes a large cache of 55-gallon drums. In 1991, letters to Exxon Company USA and Mobil Exploration and Producing U.S., Inc. were mailed requesting them to submit cleanup plans pursuant

BECHAROF NATIONAL WILDLIFE REFUGE

Guide - Outfitter Use Areas

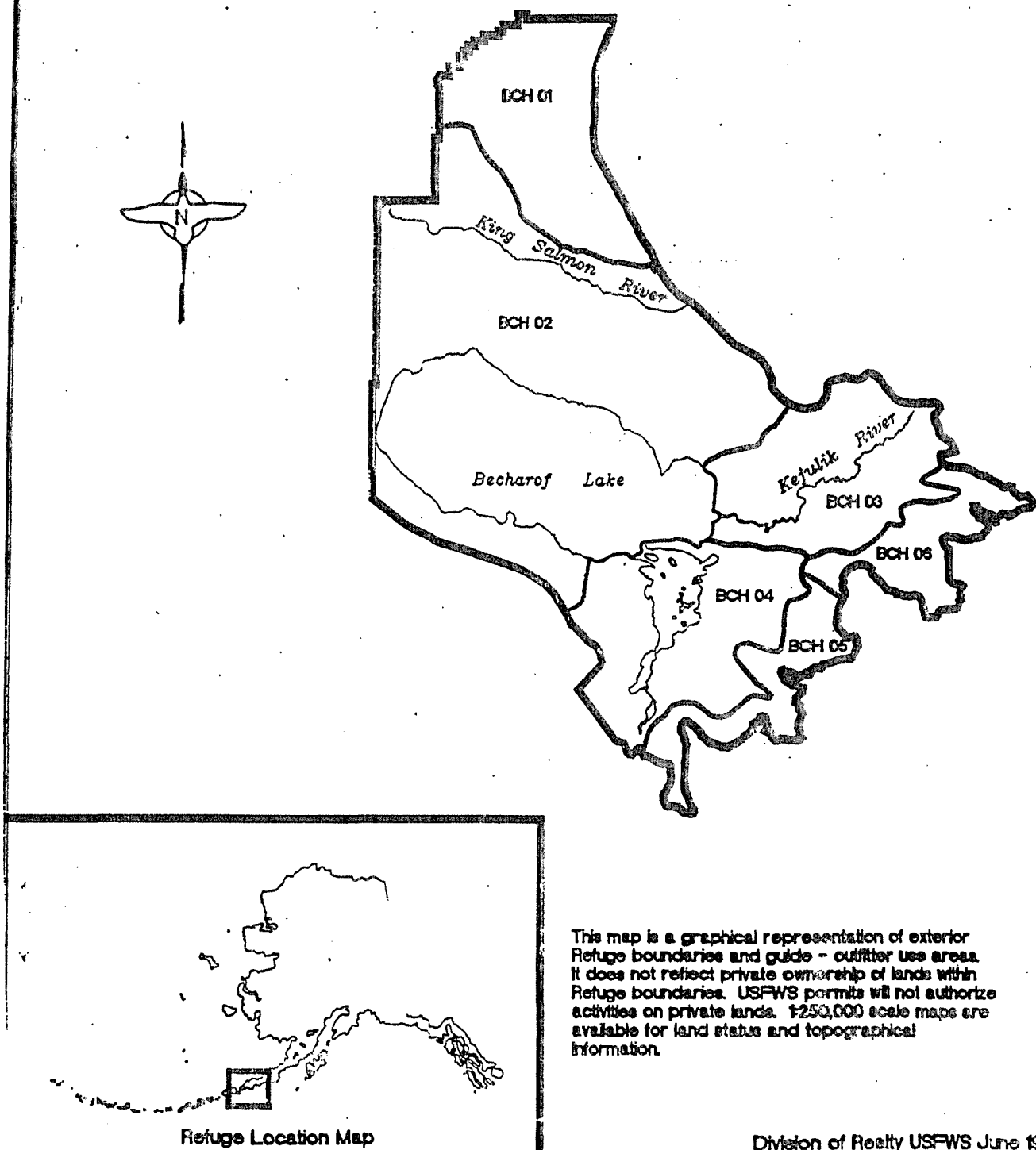


Figure 19. Guide-Outfitter areas within Becharof National Wildlife Refuge.

ALASKA PENINSULA NATIONAL WILDLIFE REFUGE

Guide - Outfitter Use Areas

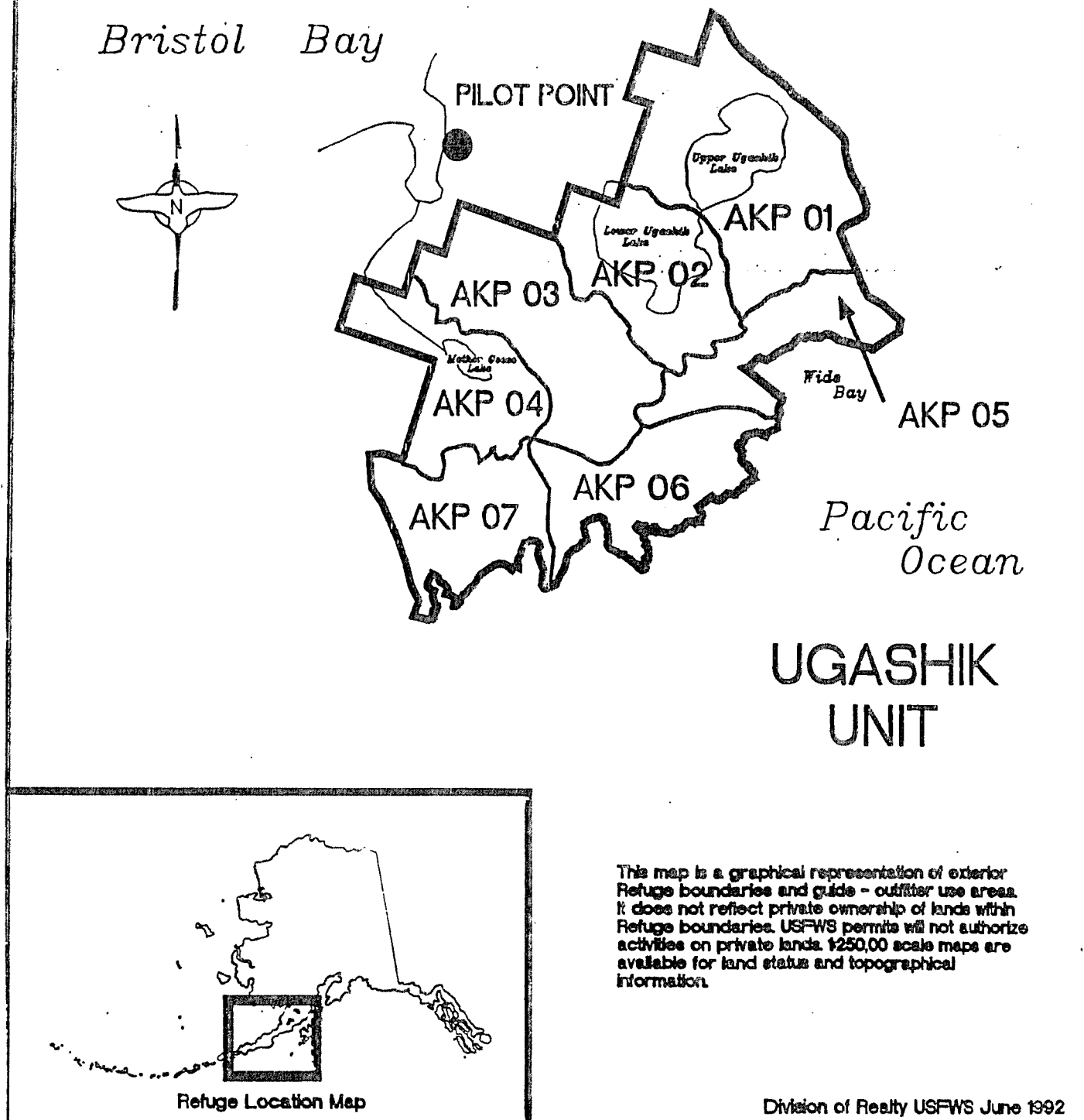


Figure 20. Guide-Outfitter areas within the Ugashik Unit, Alaska Peninsula Refuge.

ALASKA PENINSULA NATIONAL WILDLIFE REFUGE

Guide -- Outfitter Use Areas

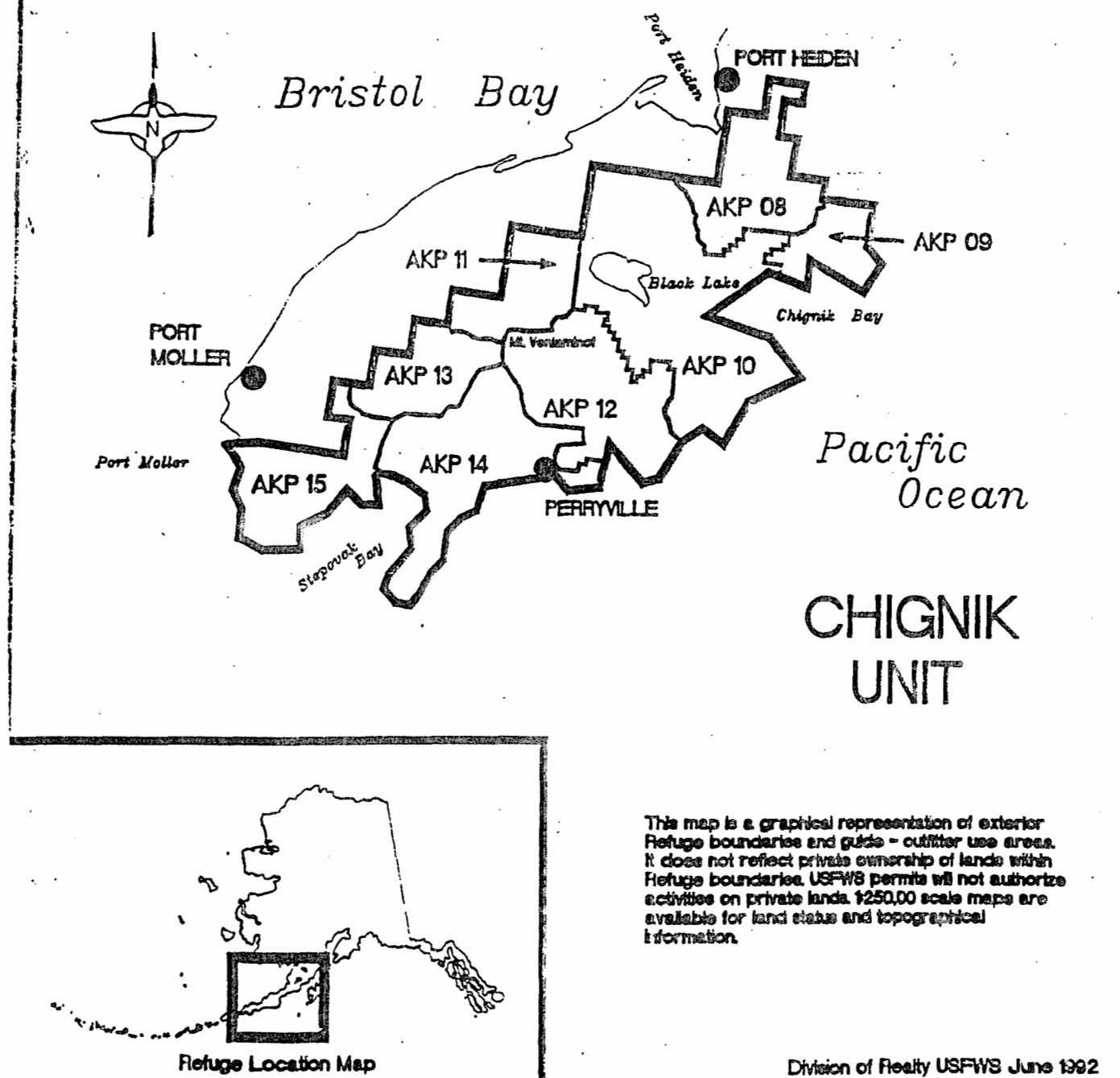


Figure 21. Guide-Outfitter areas within Chignik Unit, Alaska Peninsula Refuge.

to BLM regulations. We encouraged them to clean up these sites as a "Take Pride" project rather than taking a more contentious approach. This effort bore fruit in 1992.

On April 28th, representatives from Mobil Oil (John Winston) and Northern Exploration Services (Jeff Hastings) along with RM Hood conducted an onsite inspection, via helicopter, of the proposed "Take Pride in America" clean up of oil exploration infrastructure remains on the Becharof Refuge. Exxon agreed to complete the clean up of culverts and other trash at Bear Creek No. 1 well site. Mobil agreed to clean up the barrel cache (1500 barrels and misc. metal trash) at Island Bay. Northern Exploration Services (NES) subcontracted the work from both companies. Separate special use permits were issued to Exxon and Mobil for their part of the project. The barrel cache clean up was complicated by the discovery of partial and full barrels of lubricants and fuel oils (see Section J.3.).



John Winston (Mobil) and Jeff Hastings (NES) examine cache of 55-gallon drums. See Section J.3. for additional photographs.

4/28/92, REH

A series of "Take Pride in America" cleanup projects were undertaken May 22nd-26th based from the administrative cabin site at Mother Goose Lake on the Ugashik Unit, Alaska Peninsula Refuge. The crew consisting of DRM Poetter, Student Interns Meredith Bridgers and John Gerlach, and Service Volunteer Mirjam Wurth utilized the Fire Program's contract Bell-206 Long Ranger helicopter (N3928B) and Pilot Jack Cunningham to complete three different phases of this cleanup project.

- 1) Sport Hunting/Fishing Guide-Outfitter Brent Jones has a permitted base camp on the upper reaches of the Dog Salmon River. Historic trash and empty 5 and 55-gallon fuel containers have littered the area for years. Marginal efforts by Mr. Jones to remove the trash have been instituted in previous years. On May 4, the Complex's 5-gallon can crusher was delivered by helicopter to the base camp for Mr. Jones to use to compact the metal cans to allow for more of them to be hauled out per flight. His strip is only accessible by Super Cub type aircraft. Before he received the crusher, Mr. Jones had taken 16 Super Cub loads of cans (24 cans per load) to Pilot Point where the local villagers hauled the trash to their dump, for him. After he crushed the remaining cans he made another 12 trips, now hauling 80 cans per load. This roughly totals 1,344 five-gallon cans hauled out by Mr. Jones. The helicopter crew hauled out another full sling load of misc. cans, bed rails, metal, etc., estimated at 800 lbs. A small four-wheeled "Coot" all-terrain vehicle, that had long since been useful, was also lifted by helicopter to the Mother Goose Lake cabin site, where it was, later, cut up with a cutting torch so it could be loaded into a float-plane. The can crusher was also flown to the Mother Goose cabin, it was going to get heavy use there also, for crushing the accumulating 5-gallon cans from other locations.



Big Game Guide-Outfitter Brent Jones' camp prior to the clean-up effort. This was a common sight that is diminishing with the "Take Pride In America" efforts of this station.

05/04/92, ART-W



"Take Pride In America" dollars at work. The Region's contracted fire helicopter assisted in the clean-up by slinging numerous loads of trash for inaccessible (by large planes) to larger lakes like Mother Goose Lake. The object is a "coot" all terrain vehicle. 05/24/92, RDP



When there are no roads, you have to use the "Alaska pick-up truck" to transport trash to the landfill. This, and two other Super Cubs were used by Mr. Jones to clean-up his permitted cabin site (pictured above). 06/93, BJ

- 2) To the north of the Dog Salmon River is a tributary called Figure Eight Creek. Near this creek, in Section 7, T 33 S, R 47 W, is a small lake that had been used as a campsite and left trashed. Three sling loads of five-gallon and other cans, jars, cabin utensils, old weatherport framing, etc. were gathered from the brush and piled and lifted to Mother Goose Lake. An extremely old snowmobile frame and tow-sled were also lifted away from the site. An estimated 2,500 lbs. of trash were removed.
- 3) The third phase of the cleanup project was at a site located nine miles west of the Mother Goose cabin in Section 33, T 34 S, R 51 W, at the west end of a 300+ acre lake. Here a 10'x15' garage type, wood frame structure with ridged aluminum siding/roofing stood. Its intended usage was as a makeshift cabin that had been built prior to the establishment of the refuge and no longer under permitted ownership. The structure stood out like a beacon with its shiny siding and roof. It was dismantled and the sheets of aluminum were stacked for later removal by float plane. The associated cabin trash of five-gallon cans, trash pit full of food cans/bottles, and other debris was slung to the Mother Goose cabin. Approximately 800 lbs. of trash and debris were hauled out by sling. The better pieces of 2"x4" lumber were also taken to the cabin for use in constructing the new food cache. The rest of the wood was left for Mr. Howard Flynn to pick up and/or burn. He is a permitted sport hunting guide-outfitter with inholding property at the outlet of Mother Goose Lake. He had stopped by the office and volunteered to remove materials we were going to haul away. His efforts contributed to our "Take Pride" thrust.

The use of the helicopter and timing of the project was critical to help save transportation dollars. The new Mother Goose Lake administrative cabin (see Section I.1.) construction materials were planned to be transported by float plane on May 26th. We planned to combine these two projects (cabin replacement and "Take Pride" cleanup) to back haul the trash to King Salmon instead of having "dead head" flights for the cleanup project and then again for the cabin material hauling project. Excellent weather made this Memorial Day weekend cleanup project very enjoyable for our dedicated staff and volunteers.

Sport fishing guide J.W. Smith backhauled thirty-four 55-gallon drums from the Yantarni Bay air strip. These drums had accumulated from various sources during a period of non-management of the area. RM Hood negotiated the removal with Mr. Smith.

The "Take Pride in America" cleanup crew struck again in July. A return visit to the Mother Goose Lake administrative cabin was necessitated on July 2nd. A permitted subsistence cabin site (Stan Chmiel) on the upper reaches of the Dog Salmon River on the Ugashik Unit, Alaska Peninsula Refuge was known to have "historic" trash and waste 5-gallon cans littering the area. Contact was made with the permittee and on the 4th the contaminants helicopter (Bell 206 Jet Ranger of Kenai Air, Inc.) and pilot Jerry Gray was used to transport DRM Poetter, RR Terrell-Wagner and Student Intern John Gerlach to the site. A total of six full sling loads of trash were hauled to the administrative cabin site. Most of the material hauled out was related to the garbage pit that as the crew continued to remove the surface layers found themselves deeper and

deeper in garbage. The hole left by the removed garbage eventually measured 10 ft. wide x 18 ft. long x 4 ft. deep. Numerous 5-gallon cans were found scattered around the site. The bagged trash has since been removed by back-haul in the Park Service's Grumman Goose. The other debris was removed later during fall visits to the Mother Goose Lake to accomplish finish work inside the cabin.



Intern John Gerlach, RR Terrell-Wagner and contract Pilot Jerry Gray in process of clean-up of "deep" trash pit created over years of subsistence activities.

07/02/93, RDP

The week of July 13th-17th, MW Terry, Service Volunteer Mirjam Wuerth, and the three YCC enrolles traveled to the Kejulik River administrative cabin site on Becharof Refuge for a cleanup and repair "Take Pride" project. During the week the crew picked up trash and repaired cabin walls and the front door damaged by bears shortly after last year's repair work. The cabin was repainted a medium brown to assist in blending in. A 4'x4'x6' hole was re-dug for the outhouse. It also was painted brown. Deadman anchors and new cables was used to secure the outhouse from the bears and high winds.

Refuge Operations Specialist/Pilot Randy Arment was instrumental in convincing Guide-Outfitter Tracy Vrem of the need to remove his permitted tent frame from Gertrude Lake, Becharof Refuge. His tent frame site has been a perpetual problem for litter. Mr. Vrem claimed that others visiting the area were trashing his site. Randy was able to convince him to remove the entire facility as part of the "Take Pride" program, thus resolving his/our problems. Mr. Vrem cooperated fully and was proud to report that the site is completely cleaned-up as of August 8th. He flew, via Cessna 185 on floats, two empty 55-gallon drums, two

bunk bed frames, one 10'x12' tent frame, and 20 large plastic bags full of miscellaneous trash/debris back to King Salmon for proper disposal.

23. Subsistence

Historically, recreational and subsistence use by local residents are nearly inseparable. The two activities have long meshed as residents have hunted, fished, trapped and gathered berries. Most subsistence use comes from twelve villages in and around the boundaries of the Complex. These include Naknek, South Naknek, King Salmon, Egegik, Pilot Point, Ugashik, Port Heiden, Ivanof Bay, Perryville, Chignik Bay, Chignik Lake and Chignik Lagoon. Access to Complex lands is primarily by aircraft; however, Big Creek, and the Egegik, Ugashik and Dog Salmon rivers are well used corridors by subsistence users. The streams also serve as winter trails for all-terrain vehicles for subsistence hunting of moose and caribou.

On January 17th, the Complex submitted several proposals to change federal subsistence regulations. Proposals submitted concern the subsistence taking of brown bear, moose and beaver in Game Managements Unit 9C & E. Subsistence regulation proposals submitted by the Complex generated intense consultation activities between various Subsistence Management staff and Complex staff. Clearly, an antlerless moose hunt for Becharof Refuge (Unit 9C) was the most controversial and generated intense discussion.

On January 30th, DRM Poetter attended a Naknek/Kvichak Advisory Committee meeting in Naknek. Elections for several positions were held. Later, the committee reviewed game and commercial fishing proposals, making recommendations as to their support or non-support. The main proposal, relating to the Complex, dealt with moose hunting in Unit 9C. The State had proposed to not allow the taking of cow moose, but the committee wanted it allowed and if the population counts determined it, then close the December hunt to the taking of cows by emergency closure procedures.

On February 25th, RIT Knutsen met with representatives of the Paug-Vik Native Corporation in Naknek to discuss several issues including the upcoming public hearing on Subparts A, B, C and D of the proposed Federal Subsistence Regulations, the proposed guide areas for the Complex, and the Migratory Bird Treaty Amendment. Smiley dispensed information, answered many questions and encouraged everyone to make public comments about these important issues.

In February and March, the public use staff gathered 70+ public comments regarding the Migratory Bird Treaty amendment. The public comments were submitted to the Migratory Bird Coordinator in the regional office. Comments were gathered from residents of Chignik Bay, Chignik Lagoon, Chignik Lake, Egegik, Ivanof Bay, Perryville, Pilot Point and Port Heiden.

On March 5th, a public hearing was held in Naknek to gather public comments on subparts A, B and C of the proposed Federal Subsistence Management Regulations. When the process is complete, the regulations will outline the Federal Subsistence Management Program and will replace current temporary regulations. Cheryl Kline and Mike Lockhart of the Regional Subsistence Office conducted the meeting with assistance from

this office. Complex public use staff arranged for the meeting room, conducted an extensive advertising campaign that included personal contacts with key individuals in the community, and provided transportation, lodging and assistance to Cheryl and Mike. An excellent turnout demonstrated the effectiveness of our team. RIT Knutsen was instrumental in publicizing the meeting and encouraging subsistence users to attend. We were very pleased with the turnout of approximately 35 people, especially considering the -20 degrees F temperatures and drifting snow causing hazardous driving conditions on the King Salmon-Naknek Road. The Paug-Vik Native Corporation generously donated four dozen donuts and coffee. Complex and FAO staff attending the hearing included RM Hood, DRM Poetter, RR Terrell-Wagner, RITs Knutsen and Kelly, and FAO Biologist Jeff Adams.

On March 11th, RIT Kelly traveled to Ivanof Bay to conduct a meeting to discuss subsistence management and the proposed regulations in subparts A, B, and C. She explained the proposed regulations and gathered public comments regarding the proposals. A total of eight villagers attended this meeting. She also gathered additional comments concerning the amendment of the Migratory Bird Treaty Act.

On March 24th-25th RR Angie Terrell-Wagner attended an Aniakchak National Monument Subsistence Resource Commission meeting in Port Heiden. Also in attendance was Susan Savage, Subsistence Ranger representing the National Park Service. Approximately ten commission members and residents of Port Heiden attended the meeting. Angie was in attendance representing the Complex for the Refuge Manager.

On April 8th, ROS/P Arment and RIT Kelly traveled to the village of Pilot Point to collect subsistence use information for the Public Use Management Plan. The two visited a total of 22 homes talking with the villagers about current and projected subsistence use on the refuges.

Caribou were late in arriving in Port Heiden again this spring. Local residents requested that ADF&G extend the caribou season and allow a take of up to 50 caribou. ADF&G Big Game Biologists coordinated the request with RM Hood. It appeared that all of the take would be on State and Native Corporation land; thus there was no need for Federal Subsistence Board action. RM Hood contacted Jim Kurth, Subsistence Management, on April 3rd and briefed him on the situation. The State Board ruled that an emergency did not exist and refused to extend the season. This ruling was reversed. A four day season with a bag limit of one antlerless caribou was opened by Emergency Order for April 18th-21st for the areas near the villages of Pilot Point and Port Heiden. Dick Sellers, State Wildlife Biologist, reported that RIT Orville Lind did a commendable job in tallying the Port Heiden harvest (63 caribou, including 41 bulls). The information from Pilot Point was less reliable (6 to 30 caribou reported).

On June 2nd and 3rd, RM Hood and RR Terrell-Wagner attended a "Subsistence Orientation Workshop" in Anchorage. The conference was sponsored by ADF&G and highlighted methods of conducting subsistence research (developing goals, methodologies, conducting surveys, land use mapping, harvest monitoring, report writing, and utilizing the ADF&G Community Profile Database). The two day course was very informative.

On September 29th, RIT Knutsen attended a Paug-Vik Native Corporation meeting to talk with shareholders about the Complex's Public Use Management Plan. He also encouraged participation in the upcoming public meetings in October to discuss subsistence on federal public lands.

In a cooperative effort with the local ADF&G biologist and Aniakchak National Monument and Preserve, the Complex has agreed to utilize RIT Orville Lind in administering the subsistence permits for the October 1 - December 1, 1992 and May 10-25, 1993 Federal subsistence brown bear season for the villagers of Chignik Lake, Perryville and Ivanof Bay. Orville will be passing on information regarding the season, issuing permits and sealing bears that are taken. Information flyers and large maps, showing the lands open for the taking of subsistence brown bear, have been sent to each of the villages' post offices and key village council members were notified.

A subsistence bear season (October 1st- December 1st) was open in GMU 9(E) for residents in the villages of Chignik Lake, Ivanof Bay and Perryville. One bear could be taken and required a federal registration permit. One bear was taken during this open season in early December in Chignik Lake. RIT Orville Lind completed the necessary reporting forms and sealed the bear as part of a cooperative effort with ADF&G.

On October 8th and 9th, public meetings were held in Naknek to talk with subsistence users about local and regional issues, submitting proposals for 1993-94 federal regulations, submitting nominations for regional council members and applying for the five regional coordinator positions. Even with extensive advertising efforts by RIT Knutsen only four subsistence users attended the meeting the evening of the 8th, and no one attended the afternoon of the 9th. The meetings were competing with a two day Bristol Bay Native Association meeting, a community wide potluck dinner and a dancing demonstration by the New Stoyuk dancers! Conducting the meetings were Subsistence Office staff Bill Knauer, Dick Marshall, Ray Corning and Moses Dirks, and BLM representative Van Waggoner. On the morning of the 9th, Bill Knauer conducted an inter-agency workshop to discuss the federal subsistence program. In attendance were Service employees RM Hood, DRM Poetter, WB Dewhurst, RR Terrell-Wagner, and RITs Knutsen and Lind, and Subsistence Specialist Susan Savage of the National Park Service.

On October 20th, RIT Lind attended a Village Council meeting in Port Heiden to explain and answer questions concerning the PUMP Update Newsletter sent out in October. He also talked with villagers about proposals they might want to submit concerning 1993-94 federal subsistence regulations. Nine villagers attended the meeting.

On October 23rd, RIT Kelly attended a village meeting in Egegik to encourage villagers to submit proposals for the 1993-94 federal subsistence regulations and to discuss the Complex's PUMP.

On November 5th and 6th WB Dewhurst and RIT Lind attended the Aniakchak National Monument Subsistence Resource Commission meeting held in King Salmon. Topics discussed during the meeting include function and purpose of the commission, federal subsistence program update, and a subsistence hunting program recommendations work session.

On November 10th, RIT Lind attended the Chignik Fish and Game Advisory Committee meeting in Chignik Lake. He attended to inform villagers about his role with FWS and to encourage subsistence users to nominate candidates to serve on the Regional Subsistence Advisory Council.

On November 30th, RR Terrell-Wagner served as the agency representative on a work panel reviewing applications for candidates to serve on the Federal Regional Advisory Council. Other members of the review panel included Bill Knauer (team leader, FWS), Susan Savage (National Park Service) and Jeff Denton (Bureau of Land Management). The review team met in King Salmon. The team reviewed and ranked a total of 24 applications. A list of recommendations was forwarded on the Federal Subsistence Board.

During the month of December a special subsistence moose hunt was open in GMU 9C. This is a new hunt and a federal permit was required. We issued a total of 5 permits and only one of these was filled (an antlerless bull moose). Warm weather made the Naknek River unsafe for crossing for a good portion of the month, otherwise more local residents may have participated in this hunt.

I. EQUIPMENT AND FACILITIES

1. New Construction

The biggest effort of the year involved completing the Maintenance Management System (MMS) funded (\$85,000) replacement of the administrative cabin at Mother Goose Lake located on the Ugashik Unit, Alaska Peninsula Refuge. Regional Facilities Maintenance Chief Walt Szelag ordered an \$18,000 "Panabode" type kit cabin of 330 sq. ft., that had been selected by the Complex. The cabin was trucked from Fairbanks, barged from Anchorage, trucked from Naknek, and loaded onto float planes and flown over 100 miles to Mother Goose Lake. On May 26th, Walt's crew of seasonal Carpenters Harold Shipley and Gary Rider arrived in King Salmon. They were immediately flown out to the cabin site to begin work dismantling the old cabin and constructing a new outhouse and food cache. A massive effort to load plane after plane with the cabin materials was undertaken for the next 2 1/2 weeks. A single-engine Otter (Katmai Air, Inc.) was utilized to haul 8 loads of the longest (14-18 ft.) lumber; the Katmai National Park's Goose was used to haul 6 loads; and a Beaver (Branch River Air, Inc.) hauled 10 loads of materials. On the 29th, Walt joined his crew and the Complex supplied help consisting of MW Terry and Service Volunteer Urs Roth. MW Terry spent two weeks helping to build the new cabin. The construction continued through the end of the month.

The replacement of the Mother Goose Lake administrative cabin, which began on May 26th, was completed on June 12th. We are very pleased with the final product and are looking forward to using the cabin frequently. Many thanks to everyone who assisted in completing this much needed project, in particular the construction team of Facilities Maintenance Chief Walt Szelag and Carpenters Harold Shipley and Gary Rider from the Regional Office, MW Terry, and Service Volunteer Urs Roth!



Old cabin at Mother Goose Lake, as it appeared before
demolition. 05/10/89, RDP



New Panabode type cabin after construction. 07/92, DAD

On July 28th, Regional Engineer Rudy Berus traveled to King Salmon and on to the Mother Goose Lake cabin site. An inspection of the cabin was conducted by Rudy and RM Hood. A number of complaints on the quality of construction had been registered with the Regional Director. Nothing was discovered.

The maintenance staff flew to the Mother Goose Lake administrative cabin on September 14th and returned on the 17th. They installed new kitchen cabinets, varnished/sealed the floors, constructed and installed security shutters for the windows and door, and removed the excess construction materials and equipment. On back-haul flights the trash from the Schmil subsistence cabin "Take Pride in America" clean-up project was brought to King Salmon.

This summer the Bristol Bay Borough contracted to install a sewer plant and delivery system for the King Salmon area. The office compound was included. The west boundary cyclone fence, constructed the previous year, was dismantled; trenches dug through the middle of the parking lot and driveways; and piping installed. The final connections will be accomplished in 1993.



Contractors for the Borough working amongst the "whitesox" (biting bugs) to install the new sewer piping system. 07/92, REH

2. Rehabilitation

In August an old sewage septic tank from Residence No. 8 was excavated and then filled. The old wooden septic crib was discovered by the construction crew placing a sewer system pipeline across the headquarters compound. The 10-ft. X 20-ft. crib was filled with 10 yards of pit-run gravel; and then was covered with top soil and reseeded. The old heavy timbers that were removed from the tanks were loaded into the Park Service dump truck and transported to the landfill.



MW Terry and MH Mumma working on removing 1939 wooden septic crib.
08/03/92, REH

A chemical ventilation system was installed in the laboratory. Two adjustable portable ventilation hoods can now be maneuvered directly over the work areas. Wiring of the electrical components was preformed by Ralph Zigglemeyer from regional office.

A replacement garage door electric power drive system was installed at Residence No. 27. The old unit ceased to function properly.

On February 11th-13th, Walter Szelag, Chief of Facilities Maintenance and Christine Provenzano, Regional Civil Engineer visited King Salmon. Walt conducted MMS inspections of Complex facilities. Christine briefed us on the current status of above-ground and below-ground fuel storage tank regulations. She inspected all above-ground tanks and will be providing recommendations for any needed rehabilitation or replacement.

On September 11th & 12th, a contractor tested underground fuel storage tanks at the hangar, boat dock, and fuel shed for leaks. On December 23rd, Kristine Provenzano, Engineering Office, telephoned RM Hood with news that two of our fuel tanks had failed the "tightness tests." Pursuant to Alaska's Underground Storage Tank (UST) regulations (18 AAC 78), the Complex was directed to (1) cease using the 1000-gallon automobile tank (installed by contract in 1988) and the 3000-gallon aviation fuel tank at the hangar (installed by contract in 1986) and (2) pump both tanks dry. It is interesting to note that the 1000-gallon aviation fuel tank installed by refuge staff in 1984 passed the test. At month's end, we were still working on emptying the tanks - it is not easy to find storage for this amount of fuel in the bush! Correction of the problem is being handled and funded by the Engineering Office.

King Salmon Visitor Center: Re-modeling/Rehabilitation Project

March - Re-modeling the King Salmon Visitor Center building began at a hectic pace on the 19th. RIT Knutsen was designated "Project Leader" and together with SCA Volunteer Schenck and Leif Sorlie, from the Bristol Bay Borough, worked almost full time on the building through the end of the month. The Regional Engineering Office provided the services of Electrician Ralph Zieglmeier, the 25th-29th. Ralph worked on the visitor center to revise the overhead lights, install needed electrical outlets, and to bring the entire electrical system up to code.

April - The re-modeling continued throughout April. RIT Knutsen, SCA Volunteer Schenck and Leif Sorlie again worked almost full time on the building. MW Terry provided technical assistance and advice when needed. Major re-modeling projects accomplished during the month included: stripping and varnishing walls and painting window trim; designing and constructing an extensive information counter; building a large book case to hold Alaska Natural History Association (ANHA) educational and interpretive sales materials; building a cabinet to house an inter-active bear video quiz; re-hanging doors to bring the building up to life/safety code; installing dead bolt locks; re-installing metal bars on the windows, for building security; and other small projects too numerous to mention.

MAY - Finishing touches on the re-modeling continued during the first part of the month, in preparation for opening on the 11th. RIT Knutsen, Volunteer Schenck and Leif Sorlie worked full time. MW Terry and MH Mumma also provided several days of work, technical assistance and advice. Several Katmai National Park employees also provided people power and together the inter-agency work force accomplished the following tasks: hanging exterior signs; installing ceiling lights; installing fire extinguishers; hanging brochure racks; stocking ANHA interpretive and educational sales materials; and many other smaller touch-up projects.



RIT Knutsen busily working on the information counter for the new inter-agency visitor center. 04/92, ART-W

June - Beautiful alderwood signs, depicting the three participatory agency logos, were installed on the front panel of the information counter. The logos were purchased from the Federal Prison Industries. They look sharp!

October - Carpeting, purchased by Katmai National Park, was installed in the audio-visual room, offices, and behind the information counter. Hopefully, future funding will provide carpeting for the exhibit area. Flag pole holders have been mounted on the building's front exterior to display the national and state flags. Security bars were fabricated to install on windows that were not already protected. Measurements were taken to build a bookcase for ANHA materials. The bookcase was completed before in December.

3. Major Maintenance

Cold temperatures during the latter part of January resulted in frozen water lines in Residence Nos. 1, 9, and 11. The water lines that typically freeze are those entering the bathrooms and those supplying washer/dryer units. The pipes were thawed, and the lines and surrounding areas insulated. Fortunately, no water lines were damaged.

On March 11th, MW Terry began rehab work on Residence No. 1. Due to frost heave, the building started to settle around the 1st of February.

He attempted to level the building and much to his dismay, discovered that the floor joists were completely dry rotted and the house was settling rapidly. A quick call was made to the Regional Engineer. By Friday the 13th (!), needed materials had been purchased and on the 17th a regional construction crew consisting of Walt Szelag and Harold Shipley arrived to conduct emergency rehabilitation. Five new weather-treated 8" x 8" wooden beams were installed under the house. The house was leveled and shifted after beams were put into place. This required the use of several heavy duty 20-40 ton hydraulic jacks. By the 19th, the rotted floor joists had been replaced. MW Terry and MH Mumma assisted in this three day project.

Regional Electrician Ralph Zigglemeyer traveled to King Salmon to help us with some electrical jobs. He arrived on August 17th and departed late on the 26th. Work projects included: locating an electrical short in the Visitor Center lighting system; designing a plan for the future running of electricity to the south end of Building No. 4 for plugging vehicles into during sub-zero weather; and installing the new aviation gas fueling system for the headquarter's dock. The fueling system was by far the biggest job of his trip. Ralph discovered that the old system was not spark proof. He was amazed that no one had been blown up. The original job was to complete the electrical installation of a new power hose take-up reel, but the final job evolved into a complete rewiring and fire-proofing of the system. We now have a safe system with several emergency shut-off devices.

4. Equipment Utilization and Replacement

The King Salmon Fisheries Assistance Office (KSFAO) 21 ft. Woolridge jet boat received routine maintenance and a test run prior to sending it out to the field for the summer. On May 27th, MW Terry traveled to Island Arm on Becharof Lake to service the boat engine after problems were encountered. In mid-June, MW Terry made several trips to Becharof Lake to repair the 361 cu. in. Ford V-8 inboard jet boat engine. Finally, the engine was pulled and flown back to King Salmon via helicopter. Terry disassembled and repaired engine, with recommendations to purchase a new one. A rod bearing went out in it. Before the summer was over, the engine again failed. This time it was towed back to King Salmon.

Two Polaris Indy Trail Deluxe snowmobiles and two sleds were received on September 25th. These are two machines that were ordered with year-end monies from the Subsistence Division. Their intended use is for the monitoring of the December moose hunting season for subsistence users.



Two new sno-goes and sleds purchased by the Subsistence Division. All we need now is more snow. 12/12/92, RDP

5. Communications Systems

The Complex's new Federal Telecommunications System (FTS) phone lines were installed and made operational in January. A slight technical difficulty was encountered, but resolved, and the phones reprogrammed. The past method of utilizing FTS involved dialing the 800 number, then dialing the number to be called and then entering an FTS calling card number. If calling the Lower 48 it worked fine, because the satellite link went that direction. Calling Alaska numbers created an annoying delay while the call was shot back up to Alaska via satellite from the Lower 48. The new number is **FTS 868-2339**.

6. Computer Systems

In March, MW Terry and MH Mumma routed wires for interconnecting eleven personal computers, and four dot-matrix and two laserjet printers via three logical connections on the two levels of the office building. Computer Specialist Hedy Saccone was then brought out from the Regional Office's Division of Information Resources Management to help DRM Poetter make all the final hardware connections and software configurations. Many thanks, Hedy made the system functional. It sure beats loading your document onto a floppy disk, walking to a computer with a printer, and interrupting someone to print a draft or final document. Now its push a few keys and walk in the other room to pick up the document.

In October we received a flat-bed scanner, 18" monochrome monitor, CD ROM player and software for the primary public use computer. The software included: Microsoft for Windows 3.1, WordPerfect for Windows 5.1, Corel Draw 3.0, and Omnipage. Lotus 1-2-3 version 2.4 was also received for the budget computer system.

AT Collins installed the new electronic mail software on December 29th. She successfully transmitted a memorandum to Arctic National Wildlife Refuge on the 30th.

7. Energy Conservation

On February 11th-13th, Christine Provenzano, Regional Civil Engineer visited King Salmon. Christine completed energy audits for Residence Nos. 1, 8, 9, 10, 11 and 26. Energy audits were also conducted for the office, shop, bunkhouse and FAO trailer-office. Later we found out that test results were useless due to test equipment problems.

Daylight and motion-detecting outdoor lights were installed on Residence Nos. 26, 27, 28, 29 and the bunkhouse in October. The units cost less than \$10.00 each and replace porch lights. They were installed to replace the mercury vapor lights that were on all night long wasting energy. These are great devices that can be adjusted for sensitivity and on/off duration.

J. OTHER ITEMS

1. Cooperative Programs

On February 12th, ROS/P Arment, serving as an Accident Prevention Counselor, attended the Federal Aviation Administration (FAA) sponsored Accident Prevention Program in King Salmon. Approximately 35 people attended the seminar held in the FAA Conserfac Building.

On February 25th and 26th, the maintenance staff assisted Katmai National Park by plowing a roadway in the snow on Naknek Lake from Lake Camp to Brooks Camp, 37 miles. Once at Brooks Camp, a 7,000 foot long runway was plowed so they could land wheeled aircraft (C-206 borrowed from the Complex) to bring in needed construction materials. The maintenance staff also helped in hauling and unloading lumber at Brooks Camp. This was a golden opportunity for our staff to see this part of the Park in the winter from ground level.

In a cooperative effort, Residence No. 10 (vacant) was made available for use by the Alaska Department of Fish and Game, Sport Fisheries Division personnel. The staff conducted king salmon netting and tagging efforts in the Naknek river and needed temporary housing for the summer.

On June 29th, RM Hood and WB Dewhurst met with John Chamberlain, Environmental Consultant, SRI International, regarding a proposed dobblor radar site. The Federal Aviation Administration plans to construct the structure just north of the King Salmon airport. Mr. Chamberlain was making preliminary contacts and gathering information for the environmental assessment.

On May 20th, Refuge Ranger (RR) Terrell-Wagner instructed an American Red Cross Cardio-Pulmonary Resuscitation (CPR) class for ten Katmai-Land Inc. concession employees at Katmai National Park. A second CPR course was offered to six National Park Service employees on the 29th. Having successfully completed the course, the students are now certified for a period of one year.

Mr. Glen Anderson, Fire Coordinator, Bureau of Indian Affairs, interviewed RM Hood on June 8th. He was investigating Fire No. A 075. This fire burned an 80 acre Native allotment including a cabin in Ivan bay, Chignik Unit, Alaska Peninsula Refuge on May 19th. It was alleged to have been started by a bear hunting guide.

The Bureau of Land Management had five employees residing in our bunkhouse from June 21st through the end of the month. They based out of King Salmon while conducting wetland water and wildlife analyses by helicopter and float plane, to the north and northwest.

On May 31st and June 1st, WB Donna Dewhurst, provided technical assistance by participating in an inter-agency effort with Katmai National Park staff in conducting an aerial bald eagle nest survey of the Pacific Coast of Katmai National Park. Donna helped train new observers Rick Potts, Resource Management Specialist and Tom Smith, Researcher, both from Katmai Park in the helicopter survey techniques developed during the oil spill. A majority of the nests contained small downy hatchlings, with some pairs still incubating. On July 21st, WB Dewhurst continued assistance with helicopter bald eagle surveys of the Pacific Coast of Katmai National Park. This July replicate served as a fledgling count.

In a cooperative effort with the local ADF&G biologist and Aniakchak National Monument and Preserve, the Complex has agreed to utilize RIT Lind in administering the subsistence permits for the October 1 - December 1, 1992 and May 10 - 25, 1993 Federal subsistence brown bear season for the villagers of Chignik Lake, Perryville and Ivanof Bay. Orville will be passing the on information regarding the season, issuing permits and sealing bears that are taken. Information flyers and large maps, showing the lands open for the taking of subsistence brown bear, have been sent to each of the villages' post offices and key village council members notified.

In a cooperative effort with the Fish and Wildlife Research Center, Service Volunteer Jim McCarthy conducted radio tracking northern pintails in October. The waterfowl were fitted with transmitters by Barry Grand's crew on the Yukon Delta this summer. We confirmed only one pintail on the 20th, (150 yards downriver from the Complex Office along the Naknek River).

In addition to 50 special use permits issued for cabins, guides, outfitters and transporters, nine permits were issued for other uses (Table 18). Seven of the nine permits were issued for non-economic uses.

Table 18. Special use permits issued for other economic use and non-economic uses.

Year	<u>Other Economic Uses</u>			Sub	<u>Non-Economic Uses</u>			Sub
	Oil/Gas	Mineral	Total		Federal	State	Other	Total
1984	9	1	10		4	2	1	7
1985	5	1	6		3	2		5
1986		1	1		2	2	1	5
1987	1	1	2		4	1		5
1988	1		1		5	1	1	7
1989		1	1		4	1		5
1990	2	2	3		2	2	2	9
1991	2		2		3		4	7

On February 25th, ARCO representatives Richard Ranger and Douglas Bremner traveled to King Salmon to meet with Complex and Katmai National Park staff. The briefing and consultation took place in the Park Service office. RM Hood, DRM Poetter, ROS/P Arment and WB Dewhurst represented the Complex while Subsistence Specialist Susan Savage, Cultural Resource Management Specialist Pat McClenahan and Chief of Maintenance Ed Stondall represented Katmai National Park. ARCO Alaska, Inc. was planning to conduct an offshore seismic program in the Cook Inlet and Shelikof Straits in May/June of this year. They were planning to install near-shore seismic lines into Wide Bay, Portage Bay, Puale Bay and perhaps Alinchak Bay. Most work will be below mean high water (mhw) so a special use permit will not be required. However, ARCO did plan to locate one ground positioning system (GPS) site in each bay that will be above mhw and required a permit. The use of helicopters and potential fuel caches were discussed. We provided information and advice on sensitive wildlife concentrations, beach conditions, archeological sites, timing of work, other agencies that should be consulted, etc.

3. Items of Interest

Contaminants Projects. Two proposals for contaminants studies on Becharof Refuge were funded for 1992. These were:

- 1) "AK - Further Investigation of Oil Exploration Well, Bear Creek No. 1, Becharof National Wildlife Refuge"; and
- 2) "AK - Investigation of Cache of 55-gallon Barrels, Jute Bay, Becharof National Wildlife Refuge."

Since DeVries, Fish and Wildlife Biologist, Ecological Services Anchorage, and Joan Christen, Cooperative Student, arrived in King Salmon on June 14th to initiate the sampling for the two studies. A Bell 206 Jet Ranger was chartered from Kenai Air, Inc. piloted by Jerry Gray for the projects. Weather and events conspired to complicate the completion of the two projects.



Oil exploration at Bear Creek No. 1 well was completed in 1960. 6/92, DAD

Extensive sampling for potential contaminants was planned for the Bear Creek well site. The well pad is located at about 1800 feet above sea level in a mountain pass that is characterized by 15 to 30 knot winds with copious rain. Due to numerous weather delays, sampling was not completed until July 1st. A sample catalog was completed in September and the samples submitted for analyses.

The nature of the sampling at the barrel cache on Jute Bay (Island Bay) changed when Mobil Exploration and Producing U.S., Inc. assumed responsibility for the site and agreed to clean it up (see Section H.22. above). Mobil began their clean up on the 12th. A rapid-fire set of events followed.

- On the 14th, RM Hood conducted an onsite inspection of the project using a Bell 206 Jet Ranger helicopter. Onsite, he met with Mobil representative Gary Busse and Northern Exploration Services (NES) Manager Jeff Hastings.
- The NES crew had used a backhoe to remove overburden and establish the limits of the cache. We suspected that a long, continuous cache of barrels and buried debris existed. Site testing revealed that two caches were present. The eastern cache contained approximately 1200 stacked, uncrushed barrels. An undetermined number of crushed barrels were buried at its west end. Along the north side of this cache were barrels that contained liquid (some partial, some full).



The Island Bay barrel cache proved to be extensive.

6/19/92, REH

- The western cache contained 250 to 300 uncrushed barrels, some crushed barrels, and buried miscellaneous metal trash (at east end of cache). There was approximately 100 feet of sand dune between the two caches.
- The NES crew had started crushing the barrels in the eastern cache and were about one-quarter completed. Crushed barrels were stacked in a blow-out just south of the cache. A problem with residual fuel in a few barrels and partial/full barrels was brought to RM Hood's attention by Messrs Busse and Hastings. A small number of uncrushed barrels with some sort of contents were placed next to the crusher. Also, a number of crushed barrels showing an oily residue were stacked within the bermed area. All barrels in the cache were in a very deteriorated condition.
- Mr. Busse was advised the obvious -- that Mobil now had a contaminants problem. Since contaminants specialist Sonce DeVries was arriving that day, action was deferred until the 15th. The next day RM Hood again visited the Jute Bay site; this time accompanied by Sonce devries, Fish and Wildlife Biologist (FWB), Ecological Services Anchorage and Joan Christen, Cooperative Student. At the cache, they discuss the situation with Messrs. Busse and Hastings. It was pointed out that at this point there had not been a spill -- all barrels had retained their integrity. Sonce advised Mr. Busse on what was required of Mobil at this point. This included preparation of a "Contaminants Plan" that would address all aspects of the clean up; health, safety, and

proper trained work crew; containerizing the barrels, etc. To emphasize this point, RM Hood ordered a temporary halt to the work until a Contaminants Plan was prepared by Mobil and approved by the Service.



Contaminants Specialist Sonce deVries (right) discussing the need for a Contaminants Plan with Mobil representative Gary Busse while Co-op student Joan Christen observes how its done.
6/15/93, REH

- A draft plan was received from Mobil on the 16th. The draft plan was reviewed by Sonce DeVries and Everett Robinson-Wilson, Regional Contaminants Coordinator, and received their approval. RM Hood wrote Mobil a letter on the 17th approving the Contaminants Plan and lifting the temporary halt in the work. Work resumed, under the plan, on the 19th. Mobil requested a final inspection of the work on the 25th. The inspection was completed by RM Hood, FWB deVries, and RAPS student Johanna Young. Mobil had done an excellent job of cleaning up the site pursuant to the Contaminants Plan. All of the barrels had been properly containerized.



Extracting the 55-gallon barrels from the cache soon revealed a contaminants problem. 6/15/92, REH



Crushing the barrels created an additional potential problem when residual fuels were discovered in many of the barrels. 6/14/92, REH



Crushed barrels were containerized for transport.
6/19/92, REH



The barge, Polar Bear, was used to haul the barrels and other trash from Exxon's Take Pride project (trash in foreground) and Mobil's Take Pride/contaminants project.
6/15/92. REH

However, when sampling began, it was immediately evident that hydrocarbons had escaped into the soil and water table beneath the cache. Sheening was observed in several test pits dug by the backhoe. Then another mysterious source of hydrocarbons was found on the bank of Jute Creek about 100 yards southeast of the cache - - natural or manmade? Once the test results of the samples are known, we will know the scope of the problem. Until then Mobil was given approval to backfill the cache and contour the site.



Sheen from test pit adjacent to cache demonstrates that hydrocarbons have escaped. At year's end, we were still waiting for the results of lab analysis of the numerous samples taken at the site. 6/19/92, REH



The cache was backfilled and contoured after all barrels and trash were removed.

6/25/92, REH



Numerous natural seeps makes tracing hydrocarbon contamination to its proper source a challenge. Sonce deVries examines a large seep on Oil Creek. This is only a short distance from the Island Bay barrel cache.

6/25/92, REH

-- At year's end, we were still waiting for results from the analyses of the samples. A sample catalog was submitted in September

4. Credits

Without the efforts of the following people, this annual narrative would not be possible. Thanks and appreciation go to everyone.

Collins	Table of Contents; typing, editing and compiling.
Dewhurst	Sections D.5.; F.; G.; and editing.
Hood	Introduction; Sections A.; C.; D.1., 2., 3., 4., and 6.; E.5., and 8.; J.4.; K; and editing.
Mumma	Section E.6.
Poetter	Sections B.; E.1., 2., 3., 4., and 7.; H.17, 20. and 21.; I.; J.1., 2., and 3; and editing.
Terrell-Wagner	Sections H.1., 2., 3., 6., 7., 8., 15., 16., 18., 22., and 23.
KSFRO	Section G.11.

Photograph credits are listed in alphabetical order.

ART-W	Angie Terrell-Wagner	Complex Staff
BJ	Brent Jones	Commercial Guide
CH	Chuck Hunt	Yukon Delta NWR
CJS	Carol Snetsinger	Service Volunteer
CLK	Cynthia Kranich	Complex Staff
DAD	Donna Dewhurst	Complex Staff
DDM	Moose Mumma	Complex Staff
FWS	Unknown	Service
JCK	Smiley Knutsen	Complex Staff
JHM	Jim McCarthy	Service Volunteer
JPL	Jim Larson	KSFRO Staff
KSFRO	Unknown	KSFRO Staff
LC	Laurie Cleary	Service Volunteer
ME	Mark Emery	Professional Photo.
MW	Mirijam Wurth	Service Volunteer
NLB	Nikki Benjamin	Service Volunteer
OL	Orville Lind	Complex Staff
RDP	Rick Poetter	Complex Staff
REH	Ronald Hood	Complex Staff
UR	Urs Roth	Service Volunteer

K. FEEDBACK

1992 WAS THE BEST OF YEARS AND THE WORST OF YEARS! THIS DOCUMENT RECORDS OUR NUMEROUS ACCOMPLISHMENTS. THESE ARE PARTICULARLY REMARKABLE IN LIGHT OF THE TREMENDOUS DISTRACTIONS THAT WE FACED. NOTHING WOULD BE GAINED BY REHASHING THE DISTRACTIONS -- AND THIS DOCUMENT SPEAKS FOR OUR ACCOMPLISHMENTS. TO THE STAFF OF THE ALASKA PENINSULA/BECHAROF NATIONAL WILDLIFE REFUGE COMPLEX, THANK YOU FOR WORKING SO HARD TO MAKE 1992 A SUCCESS! IT WAS A BANNER YEAR AND EACH OF YOU DESERVE THE CREDIT!