



ALASKA PENINSULA NATIONAL WILDLIFE REFUGE

King Salmon, Alaska

ANNUAL NARRATIVE REPORT

CALENDAR YEAR 1983

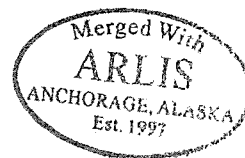
SPEC
COLL
NARR
APNWR
1983

ALASKA PENINSULA NATIONAL WILDLIFE REFUGE

King Salmon, Alaska

ANNUAL NARRATIVE REPORT

Calendar Year 1983



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

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



5 2 3 4 1 6

Personnel

1.	John Taylor	Refuge Manager	GS-485-12	EOD	08/26/79
2.	Vernon D. Berns	Asst. Refuge Manager (Pilot)	GS-485-12	EOD	02/18/82
3.	C. Randall Arment	Asst. Refuge Manager (Pilot)	GS-485-11	EOD	10/03/82
4.	John W. Solberg	Asst. Refuge Manager	GS-485-05	EOD	03/06/83
5.	Randall J. Wilk	Biological Technician	GS-404-05	EOD	06/27/83
6.	J. Michael Humerick	Maintenance Worker	WG-4749-8	EOD	05/23/82



Glenn Ellison, Refuge Manager GS-485-12 EOD 10/08/81 Transferred 09/26/83



Kellie Swanson, Refuge Assistant GS-303-4 EOD 08/22/82 Resigned 07/20/83

Sharon Workman GS-303-4

EOD 10/13/83 Resigned 01/06/84

Temporary

Carl Reintsma Biol. Technician EOD 06/13/83 Termin. 08/09/83

Y.C.C.

Denise Reynolds EOD 06/13/83 Termin. 07/22/83

Tani Wieber EOD 06/13/83 Termin. 07/22/83

Review and Approvals

John I. Taylor 02/29/84
Refuge Manager Date
TC 3/16/84

John I. Taylor *Reg. Off.*
Regional Office Review Date
4/12/84



TABLE OF CONTENTS

INTRODUCTION

A. HIGHLIGHTS.....1

B. CLAMACTIC CONDITIONS.....1

C. LAND ACQUISITION

1. Fee Title.....	4
2. Easements.....	NTR
3. Other.....	4

D. PLANNING

1. Master Plan.....	5
2. Management Plan.....	6
3. Public Participation.....	6
4. Compliance with Environmental Mandates.....	7
5. Research and Investigations.....	NTR

E. ADMINISTRATION

1. Personnel.....	7
2. Youth Programs.....	8
3. Other Manpower Programs.....	10
4. Volunteer Programs.....	NTR
5. Funding.....	10
6. Safety.....	10
7. Technical Assistance.....	NTR
8. Other Items.....	12

F. HABITAT MANAGEMENT

1. General.....	12
2. Wetlands.....	14
3. Forests.....	14
4. Croplands.....	NTR
5. Grasslands.....	NTR
6. Other Habitats.....	NTR
7. Grazing.....	NTR
8. Haying.....	NTR
9. Fire Management.....	NTR
10. Pest Control.....	NTR
11. Water Rights.....	NTR
12. Wilderness and Special Areas.....	14
13. WPA Easement Monitoring.....	NTR

NTR* = Nothing to Report

G. WILDLIFE

1. Wildlife Diversity.....	15
2. Endangered and/or Threatened Species.....	15
3. Waterfowl.....	15
4. Marsh and Water Birds.....	19
5. Shorebirds, Gulls, Terns and Allied Species.....	19
6. Raptors.....	19
7. Other Migratory Birds.....	21
8. Game Mammals.....	21
9. Marine Mammals.....	23
10. Other Resident Wildlife.....	23
11. Fisheries Resources.....	27
12. Wildlife Propagation and Stocking.....	NTR
13. Surplus Animal Disposal.....	NTR
14. Scientific Collection.....	NTR
15. Animal Control.....	NTR
16. Marking and Banding.....	27
17. Disease Prevention and Control.....	NTR

H. PUBLIC USE

1. General.....	29
2. Outdoor Classrooms - Students.....	NTR
3. Outdoor Classrooms - Teachers.....	NTR
4. Interpretive Foot Trails.....	NTR
5. Interpretive Tour Trails.....	NTR
6. Interpretive Exhibits/Demonstrations.....	NTR
7. Other Interpretive Programs.....	NTR
8. Hunting.....	29
9. Fishing.....	31
10. Trapping.....	31
11. Wildlife Observation.....	31
12. Other Wildlife Oriented Recreation.....	31
13. Camping.....	31
14. Picnicking.....	NTR
15. Off-Road Vehicling.....	32
16. Other Non-Wildlife Oriented Recreation.....	NTR
17. Law Enforcement.....	32
18. Cooperating Associations.....	NTR
19. Concessions.....	NTR
20. Cabins.....	32

I. EQUIPMENT AND FACILITIES

1. New Construction.....	33
2. Rehabilitation.....	34
3. Major Maintenance.....	34
4. Equipment Utilization and Replacement.....	38
5. Communications Systems.....	40
6. Energy Conservation.....	40
7. Other.....	NTR

J. OTHER ITEMS

1. Cooperative Programs.....40
2. Items of Interest.....43
3. Credits.....43

K. FEEDBACK.....43

INTRODUCTION

The Alaska Peninsula National Wildlife Refuge (APNWR) was established on December 2, 1980 by the Alaska National Interest Lands Conservation Act (ANILCA). APNWR roots are in the Alaska Native Claim Settlement Act (ANCSA) Section 17(d)(2). Following the U.S. Congress' stalemate on the (d)(2) legislation in 1978, most National Interest Lands in Alaska were withdrawn by the Executive Branch for three years under Section 204(e) of the Federal Land Policy and Management Act. Alaska Peninsula Refuge was one of these areas.

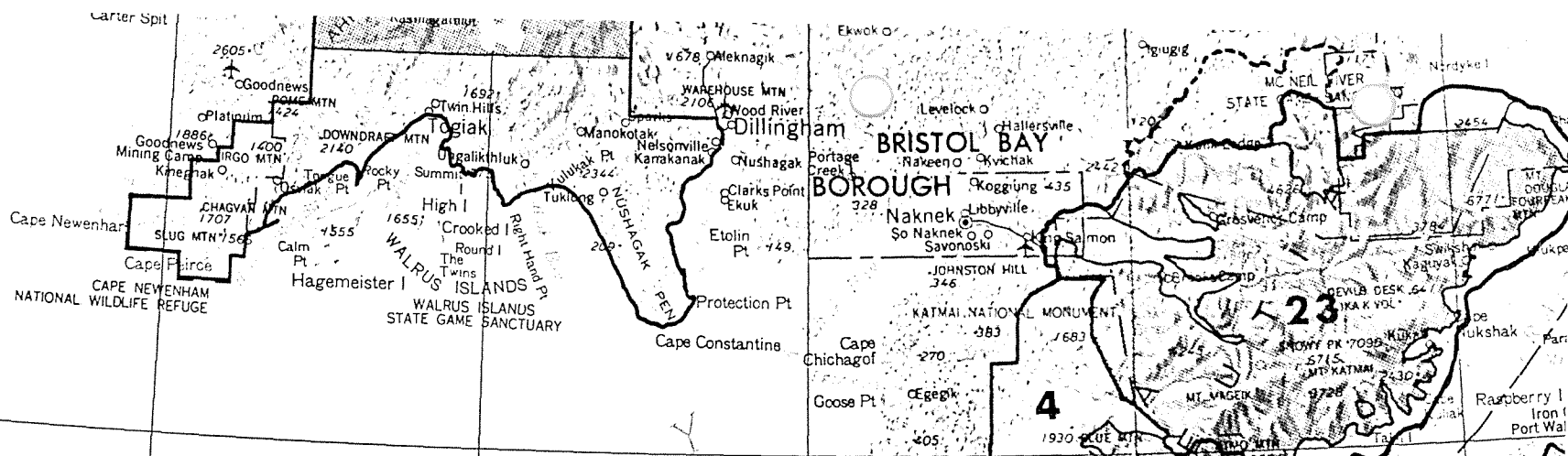
APNWR comprises approximately 3.5 million acres generally on the southern half of the Alaska Peninsula from the western boundary of Becharof NWR to False Pass, excluding Aniakchak Caldera National Monument and Preserve, all valid State and Native land conveyances, and other Federal land withdrawals. Lands on the north side of the Alaska Peninsula were excluded primarily due to heavy selection by the state and native corporations.

The sprawling configuration of the refuge is 330 miles from one end to the other. The closest point on the refuge is 55 miles from the headquarters in King Salmon and the farthest point is 370 miles. King Salmon is located 290 air miles southwest of Anchorage and is the headquarters for the Ugashik and Chignik Units of the refuge. The Pavlof Unit (area south of Port Moller) is managed by Izembek NWR out of Cold Bay, Alaska.

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

The APNWR is a very scenic area. The Aleutian Mountain Range bisects the refuge lengthwise. The mountains are volcanic origin rising to over 8,200 feet. Several of the volcanoes have been active in historic time; Pavlof Sister, Mt. Chiginagak, and Mt. Peulik, while Pavlof and Mt. Veniaminof have been active within the last five years. The mountains are heavily glaciated and snow covered. Several large rivers and streams originate on the refuge; Chignik, Ugashik, Dog Salmon, King Salmon, Sandy and Bear rivers. Each of these Rivers support salmon which is a multi-million dollar industry on the Alaska Peninsula. The Pacific coastline is rugged with seacliffs rising hundreds of feet from the water, while the refuge west of the mountains is primarily rolling wet or moist tundra.

There are many problems that the refuge must confront; oil and gas development within the next 20 years, proposals for transportation corridors of highways and pipelines across the refuge, and increased human population and activities that will increase pressure on fish and wildlife resources.

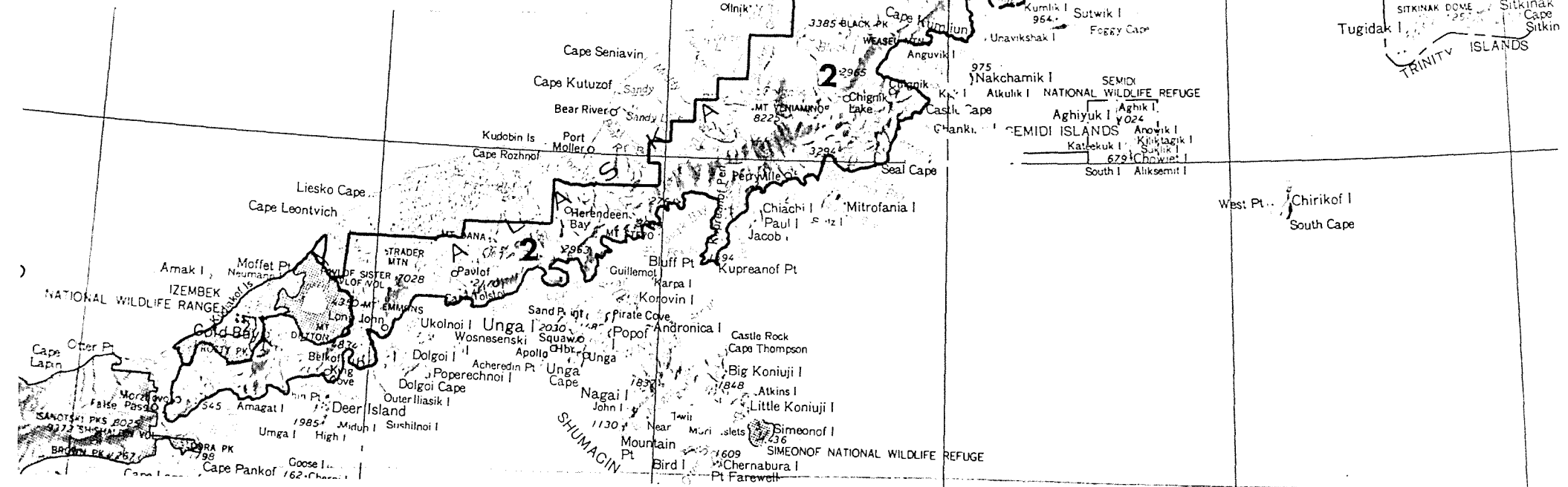


U.S. FISH AND WILDLIFE SERVICE AREAS

2. Alaska Peninsula Nat'l Wildlife Refuge
4. Becharof Nat'l Wildlife Refuge

NATIONAL PARK SERVICE AREAS

17. Aniakchak Nat'l Monument and Preserve
23. Katmai Nat'l Park and Preserve



A. HIGHLIGHTS

The Becharof and Alaska Peninsula Refuges were combined and put under one staff as of October 1 (Section E).

On January 21 the refuge took occupancy of the rehabbed office building. The refuge now has such luxuries as heat, water and toilets, so for the first time since established we could finally justify buying toilet paper (Section I).

Providing data, writing/rewriting plans and attending public meetings to explain the Bristol Bay Comprehensive Management Plan at outlying villages continues through most of the year (Section D).

Mt. Veniaminof volcano erupted on June 4 and sparked an interest on local and national news. The eruption was predominantly ash and steam with some magma (Section F).

A brown bear survey conducted at Chignik-Black Lake area yielded 173 bears in 186 minutes of flying time. This was a record showing of bears since the survey began in 1962 (Section G).

A female brown bear with six yearlings was observed on two occasions at the Ugashik Lakes area. Is this a record or were they adopted? (Section G).

B. CLIMATIC CONDITIONS

1. General

The refuge lies in an area which is generally considered to exhibit polar maritime climate, characterized by high winds, mild temperatures, protracted cloud cover and frequent precipitation. Cyclonic storms frequently move from the Bering Sea to dominate the refuge's weather for a major part of each year. Summers, although highly variable from year to year, are characterized by fog, drizzle and persistent cloud cover.

Weather conditions are influenced tremendously by the Aleutian Range. The Bering Sea side has lower average temperatures, less precipitation and clearer weather than the Pacific. The mountains' uplifting, especially on the southeast side of the range, result in very heavy rain and snowfall at higher elevations. Extreme local winds and turbulence occur in the mountain passes. During winter, precipitation often falls as rain on the southeast side near sea level, but rain occurs less frequently than snow northwest of the Aleutian Range.

Precipitation varies from an average 160 inches in the vicinity of Chignik and Castle Cape to less than 20 inches a year over northern parts of the refuge. Fall is the wettest season. Snowfall ranges from over 200 inches annually on windward mountain slopes to about 30 inches on the refuge's Bering Sea side.

At King Salmon, cloud cover prevails 76 percent of the time with an average of only 55 clear days each year.

No sharp distinctions occur between seasons because of the moderating influence of surrounding oceans. Growth of vegetation usually does not occur until late May or early June. The first freezing weather, especially on the Pacific side, generally does not occur until October or November. The King Salmon climatological data for 1983 is summarized in Table 1.

Table I. 1983 Climatological Data - National Weather Service, King Salmon, Alaska

Month	Temp. (°F)				Precipitation (inches)			Max. Snow on ground (inches)	Wind (mph)		Sky Cover ¹ (days)		
	High	Low	Ave.	Norm	Total	Norm	Snow		Ave.	Pk.	Clr.	Pt.Cldy	Cldy.
Jan	43	-18	12	13	.42	1.04	4.0	2	13	60	11	7	13
Feb	43	-15	19	14	.25	.88	2.0	1	10	39	2	8	18
Mar	50	-3	33	19	.22	1.13	T ²	T ²	11	39	5	4	22
Apr	64	13	37	31	2.22	1.05	6.0	2	12	55	1	6	23
May	66	30	47	42	1.37	1.18	T		12	51	1	7	23
Jun	74	34	54	50	1.18	1.50			11	43	3	6	21
Jul	76	43	57	55	1.53	2.08			10	35	0	6	25
Aug	73	35	54	54	2.33	3.13			10	38	1	5	25
Sep	63	15	46	47	2.36	2.78	T		11	60	3	6	21
Oct	54	-12	29	33	2.81	1.92	9.9	9	11	46	3	6	22
Nov	50	-7	30	23	.98	1.40	2.3	6	10	67	4	4	22
Dec	46	-3	27	12	.48	1.24	2.8	2	10	46	6	3	22
Total					16.15	19.33	27.0				40	68	257

¹Sky Cover: Clear= 0 to 3 cloud cover; partly cloudy= .4 to .7 cloud cover; and cloudy= .8 to 1.0 cloud cover.

²T= Trace

C. LAND ACQUISITION

1. Fee Title

The boundaries of Alaska Peninsula NWR established by the ANILCA encompass 3,500,000 acres. However, several hundred thousand acres of mostly State and Native inholdings are present within that boundary. Due to overselections by Native corporations and conflicting claims by the State, Native corporations and private individuals, exact acreages are not available. Nevertheless, it has been estimated that approximately 2,070,000 acres plus an additional 390,000 acres with subsurface rights have been selected or conveyed to the Natives. There are also about 115,000 acres of State selections which do not conflict with Native selections.

The Alaska Department of Natural Resources (DNR) has agreed to resolve the status of refuge State selections under Bristol Bay Cooperative Management Plan ANCSA section 11(a)(3) as part of the (BBCMP). These State-selected areas were filed on lands that had been withdrawn for, but which were not selected by Native corporations under section 11(a)(3).

The validity of these particular State selections has been questioned by the FWS. Resource value and logical land management patterns are the primary criteria by which the State and the FWS will decide whether these lands should be included in the refuge or owned by the State.

3. Other

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

State-owned lands adjacent to Mother Goose Lake has attracted FWS interest. Its southwestern location from the lake would place the entire watershed under FWS administration. The area receives considerable recreational use and has been considered by the Alaska DNR for public sale. Thus, having this land as part of the refuge would ensure its availability for public recreation.

The area which includes lands between Herendeen Bay and Port Moller on the north and the Pacific Ocean on the south, has a confusing pattern of land ownership. The area contains a hodgepodge of refuge and State lands, State-selected, Native corporation, Native corporation-selected and other private lands. The BBCMP recommends that the FWS, State, Aleut Native corporation and affected village Native corporations accomplish land exchanges to consolidate ownership.



Mt. Chiginagak - this part of the Mother Goose Lake watershed is included in the refuge, however, another part of the watershed is owned by the State. The BBCMP has recommended that the State land be added to the refuge so the entire watershed can be managed in unity.

01-83-JS

D. PLANNING

1. Master Plan

Alaska refuges do not utilize master planning as it exists for the refuges in the lower 48 states, but rather comply with Public Law 96-487-ANILCA. Section 304 authorized the Secretary of Interior to enter into cooperative management agreements and to prepare comprehensive conservation plans. Bristol Bay was an area chosen for a cooperative management plan. The BBCMP area encompasses 31 million acres. Members of the Study Group include the Fish and Wildlife Service, Bureau of Land Management, Alaska Department of Fish and Game, Alaska Department of Natural Resources, Native interests, and the private sector. The plan is in part derived from the Refuge Comprehensive Conservation Plan (RCCP). The draft BBCMP was completed in June, while the draft refuge RCCP is due for completion in the spring.

A tremendous amount of staff time and travel was spent on writing,

mapping and providing resource information for the plans. Some of the major commitments included were but not limited to:

January - RM Ellison spent several days writing the wildlife and habitat section of the BBCMP.

February - BBCMP public meetings were presented in Naknek, Pilot Point, Meshik, Chignik Lake and Chignik Bay.

March - RM Ellison attended a presentation in Anchorage concerning designation of pipeline/transportation corridors on the refuge. Ellison attended a Bristol Bay Study Group meeting where the preferred alternatives for the BBCMP were selected.

August - ARM Solberg attended public meetings regarding BBCMP in Port Heiden and Pilot Point. Solberg also attended a meeting in Naknek with personnel from Becharof NWR. RM Ellison attended BBCMP public meetings at Ivanof Bay, Chignik Lake and Chignik Bay.

September - RM Taylor worked with Regional Office Planners Ron Thuma and Dave Patterson at King Salmon on the RCCP. ARM Berns flew Regional Office Planners to Black Lake on a "show me" trip of the refuge.

October - Revised alternatives were selected for the RCCP.

November - RM Taylor traveled to Anchorage to attend RCCP and BBCMP meetings. Taylor traveled to Washington, D. C. to present the draft Becharof RCCP to Assistant Secretary Arnett and Director Jantzen, and discussed alternatives for the Alaska Peninsula RCCP.

2. Management Plans

Several wildlife inventory procedures including brown bear, moose, caribou, bald eagle and sport fishing were submitted to the Regional Office (R.O.) for review. Upon return the procedures were revised and resubmitted for final review. Next year, and upon approval of the individual inventory procedures, there will be a consolidation of the plans with the Becharof NWR Inventory Plan.

3. Public Participation

Public participation in the form of meetings and written comments were used during the preparation of both the draft BBCMP and RCCP. Meetings were held in Naknek, South Naknek, Egegik, Pilot Point, Meshik and Chignik. During the meetings personnel representing the FWS, the refuge, Native corporations and Alaska DNR were on hand to answer questions pertaining to their area of expertise. Relatively few people attended the meetings conducted during the day, as compared to the higher turn out for those meetings held in the evenings. Major issues centered around the oil and gas development and the contingent pipeline/corridor plans.

Most villagers expressed mixed and generally negative feelings toward the pipeline corridors. The attitudes could generally be grouped into one of three categories: those opposing pipeline corridors completely; those for energy development but against a pipeline corridor in their area; and those for energy development and a pipeline corridor in their area but against access roads. Overall the participants wanted to protect their existing subsistence lifestyle.

4. Compliance With Enviromental Mandates

Both the BBCMP and RCCP are considered major federal actions and include Environmental Impact Statements within the plans. As previously discussed, the refuge manager and staff worked extensively in the preparation of the plans and their associated Environmental Impact Statements.



The Meshik River area--one of the proposed oil/gas pipeline corridors under study in the BBCMP and Alaska Peninsula RCCP.

02-83-GE

E. ADMINISTRATION

1. Personnel

In January, John Solberg was selected for the Assistant Refuge Manager (Trainee) position. John reported for duty in King Salmon on 03/07/83.

He had worked as a Biological Technician (temporary) on two refuges in Region 6 and as a clerk/typist in the R. O. in Anchorage just prior to the assignment with the refuge.

In September, Glenn Elison, refuge manager, transferred to the Arctic NWR. After his departure, responsibilities for APNWR were combined with Becharof's to be managed by the remaining manager, John Taylor. The decision to combine the two refuges had been made by the R. O. in FY 82. This appears to be a logical action since the two refuges have shared the same headquarters site, facilities, and administrative needs. Additionally, due to lack of funding and personnel ceilings, the refuges also had shared certain positions, e.g. the refuge assistant and maintenance worker. This created an administrative nightmare concerning budget tracking, FTE's, payroll, and supervision. The state of personnel affairs is shown in TABLE 2.

TABLE 2. PERSONNEL STATUS OF APNWR

<u>FY</u>	<u>PFT</u>	<u>TEMPORARY</u>
84	3	.4
83	3	.7
82	2	.6
81	1	.0

Refuge Assistant Kelie Swanson resigned on 7/20/83 after 11 months of clerical duty. Upon advertising the position, administering the OPM examination, and making a selection, it was October 13 before Sharon Workman reported as the new Refuge Assistant. Sherry worked for only two months at which time she and her husband decided to leave the King Salmon/Naknek area and head for Idaho.

The ability to retain clerical help continues to be a problem in King Salmon. Motives for frequent turnover vary but quite often involve wages in the private sector approaching as much as 3 times those available in federal employment.

The maintenance worker position currently held by Mike Humerick was originally established as a temporary appointment. The position was advertised as a permanent, full-time appointment and selection will be made in CY 1984.

2. Youth Programs

Two YCC enrollees completed an 8 week work session this summer. The young women were hired locally (our only two applicants) and worked on numerous maintenance projects for both APNWR and BNWR. Some projects included: filling sandbags for dock bulkhead, painting (overhead doors, building trim, foundation skirting, and boardwalks with anti-slip grit), shingle siding, grounds "fix-up" (litter/junk patrol, raking, fertilizer-grass seeding), vehicle cleaning-washing-waxing, and



Denise Reynolds and Tani Weiber completed an 8 week YCC work program. The enrollees were a great help even if they were caught here "sitting down on the job." 03-83-RW

office cleaning duties. In addition to maintenance jobs the YCC's helped with clerical duties during interim periods between refuge assistants.

A problem exists on recruiting enrollees for our youth programs. The YCC work sessions occur (generally) at the height of the salmon processing period. Consequently, teenagers can usually find more lucrative summer employment with local canneries. There are 5 canneries in Naknek located 15 miles west of King Salmon.

3. Other Manpower Programs

From June 1 until August 9, Carl Reintsma was detailed from the Washington Office to work jointly for BNWR and APNWR. Washington paid all salary, per diem, and travel costs. Carl spent most of his time in the headquarters compound. He assisted the maintenance worker and worked with the YCC crew at jobs including: siding and skirting the cabins, installing vents in cabin roofs, painting, assorted light carpentry, lawn mowing and vehicle cleaning.

5. Funding

TABLE 3. APNWR FUNDING FY81 - FY 84

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

¹Includes 130K earmarked for ARMM project.

²Earmarked to assist King Salmon Fisheries Resource Station in developing a Fisheries Management Plan.

³Includes \$56K spent on BBCMP mapping.

6. Safety

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

Flight helmets were purchased for all refuge personnel involved in survey operations. Hopefully they'll never be needed, but in the event that one of our aircraft go down, the bruise from a panel knob might be lessened.



R.O. Safety Officer Ginny Hyatt (third from left) visited King Salmon to conduct training sessions in defensive driving, CPR, and first aid. All the injured personnel pictured survived. 04-83-JT

The facilities occupied by the refuge were acquired from the National Marine Fishery Service (NMFS). Much headway was gained this year in correcting many unsafe conditions relating mainly to facilities (Section I).

A lost time accident involving a YCC enrollee occurred in June. Tani Weiber cut her finger with a utility knife while trimming siding shingles for one of the cabins. The laceration required a trip to the doctor and four stitches. The accident could have been prevented (or at least reduced) had she been wearing her gloves.

Three flammable liquid storage cabinets were purchased for the shop. We have utilized the cabinets for storage of various paints and solvents.

Ginny Hyatt, Safety Officer (R.O.) visited King Salmon the week of 2/21. In addition to conducting a refuge safety inspection, Ginny presented courses in: CPR, Multimedia First Aid, and Defensive Driving.

Safety meetings were conducted monthly in conjunction with staff meetings. Safety topics were presented by all personnel on a rotating basis.

8. Other Items

An administrative inspection was conducted by Winston Jacobson, CGS (R.O.) in late September. The inspection was helpful in smoothing out refuge administrative procedures.

Administrative Assistant, Ruth Johnson (R.O.), traveled to King Salmon in December to give our new clerk Sherry Workman some "on the job training" regarding administrative procedures. Much to our dismay, Ruth arrived the day Ms. Workman announced her resignation. Ruth spent her time "polishing up" the administrative skills of those refuge persons who handle administrative affairs in (yet another) clerkless period.

Federal employment career opportunity packages were given to village leaders or school teachers in seven villages on the peninsula.

F. HABITAT MANAGEMENT

1. General

Little is known about the Bristol Bay/Alaska Peninsula region regarding vegetation. Prior to 1970, the majority of vegetation data for the region came from isolated studies. In the 1970's some general vegetation studies were done in areas that included the Alaska Peninsula NWR.

In April, 1981 the state and federally-supported Bristol Bay Land Cover Cooperative Mapping Project was begun. Using Landsat satellite images and computer technology, this effort provided more accurate and detailed information than previously existed on vegetation of the refuge and surrounding areas.

Based on this system these are the major cover types on and near the refuge (Table 4). The refuge lies south of a transition zone between the forest/tundra plant communities to the north, and the generally treeless grass/sedge/low shrub tundra characteristic of the majority of the

of the peninsula. This treeless, low-profile tundra is nearly continuous from the Ugashik Lakes south to False Pass.

The closed shrub/grass class is the largest cover type on and near the refuge: 19.2% of the refuge (881,496 acres) is classified in this category.

Table 4 -- Major Cover Types and Percentages of Total Cover on and near the Alaska Peninsula NWR.

Cover Type	Approximate Area (acres)	Approximate Percentage Total Cover
Deep clear water	472,532	10.3
Shallow sedimented water	26,557	.06
Snow/cloud/light barren	615,630	13.4
Barren	846,599	18.4
Open low shrub/heath tundra	296,803	6.5
Marsh/very wet bog	141,782	3.1
Closed shrub/grass	881,496	19.2
Miscellaneous deciduous	558,264	12.2
Wet bog/wet meadow	258,304	5.6
Open low shrub/grass tundra	431,497	9.4
All other	60,607	1.3
Total	4,590,071	100.0

Within the Ugashik Unit of the refuge the major land cover types are:

- Miscellaneous deciduous
- Closed shrub/grass
- Barren
- Snow/cloud/light barren
- Deep clear water

Within the Chignik Unit of the refuge all of the cover types are represented with the exception of a few types that are absent or very localized. They are:

- Lichen
- Lichen/shrub tundra
- Conifer forest
- Mixed forest

The terrestrial flora of the refuge is generally restricted to low growing species that can resist cold summer temperatures, strong winds, limited moisture, shallow soils and a short growing season. About 300 terrestrial plant species are known to occur in the general area of the refuge.

At least 20 freshwater plant species (mostly algae) are found on the refuge, while more than 70 marine plant species (mostly algae) inhabit salt water adjacent to the refuge.

2. Wetlands

Hundreds of lakes and ponds dot the Bristol Bay lowlands on the northwest side of the refuge. The Ugashik Lakes (160 square miles), is the refuge's largest lake system. Other major lakes include Mother Goose, Bear, Sandy, Black, and Chignik. Except for the latter two, all the aforementioned lakes drain into Bristol Bay.

Streams on the southeast side of the peninsula are generally shorter, smaller and have steeper gradients than those terminating in the Bering Sea. The Ugashik River is the largest river in the refuge. It drains a 1,260 square mile area and meanders 34 miles. The 71-mile Dog Salmon River is the longest river in the refuge and flows into Ugashik Bay. The Chignik River is 32 miles long, drains 600 square miles of watershed and is the largest drainage on the Pacific side of the peninsula. Other major rivers within the refuge include the Meshik, King Salmon, Muddy, Sandy, Bear, and Kametolook.

Refuge mean annual runoff varies from less than two cfs per square mile in the Bristol Bay lowlands to well over four cfs per square mile in the Aleutian Range. Mean peak annual runoff ranges from less than ten to over 50 cfs per square mile. Flooding is most common in the fall, the period of maximum precipitation. Spring runoff is generally gradual.

3. Forests

There are no major forested areas within the refuge. The miscellaneous deciduous category (Table 4) occurs as cottonwood only in the Mother Goose Lake area, while it is generally willow in tall, low or dwarf shrub form. Tall and low willows are the dominant deciduous species associated with riparian areas.

12. Wilderness and Special Areas

Mt. Veniaminof, located on the refuge approximately two-thirds the way down the Alaska Peninsula, erupted on about June 4. It was last active in 1944. The current eruption and activity has lasted through the end of the year. During this time, residents of Perryville and pilots observed ash clouds ascending to 3 miles above the volcano, lava fountains with incandescent bombs shooting to 300 feet, and a 300 foot wide lava flow. Perryville residents also heard the mountain rumble and felt earth tremors. The USGS made regular overflights throughout the period to monitor the strombolian activity. Unfortunately, due to weather, the refuge staff has not yet taken any photographs of the activity.

G. WILDLIFE

1. Wildlife Diversity

The Alaska Peninsula and its present wilderness character produces a rich and diverse wildlife population. In part, this is due to the refuge being adjacent to the Pacific Ocean on one side and the Bering Sea on the other. Also, the biomass is not as limited as in the higher latitudes.

There have been 156 species of birds, 32 species of land mammals, 22 species of sea mammals and 25 species of fish recorded on or adjacent to the refuge.

2. Endangered and/or threatened Species

A few ornithologists have suggested that the endangered peregrine falcon Falco peregrinus anatum may migrate over the Alaska Peninsula. The Peale's peregrine falcon F. p. pealii is the non-endangered subspecies that nests on cliffs and offshore islands near the refuge.

3. Waterfowl

Waterfowl use on the Alaska Peninsula is a high but seasonal activity, however, most of it occurs on the lowlands adjacent to the refuge along the Bering Sea. A few ducks, geese and swans overwinter in the coastal bays, lagoons and open streams.

Waterfowl surveys were conducted on the Naknek River in an effort to determine the chronology of migratory birds at King Salmon. The survey was designed to document spring waterfowl movements along a fixed survey route which could be repeated with a high frequency and at a low cost. The survey provides an index for waterfowl in the area and migration phenology as well as excellent trend data. It is also a worthwhile exercise for pilot and observer in aerial identification and counting of waterfowl.

The survey takes about 45 minutes to cover all the Naknek River from Bristol Bay to Naknek Lake. The largest bias present in the survey is the tide conditions that influence approximately two-thirds of the river, the counts being consistently higher during low tides. Table 5 reflects results from the Naknek River survey, 1983.

TABLE 5 -- NAKNEK RIVER SURVEY, 1983

	<u>3/28</u>	<u>4/6</u>	<u>4/15</u>	<u>4/19</u>	<u>5/3</u>	<u>5/17</u>	<u>6/1</u>
Common merganser	2,075	1,673	1,294	679	12	14	37
Goldeneye	244	57	209	315	37		
Mallard	10	251	280	126	143	35	46
Pintail		9	1	83	640	63	142
Scaup		10			142	33	26
Am. Wigeon					354	124	96
Green-winged teal					7		
Scoter spp.				3	15	34	42
Shoveler						2	2
Old Squaw						2	2
Tundra Swan	50	4	136	205	720	462	314
Canada Goose			28	40	19		
White-fronted Goose			13	63	28		4
Bald Eagle	2	5	6	4	2	2	3
Gull spp.	2	33	110	72	102	155	198
Loon spp.					3	14	4
Sand hill crane							1

Spring emperor goose surveys in southwestern Alaska were completed by two aerial crews April 25 to 28, 1983. A total of 79,155 emperor geese were enumerated. ARMs Berns and Solberg flew a Cessna 180 surveying most of the south side of the Alaska Peninsula on April 25, and completing the remaining areas west to Cold Bay on April 26. A total of 2,072 emperor geese (2.6% of the total) were observed. The low number in this area suggested that the spring migration was well underway and that most of the birds had moved to more northerly areas.

King (Wildlife Assistance, Fairbanks) and Dau (Izembek NWR) completed the survey segments from Bethel to Naknek on April 25 and observed 2,459 emperor geese (3.1% of the total). On April 26 the segment from Naknek to Moffet Point was surveyed with most of the birds found in the Port Heiden and Seal Island Lagoon areas. On this segment 71,770 emperor geese (90.7% of the total) were observed. Izembek Lagoon

and coastline esturine areas west to Unimak Island were surveyed on April 28 with a total of 2,854 (3.6% of the total) emperor geese observed. See Figure 1.

Climatic conditions in April of 1983 were milder than those encountered in April of 1982. Late heavy ice conditions in 1982 retarded spring migration of emperor geese when greater numbers were observed south of the Alaska Peninsula and from Izembek Lagoon west to Unimak Island. Fewer emperor geese were observed in these areas in 1983 when ice conditions further north were very light.

A population decline from 100,643 to 79,155 emperor geese (down 21%), or a loss of 21,488 based on a comparison of the spring aerial surveys between 1982 and 1983, is quite a drastic change and will require careful monitoring.

Two attempts were made for a fall emperor goose survey with both of them being aborted. On September 12, a beautiful calm day at King Salmon, the survey was started along the Bering Sea Coast, with a showing of emperor geese at Pilot Point and Cinder River Lagoon. Winds picked up to 25 knots at Port Heiden and upon arrival at Cold Bay winds were gusting to 30+ knots making surveys impossible.

The second aborted flight occurred on October 27 when advection fog was encountered along the coast to 5 miles inland.

In June, all tundra swan breeding habitat on the Alaska Peninsula from the south side of Becharof Lake to Port Moller area was surveyed. The survey covered 39 U.S. Geological Survey maps, scale 1:63,360, and took 32.8 hours in a Cessna 180. A total of 1606 tundra swans were counted with 236 as singles, 532 in flocks of three or more, 762 pairs and an additional 20 pairs with 72 cygnets already hatched by June 14. In addition, 96 swan nests were tallied during the survey.

The swan observations were located on detailed maps which will be of recurring value as land management decisions are made in the years ahead. To enhance the manipulation and quick retrieval of data, Waterfowl Investigations and Information Resource Management of the R.O. are developing a computerized data storage system which will serve as a depository for all swan data gathered in Alaska.

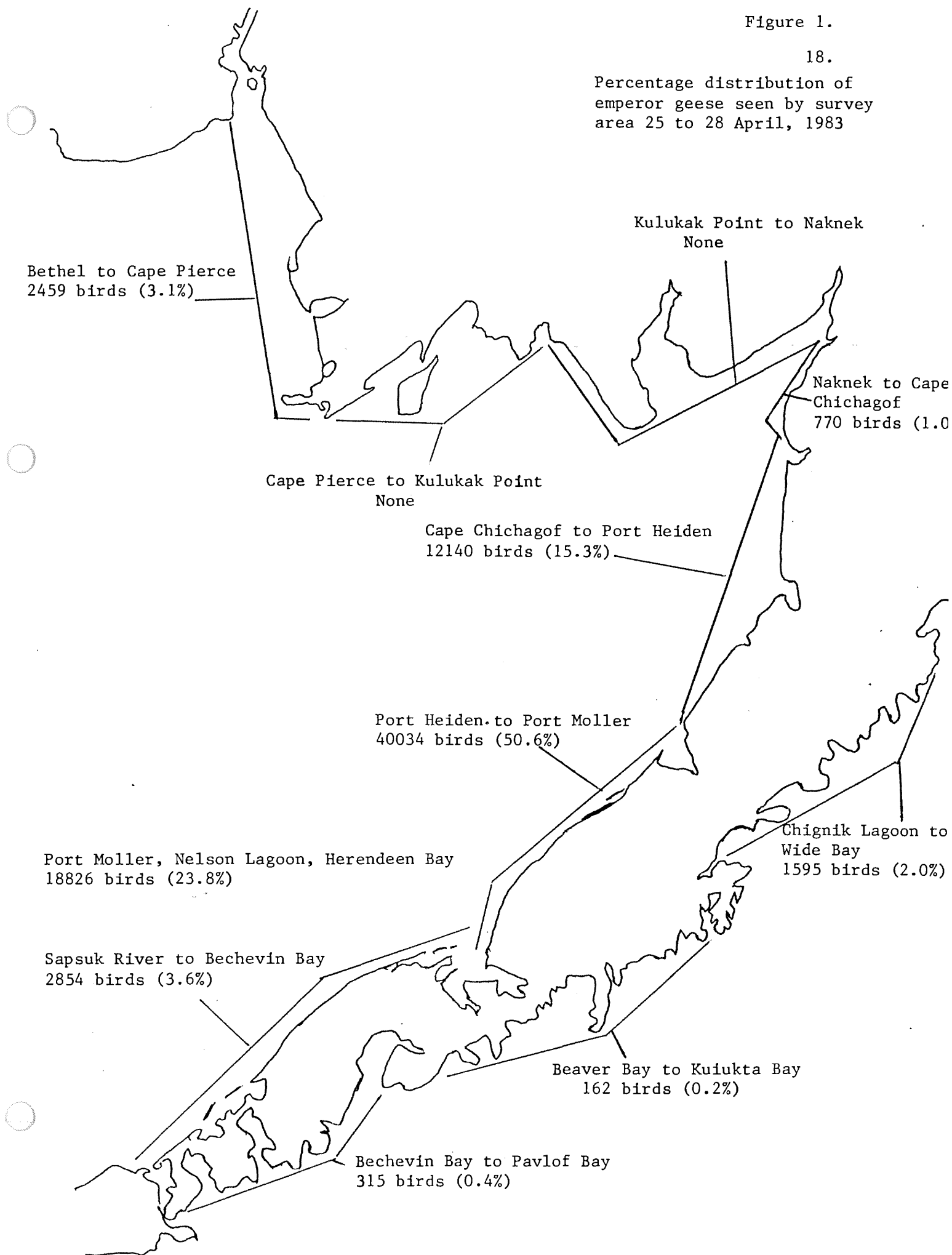
In July, follow-up flights were made for broods using six of the quadrangle maps previously used. A supercub was flown 26 hours to locate 50 pairs of swans with 135 young for an average of 2.7 cygnets per brood. In addition, 126 swan pairs, 28 single and 277 birds in flocks were observed for a total of 792 swans. This amounted to .81 swans per square mile in the area surveyed.

One bean goose Anser fabalis was identified in Ugashik Bay during June by Brina Kessel and Dan Gibson from the University of Alaska.

Figure 1.

18.

Percentage distribution of
emperor geese seen by survey
area 25 to 28 April, 1983



4. Marsh and Water Birds

The Peninsula is one of the major nesting areas for sandhill cranes of the Pacific Flyway. They seem to be very secretive until early August when they are seen or heard throughout the heath and lowlands.

5. Shorebirds, Gulls, Terns and Allied Species

These species peak during the spring and fall migrations along the Bristol Bay coast. The refuge staff has made no attempt to inventory these birds. However, with assistance from the refuge, ornithologists from the University of Alaska at Fairbanks searched Ugashik Bay this summer for nesting marbled godwits. Adult godwits were observed but no nests were located. They reported sighting a wood sandpiper Tringa glareola which is a rare Asiatic species.

Chignik Bay villagers reported to the refuge a kittiwake die-off that started about August 9. First reaction was that the birds were picking up toxic waste from the local cannery. Upon further investigation the die-off was found to be starvation related, caused by unusually high water temperatures (influence of El Nino) which adversely impacted the birds' food source. The die-off was not unique to Chignik as birds were picked up at Egegik and Port Moller with the same symptoms. The juvenile population appeared to be the most affected.

6. Raptors

The peregrine falcon eyrie in the Ugashik Lakes area was active again this year. The adults were sighted along the cliffs but no attempt was made to visit the eyrie and count fledglings.

A bald eagle survey was not conducted this year. All eagle sightings were incidental to other work on the refuge. While making the emperor goose survey on the Pacific coast 84 adults, 30 juveniles, 1 unknown and 15 nests were tallied.

Raptor Management Specialist, Jack Hodges, made a random plot survey of the Alaska Peninsula between Cape Douglas and Unimak Pass. He had 206 plots with saltwater shorelines and surveyed 40 plots by aircraft. From his results, he estimated $1442 \pm 21\%$ for adults and $418 \pm 38\%$ for juvenile eagles using the 95% confidence limits.

The bald eagle nest on Dog Salmon River was blown down during the winter of 1982-83. The adult pair were seen in the area all summer but did not nest. The nest on Lower Ugashik was not active this year. An active nest on Naknek River above Rapids Camp was visited in July by an ADF&G biologist. The nest was abandoned with one egg intact and the shell remains of another egg. Apparently the same pair was unsuccessful in 1982 when the tree bearing the nest blew down during the summer.

An adult eagle was given to the refuge by a trapper who had caught it in one of his fox traps. The bird had an injured leg but it was not broken. After force-feeding the bird for several days, it was released and last seen soaring over the river.



This crippled eagle was given first aid, fed for several days at the Refuge Headquarters, and released after being caught in a fox trap.05-83-VB

Other raptors found on the refuge are the short-eared owl, snowy owl, rough-legged hawk, marsh hawk, merlin and gyrfalcon.

7. Other Migratory Birds

The most abundant passerine on the peninsula tundra during the summer is the Lapland longspur. The raven and black-billed magpie are common throughout the year. During the winter the black-capped chickadee, boreal chickadee and gray jay frequent the willow thickets and bird feeders where suet and seeds are a free handout.

8. Game Mammals

Brown Bear. Brown bears use nearly all the habitat from the mountain tops to the coast on the Alaska Peninsula. They graze in sedge and forb meadows, forage for berries in the tundra, scavenge for carrion on the beaches, catch spawning salmon in the streams, use shrub thickets for shelter and cover, and den in the mountains. Large numbers of bears are found in the Island Arm area of Becharof Lake on nearby Becharof NWR and the east side of Ugashik Lakes. Black Lake and Chignik Lake are considered among the most important bear concentration areas on the Peninsula.

Bear surveys were flown from August 22 through August 26 in the Ugashik Lakes area for the second consecutive year. Salmon runs appeared to be good in all streams surveyed on the east side of the lake.

A sow bear with six yearlings was seen on August 24 and again on the 26th. All the yearlings appeared to be nearly the same size. We can only postulate that the female had adopted another litter. There is no doubt about the sow having six yearlings as she was seen on two different dates and in two different drainages.

The year's high count for the Ugashik area was 92 animals on August 24. On the above survey date the conditions were ideal - winds were calm and a light overcast. The other flights had glaring sunlight and turbulence which made surveying difficult. See Table 5 for a breakdown of the Ugashik Lakes surveys.

The survey in the Black-Chignik Lake Brown Bear Study Area designed by the Alaska Department of Fish and Game in 1962 was conducted in August by the refuge staff. The ADF&G helped provide logistics but due to other commitments could not participate. One female with four yearlings was seen on three different surveys at Broad Creek.

The year's high count for this area was 173 bears on August 10, which is higher than those made in 1982 when 134 and 148 bears were enumerated. A previous high was 123 bears observed during a flight in 1965. See Table 6 for the Black-Chignik Lake survey.

Table 6 -- Ugashik Lakes Brown Bear Stream Survey, 1983

Date	8/22		8/24		8/25		8/26	
Survey Time (min)	157		158		140		143	
Break Down	#	%	#	%	#	%	#	%
Female & Young (all ages)	31	55.3	65	70.6	33	64.7	48	73.8
Ave Litter Size								
Cubs	2.6		2.0		2.2		2.1	
Yearlings	2.3		2.4		1.8		2.2	
All young/ female	2.4		2.2		2.0		2.15	
Single Bears								
Small	7.	28.0	15	55.5	9	50.0	7	41.1
Med.	18	72.0	12	44.0	9	50.0	9	52.9
Large	0	0.0	0	0.0	0	0.0	1	5.9
<u>COMPOSITE SUMMARY</u>								
Female w/young	9	16.1	20	21.7	11	21.5	15	23.1
Cubs	8	14.3	16	17.4	9	17.5	13	20.0
Yearlings	14	25.0	29	31.5	13	25.4	20	30.7
Single Bears	25	44.6	27	29.3	18	35.3	17	26.1
TOTAL	56		92		51		65	

Table 7 -- Black-Chignik Lake Brown Bear Stream Survey, 1983

Date	8/9		8/10		8/10		8/12	
Survey Time (min)	175		196		148		186	
Break Down	#	%	#	%	#	%	#	%
Female & Young (all ages)	102	72.8	124	74.2	95	62.9	111	64.1
Ave. Litter Size								
Cubs	2.2		2.3		2.4		2.2	
Yearlings	1.8		1.7		3.0		2.0	
All young/ female	2.0		2.02		2.2		2.17	
Single Bears								
Small	10	26.3	11	25.6	15	26.7	17	27.4
Med.	24	63.1	31	72.1	37	66.0	43	69.3
Large	4	10.5	1	2.3	4	7.1	2	3.2
<u>COMPOSITE SUMMARY</u>								
Female w/young	34	24.3	41	24.5	29	19.2	35	20.2
Cubs	33	23.5	49	29.3	42	27.8	47	27.1
Yearlings	35	25.0	34	20.3	24	15.8	29	16.7
Single Bears	38	27.1	43	25.7	56	37.0	62	35.8
TOTAL	140		167		151		173	

Caribou. Rather than conducting separate caribou surveys, the refuge is cooperating with ADF&G in tracking 20-25 radio-collared caribou from the King Salmon-Port Moller herd to monitor their movements and find them more readily for inventory. The refuge has made available an aircraft and pilot for the survey, and share the information obtained. During 1983 the refuge staff participated in five flights to monitor and track the caribou.

During the spring count the ADF&G estimated approximately 18,000 caribou in this herd with 28.5% being calves. The same type count in the fall showed only 16.1% being calves. Generally there is a small percentage difference from spring to fall, however the 12.4% difference cannot be explained.

The harvest for reported and unreported caribou is estimated to be 1,000-1,200 animals. Most hunters prefer bulls, therefore, the sex ratio of the herd slightly favors females.

One small group of caribou, south of Egegik appear to be non-migratory. It is believed that these animals are remnants of the reindeer herd abandoned in the 1940's.

Moose. Some of the key areas for moose on the refuge include the Dog Salmon River, Cinder River, Mother Goose Lake, Upper Meshik River Valley and the Black and Chignik Lakes area. The moose population has declined from about 6,500 in the mid-1960's to slightly over 2,000 in 1983. The decline is thought to be related to succession of key plant species of willow, and/or brown bear predation on moose calves.

The calf production was up slightly this year. In the 1982 sample there were 8.7 calves/100 cows or about 6% calves in the population compared to 13.8 calves/100 cows or 8.9% of the population being calves this year.

Other Game Mammals. Wolves, wolverines, lynx, and red foxes are found in the refuge. While doing moose surveys in mid-February we observed four wolves in a pack along the foothills of Meshik Drainage. In April, a single grey wolf was sighted at Dog Salmon River. While we think of lynx as being associated with conifer forest and snowshoe hares we observed a family group of five south of Dog Salmon River which is almost 100 miles south of the spruce tree line. No population data is available.

9. Marine Mammals

Cape Seniavin was used until late summer as a hauling out ground for walrus. There is some speculation that Round Island has reached its maximum carrying capacity. Harassment by herring boat fishermen, and summer visitors are causing the animals to find new or different hauling out grounds.

10. Other Resident Wildlife

Cycles of spruce grouse, willow ptarmigan, rock ptarmigan and snowshoe hares fluctuate widely between areas and years within the refuge. No population data is available.



Over 10,000 caribou move through parts of the
Alaska Peninsula Refuge to winter north of Becharof
Lake. 06-83-CD



During the summer, caribou prefer dry lake beds
and a breeze to keep away from bugs. 07-83-JS



A flock of moose in some excellent wintering range
in the Black Lake area. 08-83-GE



A red fox checking out those strange smells at
Wide Bay 09-83-GE



Approximately 3,500 walrus used Cape Senaivin
as a hauling out ground in 1983. 10-83-JS

11. Fishing Resources

In cooperation with the refuge, the King Salmon Fisheries Resource Station began investigations on the Dog Salmon River to determine the species composition, abundance, and distribution of salmonids in the watershed. The river and its major tributaries, Figure Eight and Goblet Creeks, originate from glaciated and spring fed waters in the Alaska Range and terminate in Ugashik Bay. Spawning areas for salmonids are restricted to the upper 20% of these waters where flows and substrate composition are preferable. The remainder of the watershed provides suitable areas for migration and rearing. Age, weight, and length data were collected from fresh run fish and carcasses.

The Dog Salmon River provides approximately 30% of the king, chum and coho salmon harvested in Ugashik Bay. Harvest data for 1983 indicate 3,000 kings, 36,000 chum and 2,600 coho of Dog Salmon origin. Other species in the watershed includes sockeye and pink salmon, Dolly Varden, northern pike, black fish and slimy and coastrange sculpins. In addition to human consumers, the brown bear, bald eagle and river otter subsist on these fish.

The BBCMP identified four potential trans-peninsula pipeline corridors with the Dog Salmon River, Figure Eight Creek as one. This pipeline would transport oil from offshore wells to the ice-free waters of Wide Bay in the Shelikof Strait. The United States Department of Agriculture and Soil Conservation Service, in a 1979 report, classified this area as severely limited for road and other construction due to rugged terrain, and identified the erosion potential as medium to high. In addition, the soils of the area are strongly acidic. Erosion of these soils into the streams would clearly lower the pH and has the potential to severely reduce or eliminate fish production.

The refuge staff assisted the fisheries biologists in flying logistics to the Dog Salmon River with the supercub on several occasions. We soon found that a chartered Beaver aircraft was more suitable for the large freight hauls and moving camps.

16. Marking and Banding

During August, 39 tundra swans were captured and banded. One was an adult male while the other 38 consisted of 21 males and 17 females of the year. Each of the birds were fitted with a plastic neck collar and tarsus band in addition to the standard metal leg band.

It is interesting to note that from the first banding endeavor there has already been three returns; one cygnet, P002 was found dead at Summer Lake Wildlife Management Area at Summer Lake, Oregon on November 12. P008 cygnet was observed at the Lummi Indian Reservation at Whatcom, Washington on November 22 and P005 cygnet was seen at Serpentine Fen near Surrey, British Columbia, Canada on November 1.



"Moose" Mumma sampling a king salmon. Age, weight, and length measurements were obtained from 200 king salmon in the Dog Salmon drainage. 11-83-CD



A collar banded cygnet swan. This bird was seen in British Columbia on November 22, 1983. 12-83-VB

H. PUBLIC USE1. General

Residents from several small communities along the Alaska Peninsula recreate and participate in taking subsistence resources on the Alaska Peninsula NWR. The communities extend from the Bristol Bay Borough at the base of the Peninsula, to Cold Bay where the refuge adjoins Izembek NWR.

8. Hunting

Hunting is the major use of the APNWR. Commercial guiding includes hunts for world-class trophies of moose, brown bear and caribou. This year, all three species had fall seasons and many sportsmen took advantage of multispecies hunts. At least twenty-three individuals applied for special use permits to commercially guide on the refuge in 1983.

Moderate waterfowl hunting occurs near the refuge. Numerous lakes, potholes and streams dot the wet tundra habitat of the Bristol Bay coastal plain and become important staging areas for migratory waterfowl. Pilot Point and the Cinder River receive considerable use from non-local hunters during peak fall migration. Waterfowl experts have purported that perhaps the entire Alaska population of Cackling Canada Geese migrate over Ugashik Lakes.

Total hunting pressure for 1983 was estimated at 1276 visits for 15,798 activity hours.

The Alaska Dept. of Fish and Game is our best source of harvest data for game management units within the refuge. Table 8 lists moose and caribou harvest data for 1982. The 1983 data is not yet available.

Table 8 -- Summary of caribou and moose harvest on the Alaska Peninsula 1982.

Species	M	F	?	Total	Hunter Data						
					resident		non-res		?	Total	
					+	o	+	o			
Caribou					+	o	+	o	+	o	
APNWR	109	33	1	142	416	62	144	16	60	5	703
GMU9	758	270	10	1083							
Moose											
APNWR	23	1		24	58	137	35	31	25	18	304
+=successful		o=unsuccessful									

Trophy moose hunting by residents and non-residents is popular on the Peninsula. Harvest tickets show in 1982 304 moose hunters visited the Alaska Peninsula, 22% of which were non-residents.

A decline in moose numbers in recent years has warranted several changes in the laws and limits for taking moose. Recent legislative history imposed a reduced moose season in 1975. In 1976 and early bull season and late either-sex season further restricted hunter's options. Antlered moose required a minimum 50" antler spread or three brow tines on one side. These restrictions resulted in a 66% and 20% in number of hunters and hunter success respectively (three-year means) immediately before and after the change in regulations.

Approximately one-third of the brown bear hunted in Alaska are taken from the Alaska Peninsula since hunting of this species first took hold in the early 1960's. Most bear are taken by commercially-guided non-resident hunters during the fall season. State hunts occur one season every year in either spring or fall. Data from state records show that at least 109 brown bear were harvested from Alaska Peninsula Refuge during the fall, 1983 season. Table 9 lists recent harvest data from the Alaska Peninsula.

Table 9 -- Brown Bear Harvest for the Alaska Peninsula, 1975-82

Date	Total	%non-res.	%male	\bar{x} age		% 5 yr. old	
				M	F	M	F
1975-76	261	67	62	6.4	6.8	48.7	51.3
1977-78	311	72	64	5.9	7.1	45.3	54.7
1979-80	316	77	68	6.1	6.2	46.7	53.3
<u>1981-82</u>	<u>339</u>	<u>76</u>	<u>59</u>	<u>5.9</u>	<u>6.4</u>	<u>47.0</u>	<u>53.0</u>
\bar{x}	307	73	63	6.1	6.6	46.9	53.1

Alaska statutes allow the taking of wolf and wolverine with either hunting or trapping license. Animals taken by firearm and trapping are listed in Table 10.

Table 10 -- Trapping Harvest, Alaska Peninsula NWR and adjacent areas 1982-83.

SPECIES	DATE	MALE	FEMALE	UNKNOWN	TOTAL
Wolverine	12/82-3/83	21	17	-	38
Lynx	11/82-1/83	7	10	2	19
River Otter	1/83-2/83	9	5	2	16
Wolf	9/82-1/83	4	3	-	7

The above laws also apply to fox and lynx in Alaska. Fox harvest data is lacking; however, harvest numbers are high, evidenced by the high local trapper harvest. There were no lynx registered by firearm harvest on the Alaska Peninsula Refuge during the 1982-83 season.

9. Fishing

The Alaska Peninsula has an international reputation for sport fishing. Salmon, rainbow trout, arctic grayling, arctic char, Dolly Varden, lake trout and northern pike are the major game species. The world record grayling was taken at the Ugashik Narrows in 1981.

Several private fishing lodges operate on the refuge. Lodge owners promote catch-and-release angling ethics. Estimated fishing use for 1983 was 774 visits for 5438 activity hours.

10. Trapping

Historically, trapping was a full-time endeavor during the "moderate" Alaska Peninsula winters. The prevalence of old dilapidated trappers' cabins throughout the Peninsula is evidence of this bygone era. In the early 1900's most of the islands off the Peninsula's Pacific coast were occupied by fox ranchers. Table 10 lists the 1982-83 recorded trapping harvest for the refuge and adjacent areas.

11. Wildlife Observation

The high costs of travel, lack of support facilities and weather hinders refuge visitors exclusively interested in wildlife observation. Regular commercial air service to Katmai National Park is an attractive alternative to visitors of the Alaska Peninsula. Katmai offers comfortable amenities in an attractive wilderness setting. Brown bear photography opportunities are excellent there, particularly during the peak sockeye salmon run. People interested strictly in wildlife observations understandably bypass the refuge in favor of the National Park.

12. Other Wildlife Oriented Recreation

Nature photography usually occurs during hunts, while angling or while viewing wildlife. An estimated 430 visits for 2455 activity hours occurred in this category.

13. Camping

Most refuge camping is associated with hunting and fishing. The average trip is usually 3-4 nights. Most commercial guides have cabins on the refuge, but also operate out of spike camps. Refuge estimates for 1983 were 408 visits for 9648 activity hours.



Camping on the Alaska Peninsula is done in conjunction with other recreational activities. Some of the aesthetic benefits are obvious. 13-83-GE

15. Off-road Vehicling

Three-wheeled all-terrain vehicles (ATV's) are a mainstay means of transportation for off-road movement on the peninsula. Local villages are replete with ATV's particularly during the hunting season. Some guides use tracked vehicles, mainly for game transport, but are limited to use only on trails established before the refuge was designated.

17. Law Enforcement

Most law enforcement on APNWR is preventive and high visibility. Aerial patrols, visits to camps and making FWS presence known are the best strategies for our limited law enforcement resources to cover such a large, remote area.

In March, ARM Berns made a case for the State by reporting an illegal caribou taken by a South Naknek resident. The "pinch" resulted in the forfeiture of game and a \$250.00 fine.

ARM Solberg attended FLETC in Glynco, GA from October-December.

20. Cabins

ANILCA mandated the FWS to require permits of all people who currently own or use cabins on the refuge.

The purpose of the permit is twofold. First, it gives legal status to use the cabin(s) for traditional and customary purposes such as commercial fishing, guiding, trapping and subsistence activities. ANILCA prohibits the use of cabins on National Wildlife Refuges for private recreational purposes. Secondly, the permit protects refuge wildlife, habitat and other resources, ensuring that the cabin(s) and associated uses will not be detrimental to the refuge through its Special Conditions.

The permits are issued for five-year periods and may be renewed provided the continued use is found to be compatible with the purposes for which the refuge was established. Renewal may be authorized until the death of the last immediate family member using the cabin.

There are 35 known cabin sites currently in use within the Ugashik and Chignik subunits. However, as time passes, additional cabins will be found during aerial wildlife surveys, by word of mouth, etc. All but 13 of the cabins have been permitted. Action on these is pending due to a combination of factors including cabin/land ownership dispute, legitimate use/need of cabin and date of construction.

I. EQUIPMENT AND FACILITIES

1. New Construction

Early in the calendar year the refuge staff began considering sites to construct a cabin for summer field operations. After discussing locations and logistics, a site at Cub Lake was selected. The site is attractive as it would permit access by either float or wheel equipped aircraft.

RM Elison and ARM Berns made a trip to Cub Lake to decide on the exact location for the cabin and to clear brush. In March a DI-1 was submitted to the R. O. for cabin materials. The materials were purchased and Berns cut the pieces to correct lengths so they would fit into a Grumman Goose for transport to the lake. However, with field season approaching fast, we decided to postpone construction for a year.

To temporarily improve some of the logistical problems in conducting field operations, a 10' x 12' cabin was rented from a local entrepreneur in Pilot Point. Although the rental cabin wasn't a panacea, it did provide beds, a table for the Coleman stove, and a place to get out of the rain in addition to cutting down the traveling distance to the nearest refuge boundary from about 55 miles to 12 miles.

In June a contract was awarded to Kreuger Construction for \$156K for "Phase II" of the office construction.

Construction for Phase II began September 19th with completion expected in January or February 1984. The project involves the construction of the new offices on a second floor located above the existing office housed in one of the warehouses acquired from the National Marine Fisheries Service (NMFS). Additional construction in the contract includes: 2 stairwells connecting the floors, a boardwalk in front of the building, parking barriers (with vehicle engine heater outlets), and a wooden fence separating Quarters 12 from the office building.

With two refuge staffs and the Fishery Resource Station staff occupying the same floor we were a bit crowded at times. Phase II will provide an additional 2000square feet to be utilized as office space, conference room, and location for a small resource center (reference library, study skins, herbarium, etc.). Additionally, interpretive displays will be developed in the room vacated on the first floor by fisheries.

2. Rehabilitation

On 1/21/83 the refuge took beneficial occupancy of the rehabbed office (Phase I). A few items remained for completion but the job was basically finished and in good order. The refuge now has such luxuries as heat, water, and toilets. The separate offices should enhance efficiency. In general, the new office is a quantum leap over what was available in the past. When the Phase II portion is completed (see previous section) King Salmon's facilities should rival those found at most other refuge headquarters in Region 7.

Quarters 9's "facelift" was completed in early March. The job was started in November 1982 with work performed by a combination of force account and small contracts. The cabin was 1940 vintage with wiring and decor reflecting that era. In the past, the cabin was used to house temporary summer help and as a result insulation and facilities were minimal.

The rehabilitation consisted of gutting the cabin and installing all new insulation, thermopane windows, wiring, flooring, cabinets, appliances, and heaters. In addition, the front porch was enclosed to provide an arctic entryway. Exterior work included shingle siding of the arctic entry and insulating/siding the foundation. The YCC enrollees and our Washington appointee assisted the maintenance worker with the exterior work.

In September, a contract was awarded to Star Construction Co. for \$22K to add on a 12' x 16' bedroom to Quarters 9. The project was completed in December and added another 192 ft². For those of you who are interested in the "price of doing business" in bush Alaska, that construction cost is a shade over \$114.50/ft²! The additional room makes the "cozy" cabin a bit more comfortable.

Accelerated Refuge Maintenance Management (ARMM) funding approved for FY-84 identifies \$130K for rehabilitation of the old NMFS bunkhouse. The money will be combined with \$50K ARMM funds from BNWR. The bunkhouse will be used to house summer temporary help and other FWS personnel conducting business in King Salmon.

3. Major Maintenance

A local man was hired on contract for two weeks to do some minor repair work in Quarters 13 and 14 which included removing and replacing the linoleum in the kitchens, and reroofing Quarters 14.

In May, ARM Berns and MW Humerick planted spruce and birch trees near the trailers. The trees not only improve the landscape but will provide some windbreak and privacy.

Various painting projects were undertaken this summer on Quarters 9, 13, 14, office exterior trim, and an overhead door on one of the warehouses. Painting crews consisted of different combinations of: YCC's, Washington appointee, and two separate contracts with local individuals.



Quarters (cabins) 9, 10 and 11 (1940's vintage)
in early stages of rehabilitation. 14-83-RA



Quarters 9 getting its \$22,000, 12' x 16' bedroom
addition. 15-83-RW



Quarters 9 and 10 complete with bedroom additions,
new paint, and enclosed porches. 16-83-RW



Upkeep had been neglected in many areas of the
NMFS buildings. 17-83-RA



Painting was one of the YCC's specialties.
Here the crew finishes a paint job on a warehouse
door. 18-83-RA

High winds, tides, ice, and a dilapidating bulkhead have caused a rapid deterioration of our riverfront. To temporarily rectify the problem, the YCC's filled sandbags and MW Humerick placed them and filled with the backhoe. While on an inspection for ARMM projects, R.O. Engineers and the Refuge Supervisor looked at the bulkhead and took measurements should repair money become available in the (hopefully) near future.

4. Equipment Utilization and Replacement

Much effort was devoted this year to cleaning up the headquarters compound. Along with the buildings, the refuges inherited from NMFS a tremendous quantity of equipment and supplies. An inventory was conducted by refuge personnel and a list of items unuseable by the refuge was submitted to contracting and General Services (R.O.) during the summer. CGS is working through GSA on disposal of the property (e.g. excess property lists, inter-agency trading, public sales, etc.), but little progress has been made to date.

Our new float plane/boat dock arrived on the spring barge. The dock was purchased from MEECO Marina's Inc. of Oklahoma. The structure is 60' long with two 30' wings extending downstream. The dock raises and lowers (due to tidal influence) on steel collars that surround pipes set into the river bottom. A wheeled ramp, bolted to the bulkhead, ensures safe access to the dock regardless of the tide. Dock sections were placed (and removed this fall) in the river with the help of a crane supplied by the Air Force.

A variety of needed equipment was procured in 1983. For the refuge trailers, new furnaces were purchased and installed. Quarters 9, which was completely rehabilitated in 1983, received all new appliances.

An assortment of camping/survival gear was obtained for field operations, including a new Avon "Redshank" and Evinrude 25 hp.

The cost of an 18' aluminum boat and trailer was shared by Becharof and Alaska Peninsula NWR's. A 40 hp motor supplied by fisheries will power the craft. The rig will be used primarily for the several VIP trips which visit the refuge headquarters each year.

A compact 4x2 pick-up truck was requisitioned in August. This vehicle will replace a 1973 IH 4x4 which was transferred to FWS by NMFS. The IH is in poor condition and in need of replacement. All vehicles currently in use at King Salmon are full size offering poor fuel economy and high maintenance costs. A small fuel-efficient two-wheel drive vehicle will suffice the daily trips of routine nature which constitute the bulk of vehicle use in King Salmon.

Various hand/power tools and equipment were acquired for the shop and use around the headquarters. They include a table saw, drill press, airless paint sprayer, high pressure cleaner, fork lift tires, fuel filter system, and an electric fuel pump for dispensing fuel from 55 gallon drums into vehicles.

In May, N709 (Cessna 180) was traded to McGrath, Alaska (Innoko NWR) for N716 (Cessna 180). Innoko NWR needed desperately a plane that could



The new float plane/boat dock arrived on the
spring barge and was assembled by refuge personnel.
19-83-JT



The finished product on the Naknek River. The
dock rides steel pipes with the fluctuating tide.
the wheeled ramp allows safe access regardless
of dock height.
20-83-JT

float equipped. We miss the long range tanks for survey but it was a sensible trade as APNWR had no intention of putting N709 on floats.

Scheduling conflicts with Becharof NWR over the use of the FWS Supercub on floats arose on numerous occasions. Two active refuge programs make sharing aircraft difficult during the busy field season. In August, with the need to complete our bear survey and swan banding projects, Alaska Peninsula's lack of a supercub haunted us with a continuous airplane shuffle. RM/Pilot Berns made trips to Anchorage and Kenai to borrow/trade (our C-180) for other cubs. Shuttle flights were routinely done on weekends with over 70 hours of flight time logged for the month. The long hours of flying during the week and the trading of aircraft on weekends, exemplifies our need for a cub.

5. Communication's Systems

With the help of communications technicians from the King Salmon Air Force Station, we completed the installation of our Sunair HF base station and antenna in May of 1983.

6. Energy Conservation

The Enertech wind generator was not operational until September 30th. High electrical resistance between the generator and the office and 3-phase power was the suspected problem. In August, Naknek Electric Association (NEA) installed new lines and single phase power to remedy the problem. Enertech sent a technician from Anchorage to install generator monitoring devices (anemometer, electrical output, etc.) and complete new wiring to the single phase panel. The generator appeared to be working, but was not producing adequate wattage. In mid-December NEA representatives were at the refuge headquarters to inspect the operation of the wind generator. Upon examination, it was determined that the generator was wired improperly by Enertech. NEA rewired the system at no charge and the system is now generating electricity at maximum potential (4.5 KW).

J. OTHER ITEMS

1. Cooperative Programs

APNWR is working cooperatively with local ADF&G personnel to conduct wildlife surveys. Approximately 25 Alaska Peninsula caribou (northern herd) are radio-collared in an effort to learn their migration patterns and other information. The refuge provides logistical support by piloting the Cessna 180 for state biologists. Future planned cooperative efforts include determining moose demography from aerial surveys in the Meshik River drainage and moose habitat monitoring.

During the summer, Amoco Oil Corp. set up a field camp on Jensen Strip, outside the refuge's NE boundary. Implementing improvised techniques, company crews conducted geophysical exploration on the tundra. Some of the activities were overseen by the RM's Taylor and Elison via helicopter. Regional office and refuge personnel monitored the on-ground



The 4.5 KW Entertech wind generator is again producing electricity for use at the refuge headquarters. 22-83-VB



Jensen's Strip camp for seismographic work conducted adjacent to the refuge. 23-83-GE



Rolligons were used to transport drilling rigs to
blasting sites 20-83-GE



and left their mark in the wet tundra. 21-83-GE

activities and conducted baseline vegetation studies in an attempt to quantify habitat alteration by the crews.

2. Items of Interest

March - ARMs Berns and Solberg presented the "America's Wetlands" movie and a talk to the Pilot Point School. RM Elison and ARM Solberg gave wildlife presentations to a total of 101 students and teachers in the villages of Chignik Lake, Chignik Lagoon and Chignik Bay. Refuge personnel gave a cooperative presentation with the National Park Service in Chignik Bay, lagoon and Lake discussing the NPS program and the role of refuges.

May - The refuge provided logistical support to Brina Kessel and Dan Gibson (U of A Fairbanks) at Ugashik Bay. Efforts focused on locating nesting marbled godwits.

October - ARM Solberg presented a bald eagle program to grade school class at Bristol Bay School.

November - BT Wilk presented wildlife ecology and survey methods talk to high school biology class at Bristol Bay School. "Chain of Life" movie was also shown.

3. Credits

Arment sections B,C,D,F
Berns sections A,G
Solberg sections E,I
Taylor section K, editing
Wilk section H,J, photo organization

K. FEEDBACK

We have to stop the turnover of clerical positions within the FWS. This refuge alone has had four refuge assistants in the past two years. Other Region 7 refuges and the Regional Office also have a high turnover of these positions. After working in three regions, I realize the magnitude of the problem is most often related to the availability and salaries of like jobs within the area. If there are several higher paying positions in the area, you can bet we aren't going to keep a good clerk around long.

The solution is simple - make these positions Wage Grade. That way we could compete locally with other jobs based on the local wage rate. The savings in time spent training new employees and improved efficiency of having an employee who has been around a while will more than compensate for any additional costs for salaries.

Think about it!