

BECHAROF NATIONAL WILDLIFE REFUGE
King Salmon, Alaska

ANNUAL NARRATIVE REPORT

CALENDAR YEAR 1980

JUL 17 1981

BECHAROF NATIONAL WILDLIFE REFUGE

King Salmon, Alaska

ANNUAL NARRATIVE REPORT

Calendar Year 1980

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



Who did you get to take the picture?

Personnel

John Taylor, Refuge Manager, GS-12/2, EOD 08/26/79, PFT

Review and Approvals

| | | | |
|------------------------|-----------------|-----------------------|------|
| <i>John Taylor</i> | <i>06/18/81</i> | | |
| Submitted By | Date | Central Office Review | Date |
| <i>Gary H. Culbert</i> | <i>6-26-81</i> | | |
| <i>Don C. Riffe</i> | <i>7/14/81</i> | | |
| Regional Office Review | Date | | |

TABLE OF CONTENTS

| | <u>Page</u> |
|---|-------------|
| A. <u>HIGHLIGHTS</u> | 1 |
| B. <u>CLIMATIC CONDITIONS</u> | 1 |
| C. <u>LAND ACQUISITION</u> | 2 |
| D. <u>PLANNING</u> | 2 |
| E. <u>ADMINISTRATION</u> | |
| 1. Personnel..... | 2 |
| 2. Funding..... | 2 |
| 3. Other Items..... | 3 |
| F. <u>HABITAT MANAGEMENT</u> | |
| 1. General..... | 3 |
| 2. Wilderness and Special Areas..... | 3 |
| G. <u>WILDLIFE</u> | |
| 1. Wildlife Diversity..... | 4 |
| 2. Endangered and/or Threatened Species..... | 4 |
| 3. Waterfowl..... | 4 |
| 4. Marsh and Water Birds..... | 5 |
| 5. Shorebirds, Gulls, Terns and Allied Species..... | 5 |
| 6. Raptors..... | 5 |
| 7. Other Migratory Birds..... | 5 |
| 8. Game Mammals..... | 6 |

| | <u>Page</u> |
|---|-------------|
| 9. Marine Mammals..... | 10 |
| 10. Other Resident Wildlife..... | 10 |
| 11. Fisheries Resources..... | 10 |
| 12. Disease Prevention and Control..... | 11 |

H. PUBLIC USE

| | |
|--|----|
| 1. Subsistence Use..... | 11 |
| 2. Interpretation and Environmental Education..... | 12 |
| 3. Hunting..... | 12 |
| 4. Fishing..... | 14 |
| 5. Camping..... | 14 |
| 6. Other Recreation..... | 14 |
| 7. Law Enforcement..... | 15 |

I. EQUIPMENT AND FACILITIES.....16

J. OTHER ITEMS

| | |
|------------------------------|----|
| 1. Cooperative Programs..... | 17 |
| 2. Items of Interest..... | 17 |
| 3. Credits..... | 17 |

PHOTOGRAPHIC SECTION.....18

A. HIGHLIGHTS

On December 2, 1981 the 1.2 million acre Becharof National Wildlife Monument became extinct and was reincarnated as the Becharof National Wildlife Refuge. This was the date on which President Jimmy Carter signed into law the Alaska National Interest Lands Conservation Act (ANILCA). The act not only redesignated Becharof, but also created the 3.5 million acre Alaska Peninsula National Wildlife Refuge which adjoins Becharof on its southwest border. Currently, Becharof has interim management responsibilities for the Alaska Peninsula NWR.

The redesignation to a refuge will hopefully help the local residents and visitors differentiate Becharof from the National Park Service. The NPS manages the Katmai National Park on the refuge's north border, and has been in the area for many years. Working under CFR 50 again will also be welcomed. It is, however, kinda sad for this manager to witness a rare breed of the refuge system pass into history. Becharof was one of only two National Wildlife Monuments in the NWRS.

A lack of housing and funds precluded additional staffing for the refuge. During 1980, the manager served as the entire staff for Becharof. Headquarters for the refuge was located in Manager Taylor's residence which is under verbal lease from the National Marine Fisheries Service.

Spurred by a law suit by the State of Alaska which questions the legality of the monument's designation, the Senate Appropriation Subcommittee refused to approve funding for the Alaskan National Monuments. Therefore, the refuge survived during the year off Regional Office funds.

B. CLIMATIC CONDITIONS

Proximity to the ocean tends to provide Becharof with a climate that is predominantly maritime in character. The area occasionally experiences definite continental influences that cause temperature extremes which tend to exaggerate the climatic conditions generally prevailing. July, the warmest month, has an average of only 5 days with temperatures reaching 70° or above. The coldest temperature on record for King Salmon is -43° in January 1919. Cloud cover averages about eight-tenths the year around, while snowfall averages about 45 inches. Winds of 50 m.p.h. or more have occurred in all months with an extreme of 94 m.p.h. in February 1952.

On August 17, a severe windstorm hit the area. Constant winds of 70 m.p.h. with gusts to 90 hammered the area throughout the day. The southerly winds caused a ten foot higher tide than normal in the Bristol Bay and Naknek River. Several millions of dollars worth of damage occurred to local commercial fishing boats, docks and private buildings in Naknek, King Salmon and Dillingham. Of refuge facilities, only the abandoned wharf on the Naknek River received damage.

December was dominated by the year's only really cold weather. A low of -32° was recorded on the 13th. Daily highs for that period were in the 0° to -25° range with a wind chill factor of -60 to -70° .

C. LAND ACQUISITION

On December 1, 1978 President Carter established the Becharof National Wildlife Monument by Proclamation 4613. The monument was set aside entirely from public domain. At that time there were 1,327 acres of privately claimed lands, 112,312 acres of state selected lands and 115,419 acres of native selected lands within the 1.2 million acre monument.

Since the monument's redesignation as a refuge, it has been determined that all of the State's selections and several of the private claims are invalid. Most of the native selections are presently involved in a land exchange with the Koniag Native Corporation. No future land acquisition is planned for the refuge.

D. PLANNING

Mandated by the Alaska Lands Act, a Comprehensive Conservation Plan (basically a refuge master plan) is scheduled to be completed for the refuge by the end of 1983. During the year, basic resource data gathering for brown bear, moose and caribou management plans was conducted.

E. ADMINISTRATION

1. Personnel

Manager Taylor continued to be the only refuge staff member for 1980. Other refuge staffing was not possible due to a lack of housing, funding and personnel ceilings.

2. Funding

As previously mentioned in the Highlights section, the Senate Appropriations Subcommittee failed to approve funding for the Alaska national monuments for FY-80. This precluded an organizational code being assigned to the refuge. A budget of \$124,000 (\$60,000 of which was cyclic maint.) was planned for the refuge in FY-81 under the Fisheries Program. However, since the refuge had no organization code, the money could not be assigned to the station. The budget, therefore, was ear-marked for the station and assigned to Refuge Operations in the RO. After months of trying, the station still does not have an organizational code.

In addition, \$82,000 under MNB was ear-marked for the refuge in FY-81 and placed under Refuge Operations in the RO.

3. Other Items

Regional Office negotiations continued throughout the year with the National Marine Fisheries Service (NMFS) in pursuit of a feasible agreement for the refuge to headquarters within their compound in King Salmon. Central Office concerns have delayed the signing of an agreement for over a year. We continue to occupy the compound under a verbal understanding from NMFS. In other words, we could be asked to leave tomorrow and would be caught with our pants down.

F. HABITAT MANAGEMENT

1. General

Becharof NWR is part of the tundra biome. Spongy ground, dwarfed plants and the lack of trees are characteristic. The tundra of the refuge differs from other Arctic tundra by the lack of permafrost. Species distribution and frequencies are caused by the lack of permafrost, rigorous climatic conditions, topographic relief, soil types and drainage patterns, forming a mosaic of vegetation within the refuge.

The species present in these communities are those found within five basic categories: wet tundra, moist tundra, alpine tundra, shrub/tree and open lowland spruce.

Approximately one-fourth of the refuge is covered by Becharof Lake. The lake is the second largest in the state and covers over 290,000 acres. Several hundred smaller lakes and the King Salmon and Kejulik Rivers are also found within the refuge.

On the southeast portion of the refuge, peaks of the Aleutian Mountain Range rise from a volcanic base.

Habitat management of this diverse and pristine area has been solely that of protection by regulation of development and use, and the preclusion of new entry. No land or water manipulation is planned for the refuge. We basically need to find out what resources we have on the refuge, what the resources are doing, and then determine what we need to do to keep the resources in a healthy, natural condition.

2. Wilderness and Special Areas

Approximately one-third, 400,000 acres, of the refuge was established by the Alaska Lands Act as the Becharof National Wilderness Area. The act requires the refuge to permit the following activities within the wilderness area:

- a. the use of snowmachines, motorboats, airplanes, and nonmotorized surface transportation methods for traditional activities and for travel to and from villages and homesites;

- b. the use and replacement of previous existing public use cabins;
- c. and the construction and maintenance of a limited number of new public use cabins and shelters if such cabins are necessary for the protection of the public health and safety.

The abandoned Kanatak village and the Kanatak Portage Trail are being studied as possible historical sites on the refuge. The portage trail connected the east and west coasts of the Alaska Peninsula. Oral history tells of year around use of the portage in the early 1900's. In 1922 a post office was established in the village of Kanatak and mail would be transported over the portage to villages in the Bristol Bay area.

In 1945, the village of Kanatak was abruptly and mysteriously abandoned. Native villagers moved to Perryville and Kodiak, leaving all personal belongings behind. A story tells that the natives suddenly abandoned the village because of a shaman or medicine man. To escape his influence the people had to disown all personal belongings and move.

G. WILDLIFE

1. Wildlife Diversity

At least six species of marine mammals, 29 species of land mammals, over 137 species of birds, five species of salmon and several species of fresh-water fish have been recorded on Becharof NWR.

2. Endangered and/or Threatened Species

An endangered peregrine falcon (F. P. anatum) may occasionally migrate across the refuge.

3. Waterfowl

Moderate numbers of waterfowl migrate along and probably winter in the coastal bays of the refuge. A few thousand emperor geese utilize these bays during the spring. In decreasing numbers, pintails, wigeons and mallards make up the majority of the fall migration. Total number is not believed to exceed 10,000 on the refuge.

Nesting species include mallard, pintail, green-winged teal, gadwall, greater scaup, harlequin, common eider, white-winged scoter, black scoter, common and red-breasted merganser. Several hundred whistling swans also utilize the lake's Island Arm and the northern portion of the refuge for nesting.

4. Marsh and Water Birds

Common and red-throated loons nest in several lakes within the northern refuge, but Arctic loons are less abundant. Yellow-billed loons occur in small numbers in the winter. Red-necked grebes are common migrants and breeders, while horned grebes are migrant and winter residents. Sandhill cranes are frequently observed in the spring, summer and fall, and are believed to nest in the wetland areas in low numbers.

5. Shorebirds, Gulls, Terns and Allied Species

Thirteen seabird colonies are found on the refuge. The two largest colonies (11,000 and 80,000 birds) found on the mainland of the Alaska Peninsula are found on the refuge in Puale Bay. Nesting seabirds on the refuge include pelagic and red-faced cormorants, glaucous-winged gulls, horned and tufted puffins, harlequin ducks, pigeon guillemots, black-legged kittiwakes, and common and thick-billed murre.

Becharof also plays host to some of the millions of shorebirds which move along the Alaska Peninsula during migration in the spring and fall. Peak populations of most of the 20 species present occur in August and September. Dunlins, western sandpipers and bar-tailed godwits are the three major species. Rock sandpipers inhabit the area all year. Species which are believed to nest on the refuge, but winter in other regions of the world include: least sandpiper, black turnstone, common snipe, greater yellowlegs, dunlins, short-billed dowitcher, northern phalarope and wandering tattler.

6. Raptors

Bald eagles are common along the coast and major streams, particularly during salmon runs. Eagles nest on the rugged Pacific coast, and less frequently, on streams, rivers and Becharof Lake. After the salmon runs are completed, bald eagles concentrate in lagoons and bays inhabited by waterfowl.

The darker, nonendangered Peale's peregrine falcon (*F. P. pealei*) nests on mainland cliffs and offshore islands. Other raptors found on the refuge include the rough-legged hawk, marsh hawk, osprey and gyrfalcon. The short-eared owl is common while the snowy owl may be seen in some winters.

7. Other Migratory Birds

During the summer, the most abundant passerine on the refuge's tundra is the lapland longspur. Water pipits also are abundant, but nest chiefly at higher elevations. During winter, flocks of both resident and migratory gray-crowned rosy finches and snow buntings feed along the beaches. In severe winters the comparatively rare McKay's bunting also appears. The northern raven is common throughout the year, while black-billed magpies are plentiful only locally in alder thickets. The savannah sparrow is by far the most abundant resident of river and mountain shrub habitats. Bank swallows and dippers are common along many streams.

8. Game Mammals

Game mammals found on the refuge include moose, barrenland caribou, brown bear, wolves, wolverine, red fox, tundra and snowshoe hare, and lynx. Moose, caribou and brown bear are generally the only animals actually pursued on the refuge, while other mammals are usually harvested incidentally during moose, caribou or bear hunts and while trapping furbearers.

Brown Bear. Present information indicates that about 350-500 brown bear utilize the refuge. The remoteness of the refuge, coupled with the proximity of key bear denning areas to salmon streams and other food sources, has helped to maintain this large population. The other food sources of the bears include sedge meadows, berry patches, beach carcasses and ground squirrels. Bears which den on the refuge may travel extensively north and south or as far as the Bristol Bay coast in the summer.

Key areas of bear denning and habitat within the refuge include: the upper Kejulik River watershed, Mount Peulik, the Island Arm area of Becharof Lake, and Puale and Alinchak Bays. The Island Arm is of particular importance due to its unique island denning by the bears.

Although bears were regularly seen in all spring, summer and fall months of 1980, a comprehensive bear survey of the refuge was flown throughout the month of August and early September. A total of eighteen creeks, rivers and portions of Becharof Lake were surveyed. Twelve of the streams were flown three or more times. A total of 347 bears were classified (Table I). The composition of the population surveyed was 90 cubs (25.9%), 55 yearlings (15.9%), 78 sows with young (22.5%) and 124 single bears (35.7%). The average litter size for cubs was 1.9 and 1.8 for yearlings. The largest number of bears seen on a single 3-hour survey was 68 seen on August 29.

A computer model of brown bears on Becharof was initiated during 1980. Three hundred and thirteen harvest reports on bears taken on Becharof since 1961 were identified and separated into ten geographic units. They were to have been then fed into the computer, but as everything was getting organized, the biometrecian heading the program in the Regional Office accepted a higher paying position with the State. Even though she was committed to finish the project, and despite much refuge proding, nothing else has been received on the project.

Several bear-people conflicts developed near the refuge during the summer. The refuge received a call during July that a bear had broken into a smokehouse in Naknek several times, and that the caller was going to shoot the bear if it came back again. The information was relayed to ADF&G, and to our knowledge, the bear was not shot.

One bear was shot at Lake Camp in defense of property, and one bear was shot in defense of life at Rapids Camp. Both of these locations are public use areas outside of King Salmon and along the Naknek River. They are used extensively by military personnel from the local air base. The biggest problem, however, developed in South Naknek where as many as 17 bears were

TABLE I
1980 COMPOSITION AND NUMBERS OF BROWN BEARS
August 7 - September 5

| <u>STREAM</u> | <u>SOVS WITH CUBS</u> | | | <u>SOVS WITH YEARLINGS</u> | | | <u>SINGLES</u> | | | <u>TOTAL</u> |
|-------------------|-----------------------|------------|------------|----------------------------|------------|------------|----------------|----------|----------|--------------|
| | <u>♀1C</u> | <u>♀2C</u> | <u>♀3C</u> | <u>♂1Y</u> | <u>♂2Y</u> | <u>♂3Y</u> | <u>S</u> | <u>M</u> | <u>L</u> | |
| Albert Cr. | | | | | | | | 1 | | 1 |
| Bear Cr. | 1 | 9 | | 3 | 2 | 4 | 5 | 22 | 10 | 94 |
| Becharof Cr. | 4 | 11 | 1 | 6 | 1 | | 5 | 12 | 8 | 85 |
| Becharof Lake | | | | | | | | 2 | | 2 |
| Bible Camp Cr. | | 3 | | | | | | 2 | | 11 |
| Big Cr. | | 1 | | | | | | | 1 | 4 |
| Burls Cr. | 1 | 1 | | | 1 | | | 1 | 2 | 11 |
| Cleo Cr. | 1 | 4 | | 1 | 4 | | 3 | 9 | 5 | 45 |
| Featherly Cr. | | | | | 2 | | 1 | 4 | 3 | 14 |
| Gertrude Cr. | | | | | | | | | 1 | 1 |
| Katrine Cr. | | 3 | | | 1 | | | 4 | | 16 |
| Kejulik River | | | | | 1 | | | 2 | 1 | 6 |
| King Salmon River | | | | | | | | 1 | 1 | 2 |

(continued)

| <u>STREAM</u> | <u>SONS WITH CUBS</u> | | | <u>SONS WITH YEARLINGS</u> | | | <u>SINGLES</u> | | | <u>TOTAL</u> |
|---------------|-----------------------|------------|------------|----------------------------|------------|------------|----------------|----------|----------|--------------|
| | <u>+1C</u> | <u>+2C</u> | <u>+3C</u> | <u>+1Y</u> | <u>+2Y</u> | <u>+3Y</u> | <u>S</u> | <u>M</u> | <u>L</u> | |
| Last Cr. | | | | | | | | | | 0 |
| Margaret Cr. | | 3 | | | 1 | | 3 | 1 | | 16 |
| Marie Cr. | | | | | | | | | 1 | 1 |
| Otter Cr. | | | | | | | | | 1 | 1 |
| Ruth River | | | | | | | | | | 0 |
| Salmon Cr. | | 5 | | 1 | | 1 | 1 | 5 | 2 | 29 |
| Severson Cr. | | | | | | 1 | | | 4 | 8 |
| | | | | | | | | | | <u>347</u> |

| <u>Daily Totals:</u> | <u>Date</u> | <u>Total</u> |
|----------------------|-------------|--------------|
| | 08/07 | 40 |
| | 08/11 | 30 |
| | 08/12 | 60 |
| | 08/13 | 61 |
| | 08/21 | 50 |
| | 08/29 | 68 |
| | 09/05 | <u>38</u> |
| | | 347 |

reported in its dump. Several buildings were damaged by bears, and two bears attempted to enter a cannery while it was operating. One bear which had a bucket stuck on its head was tranquilized by the ADF&G and the bucket removed.

Moose. The refuge supports small numbers of moose in the Pacific drainages and more substantial numbers in the lake drainages. The willow shrub communities preferred by the moose occur in the foothills of the Kejulik River watershed, the foothills adjacent to Becharof Lake, the Becharof Lake Island Arm and in the short Pacific coastal valleys.

Present State data clearly indicates that the present size and health of the herd is on the decline. It is believed by the State that this is due to a combination of past hunting pressure, forage availability and brown bear predation on calves. Calf production, which can approach or exceed 100 calves per 100 cows in a healthy herd, has declined to 14 calves per 100 cows in 1979 for the area.

The most moose seen by refuge staff on an aerial survey of the refuge was 10 bulls, 14 cows and 4 calves. They were recorded on June 14 along the Kejulik River. The same area was flown again on August 11 when nine cows and only one calf were observed.

Caribou. The Alaska Peninsula caribou herd is one of thirteen major herds in Alaska, and is one of the few that has not experienced a dramatic decline during the last decade. It is made up of three distinct subherds. The largest subherd, which ranges between King Salmon and Port Moller, was estimated in 1979 at 10,400+ animals and increasing in population. It is this subherd that utilizes the refuge. The average monthly utilization of the refuge for 1980 was as follows:

| <u>Month</u> | <u>Caribou Numbers</u> |
|--------------|------------------------|
| January | 2,000 |
| February | 800 |
| March | 100 |
| April | 50 |
| May | 50 |
| June | 50 |
| July | 50 |
| August | 3,700 |
| September | 5,500 |
| October | 5,300 |
| November | 7,500 |
| December | 1,000 |

Although the caribou herd is apparently remaining stable or increasing in size, it is probably near the carrying capacity of its range and the reproductive rate of part of the herd may be decreasing. To confirm this, the ADF&G radio collared ten cow caribou on the refuge in 1980. This will hopefully assist in locating the herd during calving, thus allowing better monitoring of the reproductive rate.

ADF&G also conducts annual sex and age composition counts of caribou wintering on the refuge. Results of the 1980 counts were 25.2% bulls, 47.8% cows and 27.0% calves. Sample size was 2074 animals.

Wolf. Wolves inhabit the entire refuge, but are not abundant anywhere. One wolf was observed by the refuge on July 16 east of Whale Mountain. State bounties of \$50 were paid on wolves killed prior to 1970, and aerial hunting was permitted until 1972.

Wolverine. Wolverines occur in moderate numbers throughout the refuge. None, however, were observed on the refuge in 1980. State bounties of \$15 were paid on wolverines until 1969.

Red Fox. Red foxes are abundant throughout the refuge. Population levels are highly variable from year to year, and widespread outbreaks of rabies within the population are common. Olaus Murie postulates that the fox formerly occurred in both the red and black phase, but selective killing of the dark phase because of its higher value has eliminated the black fox from the Alaska Peninsula.

Lynx. Although this cat is cyclically abundant, generally following the cycle of the hares on which it prefers to feed, it has historically been uncommon within the refuge. None were observed in 1980.

Tundra and Snowshoe Hare. Numbers and population statuses of both hares is unknown at this time.

9. Marine Mammals

Major marine mammals which utilize the Pacific coast of the refuge include sea otters, harbor seals and Steller sea lions. Harbor seals and sea lions migrate up and down the coast, frequently hauling out on the refuge. A major sea lion haul out site occurs on Puale Bay where 5-10 thousand animals are frequently observed.

Sea otters in western Alaska regularly come ashore, particularly at night and during storms. They usually stay within a few feet of the water, but occasionally move as far as 100 yards inland. Although not documented, this is assumed to also occur on the refuge.

10. Other Resident Wildlife

Other resident wildlife found on the refuge include land otters, beaver, short-tailed and least weasels, muskrat, arctic ground squirrels, porcupine, willow and rock ptarmigan and mink. Little information is available on the status of these animals.

11. Fisheries Resources

The river systems of the Bristol Bay provide the spawning and early rearing habitat for one-half of the sockeye salmon living on the earth. The Egegik River system provides the habitat for the second largest run of Bristol Bay sockeye salmon. Excluding the Egegik River and the lower one-third of the King Salmon River, the refuge comprises virtually the entire watershed and almost all spawning and rearing areas.

Commercial harvest of sockeye salmon returning to the Bristol Bay began in the late 1880's. Since that time, the fishing in the area has developed into one of the State's major industries.

For months, local residents awaited the record run of sockeye that everyone predicted would return to the bay in 1980. When the season finally arrived, the run was even bigger than ADF&G had predicted. ADF&G predicted around 54 million fish, while the actual run was closer to 62 million sockeye. As has been the case in other years, however, the big run did not necessarily mean a big harvest. Fishermen and processors failed to agree on a price until midway through the run. Much of the early season was lost to most fishermen as they stayed out on strike.

A price settlement was reached July 2 for sockeye at 57¢/lb. Once the entire fleet began to fish, processors set periods and limits on each delivery to prevent overloading. The resulting 23.1 million sockeye catch was slightly greater than that of 1979 and was the largest since 1965 when 24.3 million fish were harvested.

The Egegik River system provided a catch of 2.2 million, an escapement of 1.0 million and an estimated total run of 3.3 million sockeye. Five thousand king salmon were also reported caught from the system.

Pink salmon, the smallest Alaskan species, thrive in almost all Pacific Ocean drainages of the refuge. Pink, chum and silver salmon are also found in the Egegik in smaller numbers. Other fish found on the refuge include lake trout, rainbow trout, burbot, grayling, whitefish, northern pike and dolly varden/arctic char.

12. Disease Prevention and Control

The almost annual King Salmon area rabies outbreak occurred again in 1980. The disease is carried mainly by foxes, which are common to the area. The Public Health Service often visits the area to vaccinate dogs and cats, but many pets go unprotected. An unenforced local leash law also complicates the problem.

H. PUBLIC USE

1. Subsistence Use

Six villages with a total population of approximately 1,000 are located adjacent to the refuge. Several of these residents utilize the refuge's resources for subsistence. Although salmon is the most important subsistence food in the region, caribou, and moose to a lesser extent, are the primary resources harvested from the refuge. Some fur trapping is also done during the fishing off-season. Berries are the primary plant food used for subsistence.

The recently passed Alaska Lands Act defines subsistence as:

"The customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of non-edible byproducts of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption; and for customary trade."

The act also states that "nonwasteful subsistence uses of fish and wildlife and other renewable resources shall be the priority consumptive uses of all such resources." In other words, if a refuge wildlife population decreases to a level where the harvest must be reduced, the "sport hunters and fishermen" would be the first to be curtailed and the subsistence users the last. We hope to never reach such a position.

Needless to say, the question of who is a subsistence user is a burning issue in Alaska. There are those who believe that no group should be given priority, and there are those who believe all Alaskan residents are subsistence users. There are those in the cities whose income is less than some in the villages, and there are commercial guides who both believe they are subsistence users; and there are those who believe that only Native people are subsistence users. The answer and management of this issue is not an easy task, and will no doubt test our grit.

2. Interpretation and Environmental Education

Becharof has no formal Interpretation or E.E. program. Visitors to the refuge headquarters for 1980 numbered less than two dozen. On-refuge visitors, almost entirely hunters and fishermen, are contacted whenever possible, but available aircraft landing areas often does not even permit this.

The only alternative is to sell our program wherever and whenever anyone will listen. To facilitate this and improve community relations, Manager Taylor joined the local Lions and Rod and Gun Clubs.

3. Hunting

By far the majority of public use on the refuge is from hunting. A large guiding industry, which is primarily for brown bear, moose and caribou, operates on the refuge. Ten exclusive guiding areas have been designated by the State Guiding Board. Overlapping seasons for moose, caribou, and every other year, brown bear makes multi-species hunts possible and serves to attract many hunters to the refuge.

Caribou. The availability and abundance of Peninsula caribou has contributed to the increase in hunting pressure, mostly by nonresidents. As good hunting areas near Alaskan cities become more difficult to find, unguided residents also are coming to the refuge in increasing numbers because of the bag limit of four animals and the high hunter success. It is estimated by the State that about 75% of the caribou are taken by non-local hunters. This is most often a bull and is predominantly during

August - October, when only one antlered caribou may be taken. From November - March, three antlered caribou may be taken. During this period, most older bulls have dropped their antlers, and the take is predominantly cows, yearlings and calves taken by local meat hunters. This system allows a more evenly distributed harvest of the herd, and provides sport and meat hunters with a good chance of success.

Given the depleted condition of interior Alaskan herds and the healthy condition of the Peninsula herd, it is unlikely that caribou hunting pressure on the refuge will decrease in coming years. An increase beyond the present levels of harvest will necessitate intensified monitoring of refuge population status, and may result in additional restrictions.

Moose. Trophy moose hunting by residents and nonresidents also has become popular on the refuge. Many hunters travel from Anchorage and Fairbanks, although about half of the moose harvested on the Peninsula during the last decade has been by nonresidents.

Due to a declining population in the area, the ADF&G reduced the moose season in 1975. Further restrictions on hunting were put into effect in 1976. Hunting was restricted to an early (bull) season and a late (either sex) season. As with caribou, hunting in the late season is primarily done by local residents interested in obtaining winter meat. The early season attracts mostly guided, nonresidents.

Most of the refuge is also within a "trophy moose" unit. Regulations for this unit stipulates that only antlered moose with a minimum antler spread of 50 inches or three brow tines on one side of the antlers may be taken.

Of a total of 16 moose harvested on the refuge in 1980, 33% of the hunters were guided and 69% were nonresidents. Largest antler spreads were 61 and 66 inches. Twenty-six moose were taken in 1979 on the refuge. The decline is attributed to fewer hunters in 1980. More hunters participated in the 1979 moose season when the fall brown bear season was also open.

Brown Bear. Little brown bear hunting was done on the Alaska Peninsula until the early 1960's, but since that time, about 50% of the brown bears harvested in Alaska have come from the area. Harvest records indicate that a minimum of 380 bears have been taken on the refuge since 1961. The majority of the kill has been by guided nonresidents (78%) and has occurred during the fall season (70%). Harvest levels increased until the mid-60's and then declined slightly to the current level of harvest (20-30 per year). Current seasons for the refuge are a spring and fall season every other year.

As hunting pressure has increased in the area, regulations have necessarily become more restrictive. Seasons have been shortened and the use of aircraft for hunting curtailed. Despite restrictions, a gradual decrease in the size and age of bears killed indicates that the large, old bears are becoming increasingly scarce although the total bear population is apparently not changing in number.

Occasionally a bear is killed in defense of life or property, but little hunting pressure actually exists locally.

Of the 21 bears harvested on the refuge in 1980, 90% of the hunters were guided and 86% were nonresident.

TABLE II
1980 BIG GAME HARVEST

| <u>Species</u> | <u>Sex</u> | | | <u>Successful Hunters</u> | | | |
|----------------|-------------|---------------|----------------|---------------------------|------------------|--------------------|------------------|
| | <u>Male</u> | <u>Female</u> | <u>Unknown</u> | <u>Resident</u> | | <u>Nonresident</u> | |
| | | | | <u>Guided</u> | <u>Nonguided</u> | <u>Guided</u> | <u>Nonguided</u> |
| Moose | 16 | | | | 5 | 6 | 5 |
| Brown Bear | 13 | 8 | | 2 | 1 | 18* | |
| Caribou | | | 136 (est.) | | | | |

* State law requires that all nonresidents must be guided while hunting brown bear.

Some waterfowl and ptarmigan hunting during big game hunts also takes place on the refuge.

4. Fishing

Three known commercial fishing guides operate on the refuge. Most refuge hunting guides also take their clients fishing during nonhunting hours, and many nonguided hunters fish while on the refuge. Other fishing pressure is local and light.

5. Camping

All camping done on the refuge is in direct support of hunting or fishing. Overnight trips are usually 3-4 nights, but sometimes last a week or two. Uncooperative weather often makes trips days longer than planned.

Most commercial guides have cabins on the refuge, but some do operate out of base camps. Those who obey the law must often have to set up an overnight camp when an animal is located by air (State law prohibits shooting a big game animal on the same day airborne).

6. Other Recreation

Other public use includes a small number of people who observe wildlife from aircraft, photograph wildlife and pick berries on the refuge. Amount of use from these activities is unknown.

7. Law Enforcement

Becharof does and will probably continue for some time to have law enforcement problems. First, a 1.2 million acre refuge does not lend itself to easy and effective patrol, especially with a staff of one. Second, without a refuge airplane, contacting people on the refuge is next to impossible. Local air charter operations are usually not willing to sit on the ground while you investigate a situation or contact a visitor. They can make more by flying other folks on a seat rate during these busy times of the year. They are also reluctant to be associated with bringing the "law" in on a customer.

Third, many guides are the worst outlaws using the refuge, but the most difficult to apprehend. With 3-10 thousand dollars per client on the line, it is worth their while to take chances by shooting the same day airborne or herding animals with aircraft to awaiting hunters, often using shotguns and birdshot.

A refuge assistant guide was caught in September in the Katmai National Park adjacent to the refuge. He had flown a German hunter into the no hunting area and shot a moose, but had broken a landing gear on his plane in the process. When the NPS and the ADF&G arrived and began circling, he realized that he was caught. Rather than let the Feds or the State confiscate another one of his \$20,000 planes, he set it afire and burned the plane to the ground. He was back in the area guiding within two weeks with a new plane. This guide has a record of convictions as long as your arm, but it is doubtful the refuge will be able to put him out of operation due to current State Guide Board & USDI policy on commercial operations in Alaska.

The FWS's best success in pinching illegal guides has been through the use of undercover agents posing as clients. Realizing this, most illegal guides have gone to only guiding foreign or previously guided clients. This, of course, makes it much more difficult for our agents, but one local guide was apprehended in 1980 for a number of counts of airborne hunting and Lacey Act violations. The undercover agent was posing as a Mexican client.

Most illegal guides also keep an assistant guide between them and the illegal activity to buffer him from prosecution. "I didn't know anything about it!" is often heard when the assistant guide is caught.

The only effective means to curb these illegal activities is to take away a guide's license when he is convicted. The State Guide Board, made up largely of retired guides, is the only body that can do this. In the past, it has taken years for the board to act adversely against a guide and it usually only results in a slap on the wrist. Although there are a few legitimate guides in the area, they are getting harder and harder to find due to the money involved in the business and the pressure of guaranteeing their clients an animal.

Using his personal boat, Manager Taylor checked several local hunters on the Naknek River during waterfowl season. Six individuals were apprehended jump shooting birds from a boat under power. Four of the men had no hunting licenses, three had unplugged guns and all didn't have duck stamps. In separate incidents, two other boats were seen committing the same act, but both refused to stop when hailed and outran Taylor's boat. A new refuge jet boat has since been received, and should even the odds next season.

Evidently the State had done little or no law enforcement of waterfowl regulations locally. The word got around fast as several locals and ADF&G inquired the day after the season opened about "what's this with the Feds enforcing duck regs?" Knowing someone was out there watching brought most hunters in line quickly. The post office sold out of duck stamps for the first time in years.

Three individuals were also informed of refuge regulations precluding off-road vehicle use, and instructed to no longer use and remove their vehicles from the refuge. All had no real problems with the news and basically expected it would eventually happen.

I. EQUIPMENT AND FACILITIES

Since 1979, the FWS has been negotiating with the NMFS to receive fee title or a long term lease to the NMFS facilities in King Salmon. The facilities will be utilized as the refuge headquarters. The NMFS no longer uses the compound and has no immediate plans to return to the area. Currently, the refuge is occupying the compound under a verbal understanding and the draft agreement is in the Central Office.

The facilities include a permanent residence, four seasonal quarters, a messhall/bunk house, an automotive shop, a warehouse and a warehouse/office on eight acres of land. Several of the buildings will require upgrading and rewiring, and the compound will need a new sewage system when fully staffed. Three mobile homes were picked up excess from BIA in Fairbanks and barged to King Salmon in June. They are planned to be installed in 1981 for additional refuge housing.

Since virtually no housing or land is available in the area, the compound has been a lifesaver to the present management of the refuge, and a perfect location for a permanent headquarters site.

Although the refuge did not have a budget in 1980, money from the Regional Office was used to purchase the refuge an 18 ft. jet boat, an inflatable raft and outboard motor, a copy machine and other smaller items of equipment.

J. OTHER ITEMS

1. Cooperative Programs

Two special use permits were issued to oil companies to conduct surface geologic mapping and surveying, two to ADF&G to conduct wildlife and fisheries work, one to USGS to conduct geological work, one to the Alaska Dept. of Natural Resources to collect geothermal data and five to commercial guides.

Until it was abolished in September, Manager Taylor served as chairman of the interagency Western Alaska Work Group of the Solid Waste Disposal Committee. The committee was a "subcommittee" of the Alaska Land Managers Cooperative Task Force. Purpose of the committee was to coordinate the removal of debris, primarily military and oil exploration, from Federal lands.

On April 16 and August 22, Manager Taylor assisted ADF&G in over water walrus surveys of the Bristol Bay. A total of 970 nautical miles were covered on each survey of 19 transects from Port Moller to Togiak Bay. Three to four thousand walrus were recorded on both surveys in the State's Round Island sanctuary area, and an estimated 1,000 animals were seen in April at Cape Seniavin. Few walrus were seen in other areas or in the water.

Manager Taylor also assisted the MNB program from the Regional Office with beach surveys of walrus carcasses throughout the spring and summer. The surveys were conducted from the mouth of the Kuskokwim River to Port Moller. Objective of the surveys was to assess walrus mortality due to legal native and illegal non-native taking, primarily for ivory. Although moved by tides, more than 150 different carcasses were recorded.

All carcasses were headless or had its ivory removed. Most males also had their "oosiks" (penis bones) removed, and none showed any evidence of meat being utilized. Due to a lack of available landing areas and the decomposition of most carcasses, only a few could be examined. Most of these showed probable evidence of being shot.

2. Items of Interest

In December, Manager Taylor received a commendation from Interior Secretary Andrus for his work on the Alaska Peninsula Refuge EIS.

Eleven VIP's from Congressmen to Central Office staff to Regional Office ARD's visited the refuge during 1980.

3. Credits

The report was written and typed by Manager Taylor.

PHOTOGRAPHIC SECTION

#01 - The refuge headquarters is located in King Salmon, 10 air miles north of the refuge. Headquarters is the metal buildings along the Naknek River and in the left of the photograph. 80-01 JT



#02 - The Ukinrek maars are two volcanic craters found on the refuge. They were formed during an eruption in April of 1977. 80-02 JT



#03 - The braided King Salmon River bisects the refuge north of Becharof Lake. 80-03 JT



#04 - Originating in the Kejulik Mountains, Marie Creek flows into Becharof Lake. 80-04 JT



#05 - Barrenland caribou often utilize Whale Mountain in the late summer to escape insects. 80-05 JT



#06 - This albino caribou calf was observed on the refuge in August, 1980. 80-06 JT



#07 - Uncle Billy, rumored to have killed two of his trapping partners, lived year around in this cabin on the Island Arm of Becharof Lake. He was last seen in March of 1980, and is now presumed to have joined his partners. 80-07 JT



#08 - Spawning migration of sockeye salmon in the Ruth River. 80-08 JT



#09 - Due to the fishermen strike, escapement exceeded the spawning ground capacity in many streams. Redds (spawning nests) such as these were sometimes redug by successive waves of spawners, uncovering previously laid eggs. 80-09 JT



#10 - "Now let me see, which one..."

80-10 JK



#11 - "This one will do."

80-11 JK



#12 - Some visitors run into problems on the refuge. This fellow broke a nose gear while landing on the shore of Becharof Lake.

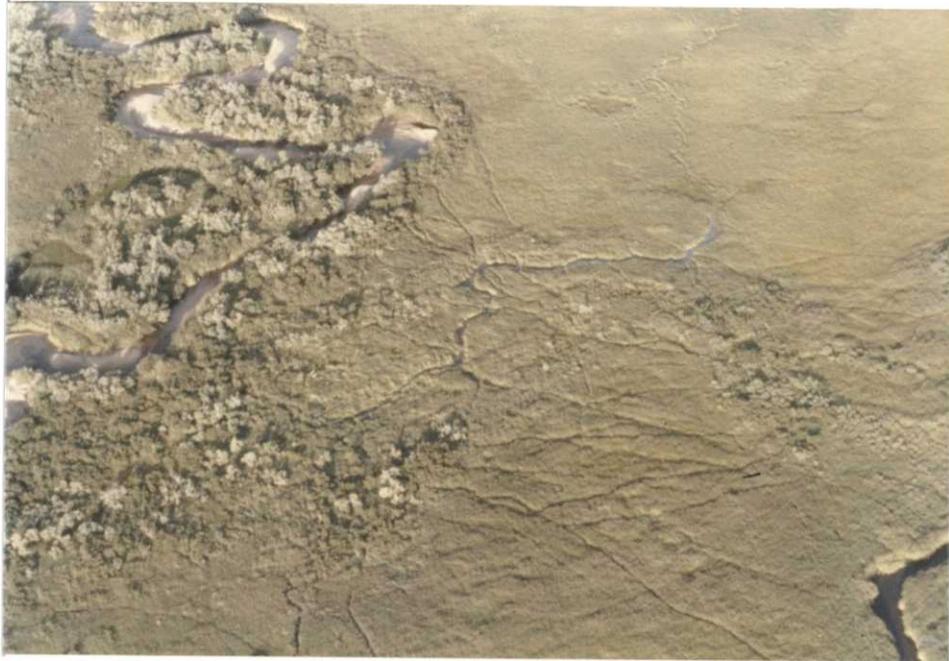
80-12 JT



#13 - The Kejulik River provides some of the refuge's best moose and brown bear habitat. 80-13 JT



#14 - These two Kejulik bulls would probably agree. 80-14 JT



#15 - A network of bear trails join the streams of the eastern portion of the refuge. 80-15 JT



#16 - One of the main reasons the Becharof Monument was established was its very unique brown bear denning on islands of the Island Arm. Brown bears usually den in the alpine above 1,500 feet. 80-16 JT



#17 - The northeast portion of the refuge provides hundreds of lakes which are moderately utilized by nesting waterfowl. 80-17 JT