ANNUAL NARRATIVE REPORT
Calendar Year 1976

ARCTIC NATIONAL WILDLIFE RANGE
Fairbanks, Alaska

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Administrative Headquarters
Fairbanks, Alaska

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NATIONAL WILDLIFE REFUGE SYSTEM
Fish and Wildlife Service
U.S. DEPARTMENT OF THE INTERIOR

Personnel

1. Averill Thayer, Refuge Manager, GS-12
2. Ted Schmidt, Assitant Refuge Manager, GS-11
3. Don Ross, Assistant Refuge Manager, GS-11
4. Patricia Young, Administrative Clerk, GS-6
5. Michael Cartusciello, EOD 6/15/76, term. 6/25/76, Biological Tech GS-5
6. Greg Einerson, EOD 7/05/76, term. 7/23/76, Biological Tech. GS-
7. Mathew Robus, EOD 8/6/76, term. 8/15/76, Camp Maintenance Worker, WG-02
8. Stephen Wood, EOD 8/6/76, term. 8/15/76, Camp Maintenance Worker, WG-02
9. Wayne Eberhardt, EOD 8/10/76, term. 8/17/76, Camp Maintenance Worker, WG-02

Review and Approvals

Averill Thayer
Submitted by

ARCTIC NATIONAL WILDLIFE RANGE
Refuge 3/27/79

Area Office Date

8/27/79
Regional Office Date

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I. GENERAL

A. Introduction

The Arctic National Wildlife Range (ANWR) was established by executive order in 1960 for the purpose of preserving unique wildlife, wilderness and recreational values. The ANWR, located in the northeastern corner of Alaska, contains approximately 8,900,000 acres. The area was withdrawn from all forms of appropriation under the public land laws, including the mining but not mineral leasing laws.

In the Alaskan arctic the ANWR offers unique recreational and aesthetic opportunities. It is the only area in the United States where the transition from the arctic foothills to the coastal plain and Arctic Ocean is not yet committed to industrial development. It is the only practical area where recreationists may travel on foot or by boat and traverse a full range of north slope landscape and habitats due to the close proximity of the Arctic coast and mountains. Mt. Isto, 2,758 m; Mt. Chamberlin, 2,749 m; Mt. Hubley, 2,717 m; and Mt. Michelson, 2,699; the four tallest peaks in the Brooks Range are located in ANWR. The ANWR contains the only extensive glaciation in the Brooks Range as well as a full complement of arctic flora and fauna. This includes critical calving grounds for the Porcupine Caribou herd, the largest in Alaska (approximately 100,000 animals), reintroduced muskoxen, and critical habitat for the endangered peregrine falcon, snow geese and other migratory bird species.

B. Climatic and Habitat Conditions

Arctic weather sharply contrasts with weather in other parts of Alaska. Average temperatures are cold. The Arctic Ocean and Beaufort Sea have a modifying effect on coastal temperatures despite the proximity of the offshore ice pack for 10 months of the year. Surface winds are relatively strong along the coast but weaken and become more variable further inland due to the influence of the Brooks Range. Although the terrain is continuously wet in summer and dotted with lakes, the amount of precipitation is low. Except at higher elevations the region is classified as desert--a desert of frozen land.

In the coastal and foothills areas, precipitation ranges from seven to less than five inches. Heaviest precipitation occurs in the highest elevations of the Brooks Range where the average annual amounts may be 40 inches or more in the ANWR. Most precipitation occurs during summer as rain.

The primary mode of transportation, flying, depends heavily on weather conditions. The only weather reporting station near the ANWR is at Kaktovik (Barter Island), on the northern coast. Average summer temperatures at Barter Island are 30^{o} to 46^{o} F; winter -20^{o} to -6^{o}; extremes -59^{o} to -75^{o}; precipitation seven inches, includes 45 inches of snow; average wind E 11.5 kts; extreme wind 75 kts.

Village of Kaktovik on Barter Island

(Schmidt 4/76)

In the arctic, days are longer in summer and shorter in winter than at more southerly latitudes. From early May to early August the sun does not set in the northern half of the ANWR. From mid-November to late January the sun does not rise above the horizon; however, a short period of twilight occurs on each of these days.

The arctic receives most of its heat energy during summer. The decrease in heat energy in fall and winter is rapid. By September there is more outgoing heat energy than incoming--a negative energy balance. The heat energy balance is positive again in late March and early April. February is the coldest month, July the warmest.

C. Land Acquisition

1. Fee Title

N/A

2. Easements

Trail easements to provide access to public land and coastal and river recreational easements were recommended through Native selection lands.

3. Other

Pursuant to Section 14(a) of the Alaska Native Claims Settlement Act of December 18, 1971, the Kaktovik Inupiat Corporation will acquire surface estate to certain lands adjacent to Barter Island. This land totals 65,292 acres and is described as follows:

Umiat Meridian, Alaska
T. 7N., R. 32 E.,
Sec. 1;
Containing 640 acres.

Umiat Meridian, Alaska
T. 8N., R. 32 E.,
Secs. 1 to 3, inclusive;
Secs. 9 to 16 inclusive;
Secs. 19 to 33, inclusive;
Section 36;
Containing 11,836 acres.

Umiat Meridian, Alaska
T. 8N., R. 33 E.,
Secs. 1 to 21, inclusive;
Secs. 29 to 32, inclusive;
Containing 12,587 acres.

Umiat Meridian, Alaska
T. 8N., R. 34 E.,
Secs. 1 to 17, inclusive;
Containing 9,944 acres.

Umiat Meridian, Alaska
T. 9N., R. 32 E.,
All;
Containing 280 acres.

Umiat Meridian, Alaska
T. 9N., R. 33 E.,
Secs. 19, 20, 28, 29,
33 and 34.
Containing 705 acres.

Umiat Meridian, Alaska
T. 9N., R. 34 E.,
Secs. 7, 8 and 9
Secs. 13 to 16, inclusive;
Secs. 21, 23, 24 and 28
Containing 1,430 acres.

Umiat Meridian, Alaska
T. 9N., R. 35 E.,
All;
Containing 4,939 acres.

Umiat Meridian, Alaska
T. 8N., R. 35 E.,
Secs. 1 to 18, inclusive;
Secs. 24, 25, and 36;
Containing 13,263 acres

Umiat Meridian, Alaska
T. 9N., R. 36 E.,
T. 9N., R. 36 E.,
All;
Containing 165 acres.

Umiat Meridian, Alaska
T. 8N., R. 36 E.,
Secs. 1 to 13, inclusive;
Secs. 18 to 19 and 30;
Containing 9,503 acres.

D. System Status

1. Objectives

Annual Work Plan Advices were given in the following programs: Migratory Birds, Mammals and Non-Migratory Birds, and Interpretation and Recreation. Programs for 1976 were essentially on-going from the previous year and are planned for continuation in Fiscal Year 77. No maintenance or rehabilitation was scheduled for Fiscal Year 76. Rehabilitation of the Fort Yukon cabin is scheduled for Fiscal Year 77. During Calendar Year 76 satisfactory progress was made in each programmed work element and all activities were apparently in phase with approved objectives.

2. Funding

Fiscal Year 1976

Migratory Birds -	49,000
Mammals and Non-Migratory Birds -	160,000
Interpretation and Recreation -	9,545
TOTAL	208,549

Permanent full-time staff - 4

Permanent manpower has not increased since the addition of an Assistant Refuge Manager in 1972.

II. CONSTRUCTION AND MAINTENANCE

A. Construction

Nothing to report.

B. Maintenance

The Fairbanks office was renovated by installing carpet, painting interior walls and purchasing window curtains. Fire extinguisher were recharged and smoke detectors were ordered and installed. All flammable material was removed from the aircraft hangar. The hangar was inspected for safety hazards and deficiencies corrected.

Barrier Reef - Arctic Ocean

(USFWS)

C. Wildfire

Nothing to report.

III. HABITAT MANAGEMENT

A. Croplands thru D. Forestlands

Nothing to report.

E. Other Habitat

The North Slope Borough was granted a permit to remove 6000 cu yards of gravel from Arey Spit on the west end of Barter Island. The gravel was used for road construction in the village of Kaktovik. Stipulations were written to protect Arey Spit. Gravel in sufficient quantity is a problem and Arey Spit will not be able to satisfy future demand.

Temporary employee Wayne Eberhardt and Don Ross removed litter from Last Lake and Porcupine Lake using N-766, a Beaver on amphibious floats.

Several habitat rehabilitation projects were undertaken to remove litter and debris from problem areas reported by visitors. An abandoned IGY camp at Jago Lake was removed in April with the help of Riley Tikluk, an Eskimo from Kaktovik. In mid-summer Don Ross and Biological Technician Greg Einerson worked in the Hulahula River valley removing litter left by hunters and eskimos along the Hulahula River as far as the northern foothills. The lower Kongakut River was given the same treatment.

F. Wilderness and Special Areas

The Arctic National Wildlife Range is a de facto wilderness area. Habitat managment is directed towards protecting the wilderness environment from potential human disruptions such as permitted commercial activities and public use.

G. Easements for Waterfowl Management

Nothing to report.

IV. WILDLIFE

A. Endangered and/or Threatened Species

Peregrine falcons nest within the Range but distribution and abundance have not been determined. No surveys or habitat evaluations were conducted during the year. Currently, funds are not available for work in this program.

B. Migratory Birds

1. Waterfowl

Michael Wotton photographed swan nesting activities on the Aichilik delta for the Audubon Society. A collared whistling swan (A-311) was found on a nest one eighth mile from the coast on the Hulahula-Okpilak delta.

2. Marsh and Water Birds

Nothing to report.

3. Shorebirds, Gulls, Terns, and Allied Species

Native selection lands south of Barter Island were surveyed by Ted Schmidt and Mike Cartusciello using random linear ground transects to determine bird use of the area's habitat types. Two species that were particularly abundant on this area were buff-breasted sandpipers and ruddy turnstones.

Jim Erckmann of the University of Washington conducted a shorebird breeding biology study on the Aichilik delta. A thesis is currently in preparation.

4. Raptors

Nothing to report.

5. Other Migratory Birds

The most favorable bird nesting and feeding habitats with the greatest species diversity within the Range are the Egaksrak/Aichilik River delta, the lower portion of the Jago River, the Canning River delta and Hulahula/Okpilak River deltas.

On the Arctic National Wildlife Range habitat types described by Kessel and Cade are fairly uniform across most of the coastal plain. The relative proportions of given habitat types differ significantly depending on the location. Bird densities on smaller habitat types, however, appear to remain essentially the same. Each species is linked to its preferred habitat; however, an observer may easily traverse a variety of habitat types and observe a great variety of birds on a relatively small area.

Grizzly Bear (Ursus horribilis)

(W. Mills)

C. Mammals and Non-Migratory Birds

1. Game Mammals

a. Grizzly Bear

Grizzly densities in the Range are estimated at approximately one per 100 square miles taking favorable and unfavorable habitat into account. Using this figure the grizzly bear population in the Range is about 140 bears. The spring bear hunting season in the Brooks Range excluded the Arctic National Wildlife Range, but the Range was open to hunting in the fall. No bears were known to have been legally harvested during the fall season. No systematic surveys or trend counts were conducted.

Because of the relative scarcity and vulnerability of the bear population in the Range, the Fish and Wildlife Service urged the State of Alaska Game Board to close the Range to bear hunting. Bear hunting in the Brooks Range, including the ANWR, will be by permit only beginning in the fall of 1977. Ten bear permits will be issued for the ANWR.

b. Moose

Moose are found scattered throughout the Range wherever suitable habitat (riparian willow) is found. On the north side, Eagle and Cache Creeks, the Canning River and the upper Kongakut River have the greatest moose concentrations. On the south side the Sheenjek and Colleen drainages contain the most favorable moose habitat.

Fall composition counts were conducted on Eagle and Cache Creeks, the Sheenjek River and the Colleen River. A total of 56 moose were observed in the Eagle and Cache Creek drainages. Leaf cover was absent and moose were easily observed from the air. Herd productivity is low and from general observations the available willow browse appears to have been heavily utilized.

In the upper Sheenjek River drainage, 82 moose were counted from the air. From aerial surveys the Sheenjek moose population is estimated to be approximately 150 to 200 animals. Productivity is good but survival of calves to yearling age is unknown. Hunting pressure has been light in the Sheenjek but moose are particularly vulnerable due to the open country and ease of access.

Sheep Hunters at Portage Lakes
(in proposed ANWR addition)

(unknown)

c. Dall Sheep

The total sheep population in the Range is unknown; however, an intensive aerial survey of favorable sheep habitat in the Range was partially completed during the summer of 1976. The question following a survey of this type is always, "what percentage of the animals actually on the range were observed?"

Taking into account a variety of factors the best estimate for sheep actually seen by drainage is:

Hulahula River	85%
Jago River	65%
Aichilik River	50%
Sadlerochit Mt.	50%
Sadlerochit River	40%

If these percentages are accurate, it is estimated that 4000 inhabit the area surveyed.

The number of reported Dall sheep hunters using the ANWR has increased from a handful in 1970 to 97 in 1976. Sixty-four sheep were reported as being harvested with most taken in the Hulahula and Canning River drainages. This is a minimum figure and does not take into account non-reporting hunters and Eskimo subsistence harvest.

Temporary employees Wood and Robus camped on the upper Hulahula River during the sheep hunting season to assess hunting pressure.

b. Caribou

The calving grounds of the Porcupine caribou herd encompass a broad area along the foothills and coastal plain of the northern Yukon Territory and the north slope of the Range. This international herd winters primarily in Canada south of the Porcupine River. During the summer it is the largest caribou herd in Alaska, numbering approximately 100,000 animals.

During the post-calving concentration in July, a ground composition count was conducted in cooperation with Renewable Resources Consulting Service (Biological Consultant to Arctic Gas Pipeline Consortium). Observers were located at a frequently used crossing point on the Kongakut River. Approximately 7,000 caribou were classified. The observed calf/cow ratio was 58 calves/100 cows. The herd is probably stable but may be slowly increasing. No other survey or trend information was obtained during the report period.

Arctic Gas Pipeline consortium proposes to construct a buried gas pipeline across the ANWR and northern Yukon, through the calving ground of the Porcupine Caribou herd. In Canada the Dempster Highway is nearing completion. It crosses the herd's migration routes to wintering grounds. Either one or both of

Porcupine Caribou Herd near Schrader Lake

(W. Mills)

these projects are threats to the long term well being of the herd.

Don Ross worked on the final environmental impact statement for the Arctic Gas Pipeline Project in Washington, D.C.

e. Polar Bear

Female polar bears occasionally come ashore to dig maternity dens in the snowdrifts along river banks on the coastal plain of the Arctic National Wildlife Range. In April an occupied polar bear den was found three miles inland on the Niguanak River by an Eskimo trapper. After the sow and cub left, scats were collected and measurements made.

Dens are extremely difficult to locate but are sometimes found as far as 15 miles inland.

Strong winds and drifting snow usually obscure tracks and den sites soon after the bears emerge from the den. An estimated five to ten bears may use the coast of the Range for maternity denning.

f. Arctic Wolf

From general observations it appears that wolf populations may be increasing. Wolves are probably a significant suppressor of some moose populations on the Range. No systematic surveys were conducted during the report period.

2. Other Mammals

Lynx, wolverine, Arctic fox, red fox, beaver, otter, mink, marten and a host of other small mammals are present in the ANWR. No surveys were conducted or trend information established on these species.

3. Resident Birds

Resident birds include:

goshawk
gryfalcon
willow ptarmigan
rock ptarmigan
snowy owl
hawk owl
great horned owl
gray jay
common raven
boreal chickadee
spruce grouse
sharp-tailed grouse
dipper

No survey or trend information is available.

4. Other Animal Life

Nothing to report.

Holmes Research Station (NARL) at Peters Lake. Used by hikers and backpackers as a shelter and rest stop

(Young 5/78)

V. INTERPRETATION AND RECREATION

A. Information and Interpretation

1. On-Refuge

The Arctic National Wildlife Range is a de facto wilderness area; there are no interpretive trails, visitor centers, signs or demonstration areas. Occasionally Range personnel act as visitor guides to VIP's touring the Range.

2. Off-Refuge

Periodic news releases, slide talks and leaflet publications are made. A visitor's guide was published and is sent to those requesting information about the Range. First time visitors to the Range usually stop at the Fairbanks office to obtain information on hiking routes, weather conditions and where to observe wildlife.

B. Recreation

1. Wildlife Oriented

Wildlife/wildlands oriented recreation is the primary public use of the Range. Most visitors to the Range wish to observe as many arctic species in a wilderness habitat as is possible. Hunters and backpackers make up the bulk of visitors. Although the Range is capable of absorbing a significantly larger visitor load, localized overcrowding at certain access points is becoming a problem. For some activities time/space zoning will be required to avoid habitat degradation such as vegetation trampling.

In 1975 there were eight floatplanes on a small lake at the head of the Hulahula River. Crowding of this kind lessens the quality of wilderness recreation for everyone in the immediate area.

A public use plan is being prepared to address the problem. A portion of this plan which would implement a permit system for sheep hunting was submitted for administrative action.

2. Non-Wildlife Oriented

The only non-wildlife oriented recreation occurring on the ANWR is snowmobiling by Eskimos from Kaktovik on Barter Island. Most snowmobiling, however, is subsistence oriented. Eskimos use them for transportation to hunting, trapping, and fishing areas.

C. Enforcement

Enforcement is a continuing problem on the Arctic National Wildlife Range. The center of the Range is 300 miles and two mountain ranges away from the adminstrative headquarters in Fairbanks. There are no full time enforcement personnel assigned to the Range. Violations of refuge and game regulations, when detected, are usually after the fact.

A full-time member of the Range staff to be stationed in either Barter Island or Arctic Village will be added as soon as funding and a ceiling is available to more closely monitor activities occurring on the Range.

VI. OTHER ITEMS

A. Field Investigations

The following field investigations, summarized in Section IV Wildlife, and Section V Interpretation and Recreation, were conducted on the Range in 1976:

Fall moose composition counts - US Fish and Wildlife Service
Post-calving caribou compositions counts - Renewable Resources, Consulting Services, LTD.
Delineation of caribou calving 1976 - Renewable Resources, Consulting Services, LTD.
Shorebird breeding biology study - J. Erckmann, Univ. of Washington
Coastal bird habitat evaluation - G. Divoky, Alaska Dept. of Fish & Game
Recreational Use Survey, ANWR - R. Ritchie, Renewable Resources, Consulting Services, LTD.
Bird habitat evaluation - Ted Schmidt and Mike Cartusciello, USFWS
Native land selections -

B. Cooperative Programs

The following commercial activities were conducted on the Range during 1976:

Geophysical Institute, University of Alaska--Rocket landing and recovery
Off-Shore Navigation, Inc.--Radio positioning transmitters (bonded) 7/1-9/30/76
Shell Oil Company--Surface geological studies (bonded) 7/15-8/9/76
Arctic Gas--Electrical resistivity measurement (bonded) 3/15-4/30/76
Northwest Alpine Guide Service--Guided hiking
North Slope Borough--Gravel extraction
Wilbur Mills--Guided hiking
Alaska Wilderness Unlimited (Quirk)--Guided hiking
Exxon Co.--Surface geologic studies (bonded) 7/15-8/9/76
Northern Air Cargo--Removal of Beaver N-715
Mobil Oil--Surficial geology (bonded) 7/15-8/9/76
Grasser, Wassom, Want and Knutsen--Guided hunting

C. Items of Interest

Donald E. Ross with Ecological Services, Fairbanks, was selected for the position of Assistant Refuge Manager vacated by Donald N. Frickie. Don Frickie left the Arctic National Wildlife Range in late 1975 to assume the position of Refuge Manager for Clarence Rhode National Wildlife Range. Don Frickie was also selected to the Alaska Peregrine Falcon Recovery Team.

D. Safety

Personnel received annual flight physicals and proficiency training. Smoke detectors were installed in the Fairbanks office. The aircraft hangar was cleaned to remove all combustible hazards. No accidents occured during the report period.