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KANUTI NATIONAL WILDLIFE REFUGE
Fairbanks. Alaska



ANNUAL NARRATIVE REPORT
Calendar Year 1982

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1982

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

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Fairbanks, Alaska

ANNUAL NARRATIVE REPORT
Calendar Year 1982

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



Ervin McIntosh, Refuge Manager

Personnel

- | | |
|--------------------------------------|------------------------|
| 1. Ervin McIntosh (PFT) - GS/485-12 | Refuge Manager |
| 2. Paul Liedberg (PFT) - GS/341-9 | Administrative Officer |
| 3. Elizabeth Aucoin (PFT) - GS/503-5 | Financial Assistant |
| 4. Debbie Austin (PFT) - GS/322-3 | Clerk-typist |
| EOD 7-25-82, terminated | 12-30-82 |
| 5. Rittie Ramirez (PFT) - GS/322-2 | Clerk-typist |
| EOD 11-14-82 | |
| 6. Rose Gonsales (Temp.) - GS-322-3 | Clerk-typist |
| EOD 4-26-82, terminated | 5-14-82 |
| 7. Vicki Allen (Temp.) - GS/322-2 | Clerk-typist |
| EOD 6-22-82, terminated | 8-22-82 |

Review and Approval

Ervin W. McIntosh 2-28-83
Submitted by Date

Robert K. Kiser 3/1/83
Operations Manager, North Date

Jan C. Riff 3/29/83
Regional Office Review Date





Fairbanks Administrative Staff

left to right: Rittie Ramirez, Elizabeth Aucoin and Paul Liedberg
Uniform? Well, from our knowledge the maternity uniform has yet to be
authorized!

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A. HIGHLIGHTS

On December 2, 1980, the 96th Congress passed Public Law 96-487, Alaska National Interest Lands Conservation Act, that provided for the designation and conservation of certain public lands in the State of Alaska, including the designation of units of the National Park, National Wildlife Refuge, National Forest, National Wild and Scenic Rivers, and National Wilderness Preservation Systems and for other purposes.

Kanut National Wildlife Refuge was established under Title III Section 302 of this Act for the purposes of: "(i) to conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to, white-fronted geese and other waterfowl and migratory birds, moose, caribou (including participation in coordinated ecological studies and management of the Western Arctic caribou herd), and furbearers; (ii) to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats; (iii) to provide, in a manner consistent with the purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents; and (iv) to insure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i), water quality, and necessary water quantity within the refuge."

The Kanuti National Wildlife Refuge is located approximately 160 miles northwest of Fairbanks and lies along the Kanuti River, which flows into the middle Koyukuk drainage along the southern foothills of the Brooks Range. This interior basin, straddling the Arctic Circle, is characterized by lakes and marshes interspersed throughout the broad rolling plain of the Kanuti and Koyukuk valleys and includes a total of one million, four hundred and thirty thousand acres. The official map entitled "Kanut National Wildlife Refuge" dated July 1980 designates the boundaries of the Refuge. (See reduced copy of map showing boundaries on the following page.)

Basically, since little information was available specifically concerning the area, the management of Kanuti NWR during FY82 consisted of the familiarization of the Refuge, its resources and its users.

Meetings were held with village councils, Doyon, the Native Regional Corporation, Interior Village Association, Tanana Chiefs Conference, Alaska Department of Fish & Game, the Game Board Advisory Committee, State Fish and Wildlife Protection, BLM, Native Allotment holders, Homesteaders, Commercial Hunting Guides, and numerous other individuals having interest in or knowledge of Kanuti NWR.

Aerial reconnaissance was flown periodically throughout the year, familiarizing the manager with the area, its resources, conditions, and use.

On-ground reconnaissance was made to gather more specific information on wildlife, fisheries, water conditions, native allotments and other preliminary surveys.

A decision was made by the Regional Office (R.O.) to combine Fairbanks Administrative personnel into a common unit under the supervision of the Kanuti Manager. Later, another decision was made by R.O. to form a refuge complex of the three refuges headquartered in Fairbanks effective in spring of CY83.

A detailed topographic map of the Kanuti National Wildlife Refuge in Alaska. The map features a grid overlay and various geographical features, including contour lines, rivers, and lakes. The title 'KANUTI NATIONAL WILDLIFE REFUGE ALASKA' is printed in the upper left corner. The map shows a complex network of roads and trails, with some areas marked as 'Unimproved Road' or 'Trail'. The terrain is rugged, with numerous peaks and valleys. The map is oriented with North at the top.



A cooperative Subsistence Study of Koyukuk River drainage between the Subsistence Division of ADF&G, the Gates of the Arctic National Parks and Kanuti NWR was agreed upon to be initiated during CY83.

B. CLIMATIC CONDITIONS

Information on the climatic conditions of the Kanuti NWR is taken from the official weather station at Bettles, Alaska, which is located near the north boundary of the refuge.

The climate is typical of a continental regime. Temperatures during the long summer days are mild, with maximums mostly in the high sixties and low seventies, and occasionally in the eighties. The sun does not set during the period June 2 through July 9. The freeze-free period averages 89 days, extending from late May to late August.

Winters are typical of interior Alaska. Minimum temperatures average below zero from November through March, and readings in minus 45° to 55° range are experienced each winter. The transition from summer to winter and vice versa is rapid, resulting in short spring and fall seasons.

Annual precipitation amounts are slightly heavier than most interior locations but still well within what is expected for a continental climate.

Precipitation amounts build up to a maximum during late summer and fall months. Snow has occurred during all months of the year except July. The total seasonal snowfall has ranged from less than 40 inches to more than 130 inches. Because of the cold temperatures, much of the snow remains on the ground during the winter.

Surface winds are seldom strong during any season of the year, nor do they show much seasonal variation. Wind direction prevails from the north 10 months of the year.

C. LAND ACQUISITION

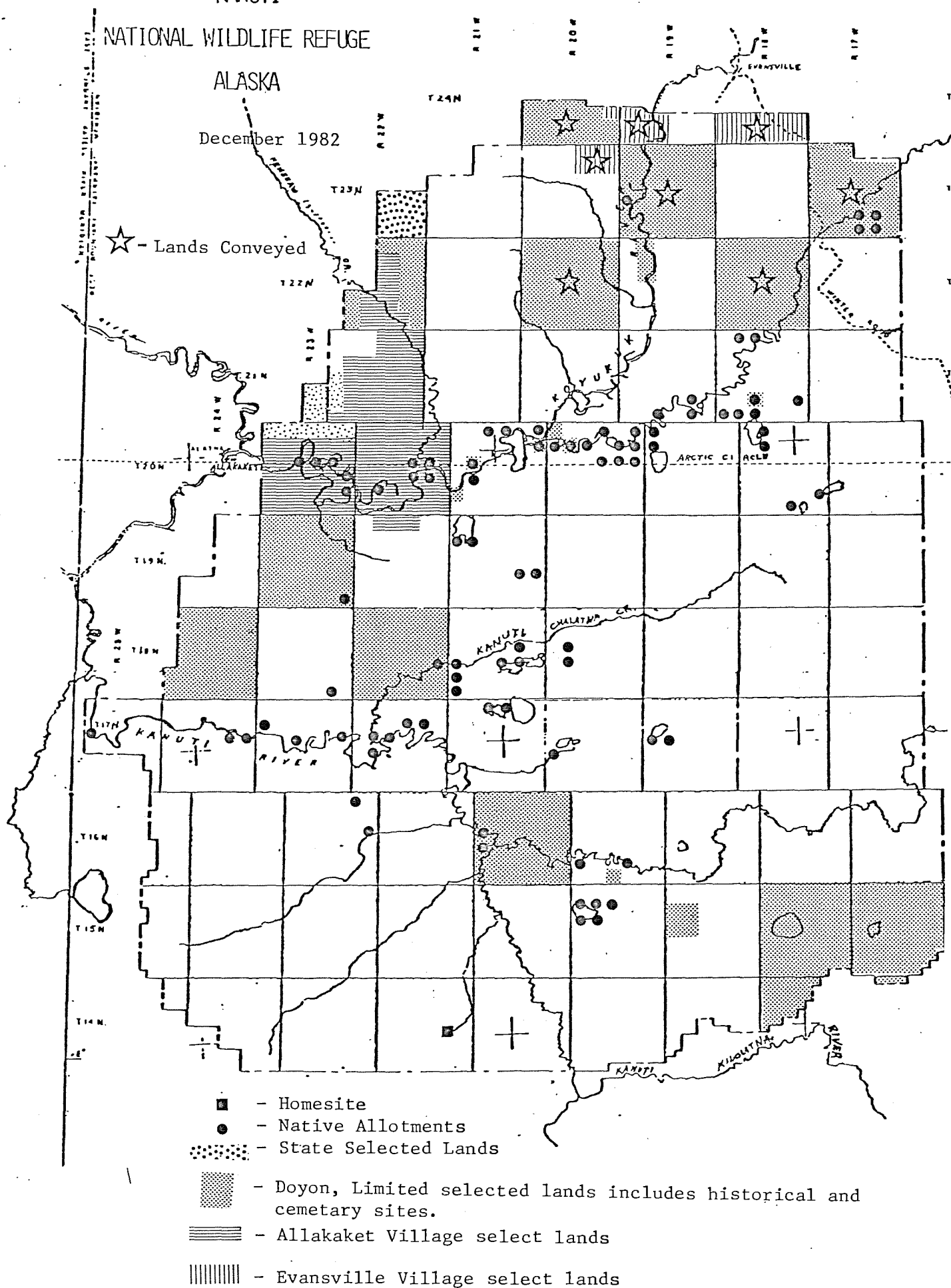
1. Within the exterior boundaries of the land acquired for the Kanuti NWR, 82 townships are involved. Of these townships, 47 have native allotments, village selections, Regional Corporation selections, and State selected lands within them. Most still have cases pending. Interior conveyances have occurred of lands selected by the village of Evansville and some Doyon Corporation lands in the northern portion of the refuge. (See map on following page).

The only State selection, T23N, R21W, was denied and has reverted to Refuge lands. However, the State selected another township of which a portion lies within the refuge but will probably be denied.

The only 14H(8) selection of Doyon, is in T14N, R18W, and contains 12 sections within the refuge.

There are Cemetery and Historical sites consisting of some 12,154 acres within the refuge. Several of these were investigated during the summer and unofficially reported as having insufficient evidence to support the claims.

December 1982

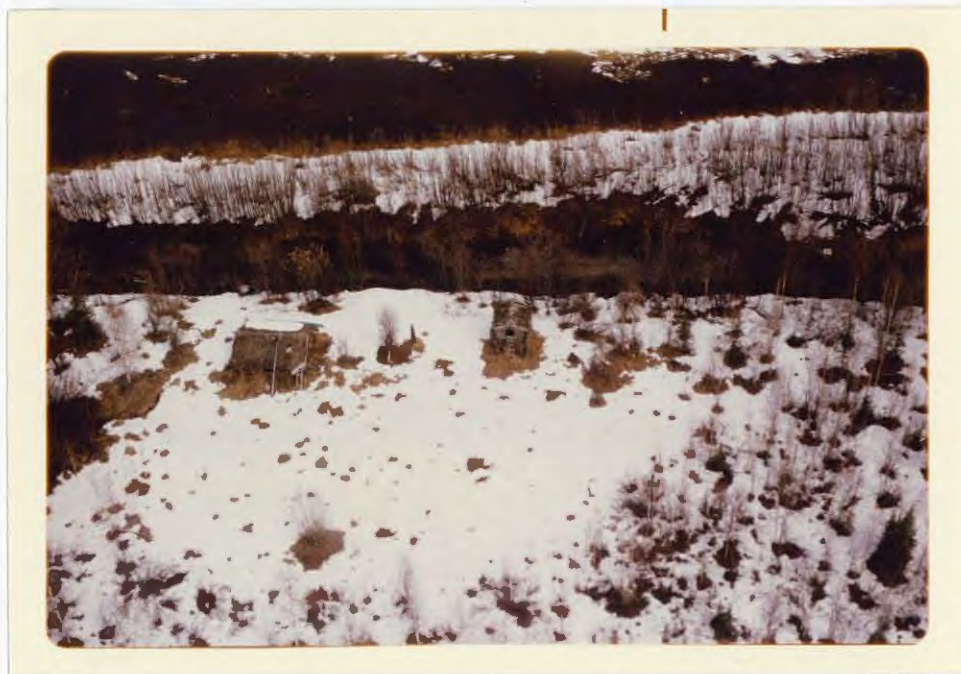


Native allotments include 45 individuals and 129 parcels of land totaling 5,221.96 acres.

There are no mining claims within the boundaries and only one active homesite; the 5 acre homesite owned by William M. Stephenson of Fairbanks. It contains a well built log cabin on a bluff beside Holanada Creek. It was built in 1971-72 and used primarily during winter months. Due to personal reasons Mr. Stephenson has not lived in the cabin for the past two years. He is looking forward to the opportunity to return.

2. Easements

As Regional and Village Corporation selections are considered for interim conveyance, we have been requested to comment and make recommendations concerning easements across these private lands as access to public lands. Numerous questions have arisen concerning navigability, winter trails, summer access, etc. Winter access to public lands is designated on the map over land that may or may not be feasible in reality. Summer access is usually by water, however, many streams that provide access to lakes and other areas of public lands are not determined as navigable under present BLM definitions of navigability. Problems could develop in the future in areas that become heavily utilized. There is no way at the present to ground check in order to make recommendations that will insure adequate access to all public lands within the refuge boundaries through the numerous private inholdings. Recommendations and comments therefore, are made based on scant knowledge of the area and upon various topographic maps and other information that is available.



Old log structures on Author William's Allotment in Sec. 35 of T21N, R19W on the South Fork Koyukuk. A permit was issued to cut house logs to build a new cabin on this site.

5-19-92

EWM



This native allotment located near Kanuti Lake was well marked by its owner, Lindberg Bergman. FF014289, Parcel "D" 1-18-82 EWM



A 5 acre homesite with the cabin belonging to Mike Stephenson is located on Holanda Creek in the southern portion of the Kanuti NWR. T14N, R 22W sec. 23 7-13-82 EWM

D. PLANNING

1. Master Plan

The Comprehensive Master Plan for Kanuti NWR is scheduled to begin in September 1983 and be completed in 1985. This is 2 years earlier than previously scheduled.

2. Management Plans

Most management plans have been postponed due to coordination with other agencies and to the lack of sufficient personnel and funds to accomplish basic data gathering. It would be presumptuous, to say the least, to formulate management plans on the scant information presently available on the resources and within the boundaries of Kanuti NWR.

3. Public Participation

It has been the policy of Region 7 and of this refuge to include public participation in most all planning. During this first full year of operation many contacts with private individuals and groups were sought out to inform and enlist their comments on the management of the refuge and their concerns. These contacts will intensify as the preplanning for the Comprehensive Management Plan begins in September 1983.

4. Compliance with Environmental Mandates

Though no Environmental Impact Statement was prepared for Kanuti NWR per se, the description and resources were included in the Koyukuk NWR F.E.I.S. dated 1974 as an alternative. Later environmental impacts were described along with other areas in the Final Environmental Supplement, Alternative Administrative Actions, Alaska National Interest Lands produced in 1978.

E. ADMINISTRATION

1. Personnel

Ervin McIntosh, Refuge Manager, came on board in November, 1981 as the first Manager of the newly established Kanuti NWR. An assistant manager position was planned but was put on hold for lack of funds. In 1982 the assistant manager position was again put on hold for the same reason. In the spring of 1982, a decision was made by the Regional Office to combine all administrative personnel of the Arctic NWR and Yukon Flats NWR into a common unit to serve 3 refuges, one caribou biologist and one wilderness biologist. The costs would be shared proportionately among the five project leaders and placed under the direct supervision of the Kanuti Refuge manager. Though the decision was effective immediately, personnel changes were not. Setting priorities and giving individual attention to each project leader as it was needed was not an easy task nor could it be properly accomplished under the system. The project leaders cooperated with one another to make the system work the best they could. The administrative system was short handed and some conflicts did arise.

A classification specialist performed a desk audit on the clerical positions and some minor improvement occurred within the administrative system.

The administrative unit is made up of the following:

Paul Liedberg - Administrative Officer GS-341-9, PFT
Transferred to Kanuti NWR 8-22-82

Elizabeth Aucoin - Financial Assistant GS-503-5, PFT
Reclassified 11-28-82
Transferred to Kanuti NWR 11-28-82

Debbie Austin - Clerk-typist GS 322-3, PFT
EOD 7-25-82
Termination 12-30-82

Rittie Ramirez - Clerk-typist GS-322-2, PFT
EOD 11-14-82

Vacant - Clerk-typist GS-322-3, PFT

Rose Gonzales Clerk-typist GS-322-3, Temp
EOD 4-26-82
LWD 5-14-82

Vicki Allen - Clerk-typist GS-322-2, Temp
EOD 6-22-82
LWD 8-22-82

There were other temporary employees on board at the time of the decision but their appointments ran out before being transferred officially to Kanuti.

Praise is due Paul Liedberg for his dedication, professionalism and leadership of this administrative unit during the trying and often awkward times of the transition. These excellent qualities of Paul enabled the Fairbanks office to keep its output up and continue operating in a timely manner.

Liz Aucoin also deserves praise for her dedication and persistence to insure that the T&A's, bills and travel of the highly mobile and active refuge employees and biologists were processed in a timely manner. Her abilities are greatly appreciated.

Another Regional Office decision was made in the latter part of the year to reorganize the Arctic NWR, Yukon Flats NWR and Kanuti NWR into a Refuge Complex as part of an overall R-7 reorganization. A desk audit of the refuge managers stationed in Fairbanks was performed by a classification specialist and new position descriptions were written. The new PD's reduced one manager's grade and converted all refuge managers to primary assistants to a complex manager to be effective sometime in the spring of

CY83. Washington office approval is necessary for portions of the R-7 reorganization plan. The administrative unit at that time will be transferred to and supervised by the complex manager.

2. Youth Programs - Nothing to report
- 3, Other Manpower Programs - Nothing to report
4. Volunteers Program

Three volunteers were utilized during two weeks of the summer field investigations in Kanuti NWR. Since personnel is of short supply on this refuge, volunteers are a necessity. The program is excellent and will be utilized to the extent feasible with safety, funds, and adequate supervision.

5. Funding

Funding for Kanuti NWR during FY82 totaled \$75,000 of which \$55,000 was programed for 1210 and \$20,000 for 1220.

Moving costs, manager salary and administrative costs used most of these funds. Equipment supplies and transportation costs to and from the refuge consumed the remaining funds.

A brighter look for FY83 was evident when \$160,000 was programed. But, it was short lived as \$35,000 was extracted due to Regional budget cuts. \$125,000 now exists for the FY83 Kanuti Refuge operation of which \$105,000 is programed for 1210 and \$20,000 for 1220.

6. Safety

No accidents occurred during the CY among the employees of Kanuti NWR.

The Fairbanks office established a safety committee chaired by Paul Liedberg and members of each project including Northern Alaska Ecological Services and Fisheries Resources. Our common use of office, storage and hanger space as well as common problems encountered in field activities demonstrated a mutual benefit of joining together in our safety consciousness. Meetings are held once a month to cover safety topics that we all encounter. Each month a different project presents the program, cleans the common areas of use and inspects for safety hazards. This cooperative effort works well and attempts to keep our employees alert and safe.

7. Technical Assistance - Nothing to report

8. Other Items

On July 27 and 28, Dan Raisovich and Sam More from the Washington office conducted an administrative inspection as part of their program review of the regional administrative functions. Red Williams ARD for administration in the Regional Office assisted in this inspection. As

part of the trip, Paul Liedberg accompanied the group on an overflight of parts of the Yukon Flats and Kanuti NWR's with a stop in Yukon. The inspection went very well and provided individuals making many of our administrative decisions to get first-hand look at some of our operating problems and constraints.

F. HABITAT MANAGEMENT

1. General

There has been no thorough inventory made of the various habitats available on Kanuti NWR other than general characterization and no management other than fire suppression activities by AFS under cooperative agreement. Much work is required to inventory various habitats during the initial phase of refuge management.

Kanuti NWR is located in the northern portion of the Koyukuk River valley and includes numerous tributaries e.g. Kanuti River, Henshaw Creek, Peavey Creek, South Fork, Fish Creek, Nolitna Creek, Kodosin Nolitna Creek, and Kanuti Chalatna Creek to mention a few. One of the best descriptions of this area is included in "Track in the Wildland: A Portrayal of Koyukuk and Nunamiut Subsistence: by Richard K. Nelson, Kathleen J. Mautner, and G. Ray Bane: "Like other large interior rivers, the Koyukuk follows a twisted, meandering course, especially where it flows across the flats. Tracings of its geologic history are revealed by innumerable sloughs, oxbow lakes, meadows, timbered ridges, and meander scars scattered everywhere along its flanks. The riverbed is continually shifting today, restructuring the environment and creating an important dynamic element in riverine ecology."

"Besides the river itself, the Koyukuk valley contains innumerable tributaries, ranging from major watercourses hundreds of miles long to insignificant creeks that trickle down over the banks. The large flats are a veritable scrambling of streams, wandering sinuously through a landscape of swamps, muskeg, ponds, and lakes of every size and shape."

"In some areas there is more water than land, and when the river floods there may be no land at all. These periodic floods, which occur in the springtime, are apparently essential to prevent many of the lakes from drying up." "...Vegetation of the Koyukuk River drainage is broadly classified as boreal forest or taiga, but this characterization gives a deceptive impression of homogeneity. Rather than a vast expanse of timber, the land is covered by diverse plant communities, patterned according to differences in elevation, drainage, permafrost development, soil type, fire history, and climate. In the low country, closed forest, open forest (muskegs), bogs, and shrub thickets intermingle in a complex pattern worthy of a divine abstractionist. Mountain slopes and valleys create another mosaic, this one of forest and thicket in the lower elevations, fingering into moist tundra higher up, and finally uniform alpine tundra above 3,000 feet or so...". "...Despite its apparent disarray, this complexity sorts itself into a few identifiable plant community types. First of these is the closed forest of white spruce, paper birch, balsam poplar, which occurs in well-drained places along rivers and hillsides. Beneath the forest canopy is a scattering of shrubs (such as willows and heaths) growing from a carpet of moss. Where fires have occurred, forests

of quaking aspen or birch predominate, with shrubs and young spruce comprising of understory. Along the rivers, stands of large balsam poplar are quite common. Forests containing very large white spruce and paper birch occur frequently along the Koyukuk River, providing an excellent source of building materials and firewood."

"Areas that are poorly drained, north facing, high altitude, and/or high latitude often support open forests of black spruce, with scatterings of birch or white spruce. Thick sphagnum moss usually covers the ground, with sedges, grasses, and heath shrubs growing in association. Muskegs of this sort are very common in the Koyukuk valley and Brooks Range. In extremely wet situations, muskegs are replaced by treeless bogs, dominated by small shrubs such as resin birch and a variety of heaths (e.g. blueberry, cranberry, Labrador tea)."

"Shrub thickets are another very common plant community throughout this region. Along the rivers, they contain tall stands of willow and alder, and are especially common on periodic flooded alluvial deposits."

"Elsewhere, on the flats and mountain slopes, they are made up of scrubby alder, willow, and resin birch thickets. These communities often provide excellent habitat for moose, snowshoe hare, ruffed grouse and other game species."



An example of one habitat type around some lakes and streams near Kanuti River; this photo was taken in the SW portion of section 33 in T16N, R20W.

6-19-82

EWM

"At higher elevations throughout the Koyukuk and Brooks Range, alpine tundra vegetation hugs the windswept terrain. This plant community includes various lichens, forbs, grasses, and shrubs, growing in a dense mat. In many areas patches of barren, rocky ground disrupts the continuity of living cover. The alpine tundra provides habitat for important game species such as caribou, brown bears, and Dall sheep, and it makes excellent walking terrain for man."

2. Wetlands

Many of the wetland areas of upper Kanuti River on the refuge were flooded 6-8 feet above normal and gradually receded by July 1. This affected many would be nesting waterfowl and other birds. This flooding is thought to periodically occur and is beneficial in supplying water to many small landlocked lakes and ponds. A late spring this past year, however, cause flooded conditions to occur during a critical nesting period.

3. Forests

The forests lie in an erratic pattern throughout the refuge as described above. Some harvest of timber is important for house logs and firewood for local residents. However, only one permit was issued in CY82 for the cutting of house logs. Arthur Williams of Allakaket was authorized to cut 75 logs from T21N, R19W, Sections 26, 27, and 34 on the south side of the South Fork Koyukuk River to construct a cabin on his personal allotment. The most important tree species for timber is the white spruce. Black spruce, resin birch, and paper birch are primarily utilized for firewood.



Aerial view of upper Kanuti River and Lakes north of Sithylemenkat Lake where first waterfowl arrivals utilize. Area is still in late spring flooded condition.

6-12--82

EWM



Emergent vegetation and surrounding habitat of lake in SW portion of 33 in T16N, R20W. 6-18-82 EWM

4. Croplands - Nothing to report
5. Grasslands - Nothing to report
6. Other Habitats

Alpine tundra is described above. The extent of acreage is unknown but is less than involved with the other habitats on Kanuti NWR.

7. Grazing - Nothing to report
8. Haying - Nothing to report
9. Fire Management

Lightning caused wildfires have played an important part in the ecology of the various habitats within the Kanuti NWR.

The Bureau of Land Management (BLM) has had the responsibility for fire suppression activities on these areas for many years and retained that status following the enactment of ANILCA in 1980. However, reorganization of BLM occurred in 1982 and the fire suppression activities formed a branch of their own called the Alaska Fire Service. The FWS maintains a cooperative agreement with them for fire suppression activities and provides general guidelines for these activities on national wildlife refuges. Kanuti NWR has also a site specific cooperative agreement with AFS concerning the suppression of fires on the refuge.

It is too early to determine what effect fire suppression will have on the refuge in the long range, but it is necessary at present to protect the numerous private inholdings and selected lands within the refuge boundaries. The need for prescribed burns in certain habitats may be necessary to maintain quality habitat for various wildlife species and possibly prevent large wildfires from occurring to the extent that they adversely affected wildlife populations.

During FY82 there was only one wildfire on Kanuti NWR encompassing a total of 1 acre of tundra in T16N, R22W, Section 5.

BLM Fire Number	Date 1982	Time	Size Acres	Hours Duration	Cause	Fire Fighters	Attack Method
8666	7/9	2142	1	8	Lightning	4	Jumpers/ Retardant

10. Pest Control - Nothing to report

11. Water Rights - Nothing to report

12. Wilderness and Special Areas

There has been no area within the refuge that has been designated a Wilderness. There are, however, special areas that have archeological significance but most are within Regional or Village Selected lands. These would include cemeteries, areas of religious significance and possibly sites of old villages.



Hulgothen Bluffs on Fish Creek is said to be one of several areas on Kanuti NWR that is of archaeological importance; this is yet to be confirmed.

5-19-82

EWM

There are several archaeological sites pointed out by local residents within the refuge lands but are yet to be investigated. One area is Hulgothen Bluffs that is thought to produce Mammoth bones as the stream erodes its banks at this site.

13. WPA Easement Monitoring - Nothing to report.

G. WILDLIFE

1. Wildlife Diversity

The diversity and maze of habitat as described in the previous section provide for an equally diverse wildlife population. The best information that the refuge manager could find indicates that approximately 139 different species of birds have been recorded on or near the Kanuti NWR. Some 34 species of mammals are recognized and approximately 19 species of fish (refer to the lists of wildlife on the following pages).

A special effort was made to confirm as many species as possible during the summer field activities. However, trips were limited which restricted the number of species confirmed. Their use and areas of use within the refuge was recorded.

2. Endangered Species

Only one species found on Kanuti NWR is recognized as being endangered. This species, the peregrine falcon, is thought to nest around the cliffs of Kanuti Canyon and in the vicinity of Sithylemenkat Lake. A thorough ground search was made near Sithylemenkat Lake in July but no falcons were



Rock outcrops east and south of Sithylemenkat Lake provided nesting sites for Peregrine falcons in the past. None were observed during the summer investigations.

2-9-82

EWM

observed. The lake and areas surrounding it where the falcons had been observed in the past is within Doyon selected lands which will be conveyed this CY.

Efforts will be made this summer to verify peregrine falcon presence and use of Kanuti Canyon and other areas within the refuge.

One unconfirmed sighting occurred east of the canyon in Kanuti River area.



Volunteer, Irene McIntosh, scanning area near Sitnylemenkat Lake for peregrine falcons.

7-7-82

EWM

3. Waterfowl

(Refer to wildlife lists.) The Kanuti Flats provide an abundance of nesting habitat for waterfowl. Some of the most prominent nesters include the white-fronted geese, Canada geese, pintail, widgeon, scaup, and scoters. It is presently thought that Kanuti provides at least 75,000 waterfowl to the annual fall migration. The production of white-fronted geese contributes primarily to the Pacific Flyway where as the production of ducks may contribute to all major flyways.

Summer field activities in T16N, R20W, Sec 27, 26, 33, 34 and 35, and T15N, R20W, Sec 4, 5, 8, 9 and 3 confirmed 12 species of waterfowl utilizing this area. The area consisted of numerous lakes, ponds, streams and approximately ten miles of the Kanuti River. Lingering flooded conditions existed. The most activity was observed where lakes bordered open tundra areas.



Tundra bordering lake in T16N,R20W, sec. 35 south was heavily used by early arrivals of geese, ducks, and shorebirds. 6-19-82 EWM



The long-tailed jaeger was also observed at the above lake. 6-20-82 EWM

The following is a list of the species and approximate numbers observed during a 7 day investigation (June 17-24) of this small area of the refuge.

Canada geese	70
White-front geese	10
Mallard	25
Pintail	100
Green-winged Teal	4
Widgeon	75
Shoveler	30
Greater Scaup	20
Lesser Scaup	130
Old squaw	1
White winged scoter	30
Surf Scooter	18
Unidentified ducks(2)	50

Waterfowl inventory procedures are being devised to provide reasonable estimates and coverage of the waterfowl population and production on the refuge. These procedures will be initiated in 1983.

4. Marsh and Waterbirds

Loons, grebes and sandhill cranes are the only birds in this class that are recorded as utilizing the refuge and vicinity. Only the common loon was confirmed during this past summer's investigations.



Canada geese leave the lake in sec. 34 of T16N, R20W.

6-18-82

EWM



Pintail, shovelers and widgeon rise from lake in sec. 34 of T16N,
R20W. 6-18-82 EWM

5. Shorebirds, Gulls, Terns and Allied Species

The habitat is excellent for many of these birds. However, lingering spring flooded conditions as occurred during this past year can delay nesting or cause birds to move to more desirable areas. This may account for the low number of these birds being sighted during field investigations this year.

6. Raptors

Of the fourteen raptors supposedly utilizing the refuge only one was observed during the several field trips to the area. Flooded conditions may have had its effect on these birds as well in the areas investigated.

7. Other Migratory Birds

(see wildlife list.) Only a few of these birds were confirmed utilizing the refuge in the areas investigated.

Wildlife List

The following list of wildlife reflects those species that are known to exist and those that probably exist on the Kanuti NWR at various times of the year or occasionally during migrations. (confirmed sightings of species are indicated by an asterisk)



A mew gull alights gently upon Sithylemenkat Lake during late evening (11 p.m.)

7-9-82

EWM



Common Loons nest in vicinity of Sithylemenkat Lake

7-9-82

EWM

Birds

Common loon (Gavia immer)*
 Yellow-billed Loon (Gavia adamsii)
 Arctic loon (Gavia arctica)
 Red-throated loon (Gavia stellate)
 Horned grebe (Podiceps auritus)
 Red-necked grebe (Podiceps grisogena)
 Whistling swan (Olor columbianus)
 Trumpeter swan (Olor buccinator)
 Canada goose (Branta canadensis)*
 Snow goose (Chen hyperboreus)
 Black brant (Branta nigricans)
 White-fronted goose (Anser albifrons)*
 Mallard (Anas platyrhynchos)*
 Pintail (Anas acuta)*
 Green-winged teal (Anas carolinensis)*
 Blue-winged teal (Anas discors)
 America widgeon (Mareca americana)*
 Shoveler (Spatula clypeata)*
 Redhead (Aythya americana)
 Ring-necked duck (Aythya collaris)
 Canvasback (Aythya valisineria)
 Greater scaup (Aythya marila)*
 Lesser scaup (Aythya affinis)*
 Common goldeneye (Bucephala islandica)
 Barrow's goldeneye (Bucephala islandica)
 Bufflehead (Bucephala albeola)
 Oldsquaw (Clanqula hyemalis)*
 Harlequin (Histrionicus histrionicus)
 Common scoter (Oidemia nigra)
 White-winged scoter (Melanitta deglandi)*
 Surf scoter (Melanitta perspicillata)*
 Common merganser (Mergus merganser)
 Red-breasted merganser (Mergus serrator)
 Goshawk (Accipiter gentilis)
 Sharp-shinned hawk (Accipiter striatus)
 Red-tailed hawk (Buteo jamaicensis)
 Harlan's hawk (Buteo harlani)
 Swainson's hawk (Buteo swainsoni)
 Rough-legged hawk (Buteo lagopus)
 Golden eagle (Aquila chrysaetos)
 Bald eagle (Haliaeetus leucocephalus)
 Marsh hawk (Circus cyaneus)*
 Osprey (Pandion haliaetus)
 Peregrine falcon (Falco peregrinus)
 Pigeon hawk (Falco columbarius)
 Kestrel (Falco sparverius)
 Gyrfalcon (Falco rusticolus)
 Spruce grouse (Canachites canadensis)
 Ruffed grouse (Bonasa umbellus)
 Willow ptarmigan (Lagopus lagopus)
 Sharp-tailed grouse (Pedioecetes phasianellus)
 Lesser sandhill crane (Crus canadensis)

American coot (Fulica americana)
 Semipalmated plover (Charadrius semipalmatus)
 American golden plover (Pluvialis dominica)
 Black-bellied plover (Pluvialis squatarola)
 Common snipe (Capella gallinago)*
 Whimbrel (Numenius phaeopus)
 Marbled godwit (Limosa fedoa)
 Hudsonian godwit (Limosa haemastica)
 Upland plover (Bartramia longicauda)
 Spotted sandpiper (Actitis macularia)
 Solitary sandpiper (Tringa solitaria)
 Willet (Catoptrophorus semipalmatus)
 Greater yellowlegs (Tringa melanoleuca)
 Lesser yellowlegs (Tringa flauipes)*
 Pectorial sandpiper (Calidris melanotos)
 Baird's sandpiper (Calidris bairdii)
 Dunlin (Calidris alpina)
 Long-billed dowitcher (Limnodromus scolopaceus)
 Semipalmated sandpiper (Calidris pusilla)*
 Western sandpiper (Calidris mauri)
 Sanderling (Calidris alba)
 Red phalarope (Phalaropus fulicarius)
 Northern phalarope (Lobipes labatus)
 Parasitic jaeger (Stercorarius parasiticus)
 Long-tailed jaeger (Stercorarius longicaudus)*
 Glaucous gull (Larus hyperboreus)*
 Glaucous-winged gull (Larus glaucescens)
 Herring Gull (Larus argentatus)
 Mew gull (Larus canus)*
 Bonaparte gull (Larus philadelphia)*
 Arctic tern (Sterna paradisaea)*
 Great horned owl (Bubo virginianus)
 Snowy owl (Surnia ulula)
 Great gray owl (Strix nebulosa)
 Short-eared owl (Asio flammeus)
 Boreal owl (Aegolius funereus)
 Saw-whet owl (Aegolius acadicus)
 Belted king fisher (Megasceryx alcyon)
 Yellow-shafted flicker (Colaptes auratus)
 Hairy woodpecker (Picoides villosus)
 Downy woodpecker (Picoides pubescens)
 Northern three-toed woodpecker (Picoides tridactylus)
 Say's phoebe (Sayornis saya)
 Olive-sided flycatcher (Nuttallornis borealis)
 Alder flycatcher (Empidonax alnorum)*
 Horned lark (Eremophila alpestris)
 Violet-green swallow (Tachycineta thalassina)
 Tree swallow (Iridoprocne bicolor)*
 Bank swallow (Riparia riparia)
 Cliff swallow (Petrochelidon pyrrhonota)
 Gray jay (Perisoreus canadensis)*
 Steller's jay (Cyanocitta stelleri)
 Common raven (Corvus corax)*
 Black-capped chickadees (Parus atricapillus)
 Gray-headed chickadees (Parus cinctus)

Winter wren (Troglodytes troglodytes)
 Dipper (Cinclus mexicanus)
 Robin (Turdus migratorius)*
 Varied thrush (Ixoreus naevius)
 Hermit thrush (Catharus guttatus)
 Swainson's thrush (Catharus ustalatus)
 Gray-checked thrush (Catharus minimus)
 Wheatear (Oenanthe oenanthe)
 Water pipit (Anthus spinolleta)
 Bohemian waxwing (Bombyailla garrula)
 Northern shrike (Lanius excubitor)
 Orange-crowned warbler (Vermivora celata)
 Yellow warbler (Dendroica petechia)
 Myrtle warbler (Dendroica coronato)*
 Blackpoll warbler (Dendroica striata)
 Ovenbird (Seiurus aurocapillus)
 Northern waterthrush (Seiurus noveboracensis)
 Rusty blackbird (Euphagus carolinus)*
 Western tanager (Piranga ludoviciana)
 Pine grosbeak (Pinicola enucleator)
 Gray-crowned rosy finch (Leucosticte tephrocotis)
 Common redpoll (Acanthus flammea)
 Hoary redpoll (Carduelis hornemanni)
 White-winged cross-bill (Loxia leucoptera)
 Savannah sparrow (Passerculus sandwichensis)
 Slate-colored junco (Junco hyemalis)
 Tree sparrow (Spizelloa arborea)
 White-crowned sparrow (Zonotrichia leucophrys)*
 Fox sparrow (Passerella iliaca)
 Lincoln's sparrow (Melospiza lincolni)*
 Snow bunting (Plectrophenax nivalis)
 Alaska longspur (Lapland longspur)(Calcarius lapponicus)

Mammals

Dusky shrew (Sorex obscurus)
 Cinereous shrew (Sorex cinereus)
 Tundra shrew (Sorex tundrensis)
 Pigmy shrew (Microsorex hoyi)
 Little brown bat (Myotis lucifugus)
 Big brown bat (Eptesicus fuscus)
 Black bear (Ursus americanus)*
 Grizzly bear (Ursus horribilis)
 Marten (Martes americana)
 Short-tailed weasel (Mustela erminea)
 Least weasel (Mustela rixosa)
 Mink (Mustela vison)
 Wolverine (Gulo luscus)
 River otter (Lutra canadensis)
 Red fox (Vulpes fulva)*
 Coyote (Canis latrans)
 Wolf (Canis lupus)*
 Lynx (Lynx canadensis)
 Ground squirrel (Spermophilus undulatus)*
 Red squirrel (Tamiasciurus hudsonicus)

Flying squirrel (Glaucomys sabrinus)
 Beaver (Castor canadensis)*
 Northern bog lemming (Synaptomys borealis)
 Brown lemming (Lemmus trimucronatus)
 Collard lemming (Dicrostonyx groenlandicus)*
 Red-backed mouse (Clenthrionomys rutilus)
 Meadow mouse (Microtus pennsylvanicus)
 Yellow-cheeked vole (Microtus xanthognathus)
 Tundra vole (Microtus oeconacmus)
 Muskrat (Ondatra zibethica)*
 Porcupine (Erethixon dorsatum)
 Snowshoe hare (Lepus americanus)*
 Moose (Alces gigas)*
 Caribou (Rangifer arcticus)*

Fish

Arctic char (Salvelinus alpinus)
 Arctic grayling (Thymallus arcticus)
 Broad whitefish (Coregonus nasus)*
 Humpback whitefish (Coregonus pidschian)*
 Least cisco (Coregonus sardinella)*
 Round whitefish (Prosopium cylindraceum)*
 Burbot (Lota lota)
 Chum salmon (Oncorhynchus keta)
 King salmon (Oncorhynchus tshawytscha)*
 Lake trout (Salvelinus namaycush)
 Longnose sucker (Catostomus catostomus)*
 Ninespine stickleback (Pungitus pungitius)
 Northern pike (Esox luscious)*
 Sheefish (Stenodus leucichthys)
 Slimy sculpin (Cottus cognatus)*
 Alaskan blackfish (Dallia pectoralis)
 Alaskan whitefish (Coregonus nelsoni)
 Silver (coho) salmon (Onocorhynchus kisutch)
 Sockeye salmon (Oncorhynchus nerka)

8. Game Mammals

(See wildlife list) The moose seems to be the single most important game species on the refuge. Natives and other local residents place major dependence upon this animal for their subsistence.

Inventory procedures are presently being devised to census this species. No valid census was obtained in 1982 due to funding. A good inventory of this species is necessary but will be time consuming and expensive. General concensus of the local residents is that the population of moose is increasing. A good year of hunting moose occurred, making most local residents content with the regulations and management. Some, however, are still concerned with the short season (September 5-25) allowed for taking moose. Since this season conflicts somewhat with the waterfowl season (September 1 - December 16) few waterfowl are taken before fall migration and freeze-up.



A white-crowned sparrow nesting in vicinity was observed in section 34 of
T16N, R20W. 6-21-82 EWM



White-crowned sparrow nest contained three young.

6-21-82

EWM

The Western Arctic caribou herd regularly utilized the refuge from the early 1920's to 1972. Several large fires occurring on and around the refuge in 1972 are blamed for the change in migratory habits. No caribou from this herd has been observed on the refuge since that time. The habitat is recovering but slowly.

Six caribou, supposedly of the small herd in the Ray Mountains, were observed in the southeast corner of the refuge at Tokusatatquaten Lake on May 19.

A question most asked by the natives is: "When do you expect the caribou to return to the area?"

Black bear are relatively abundant in Kanuti Flats. Though vegetation density is such that few are seen, the tracks encountered throughout the area attest to the fact that they are there in adequate numbers. Brown bear are reported in the Ray Mountains bordering the southern portion of the refuge and in the Alatna Hills on the north boundary. No sightings occurred.

9. Marine Mammals - Nothing to report

10. Other Resident Wildlife

All available sources of information tend to bear out the fact that the refuge supports a large population of furbearers including muskrat, beaver, lynx, marten, etc. Information and census of these species are of low priority at this time of manpower and fund shortages. This however, does not reduce the importance and concern of these resources by the refuge or local residents. Much of the natives' subsistence depends upon these animals.



Cow moose and calf observed during summer activities in section 26 of T16N, R20W. Moose play an important role in subsistence of local residents.

6-20-82

EWM



Aerial view of moose near Koyukuk River

2-11-82

EWM



Six caribou of Ray Mountain herd observed on Refuge near Tokusatatquaten Lake.

5-19-82

EWM



Beaver lodge on Kanuti River in section 26 of T16N, R20W.
6-20-82 EWM



The wood frog, Rana sylvatica, was observed often during field investigations near Kanuti Lake.

6-18-82

EWM

11. Fisheries Resources

A portion of the past summer's field investigations were directed toward these resources. Two areas were surveyed. The Sithylemenkat Lake and various lakes and ponds in T16N, R20W, and T15N, R20W. Water analysis and fish samples were collected. The water quality was good and secchi disk reading to 9 ft were obtained even though flood waters around Kanuti River were still 3 to 5 ft above normal. All information was turned over to the Fairbanks Fisheries Unit for analysis. This analysis is yet to be accomplished due to other priorities.

At Sithylemenkat Lake on 7 July, the water temperature was 60°. The lake, at 745 feet above sea level, did not thaw until late June. The use of an experimental gill net for approximately 14 hrs yielded only 10 fish (2 whitefish and 8 northern pike). However, 3 anglers caught 13 northern pike in 2 hours using spinning rods and artificial lures. The largest pike weighed 9 lbs. though few were seen that would have weighed more.

Stomach analysis of the pike revealed that they fed upon whitefish and younger pike. No other fish species or items were found in the examinations of stomach contents. At the lakes single exit stream slimy sculpins were observed. No other species of fish were found in the lake. Young fry were observed near the lake shore on several occasions and a few fresh water clam shells were found on shore.



Volunteers Steve and Tim McIntosh, take fish scale sample and measurements during summer investigations at Sithylemenkat Lake.



A number of lakes were checked for fisheries information. Experimental gill nets and rod & reels were utilized. Water analysis and lake topography were also recorded. (Northern pike)

7-7-82

EWM

The area sampled in Kanuti Flats during June 17 - 24 revealed a larger variety of fish though it was still too early for many of the migratory fishes to be present. Five lakes were sampled with experimental gill net. These samples produced 7 species of fish and relative abundance as follows:

Round Whitefish	15%
Broad Whitefish	6%
Humpback Whitefish	20%
Least Cisco	7%
Long-nosed Sucker	6%
Northern Pike	37%
Grayling	9%
	<hr/> 100%

Measurements were obtained from 54 fish and scale samples collected from 49.

The first catch of king salmon occurred near Allakaket during the week of July 12. It was learned from local residents that most of the king salmon venture up the Alatna River and South Fork Koyukuk. Few if any reach Bettles. Most salmon caught show many bruises as evidence of their long trip to this Interior refuge.



Whitefish and Northern Pike from Sithylemenkat Lake during survey.
7-7-82 EWM



First catch of King Salmon drying at Allakaket
7-14-82 EWM

12. Wildlife Propagation and Stocking - Nothing to report
13. Surplus Animal Disposal - Nothing to report
14. Scientific Collections - Nothing to report
15. Animal Control - Nothing to report
16. Marking and Banding - Nothing to report
17. Disease Prevention and Control - Nothing to report

H. PUBLIC USE

1. General

The majority of public use on Kanuti is derived from local residents, most of whom live off the resources within the refuge and surrounding lands. There are three local villages adjacent or near to the western side of the refuge; Alatna, Allakaket and Hughes with a total population of 314 people, 96 percent of whom are natives. Most are Athapascan Indians although some Eskimoes reside in Alatna.



Bettles Airfield at Evansville, Brooks Range in background
2-11-82 EWM



Allakaket on Koyukuk River

2-11-82

EWM



A fuel delivery to Allakaket which depends upon air shipment rather than barge as in the past.

7-14-82

EWM

About 100 people, about half being non-native, live in Bettles/Evansville located on the northern boundary of the refuge. Most other users of the refuge come from Fairbanks, but the number is small.

As mentioned in the Highlights section of this report many meetings and contacts were participated in during this calendar year. These meetings and contacts have resulted in a better understanding of the resources and their use as well as the opportunity to inform these various groups and individuals of the Service's mission and purposes of the refuge.

Public relations with all villages and various organizations are good, but much more immediate contact with local residents is desirable. Time spent with these people will be invaluable later as management of the refuge progresses.

Under Title VIII of the Alaska National Interest Lands Conservation Act, Congress has declared that Federal public land in Alaska shall be managed to provide the opportunity for rural residents engaged in a subsistence way of life to continue to do so, and further that public utilization of such lands is to cause the least adverse impact possible on rural residents dependent on subsistence uses. This however, is to be provided in a manner consistent with the purposes for which the conservation units were established under other sections of the Act.

Subsistence is a highly controversial subject within the State. An appeal initiative of the State subsistence law was attempted during the 1982



Tresspass cabin on Sithylemenkat Lake; the cabin is on Doyon select lands which will be conveyed shortly. 5-19-82 EWM

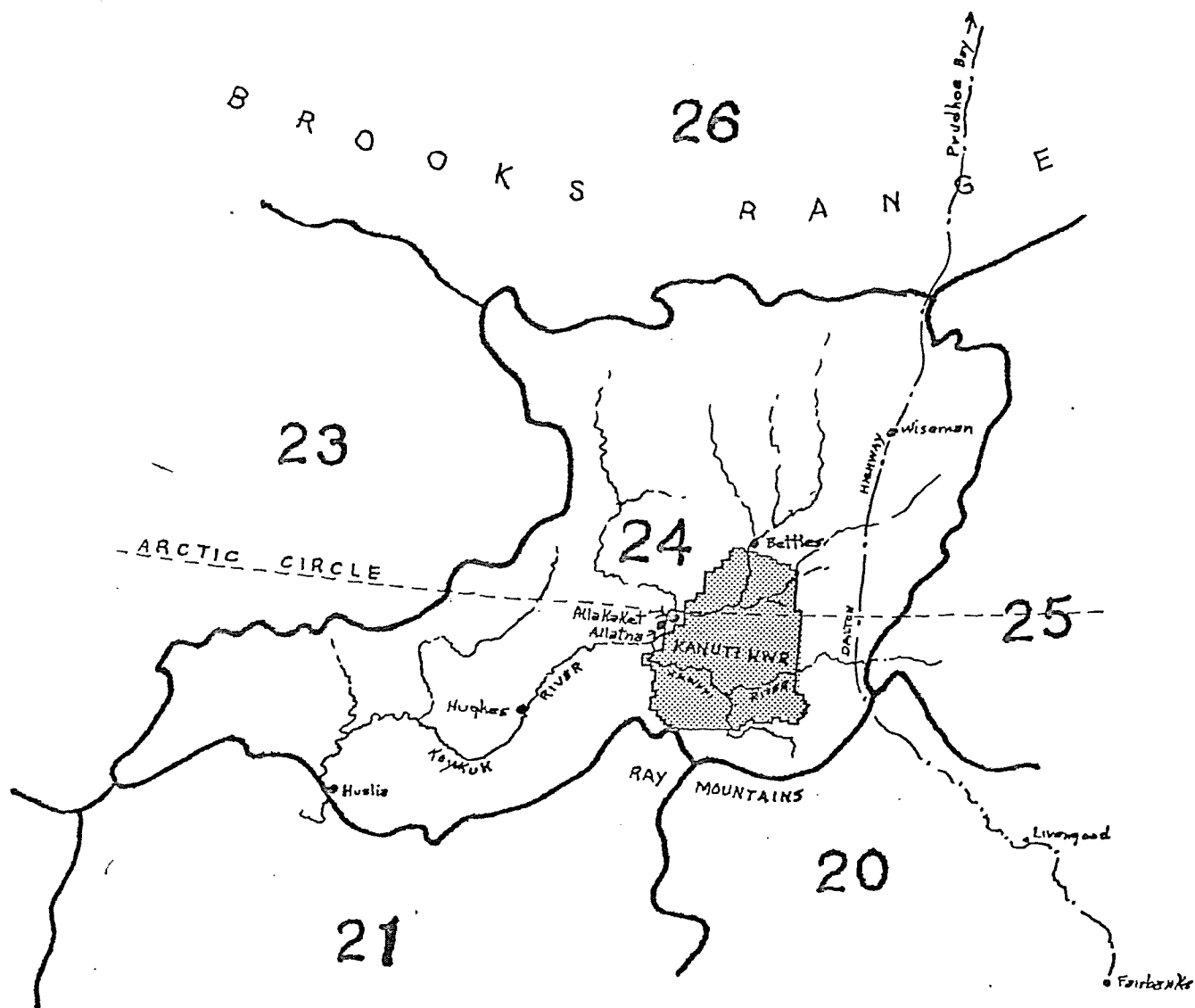


BLM plane - crash landed in June 1981 on a gravel bar in Koyukuk River.
2-11-82 EWM

election but was defeated by a small margin. No doubt it will appear again during the next election. Repealing the State subsistence laws would be the first step in attacking the Federal subsistence law.

Subsistence, nevertheless, is a reality and must be dealt with accordingly. Since most all phases of management of the Kanuti NWR will be evaluated in relation to subsistence use, it is necessary to understand its history and the resources it affects. It also requires the monitoring of present activities and being in position to detect changes that would effect management policies. Having spent much of this year attempting to understand the history and nature of subsistence upon the refuge and vicinity it was realized studies must be initiated to establish viable management programs and policies for the refuge. Therefore, a list of information needs was devised by the refuge manager to properly manage the refuge resources in relation to subsistence uses.

As result of presenting this list to the State Division of Subsistence for their cooperation, it led to a 3-way cooperative arrangement between Kanuti NWR, the State Division of Subsistence and the Gates of the Arctic National Park to attempt a subsistence study that will monitor activities on the upper Koyukuk drainage. It was learned that each agency was needing basically the same information. The study, once properly organized and presented to the Interior Regional Council, Village Councils and Tanana Chiefs Conference for comments and concurrence, will be initiated. It is hoped that this will occur during CY83. The State will take the lead in the study.



ALASKA GAME MANAGEMENT UNITS IN VICINITY OF KANUTI NWR

2. Outdoor Classrooms- Students- Nothing to report.
3. Outdoor Classrooms -Teachers- Nothing to report.
4. Interpretive Foot Trails- Nothing to report.
5. Interpretive Tour Routes- Nothing to report.
6. Interpretive Exhibits/Demonstrations- Nothing to report.
7. Other Interpretive Programs

Refuge Manager, McIntosh, gave a 2 hour seminar to approximately 30 wildlife students at the University of Alaska.

8. Hunting

Subsistence and sport hunting are major public use activities on Kanuti NWR. The Refuge lies entirely within the State's Game Management Unit 24 and all regulations pertaining to the Unit apply to the refuge as well. The following information lists the species hutable, if available on the refuge, the open seasons and bag limits as per the 1982-83 hunting regulations.

<u>SPECIES</u>	<u>OPEN SEASON</u>	<u>BAG LIMIT</u>
Black Bear	No closed season	3 bears/yr.
Brown or Grizzly Bear	Sept. 1-Oct. 10 May 10-May 25	1 bear every 4 yrs.
Caribou	July 1-April 30 Sept. 15-April 15 (female)	5 caribou/yr.
Moose	Sept. 5-Sept. 25	1 Bull/yr.
Coyote	Sept. 1-April 30	2 Coyotes/yr.
Red Fox	Sept. 1-Feb. 15 -	2 Foxes/yr.
Lynx	Sept. 1-Mar. 31	2 Lynx/yr.
Raccoon	No closed season	No limit
Red Squirrel	No closed season	No limit
Wolf	Aug. 10-April 30	No limit
Wolverine	Sept. 1-Mar. 31	1 Wolverine
Grouse	Aug. 10-April 30	15/day
Hare & Rabbit (snowshoe and Arctic)	No closed season	No limit
Ptarmigan (Willow, Rock Whitetail)	Aug. 10-April 30	20/day
Ducks (except Sea Ducks)	Sept. 1-Dec. 16	10/day
Sea Ducks (eiders, scoters, oldsquaw, harlequin & mergansers)	Sept. 1-Dec. 16	15/day
Geese (except Emperors)	Sept. 1- Dec. 16	6/day
(not more than 4 daily may be Canada and/or white-fronted geese)		
Brant	Sept. 1-Dec. 16	4/day
Snipe	Sept. 1-Dec. 16	8/day
Cranes	Sept. 1-Dec. 16	2/day
Emperor Geese	Sept. 1-Dec. 16	6/day
Crows	Mar. 1-April 15 Sept. 1-Nov. 15	40/day

Specific State and Federal restrictions, requirements and other information concerning hunting of the above animals are established and apply to the refuge.

A great effort is being made by the State to obtain subsistence and sport harvest information. The manager of Kanuti NWR will cooperate with the State in gathering valid data without duplication or conflicts. This information must be known and be reasonably accurate in order to provide justifiable recommendations concerning the management of the various game animals on Kanuti NWR.

A permit was issued to two Hunting Guides, Willard O. Lambert and Ronald K. Lambert, for commercial guiding upon the refuge. They hold a State exclusive guiding permit for an area that encompasses most of Kanuti NWR. Under the terms of the SUP, they are to submit a report to the refuge manager with information relating to their activities and any animals taken. During 1982, they were not active and carried no parties into the refuge for hunting. (See map showing exclusive guide areas)

To the managers knowledge very little sport hunting occurred on the refuge by persons other than local residents. Some moose hunting and possibly black bear occurred in vicinity of Sithylemenkat Lake and Old Dummy Lake outside the controlled use area.

The Controlled Use Area was established by the State in 1981 to prevent fly-in hunting of moose to ease conflict of sport-hunters with local subsistence hunters. The area encompasses approximately two-thirds of the Kanuti NWR.

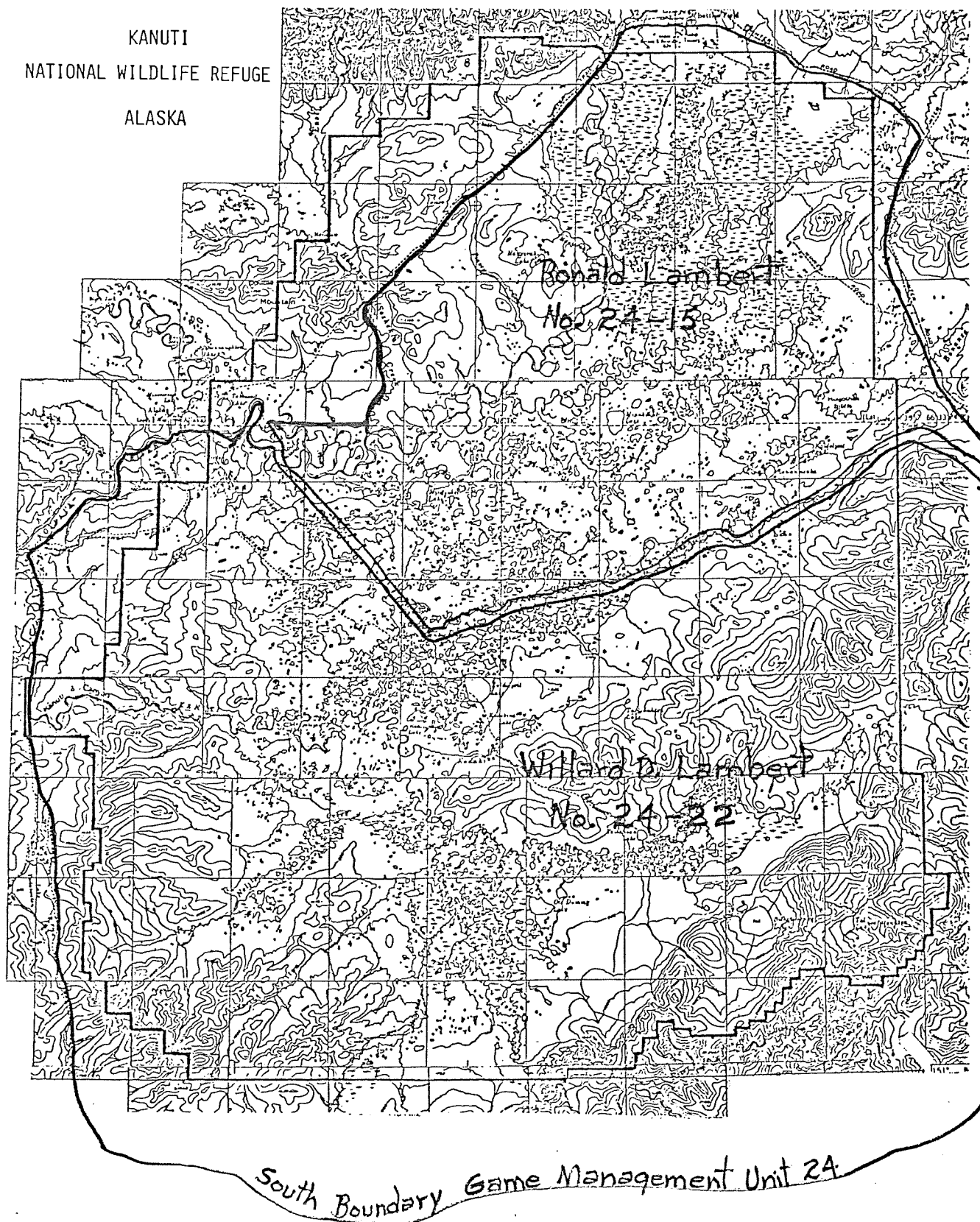


This trespass cabin on Kanuti Lake was constructed by hunting guide, Willard Lambert, and now utilized as administrative cabin for the refuge and as an emergency shelter.

6-18-81

EWM

KANUTI
NATIONAL WILDLIFE REFUGE
ALASKA



State designated exclusive Guide Areas within Kanuti Refuge.

9. Fishing

Spring (after ice breakup) and summer are primarily devoted to fishing. The local residents move to their various fishing camps scattered throughout the refuge on streams and lakes. Gill nets and hook and line are primary methods utilized in harvesting fish within the refuge. Here, again, State regulations apply. All navigable streams to mean high water are controlled by the State. The State also attempts to obtain subsistence and commercial harvest data on the fishery resources.

10. Trapping

There are approximately 30 trappers utilizing the refuge with most being local residents. Many of the traplines have been utilized by the individual or members of the immediate family for many years. The family rights to these traditional traplines are generally well respected by other trappers.

Trapping activities are usually active between November and June as the weather and temperature permits. It usually drops off during mid-winter with extremely low temperatures (-30°F and below). The State is attempting to gather accurate harvest data from the trappers. No permit is required by Kanuti NWR for trappers utilizing the Refuge. State regulations apply.



Game Board Advisory Committees, such as this one meeting in Huslia, play an important part in establishing fish and game regulations in Alaska.

2-27-82

EWM



A temporary trapping shelter seems well hidden in the small wooded area near a winter trail.

2-11-82

EWM

11. Wildlife Observation

Wildlife observations are a coherent part of most all public use activities of Kanuti NWR. However, it is not known whether or not wildlife observation has been the primary interest of any public visitor use.

12. Other Wildlife Oriented Recreation

An occasional boater or stream floater travels the Koyukuk River, stopping occasionally to fish, observe wildlife or camp. The numbers of this type are few on Kanuti NWR, but are expected to increase somewhat as the public learns of the area and attempts to explore this new NWR.

13. Camping

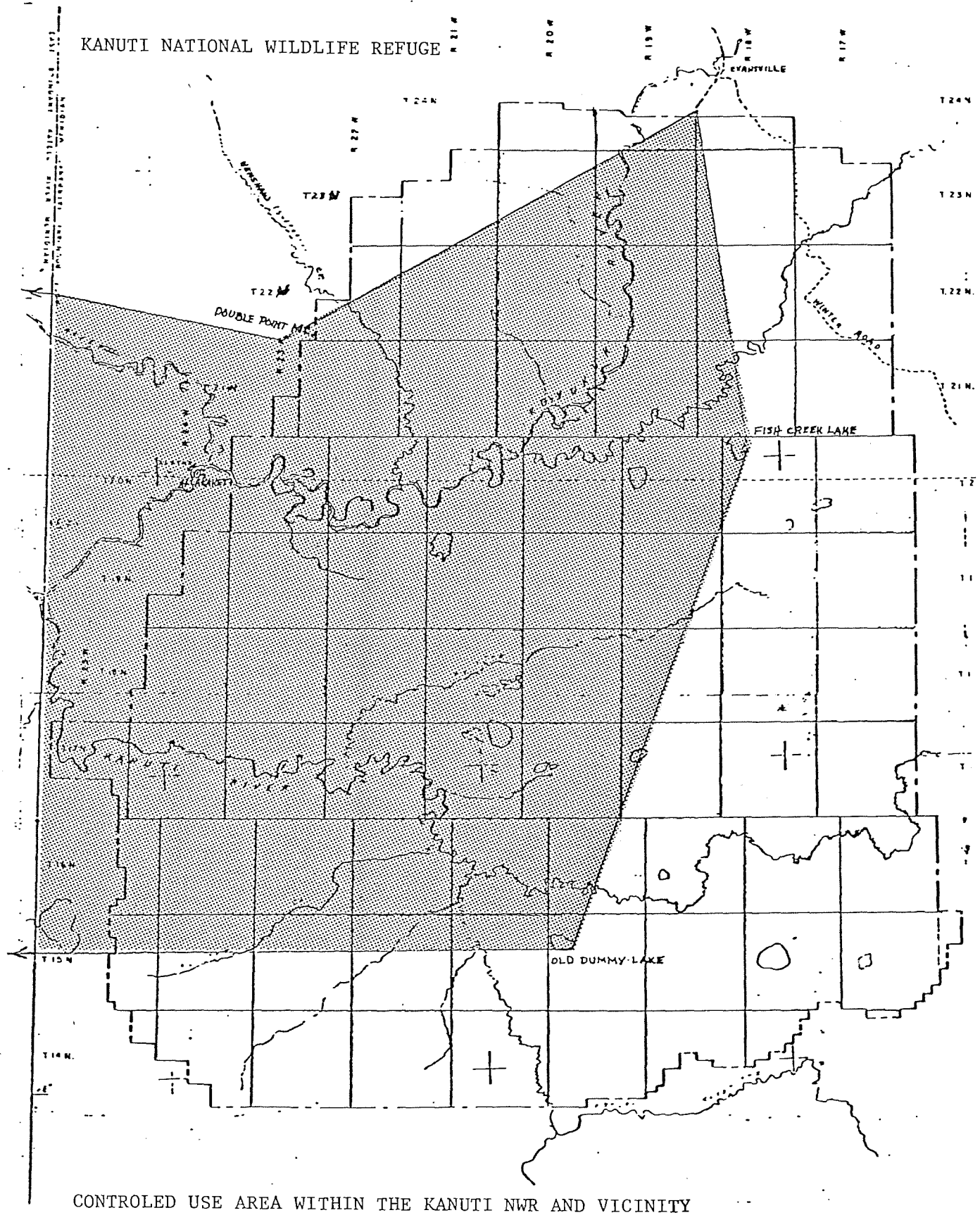
Camping is associated only with wildlife oriented activities as far as is presently known.

14. Picnicking

Nothing to report.

15. Off-Road Vehicling

Off-road vehicling on Kanuti NWR is mostly directly associated with wildlife oriented activities. Snowmobiles, three wheelers, and dog sleds



in winter and outboard boats in summer are major ground transportation means within the Refuge. They have caused little or no problems on the Refuge to the knowledge of this Refuge Manager. There are trails established that carry the primary use of off-road vehicles.

Small planes utilize the slower streams, lakes, ponds, and gravel bars to land in transporting public users into and out of the Refuge. Such activity has been light with little effect upon the Refuge or its resources. Some areas, where major waterfowl nesting occurs, may need control of air traffic and some boating activity in the future.

16. Other Non-Wildlife Oriented Recreation

According to 50 CFR Part 36.31(b) "Surface collection, by hand (including handheld gold pans) and for personal recreational use only, of rocks and minerals, is authorized: ". This activity with its special restrictions concerning precious metals and gem stones and the collection methods is participated by a few individuals within the refuge boundaries.

17. Law Enforcement

Law enforcement activities have been confined to learning where problems exist or are thought to exist by local residents. Information obtained from numerous contacts reveals only a few minor illegal activities may exist, especially during moose season with the controlled use area being violated by fly-in hunters.

18. Cooperative Associations- Nothing to report.

19. Concessions- Nothing to report.

I. EQUIPMENT AND FACILITIES

1. New Construction - Nothing to report.

2. Rehabilitation

The need to remodel office space in the Federal Building for FWS was recognized and acted upon. The increase in FWS personnel in Fairbanks has created working space problems and a shifting around of personnel was necessary. To provide the proper type and amount of space will require some modifications of existing area. Modification of room 110 has been contracted out but work not completed.

3. Major Maintenance- Nothing to report.

4. Equipment Utilization and Replacement

There are no vehicles or heavy equipment for the refuge at this time.

5. Communications System

A new Motorola Nikon S HF-SSB mobile radio was obtained for use in the field. It is a good multi-channel radio, but still too bulky and cumbersome to easily handle in the field with battery and accessories.

Weight and space are critical in air transportation, boating and backpacking. Walkie-talkie type radios are needed as well as the long range radio when members of the field investigating party must split up to accomplish a task.

6. Energy Conservation- Nothing to report.

7. Other

A new storage area was obtained for the Fairbanks FWS staff in the post office building at the Fairbanks airport. Each project leader was designated space.

J. OTHER ITEMS

1. Cooperative Programs

Six special use permits were issued during 1982. They are as follows:

K-1-82	Ronald D. Kortlever- BIA-ANSCA Projects - To investigate two Native historical and cemetery sites within the Kanuti NWR.
K-2-82	Dave Williams- Doyon, Limited - To take hand samples, pan concentrates and geologic mapping of Doyon select land 1/2 mile east of Sithylenkat Lake.
K-3-82	Arthur Williams- Native Allotment Holder - To cut house logs near South Fork Koyukuk for subsistence purposes.
K-4-82	John Cady- U.S. Geological Survey - Gravity surveying and geologic mapping within the refuge.
K-5-82	William W. Patton, Jr.-U.S. Geological Survey - Geologic investigations to complete geological studies of the north side of the Ray Mountains.
K-6-82	Willard D. Lambert & Ronald K. Lambert- Commercial Hunting Guides - To operate hunt guiding operation on Refuge.

2. Items of Interest

On the following page you should find 2 photographs of unusual items not yet explained that were noticed during the summer investigations.

In one photograph you will see water bubbling at the surface of a lake. At first glance, it was thought to be simply methane gas rising to the surface, but in my experience, I have never seen methane, that collects in bottom sediment, bubble continuously at such a strong rate. The lake is approximately 8-10 ft. deep at this site with one foot of sediment over

what appeared to be solid rock. The rock must surely have crevices in it for the gas to escape this abundantly. At the time of sighting, the bubbling was observed for over an hour without its rate changing. Unfortunately, we had nothing in which to obtain a sample of the gas at the time.

In the second photo, you will observe a muddy lake among clear water streams and other lakes. This muddy lake is an oxbow cut off from the mainstream. Several such muddy lakes exist on the refuge among hundreds of surrounding lakes that are clear. The reason for the turbid condition is still not known at this time since investigations have been limited thus far. There are springs thought to exist within the refuge and this may be a result of such. However, springs observed outside the refuge did not seem muddy in appearance.

The unusual items will be investigated as time allows and an explanation attempted in a future edition of the Kanuti's Narrative Report.



Unknown gas bubbles to surface of lake continuously during hour of observation. Lake was approx. 10 ft. deep with rock bottom covered with 1 ft. of sediment. The lake is located in SE portion of section 33 in T16N, R20W. 6-23-82 EWM



The turbid water of this oxbow contrasts greatly from the air with the clear waters of hundreds of other ponds, lakes and streams within Kanuti NWR; cause yet undetermined. 7-12-82 EWM

3. Credits

This report was written in its entirety by Refuge Manager Ervin W. McIntosh. Special appreciation goes to Paul Liedberg for his efforts to have the report typed since typists are a critical shortage at this time.

K. FEEDBACK

There is a proposal to reorganize wildlife refuges in Alaska into several complexes. These complexes will be located at King Salmon, Galena, and Fairbanks. They will be composed of all refuges that could logically be headquartered in those areas. For example, the Arctic NWR, Yukon Flats NWR and Kanuti NWR presently maintain offices in Fairbanks, each having a Refuge Manager-in-charge. The proposal would reduce the authority of these managers to primary assistants to a complex manager.

The purpose of the proposed refuge complexes, as this manager understands, is to allow more efficient manipulation of manpower, equipment and funds to accomplish objectives more effectively in this period of tight budgets and personnel ceilings.

The Arctic NWR consists of 18 million acres and 9 permanent personnel, the Yukon Flats NWR consists of 8.63 million acres and 3 permanent personnel, and the Kanuti NWR consists of 1.43 million acres and 1 permanent individual who also supervises a common administrative staff of 5 permanent individuals for the Fairbanks offices.

Each area has its own unique set of problems with Kanuti having the least as result of its size and topography. Its priorities are different and can not match the emphasis placed upon the oil interest and problems associated with the other refuges. Kanuti NWR is nevertheless important in the refuge system and requires full-time management.

It has been my experience under a complex system that no matter how much a complex manager desires to place adequate attention to each station, circumstances will arise demanding that he place the majority of his efforts and resources into a priority project at the expense of the others.

If this is not the desired effect wanted by those proposing the reorganization, then the proposal would not exist. As long as the refuges are separate and have managers-in-charge, each has to be recognized and dealt with as an operating project and insure minimum operating funds and personnel. Presently this would be a difficult task for anyone to handle. Many complexes and area offices have come and gone because they were not efficient in reality. The only time complexes are actually efficient is with small unmanned satellites attached to a larger station or new areas being established but not complete enough to require full-time attention.

Every manager that I have discussed the proposal with, whether involved or not, has advised against such a move in Alaska. These are dedicated and professional individuals with years of refuge experience to draw from.

There is no system more effective or efficient than the simple direct authority from refuge manager of individual refuges to the Regional Office to Washington. Each additional step in the process slows and complicates it.

Should the complex system be approved and go into effect, then the refuge managers, being professional and dedicated as they are, will do their best to make it work. Success and accomplishment has come from professional and dedicated employees with free cooperation and teamwork, not through reorganization.

Most managers have spent most of their careers faced with a shortage of funds and manpower to do the job they were asked. Yet, through determination, they accomplished their tasks. Mutual cooperation and support by the Regional Office and the refuge managers are critical elements in the efficient and successful management of our NWR system. It can breed mutual respect and trust among the team members only so long as it is not allowed to get one-sided.