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KENAI NATIONAL MOOSE RANGE

NARRATIVE REPORT

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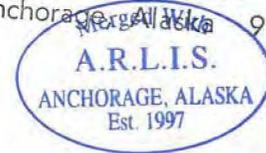
REFUGE NARRATIVE REPORT

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KENAI NATIONAL MOOSE RANGE

TUXEDNI NATIONAL WILDLIFE REFUGE*

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Anchorage, Alaska 99503



James B. Monnie	Refuge Manager
Robert A. Richey	Assistant Refuge Manager (Enforcement)
Robert K. Seemel	Assistant Refuge Manager (Timber and Range)
John L. Fillio	Assistant Refuge Manager (Recreation)
Eugene P. Heath	Administrative Assistant (EOD 08/04/74)
Karen J. Brown	Administrative Clerk
Ralph M. Mumm	Maintenanceman
Richard D. Kivi	Engineering Equipment Operator

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Sport Fisheries and Wildlife
U.S. Fish and Wildlife Service
Kenai, Alaska 99611

*No Report

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KENAI NATIONAL MOOSE RANGE

Narrative Report

July 1974 - June 1975

I. GENERAL

A. Weather Conditions

The summer was nice and relatively normal. Deep snow came in November and continued thru the winter with crusting conditions. The lakes were not ice free until after the Memorial Weekend.

B. HABITAT CONDITIONS

Summer habitat conditions were normal. Winter conditions with deep snow and crusting conditions again took a toll of moose. Range quality is deteriorating rapidly as the vegetation on the better sites in the 1947 burn grows out of reach.

II WILDLIFE

A. Migratory Birds

1. WATERFOWL: Fall migrations passed without any unusual sightings or numbers recorded this period. Fair weather at traditional hunting areas in the region prevailed, keeping would be feeders and resters moving South. The usual groups of swan and golden-eye brought up the rear about October 20th, shortly before freeze up. About 60 mallards were observed at the Chickaloon Flats November 1.

Returning spring migrants were sighted the first week in April. By April 12, several sightings of Canada geese, mallards, golden-eye and mergansers were reported. White fronts arrived in numbers April 22, and snow geese the following day. Several thousand snows utilized refuge lands the first week of May with more than one thousand snows observed May 2 on the Kenai Flats with 200 Canada geese and 800 ducks.

2. TRUMPETER SWAN:

Spring Breeding Season. There were no wintering swan observed on the Kenai this season. The first swan sighting was recorded April 11, when seven were observed in open water at the Skilak Lake outlet. Not until May 2, were swan numbers recorded and on that date 90 birds were seen at the Moose River outlet above the bridge.

Nesting. Twenty-two active nests were located on the Kenai Peninsula this season, one less than in 1974. All nest locations utilized have had a past history of trumpeter swan use. The Union Lake swan pair, following several seasons of human disturbance at four different nest locations in this developing area, were not observed nesting. Several non-breeders were also sighted on Bedlam (5), Picher creek (9), and at Warbler Lake (2) and Loon Lake (3).

Nesting Period and Incubation: Early nesting was generally a week later than last season. The Mink Creek pair, traditional early nesters, were first observed on their nest site May 9, however, six eggs were recorded at this location June 17, and one adult was still on the nest two days later. As late as May 21, several swan nests contained only 1 or 2 eggs.

Clutch Size: The clutch size of 16 nests was recorded as shown on Table II. Two nests contained 7 eggs each, the largest clutches observed. Mean clutch size for the 16 nests sampled was 4.88 eggs per nest compared to 5.33 of last season.

Hatching Success: The earliest hatch record this season was June 19 at the Scenic Lake site when 5 cygnets with 2 adults were sighted in the small creek 300 yards upstream from the nest site. On this same date at the Diamond Lake nest site, 4 cygnets with 3 eggs were observed in the nest. During this aerial survey, several additional swan nests were visited and all contained incubated eggs.

Survival and Mortality: An aerial survey conducted late August located eight swan families with 33 cygnets. Another survey flown October 17 located six family groups with 18 cygnets. Twenty-one additional adult swan were also observed during this survey.

Banding and Marking: Swan were not banded during the period. However, three trumpeters collared and tarsus banded on this refuge during previous seasons were observed again on the Kenai. On August 10, one collared bird was observed in a group of three adults three miles west of Lonesome Lake. Again, two days later, a collared bird was sighted with another adult at Cow Lake. A Soldotna resident reported a blue collared swan on Watson Lake June 25. This swan pair could have easily been the Brood Lake nesters located just northeast of Watson Lake. This bird was banded as a juvenile July 31, 1972 near Snowshoe Lake with band 02VY.

Wintering Populations: No wintering swan were reported or observed on the refuge this period.

West Side Cook Inlet Surveys: This sample area, located immediately west of Cook Inlet, was not surveyed this season.

TABLE I

KNOWN TRUMPETER SWAN NEST SITES
KENAI PENINSULA 1957-1975

<u>YEAR</u>	<u>NESTS</u>
1957	20
1958	21
1959	20
1960	27
1961	30
1962	25
1963	22
1964	25
1965	39
1966	36
1967	28
1968	30
1969	31
1970	21
1971	26
1972	21
1973	25
1974	23
1975	22

TABLE II

CLUTCH SIZE - TRUMPETER SWAN
KENAI PENINSULA - 1975

<u>Clutch Size</u>	<u>Frequency</u>
2	1
3	1
4	4
5	5
6	3
7	<u>2</u>
Total Nests:	16

Range 2-7

Mean 4.88 eggs/nest

3. OTHER MIGRATORY BIRDS: Snow buntings, usually early returners, were sighted April 4 and by mid month resident hawks reappeared. More than 300 northbound sandhill cranes were observed in flight May 5 near Soldotna. Violet-green swallows were again recorded in the local area May 11 as were several of the passerine species.

One osprey was observed at a traditional nest site near Weed Lake May 26. This old nest site has for years been utilized by an osprey pair, recently moved eastward (1973) to a new nest location more distant from the heavily traveled public road nearby.

B. Upland Game Birds

1. Spruce Grouse: Grouse were observed in moderate numbers this period, the population remains stable. Some road hunting was recorded early fall.
2. Ptarmigan: The population of all three ptarmigan species on the Kenai remains fair to good. Some hunting pressure was observed during the fall sheep and goat season in the Kenai Mountains. Moderate to low hunting pressure during mid-winter is normal for most open areas accessible including the Caribou Hills.

C. Big Game

Moose. The winter of 1974-75 was the fourth consecutive season we have experienced poor moose survival on the Kenai. The most important contributing factor appears to be the deteriorating quality of the winter range as vegetation on the better sites in the 1947 burn continues to grow further out of reach. The annual moose quadrant census indicated a population of 3375 moose on those lands between Tustumena Lake/Kasilof River and Point Possession. This estimated population is 43% less than that of the 1971 survey for the same 1920 square mile area.

Population Inventory. The annual moose census using a quadrant sampling method was conducted March 12-14. Four supercub aircraft were utilized for the survey requiring 22 hours total count time on the mile square quadrants in addition to nearly twice that number of hours reaching and locating the count plots. Within 1920 square mile count area, 106 square miles were randomly selected and flown. Moose observed in these quadrants totaled 292 of which 36 were calves or 12.33 percent of the moose sighted. This percent figure is considerably less than the 18.2 percent calves observed during the 1974 count. The inventory resulted in a moose population estimate of 3375 plus or minus 986 with a confidence limit of 90 percent. This population estimate is 30 percent lower than the 4850 estimate of 1974.

Composition Counts. The annual moose composition count was conducted November 20-24 by the refuge staff and State personnel. A total of 1841 moose were observed.

Total moose observed in Subunit 15A was 1067 with 8.7 bulls and 41.2 calves per 100 cows. Count units 19C, D, E, F were not surveyed. Calves represented 27.5 percent of all observations. In Subunit 15B, 774 additional moose were sighted with 23.4 bulls and 34.9 calves per 100 cows. Calves represent 22.4 percent of all observations.

Hunting. The fifty-two day moose hunting season began August 20 and continued through September 30. Moose harvested as reported on State harvest tickets was about 380 animals. The harvest by Subunit was 15A-152; 15B-97; and 15C, in the refuge, estimated at 130. The only antlerless hunt was in Subunit 15C. Future seasons may well be shortened and antlerless hunts eliminated in response to very high calf mortality in recent years. The excessive harvest of bulls in Subunit 15B East both in 1973 and 1974 may well close this trophy area to moose hunting for a period of time.

Mountain Goat. Aerial goat surveys were not conducted by the refuge staff this period. The hunting season was open August 10 through December 31. The bag limit this season was cut from two to one goat, either sex. Hunting pressure was generally light and mostly incidental to a planned sheep hunt. Nine goats were harvested in Subunit 15B. Planned shorter seasons in Subunit 15C and Unit 7 may place some additional pressure on those goats sighted by sheep hunters on refuge lands.

Dall Sheep. Aerial sheep surveys were not conducted by the refuge staff this season. However, State surveys during this period recorded in that mountain habitat between the Killey River and Tustumena Lake, 470 sheep. Of this number, 87.7 percent were adults or yearlings, and 12.3 percent were lambs, a significantly low number, and only 8 percent were legal rams, i.e. 3/4 curl or larger. In that mountainous region between the Killey River and Skilak Glacier, only 43 sheep were sighted, 90.7 percent adult/yearlings and 9.3 percent lambs. Sixty percent of this population were rams, 25 percent 3/4 curl or larger. Surprise Mountain observations included 189 sheep with lamb production 27:100 ewes.

Hunting. Sheep hunting season began August 10 and continued through September 20 as in past seasons. Bag limit was one ram with 3/4 horn or larger. Seven rams were harvested on Surprise Mountain with nearly 50 harvested on the refuge. Harvest tickets indicate 152 hunters persuaded sheep this season. The average horn size was 30½ inches, the same as recorded in past years.

Bear.

1. Brown Bear. Few brown bear observations were recorded this period. The refuge population is probably stable at 50-75. Brown's are generally observed west of Skilak Lake, head of Moose and Funny Rivers, Caribou Hills and those river drainages supporting spawning salmon. On June 27, a sow with two cubs and one sub-adult were sighted in the Swanson River Oil Field.

The hunting season is open from September 10 through October 10 with one bear every four regulatory years being the bag limit. Only 8 known brown bear were harvested in Unit 15 this period, 5 males and 3 females. Their average age was 9.3 years and skull measurement 20.4 inches.

2. Black Bear. Numerous sightings of black bear are annually recorded throughout the year by both staff and the general public. An observation July 30 was reported from the Coyote Lake area of a black bear with a 13-inch hind foot. During the refuge rehabilitation program at Willow Lake one tree-crusher operator reported rousting out a very sleepy black bear near Duckling Lake.

The black bear hunting season continues from August 10 through June 30 with a 3 bear bag provide the taking of cubs or females accompnied by cubs is prohibited. A few spring bear are usually harvested during the last two weeks of May and first week of June. About the second week of June some hides may not be satisfactory to most trophy hunters. The total black bear taken in Unit 15 during the fall was 54, (33 boars, 19 sows and 2 unknown). Most of these were harvested incidental to other hunting effort.

Caribou: Our summer resident herd just north of Kenai continues its growth, now numbering more than 50 animals. This has been a most satisfying trend of observation for the staff since 5-9 caribou established residence in the area following their reintroduction to the refuge in 1965.

July 8 sightings recorded 31 caribou including 6 calves just north of the airport. Again this month a group of more than 50 caribou were located seven miles north of Kenai. A group of 300 caribou traditionally utilize the nearby alpine region at the head of Big Indian Creek on adjacent Forest Service lands. More than 150 animals were observed November 30 just six miles east of the South Gasline strip along this common boundary.

Those caribou north of Kenai generally winter in the lowland bogs 30 miles northeast. On January 20 near the Moose River flats, 21 wintering caribou were sighted. By mid May a group of 15-20 had returned north of Kenai and in June, 42 animals including 19 calves were observed near the radio facility beacon 2 miles north of Kenai.

Hunting. Although nearly 600 hunters acquired permits to hunt caribou on adjacent Forest Service lands, caribou hunting is not authorized on the refuge.

D. Fur Animals:

Wolves. The first wolf hunt since the establishment of the Moose Range was conducted by the State this season. Two hundred forty-six hunters obtained permits to hunt between November 1 through February 28 on the Kenai Peninsula. Only one wolf was harvested on the refuge although five other animals were reported taken outside refuge lands.

Wolves are infrequently observed in the wild especially during the summer. Some winter sightings recorded but also infrequent, include observations of 1-19 wolves in groups. More sightings occur during the winter on large lakes and snow covered open areas.

III REFUGE DEVELOPMENT

- A. Physical Development: Refuge headquarters buildings (Office, shop, and Quarters #1) were re-wired to meet National Electrical Code. The walls, insulation, and ceiling were also replaced in the main office area. Despite these repairs, additional work on the office is needed to replace the floor, as the building is placed on wood skids were are slowly deteriorating.

The office parking area was expanded to accommodate more vehicles and also graveled, graded, and paved with asphalt.

In order to more effectively coserve energy, incandescent lights were changed to flourescent fixtures where possible. Heating units in the office, shop and both residences were also converted from oil to natural gas.

B. Controlled Burning

Preparation was made for Controlled burn within the Willow Lake Rehab. Area. A dozed fire line was completed between the lakes. Fuel moisture sticks were placed on the north end of the burn area to measure and monitor burning conditions. Burn not accomplished this FY.

This prescribed burn is a cooperative program between the BLM and the Fish & Wildlife Service.

C. Wildfires

Sixteen fires occurred after July 1, 1974. One of these, the pipeline fire, burned 3780 acres. The others were all less than one acre. Four fires occurred in May and June, 1975, but less than one acre burned. The Bureau of Land Management is to be commended for its professional expertise in fire suppression.

D. Kenai/Russian River Flood - Wind Storm September 1974

I. Chronology

September 15, 1974 - the alarm was triggered at 0900 hours. Snow Lake water level at the time was 22 feet above the level at which the lake had last released flood waters in 1969.

September 17, 1974 - Civil Defense confirmed the breaking of the ice dam. A flood warning was completed and all preparations for flood assistance were readied.

CONTINUE ON NEXT PAGE

Since 1947, water depth readings have been recorded for the U.S. Coastal and Geodetic Survey at the Kenai River Bridge, Mile 48 on the Sterling Highway, and at Cooper Landing, Alaska. On September 10, 1974, river depth at the bridge was 9.55 feet. Heavy rains brought the level up to 10.55 feet on the 13th, 11.00 feet on the following day. September 15th, levels began to rise until a crest of 17.18 feet was reached on the 21st.

Sunday, September 22, 1974 - water level at the Kenai River Bridge had dropped to 16.30 feet, and continued to recede quite steadily.

Several homes, businesses, recreation sites, and campgrounds were flooded to depths of 1-2 feet during the course of the flood. There were no known personal injuries or fatalities related to the flooding.

II Flood Damage Assessment - Kenai National Moose Range

A flood damage inspection trip was conducted by refuge personnel on September 25th and 27th. The general areas affected by flood waters includes two campgrounds on the Kenai River, and two on the shore of Skilak Lake.

1. Kenai-Russian River Campground. Located at mile post 55, Sterling Highway, adjacent to the confluence of the Kenai and Russian Rivers.
 - a. Severe bank erosion, undermining cable support and bulkhead.
 - b. Access and campground road washed clean of small particle gravel leaving large stones and rough surface.
 - c. Siltation widespread throughout campsites covered by flood waters.
 - d. Large logs, debris deposited throughout area.
 - e. Wood barrier posts lost and scattered over parking area.
 - f. Root systems eroded weakening several trees.

2. Jim's Landing Campground. Located at the junction of the Skilak Loop Road and Sterling Highway; on the Kenai River.
 - a. Severe bank erosion along rivers edge, several trees overhanging river.
 - b. Heavy washing of campground roads and camping spurs.
 - c. Wood barriers lifted free, lost and scattered; large trees (logs) deposited about campground.
 - d. Heavy deposition of silt, debris, scattered throughout campground.
 - e. Concrete fireplaces separated and broken apart.
 - f. Several trees with root systems completely eroded of soil.

3. Upper Skilak Campground - Skilak Lake.
 - a. Moderate shore line erosion up to tree line.
 - b. Boat ramp eroded, and covered with debris.
4. Lower Skilak Campground - Skilak Lake.
 - a. Boat ramp (steel mat) turned up and buckled, gravel washed out.
 - b. Several camping spurs (gravel pads) eroded at ends.
 - c. Concrete fireplaces broken apart.
 - d. Several trees eroded at base, root system exposed
 - e. Lake side parking area windrowed with gravel and debris.

Prior to the flood, picnic tables were secured to trees to prevent them from floating away, and all trash cans were removed.

After the flood, both the Kenai-Russian River and Jim's Landing campgrounds were closed, pump handles removed to preclude use of wells, and water samples taken for Laboratory analysis.

III Wind Damage Assessment

On Monday, September 30, 1974, winds began increasing during late afternoon and increased in intensity throughout the night. Gusts over 50 MPH were reported at Kenai and over 90 MPH in Anchorage. Winds eventually subsided by late evening on Tuesday, October 1st.

An inspection trip of all campgrounds was conducted on October 2 and 3. Aerial inspection of both canoe routes and associated rivers was also completed.

Building and structure damage was generally minor with only a few picnic tables, one vault toilet, and one tent platform (Environmental Education Site) being struck and damaged by falling trees. Roads, including the Swanson River and Swan Lake and several campground access roads were blocked by fallen trees. Both the Swanson River and Swan Lake roads were cleared immediately as they provide the only access to either the Swanson River Oil Field or the Moose Research Center.

The Kenai-Russian River Campground was the hardest hit recreational development with trees weakened by flooding (exposed root systems). Roughly 40-50 trees were blown down, with an additional 10-20 trees damaged to the extent that they now pose serious safety hazards.

Within the two canoe routes, 140 miles of portages, lakes and rivers were inspected by air and over 200 downed trees are effectively blocking this recreational facility. Additionally, 93 miles of hiking trails must be cleared of downed trees.

IV Rehabilitation, Clean-up and Flood Proofing

Clean-up will generally consist of removing all flood debris and fallen trees from campgrounds, canoe routes, and hiking trails. Hazard tree inspections will also be conducted to determine the extent of further tree removal necessary to provide safe recreational facilities for the using public.

Rehabilitation, specifically the campgrounds affected by flood waters will necessitate the clearing of silt, graveling and grading (repair) of campground roads and camping spurs, repair or replacement of boat ramps (landing mat), replacement of concrete fireplaces and grates, and installing new traffic control barriers. River bank erosion will be spot controlled but no attempt will be made to control the entire affected area.

Flood-proofing will consist of an effort to develop each recreational site vulnerable to flooding with an aim toward minimizing as much as possible any potential flood damage. The Kenai-Russian Ruver campground presents the most extensive problem for rehabilitation and flood-proofing. The site itself, roughly 3 acres in size, is composed of mature river-bottom cottonwoods and black spruce. The trees themselves pose a serious safety hazard due to age, various stages of trunk decay, and root exposure. It is felt that the best course of action would be to remove the trees and convert the area from a quasi-campground to a graveled fishermen access point. This would be in keeping with public use patterns as use coincides with the seasonal red salmon runs (late June through August - two distinct runs of red salmon). Approximately 90% of the public use of this site centers around fishing with most visitors using self-contained camper units. Visits generally are 3 days or less. Thus a large graveled parking area with minimal facilities would serve to reduce maintenance costs, accommodate the visiting public, reduce hazards, and minimize flood damage. Theorizing that flooding will occur, replacement of gravel constitutes the most efficient and economical rehabilitation. The use of concrete barriers and posts to control vehicular movement and parking, removal of picnic tables and trash cans, and installation of a central trash deposit container beyond the flood level should reduce future flood damage.

Both the Jim's Landing and Lower Skilak Campgrounds will need gravel replacement on campground roads and camping spurs. Concrete fireplaces will be replaced and relocated to minimize damage. Concrete barriers will be installed to control vehicles and prevent illegal and undesirable parking.

IV RESOURCE MANAGEMENT

A. Fur Harvest: The 1974-75 trapping season ran from November 1, 1974 through June 10, 1975 varying somewhat by species. The overall trapping effort on the Moose Range decreased 36%, resulting in a 67% decline in trapping harvest. A total of 52 permits were issued, with only 32 active. The harvest was as follows:

Beaver	6
Coyote	24
Fox	0
Lynx	162
Marten	0
Mink	33
Muskrat	21
Otter	8
Weasel	68
Wolverine	<u>10</u>
Total animals harvested:	332

Trappers obtaining permits were cautioned regarding the accidental trapping of Bald Eagles, and educated as to possible release procedures. Only two bald eagles were trapped incidentally, with both being released unharmed.

B. Timber Removal

On May 6, bids were opened in Portland for approximately 10 MMBF of Spruce, salvage timber and 10 MMBF of Aspen, Birch, and Cottonwood salvage timber. High bidder was Louisiana Pacific Corporation with a bid of \$7.40/MBF for all species. Total bid was \$148,000.00.

At the close of this reporting period, initial access roads are being put in and cutting has been started. The chipping operation had not been started.

Robert E. Price, Regional Solicitor, Anchorage, offered the opinion that in Alaska, on U.S.D.I. lands, primary process of timber products was not required.

C. Oil and Gas Operation

1. Swanson River Oil Field. The Standard Oil Company as unit operator of the Swanson River Oil Field continued development operations to increase crude production.

In addition to the usual well workovers, matrix acid jobs, and other field programs, the installation of two additional 4000 horsepower compressors in the pressure maintenance plant was completed.

The pressure maintenance plant expansion from 20,400 horsepower to 28,400 horsepower was completed June 11, 1975. The capacity to handle produced and rented gas has now increased over 30 percent. Plant capacity now closely matches productive capability and has greatly improved gas conservation in the field.

A field-wide reservoir pressure study was completed in April. This study indicated no major changes in the northern or central portion of the field, however, the Hemlock 10 sand was indicated to be over pressured in the southern portion of the field. As a result of the pressure survey, gas injection into the Hemlock 10 sand was suspended in six wells to reduce the 10 sand pressure and maintain the Hemlock 2 to 5 sand pressures.

A new waste water handling system was installed at the 1-33 tank setting. The system replaces worn out equipment which had been in operation for some time reinjecting about 8,000 bbl. of produced water each day.

Two gas compressors were rented and installed as field Boosters near the 3-4 and 1-4 tank settings respectively. They are 1000 and 750 horsepower each and will Compress gas from the 150 lb. gathering system into the 900 lb. gathering system. These compressors will help reduce the overloaded condition which exists in the 150 lb. gathering system.

During this reporting period the following average field rates were obtained:

Oil Production:	25,760 B/D
Water Production:	10,200 B/D
Gas Production:	225,400 MCF/D
Gas Injection:	241,500 MCF/D
Water Injection:	10,200 B/D
Propane:	16,000 Gals/D

Cumulative values for Hemlock Zone production and injection as of January 31, 1975, are as follows:

Oil Production:	155,097,264 Bbls.
Water Production:	29,889,152 Bbls.
Gas Production:	445,166,848 MCF
Gas Injection:	601,356,032 MCF
Water Injection:	9,550,305 Bbls.

The Hemlock oil bearing interval is 10,300 to 10,700 feet at Swanson River with a downhole structure pressure of 4200-4600 psi. Thirteen gas injection wells keep the proper structure pressure for optimum crude recovery from these known oil pools could attain 62 percent of 400,000,000 barrels. By the year 2000, an estimated 4-5000 barrels per day crude may be produced.

2. Beaver Creek Oil Field. Marathon Oil Company, unit operator of the Beaver Creek Unit, continued their development of this oil field with additional drilling, facility installations, and minimal crude production from Beaver Creek Well number 4.

Beaver Creek Well number 5 was completed December 25 at a depth exceeding 16,000 feet. The Hemlock sand and G-zones were perforated at intervals and packers installed. On a 24 hour test, the well produced on gas lift 481 barrels of oil. Production from this well during an extended test period from February through June included 43,037 barrels crude, 5627 barrels water, and 14,704 MCF gas. Testing is continuing but there is concern that a redrill may be required.

Cumulative field production through November 30, 1974 was 767,875 Bbls. of crude oil and 276,641 MCF of solution gas.

Production for the month of November 1974 was:

25,501 - barrels of crude oil
7,823 - MCF of solution gas
3,190 - MCF of gas well gas

Three applications to conduct geophysical seismographic programs on refuge lands were received this period. All three were cancelled by the requesting companies for lack of equipment availability or reassessed priorities.

One surface geologic field study in July was conducted by the Shell Oil Company generally in the mountainous region north and south of the Tustumena Glacier. A collection of hand sized rock samples were obtained.

D. Habitat Management

The tree crushers were activated for the first time since being parked in the fall of 1971. They were operated on extremely rolling terrain in the 1947 burn area near Willow Lake.

One thousand one-hundred forty acres were crushed in somewhat of a doughnut shape, leaving 380 acres in the center and 290 acres in scattered small patches of cover.

The peak number of moose using the area was 225 on February 20, 1975. The peak number using the control area was 64.

The food provided during the crushing operation helped about 40 calves survive while on the control area not more than one or two survived, if any. It is satisfying to see these immediate short term benefits from the long range program.

V FIELD INVESTIGATIONS

A. Fishery Services: The Fishery Services Kenai Field Station, continued operations on the Moose Range during FY 1975 with the following results:

1. Swanson River Egg Take: This is a cooperative program with the Alaska Department of Fish and Game with the goal of developing a pure Alaskan strain of hatchery trout in order to preclude the introduction of disease etc. by introducing non Alaskan rainbow trout.

On May 27, 1974 trout were first sighted in the Swanson River (at the oil field bridge). The operation of catching, holding, and taking eggs, etc. lasted ten days resulting in the collection of 67 rainbows. All fish were tagged in conjunction with a secondary project. A total of 29,700 eggs were collected; with a previously set goal of 30,000 eggs. The progeny have adapted well to hatchery life and show a great deal of promise for future hatchery programs in Alaska.

2. Fishery Services personnel also conducted 100 man hours of base data surveys on 54 Moose Range Lakes (7000 acres) and four major creeks; Miller Creek, Seven Egg Creek, Otter Creek, and Bedlam Creek. Stream work included aerial and on-ground surveys to determine accessibility for anadromous fish species, and suitability of spawning sites if accessibility was possible. Beaver dams (Bedlam Creek) and natural barriers prevents the use of this creek as spawning grounds.

3. Monitoring of the Swanson River at three sites continued throughout the fiscal year. Bimonthly (every two months) water samples were collected (above, within, and below the oil field) to determine base line chemical data, seasonal variations in water quality, coliform bacteria, conductivity, hardness, dissolved oxygen, ammonia nitrates, phosphates, turbidity, ph, chlorides, phenols, and anionic detergents.

4. Tagging study. Rainbow trout captured during the egg take program were also tagged prior to release to determine growth patterns, range, and habits of Swanson River rainbow trout. Data collected to date indicates that the fish use the Swanson River as a spawning site, leaving connecting lakes to do so, and upon completion of spawning, the young fish return to lakes for rearing. One such tagged fish was sighted five days later, twelve miles upriver from the release site (within a connecting lake). The age class of the fish captured in the spawning grounds were as follows; 4-5 year age class (81%), 3-6 year age class (19%).

5. Alaska Department of Fish and Game: Four Moose Range lakes were stocked with silver salmon by the A. D. F. G. Fish Division; Sunken Island Lake, 14,000; Portage Lake, 6,900; Engineer Lake, 34,400; Upper Jean Lake, 11,500; for a total of 66,800 fish.

- B. Moose Research Center: A total of eleven publications, study papers, and presentations resulted from Moose Research Center activities during 1975.
- C. University of California (Davis) Mammal Study: A mammal study was conducted from 15 May to 5 September 1974 by Todd Fuller, Steve Minta, and Jim Haney, who was replaced by Ralph Ferges on 1 August, under a cooperative agreement between the U.S. Bureau of Sport Fisheries and Wildlife and the University of California, Davis. The purpose of the investigation was to identify the mammals present in the different ecosystems of the Kenai National Moose Range, Alaska, collect mammal specimens for the Wildlife and Fisheries Biology museum at the University of California, Davis, collect information on the reproductive conditions of the mammals taken, and collect representative plant specimens from each area investigated. Preliminary information on the areas studied and the numbers and species of mammals collected or observed is included in the complete report in Refuge files.
- D. Canoe System Study - University of Alaska: Study began this FY and should be completed in FY 76.

Project Title:

Widerness Use and Crowding on the Kenai National Moose Range Canoe Trails.

Principal Investigator:

Lisa A. Shon
Graduate Student
Department of Wildlife and Fisheries
University of Alaska
Fairbanks, Alaska 99701

Principal Objective:

To investigate the dimensions of crowding as it relates to recreational carrying capacity of wilderness environments.

Project Objectives:

To survey canoeists using the Swan Lake and Swanson River Canoe Routes on the Kenai National Moose Range for the following purposes:

1. To obtain information on socio-economic characteristics of recreationists using the Kenai Canoe Trails.
2. To determine the distribution of canoeing use on the Canoe Trails with respect to location, timing and intensity of use.
3. To examine users' perceptions of, and attitudes toward, crowding on the Canoe Trails with regard to motivation and previous experience, and social interactions within and between groups.

VI. PUBLIC RELATIONS

- A. Public use continued to increase during FY 75, but at a somewhat lower rate of increase. The average rate of increase is 13-15 per cent, based on past years. FY 75 saw only a 10% rate of increase perhaps attributable to the "energy crisis" carryover.

The November moose hunting season was excluded this period, as the herd on the peninsula continues to decline. Cow hunts were also more limited. These factors also added to the slight reduction in the rate of increase of visitors to the Moose Range.

A breakdown of public use by major category follows:

	Activity Visits	Activity Hours
Interpretation	1,950	930
Education	1,179	6,383
Recreation W/W	229,626	5,418,425
Public Affairs	(68)	---
Recreation non-w/w	9,945	146,125
TOTALS:	242,260	5,571,863
Actual Visits - Total	133,260	

Wildlife/wildlands related recreation represented 97% of the recreation program during FY 1975.

B. Recreation: Commercial Fly-In Fishing Camps

Considerable effort was expended by refuge personnel in formulating new guidelines and regulations governing the operation of commercial fly-in fishing camps. All six operators were notified of current violations or discrepancies and given a specific time period to correct each situation. As a result of this increased effort to upgrade facilities and conditions, only three operators were actually issued special use permits before June 30.

The new regulations were designed to enforce sanitary and public safety conditions of each special use permit, as well as protect the environment from the deteriorating effects of unsightly dumps, inadequate toilet facilities, and also to provide a high quality wildlife oriented recreational activity.

C. Public Use Summary

The public use survey initiated in 1974 proved to be inadequate in providing the proper use data. The card questionnaire was revised to more useable form. An explanation sheet was also included in order to avoid confusing the visitor, and explain the terms and replies requested.

D. Canoe System Study

Lisa Shon continued her second year of surveying public use on the Swan Lake and Swanson River Canoe Routes. Her data will be analyzed and reported next winter (1976).

E. Law Enforcement.

Aerial and ground contacts by the refuge staff reduce significantly major violations of refuge regulations. Although many violation notices may be issued to the public each year, those issued generally involve the use of cars, trucks, snowmobiles and aircraft in refuge areas not designated for such use. A dozen violations were issued under the Federal Magistrates Act and only one required court appearance. This particular case involved an aircraft landing within the canoe system in support of a fishing venture. The pilot claimed an emergency developed when his passenger became airsick. Following close examination by the U.S. Magistrate identifying several conflicting facts, the defendant was found guilty and fined \$300.

VII OTHER ITEMS

A. Youth Conservation Corps

The Kenai National Moose Range again hosted a Y.C.C. program, employing 30 youth and seven adults. The program consisted of 32 work projects on the range including: canoe system portages and lakes; roadside litter control; sign posting; campground maintenance; construction of a moose exclosure, toilet at the the Visitor Control Station, rustic fencing at Kenai/Russian River access site; and many other tasks associated with the operation of the refuge.

The staff structure for this year's camp was bolstered by the up-grading of the Camp Director's position to GS-9 level, and the addition of an Environmental Education Coordinator at the GS-7 grade level, as well as maintaining the five Work Leader positions (GS-5).

The major problem was again the unavailability of adequate headquarters facilities for the 37 Y.C.C. personnel. An old house, formerly an F.A.A. site, was used again this year, and posed the same space problems. The future looks black, as the building is scheduled for public bid sale, and off-site removal.

B. EEO

The station Affirmative Action Plan was submitted in December and updated in March.

One Neighborhood Youth Corps employee worked for approximately a month.

Administrative Clerk Brown attended two training courses, Assistant Manager Seemel one training course, Administrative Assistant Heath two training courses, and Engineering Equipment Operator Kivi attended tree crusher refresher training.

One female biological technician was hired during the summer. Two female staff members were hired for the YCC Program, and 15 female YCC enrollees were selected.

One permanent-part time position was filled and there were no minority or female applicants.

Refuge staff members conducted career counseling at the local schools.

C. Alaska Native Claims Settlement Act.

There was considerable activity this year regarding native claims of Kenai Moose Range lands as a result of the Alaska Native Claims Settlement Act. Administrative Law Judge hearings were conducted on Kasilof and Point Possession village claims. Considerable information was provided to Marv Plenert, on assignment from the Anchorage Area Office, and John McMunn, from the Department of Interior's Solicitors office in San Francisco, in their preparation of our case in these hearings. Mr. McMunn did a magnificent job in representing the Fish and Wildlife Service interests in these hearings and the administrative Law Judge ruled that both of these claims were invalid. Thus, six townships of land was saved from being given over to invalid Native Claims.

Many meetings and discussions with the Kenai Native Association occurred throughout the year. We believe these discussions were of great value as it is expected that the Kenai Natives will select their townships in a manner which will be least damaging to the Refuge program. Tyonek village will also be selecting lands from the Moose Range and it is expected that their selection will remove about 1-1/2 townships from the Refuge. The village of Salamatof, although declared ineligible as a village, has filed suit and is trying to regain their status as bonafide village and thus be eligible for their three townships of the Refuge.

As it stands now considerable lands could be lost because of the Native Claim Settlement Act. To further complicate the situation the Cook Inlet Native Association has filed suit against the Secretary of Interior to gain even more lands from the Refuge. The settlement of this claim is somewhere in the future, and at this time we have no idea of the consequences to the Moose Range.

D. Credits

The entire refuge staff is credited with the preparation of this report.

SIGNATURE PAGE

Submitted By: James B. Monnie
James B. Monnie
Refuge Manager

Date: June 4, 1976

Approved By: David L. Spencer
Alaska Refuge Supervisor

Date: 6/10/76

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