

REFUGE NARRATIVE REPORT

January - - April, 1939

KENAI NATIONAL MOOSE RANGE

Kenai

Alaska

Staff:

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

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I. GENERAL

A. Weather Conditions.

Snowfall, depth of snow, minimum and maximum temperatures as recorded at the local FAA Station appear on TABLE I. It is interesting to note the variation in the temperature during a twenty-four hour period--frequently ranging from one extreme to the other.

B. Habitat Conditions.

1. Water. Water conditions were solid. General breakup started on March 25, with ice soon going out of the creeks and shallow lakes. At period's end, all swift-flowing water was ice-free but the deeper lakes remained frozen.

2. Food and Cover. Food conditions were adequate. Because snow conditions were not severe in the lowlands, moose movement and feeding was unrestricted.

II. WILDLIFE

A. Migratory Birds.

1. Waterfowl. Barrow's goldeneye utilized the open water at the mouth of Skilak Lake through much of the period. The last ten days of April saw a rapid influx of transients who spread to the open water areas. It is estimated that April's end saw some 1,500 Lesser Canadas, 500 snows, 3,000 pintails, 2,000 mallards, 300 goldeneye, 500 scaup, and 200 bufflehead utilizing the Refuge. Only a small portion of these will remain throughout the summer as nesters. The others are already spreading to more northern climes. By May 1, only seven snow geese were noted, and they were enroute north. On that date, we inaugurated what will be an annual inventory of the spring migrants. The route selected starts at Kenai Village, covers the Kenai mud flats, Kasilef marsh, Kasilef mud flats, Kasilef River to Tustumena Lake, north across the marshes to Kenai River below DeLong Lake, east along the Kenai River to Skilak Lake with a detour up the Moose River for two miles, down the east fork to Moose River, up the west fork of Moose River and the Moose River marshes to Mystery Creek, across to the headwaters of Swanson River and down Swanson River to the bridge. This year's inventory consisted of 1,271 pintails, 1,005 mallards, 305 scaup, 197 goldeneye, 52 buffleheads, 530 Lesser Canada, 171 sandhill cranes, 176 trumpeter swans and seven snow geese.

TABLE I

Snowfall - Snow Depth - Minimum and Maximum Temperatures

Day	January				February				March				April			
	Snow- fall	Snow Depth	Min. T.	Max. T.	Snow- fall	Snow Depth	Min. T.	Max. T.	Snow- fall	Snow Depth	Min. T.	Max. T.	Snow- fall	Snow Depth	Min. T.	Max. T.
1	T	9	-20	9	0	9	33	41	T	6	4	24	4.8	2	15	33
2	1.1	9	8	18	T	7	32	38	6.2	7	13	26	0	3	24	47
3	2.6	11	10	21	0	7	24	37	4.4	13	11	19	T	3	20	46
4	1.1	12	16	20	T	7	18	29	0	10	15	28	1.6	3	23	31
5	.2	13	-11	17	0	7	6	30	1.3	10	11	25	0	3	14	32
6	0	12	-14	16	.3	7	-3	20	1.9	13	6	25	.4	2	23	40
7	0	12	2	12	T	7	20	26	T	10	-3	14	T	2	32	40
8	0	12	-22	3	0	7	6	17	.6	10	7	24	T	1	32	42
9	0	12	-22	3	.2	7	3	22	T	11	-14	22	1.0	1	31	43
10	0	12	-17	9	1.4	8	17	23	0	10	-12	19	T	T	32	41
11	0	12	-19	2	0	8	11	23	0	10	-22	23	T	T	32	38
12	0	12	-18	7	0	8	-4	24	0	10	2	24	4.2	3	22	34
13	.2	12	-19	13	0	8	-9	23	0	10	-18	20	0	1	15	32
14	0	11	12	23	0	8	-6	26	0	10	-12	17	.8	T	29	41
15	0	11	22	30	0	8	-1	30	0	10	-18	20	2.2	3	27	38
16	0	11	-1	25	0	8	-1	25	0	10	-21	20	0	T	33	41
17	0	11	-10	20	T	8	-6	27	0	11	-22	21	0	T	27	42
18	0	11	-12	14	T	8	12	32	T	10	-18	16	0	T	16	29
19	0	11	-9	18	0	8	9	31	0	10	-15	19	0	0	14	30
20	0	11	2	20	0	8	10	36	0	9	-20	25	0	0	16	37
21	0	11	13	25	0	8	21	32	0	9	-7	26	T	0	25	43
22	0	11	20	26	0	8	23	32	0	9	-16	23	.2	0	30	43
23	0	11	17	25	0	7	25	34	T	9	-17	20	0	0	32	44
24	2.7	13	13	20	0	7	28	42	.2	9	14	23	0	0	30	40
25	0	13	5	29	1.3	7	25	32	0	8	19	40	.2	0	26	41
26	0	13	12	29	T	7	24	32	0	8	23	43	0	0	29	52
27	0	12	-2	28	T	6	21	31	0	7	22	44	0	0	29	50
28	0	12	-3	24	T	6	17	29	0	6	11	44	0	0	28	42
29	0	10	19	29					0	6	15	42	0	0	27	48
30	0	10	26	31					0	5	22	39	0	0	24	49
31	T	10	35	29					0	3	14	32				

2. Trumpeter Swans. Trumpeters were first noted on March 31, when the Assistant Manager observed eight, four adults and four juveniles, at the outlet of Skilak Lake. At period's end, the population had built to 176 individuals with no more than a dozen recognizable as juveniles. These birds spread over the Refuge as rapidly as open water became available. Many were noted utilizing the shallow water marshes pending more suitable habitat.

B. Upland Game Birds.

No notes on spruce grouse or ptarmigan.

C. Big Game Animals.

1. Moose. The moose wintered in good shape. There was no indication of winter die-off. The highway kill was very light, only eight being recorded on the Refuge. An additional eight were killed between Homer and Soldotna and three, north of Kenai, on the homestead roads (TABLE II). This was quite a contrast to the east side of the Peninsula where the Game Management Agent sometimes picked up two or three highway and railroad kills a night.

The following report has been prepared by Assistant Manager Hakala:

The 1959 winter moose inventory was conducted January 13 through 27 inclusive. A total of 63.1 hours were flown, utilizing Service-owned aircraft N705, N751 and N785. Thirteen and two-tenths (13.2) hours were flown in cooperation with the U. S. Forest Service, census-ing moose in the Chugach National Forest, from Seward north to Portage, Alaska, and west to the eastern boundary of the Moose Range. Refuge aircraft N705 covered the major portion of the Kenai Peninsula wintering areas, with 43.8 hours being flown.

Two thousand five hundred fifty-nine (2,559) moose were tallied in the wintering areas (MAP I) of the Kenai National Moose Range, with eight hundred eighty-eight (888) and two hundred fifty-two (252) moose in the Chugach National Forest and North Caribou Hills, Fox River, and Anchor River areas respectively. TABLE III summarizes moose inventories by units from 1950-1959. No January inventory was made during the winter of 1957. A count was attempted in 1958, but lack of snow and weather conditions prevented its completion.

The trend in moose numbers on the Kenai has been on the upgrade since 1950, with a slight setback in 1956 due to two severe winters of 1954 and 1955. The past three winter-- 1957, 1958, 1959-- have been relatively mild and has resulted in record calf production of 35 and 42 calves per hundred cows for the years 1957 and 1958. This increased production, combined with a higher survival rate, is reflected in the total winter count of 2,559 animals in the inventory units on the Kenai National Moose Range. FIGURE I graphically summarizes this upward trend.

TABLE II

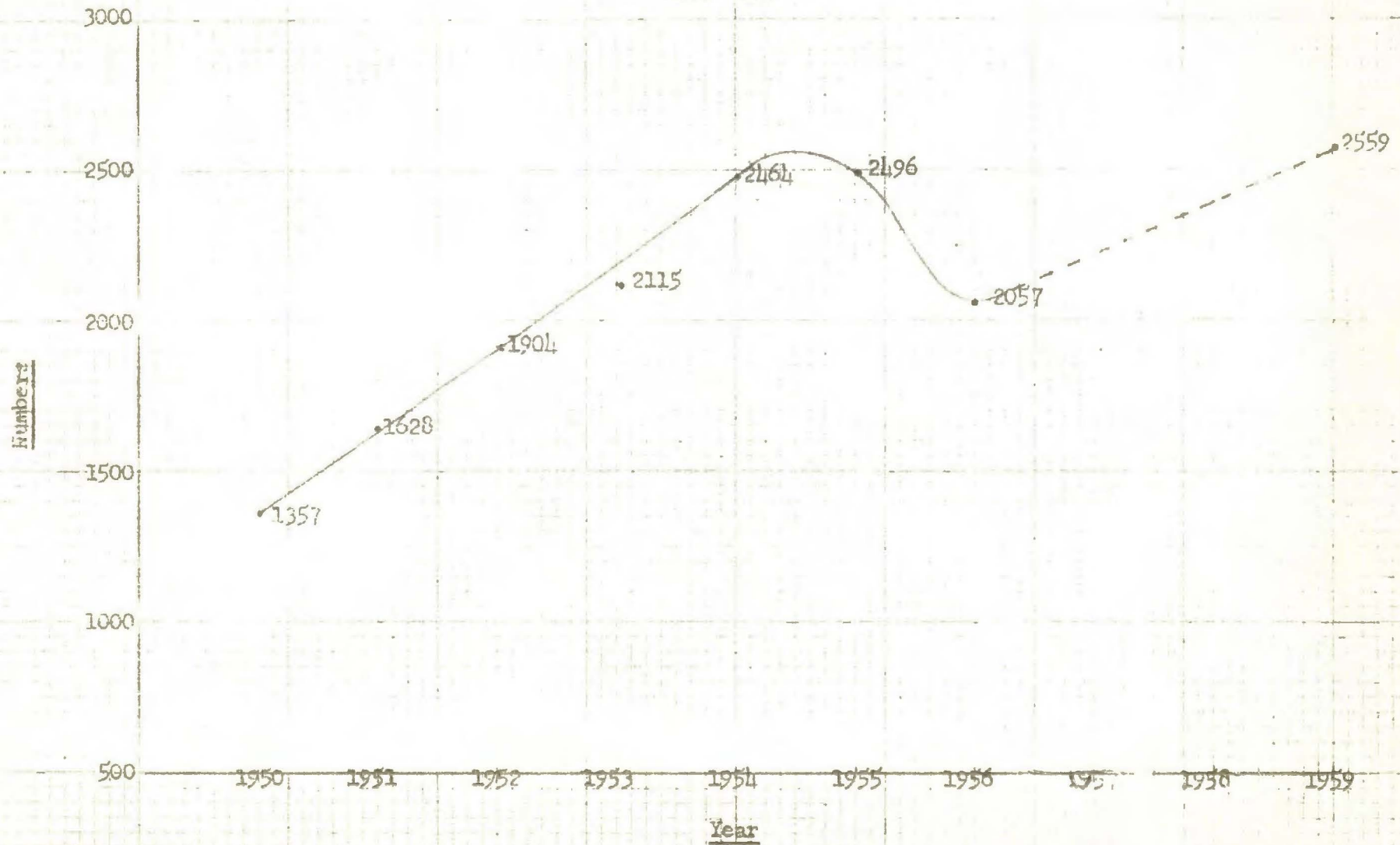
Moose Mortality - *Winter 1958-1959

	Adult			Yearling			Calf			Unidentified	Total
	M	F	Unidentified	M	F	Unidentified	M	F	Unidentified		
Illegal Kill				1			1			1	3
Auto Kill	2	2		1			2	3			10
<u>Drowned</u>	<u>1</u>	<u>—</u>		<u>—</u>	<u>—</u>		<u>—</u>	<u>—</u>		<u>1</u>	<u>2</u>
Totals:	3	2		2			2	4		2	15

* Includes four (4) animals not previously reported.

FIGURE I

MOOSE COUNT
Sample Area
1950-1959



Trend in Moose Population

Increasing winter use by moose of the 1947 Burn area is indicated by comparing moose numbers in units composing the Burn area with total numbers of moose observed. This area includes units number 9, 10, 11, 12, 15 and 18 (MAP I). Forty (40) per cent of the total moose inventoried in 1952 utilized the area. These numbers have increased with increased production of both forage and moose through the years in the 1947 Burn (with possible deterioration elsewhere), to sixty-four per cent of the animals inventoried in 1959.

Units 9, northern half of 10 and 15, 11 and approximately three-quarters of unit 12--from Schroeder Lakes Trail south-- received heavy use by moose during the winter of 1958-1959. The animals moved into these areas in the middle of November and did not leave until the latter part of March. The northwest one-third of unit 18 received medium usage by moose during this period. This area lies within that portion of the Range covered by seismic trails constructed by the various oil companies in their oil exploratory activities. These trails aided the moose in their movements within the area--the only discernible advantage resulting to date.

2. Ball Sheep. No report for the period.

3. Mountain Goat. No report for the period.

4. Brown and Black Bear. No bear were noted by Service personnel. A helicopter pilot for Union Oil Company reported seeing a yearling brownie on Moose River-April 29.

D. Fur Animals, Predators, Rodents, and Other Mammals.

No notes for this period.

E. Hawks, Eagles, Owls, Crows, Ravens, and Magpies.

Both rough-legged and marsh hawks were noted, but were not common. Bald eagles were common. Owls present but not numerous. Ravens and magpies abundant.

On April 27, the Assistant Manager, flying swan survey at Skilak Lake noted a bald eagle in the process of killing a juvenile trumpeter swan. He and the maintenance man returned to the area via boat that afternoon and retrieved the well-cleaned skeleton of the swan.

F. Other Birds.

The newly completed Refuge Bird List is appended. Since its publication, a McKay's Bunting was seen in the area. In addition, we note that Dr. Gabrielson, in his "Birds of Alaska" lists a pair of Green-throated Arctic Loons at the "Mouth of the Kenai".

G. Fish.

Parasites: A Dolly Varden trout Salvelinus malma (Walbaum) collected March 26, 1959, by Refuge Supervisor Spencer and Refuge Manager Johnson contained numerous cysts with in the intestinal tract and abdominal wall. This specimen was obtained from a fisherman ice fishing in the Swanson Lakes at the head of Swanson River. Identification of the cyst was made by Roger Allin, Fishery Management Biologist, BSWF, and was found to be one of the alternate stages of the fish tapeworm Diphylllobothrium spp., which infects man. Mammals are the primary host of this tapeworm with the two intermediate hosts being fish (primarily freshwater species) and a freshwater copepod. No method of control is known at present--thorough cooking is advised.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development.

No significant changes this period.

C. Collections and Receipts.

2. Specimens. The juvenile trumpeter swan previously mentioned will be prepared and donated to a museum.

D. Control of Vegetation. One-eighth acre of mature aspen was treated utilizing a "Little Beaver Tree Girdler". This is a portable (back-pack) machine produced by the Haynes Manufacturing Company. It was acquired for experimentation in thinning out or eradicating mature stands of aspen, birch and spruce. The machine works excellently in open stands of timber. We were able to girdle 100 trees of approximately 6" dbh in twenty minutes.

IV. RESOURCE MANAGEMENT

C. Fur Harvest.

Twenty-seven trappers presented 517 beaver pelts at Refuge headquarters for sealing. One hundred forty-nine of these were taken on or adjacent to the Refuge.

Twenty-three Refuge coyotes were presented for bounty.

D. Timber Removal.

The following special use permits were issued , all were personal use:

<u>Permittee</u>	<u>SUP No.</u>	<u>Free Use</u>	<u>Quantity</u>
Sunders, B. E.	28736	"	100 house logs
Purdy, F. W.	28737	"	25 cords D&D
Nelson, G. B.	28743	"	25 " "
Fenne, D.	28744	"	50 house logs
Tachick, W.	28745	"	30 cords D&D
Anderson, V. C.	28746	"	25 " D&D
Slate, R.	28747	"	250 house logs

F. Other Uses.

Federal Aviation Agency (FAA) was granted authority to construct and maintain a "Fan Marker-homing Radio Beacon" at Point Possession, Lot 17, Section 15, T10N, R8W, Seward Meridian.

The U. S. Department of Commerce, Bureau of Public Roads, was issued Special Use Permit #28738 for five years' use of the NW $\frac{1}{4}$, SE $\frac{1}{4}$, Section 6, T10N, R10W, S.M. for the erection of HF Radio antennas.

Some two hundred men of the 1st Battalion, 23rd Infantry, from Fort Richardson, Alaska, conducted maneuvers on the Range March 26 and 27. From a point of helicopter landing on the Chickaloon River flats, ski troops traveled overland to Sterling via the Moose River. At Sterling, they joined other motorized troops in a sham attack on Wildwood Station, Kenai.

VI. PUBLIC RELATIONS

A. Recreational Use.

Ice fishermen comprised the majority of recreation seekers for the report period. Field contacts indicated fair success on Dolly Varden and lake trout. Estimated - 100 visitor days.

B. Refuge Visitors.

<u>Date</u>	<u>Name</u>	<u>Organization</u>	<u>Purpose</u>
2/09/59	Mr. Lansing Parker	FWS	Oil activities
3/27/59	Mr. Noble Buell	FWS Predator Control	Courtesy Call
3/27/59	Mr. Morry Kelly	FWS " "	" "
3/27/59	Mr. Buck Stewart	FWS " "	" "
4/29/59	Al Erickson, Mr.	Alaska Dept. Game & Fish-Management Plan	

Jack Sherry and Ron Nabb, Bureau of Commercial Fisheries, Anchorage, were occasional visitors on official business.

John Merrick, Bureau of Land Management, Homer, Alaska, several courtesy calls.

Dignitaries of the various oil companies engaged on the Kenai were almost daily visitors.

C. Refuge Participation.

The Assistant Manager attended the annual Game Commission hearing in Juneau February 2-10, 1959.

The Refuge Manager attended the Cub Scout Blue and Gold Dinner February 25, lectured on "Scouting and Conservation" and presented a twenty-minute slide session.

VII. OTHER ITEMS

A. Items of Interest.

Standard Oil's Swanson River Unit Well #4 was declared a dry hole at 12,582 feet. However, at the same location, they are angle drilling to a spot some 2,500 feet northeast of this well site. At period's end, the approximate depth was 9,600 feet. Test production at Wells No. 1 and 2 was terminated in February. Water intrusion at Well #2 is indicative of future trouble. Access roads and well sites No. 5, 6, and 7 were constructed. Number four well being dry will have direct bearing on the drilling sequence of these well sites. Standard Oil also received permission to construct a road and a well site at Section 13, T9N, R9W. The road was fifty per cent completed when spring breakup stopped construction. This location is outside the Swanson River Unit.

Cleanup of the Swanson Unit access road berm pile was inaugurated. This work to date appears very satisfactory. Corrective measures, to be taken at the time of construction, have been evolved to prevent a recurrence of this situation.

Halasko, the Halbouty-King Alaska Oil Company, had a two-week breakdown which prevented completion of their No. 1 well this period. However, they were at a depth of 11,000 feet--the depth of the oil-bearing strata at Swanson River Unit Wells No. 1 and 2. In addition, this company has completed an access road from the Swanson River Unit road into a well site at SE $\frac{1}{4}$ of NE $\frac{1}{4}$ of Section 20, T6N, R9W, S.M. They have a third road and wellsite adjacent to the Refuge in the homestead area on the north end of the Peninsula in (unsurveyed) Section 11, T7N, R11W, S.M.

Union Oil Company of California is awaiting a drill rig to drill a well in the homestead area seven miles south of Kenai. The Bureau of Public Roads constructed an all-weather road south of the Kenai River from the Sterling Highway below Soldotna west nearly to Libby's

Cannery below Kenai. Union's road continues this new construction south an additional six miles to their well site. Combined, they create another fourteen miles of public road on the Peninsula.

Approximately 290 miles of seismic trails were cut on the Moose Range proper and an additional 100 miles in and around the Caribou Hills during the period. Four oil companies were involved. Standard Oil of California was responsible for some 246 miles, Union Oil Company of California, 57 miles, Phillips Petroleum Company, 40 miles, and Halasko, 25 miles.

The method used in all cases consisted of bull dozers, ranging from a small John Deere up to TD 18s and D-9s removing the timber and snow in an area fifteen feet wide down to, and in most cases through, the vegetative ground cover. The bull dozers were followed by track or truck mounted seismic equipment and crews, who completed shooting some 200 miles of the prepared lines.

The efforts of these trails will be far-reaching. First and foremost, they abrogate the purpose of the Moose Range as expressed in the establishing Executive Order - "for the purpose of protecting the natural breeding and feeding range of the giant Kenai moose--- which in this area presents a unique wildlife feature and an unusual opportunity for the study in its natural environment of the practical management of a big game species---". The wilderness aspect at the Peninsula is no more.

Additionally, many miles of these trails are suitable to travel by conventional motor vehicles at all times and the rest may be negotiated by 4-wheel drive vehicles under proper climatic conditions. Specialized equipment can travel them at any time.

Although access to these roads will be denied the public, it will be necessary in the future to legislate game regulations with them in mind. Denying access has created ill will and bad public relations. To grant access would lead to all of the ills inherent in public use, and add fuel to any agitation to open the Moose Range to settlement.

The method of construction led, in some instances, to unsightly berm piles. These might be considered fire hazards, however, any effort to clean them up would result in greater damage than good. Early in the program, some unnecessary cutting and filling occurred. An effort has been made to re-distribute topsoil at these sites and to install erosion control structures---neither measure is entirely satisfactory.

Some good is bound to accrue from this venture. By removing a considerable amount of ground cover and exposing topsoil to light and air, willow and birch growth may be expected, where a source of seed is available, (50 to 65% of the Moose Range lines have a potential seed source). This naturally would increase moose forage. By

providing routes of easy and open travel, the trails may facilitate moose dispersal. This could be important during severe winters. In the event of forest fire, the trails may be used as routes of access for heavy equipment, or widened into fire breaks. In the event of any expansion of the Refuge recreational facilities (badly needed), part of these trails could be used to open some areas now used exclusively by fly-in fishermen. Last but not least, if any attempt is ever made to improve forage conditions on the Moose Range, these trails have made accessible several areas of birch, aspen and spruce that are suitable for various types of mechanical manipulation.

This work was suspended on April 13, because of spring breakup. All four companies have expressed a desire to continue this program next winter.

Submitted by:

H. J. Johnson
Refuge Manager

May 18, 1959

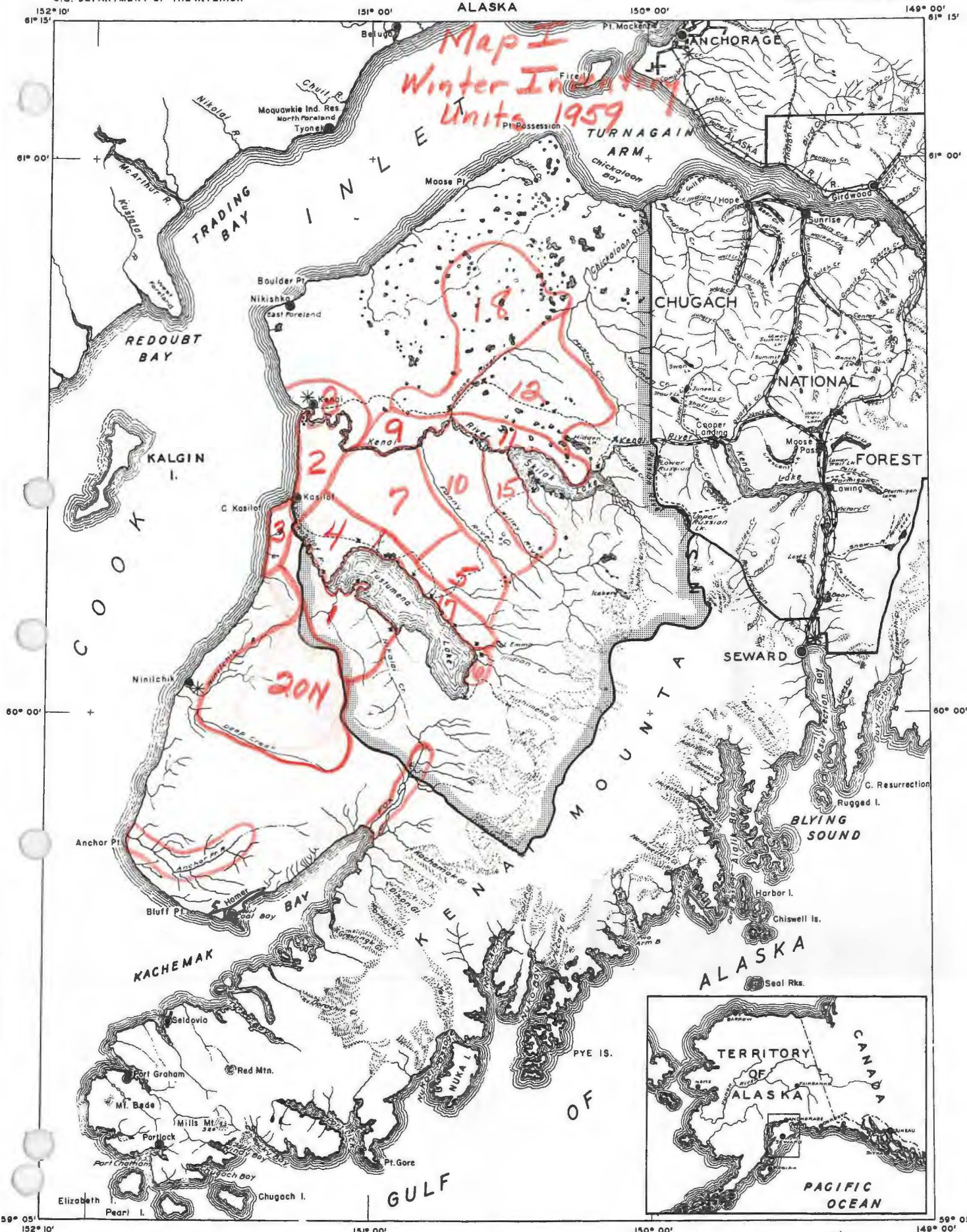
Approved by: _____

KENAI NATIONAL MOOSE RANGE

U.S. DEPARTMENT OF THE INTERIOR

ALASKA

FISH AND WILDLIFE SERVICE



COMPILED IN THE DIVISION OF LAND ACQUISITION
BASE BY U.S.D. OF A. FOREST SERVICE.

WASHINGTON, D.C.

MAY 1966

Scale 0 10 20 30 MILES

TRUE NORTH
MEAN DECLINATION
1934

2 KENAI



First seismic trail (?) cut by Standard Oil to proposed Swan Lake Unit. We will try to confine any future development to this one route.

Upper photo by Spencer.
Lower by Williams





We almost shut them down after this! Radical changes were made and they went around instead of over. These banks have been sloped to 45° and topsoil redistributed.

Photo by Williams

• APR • 59



Summit Creek Diversion Dyke.
Looking west into Russian River.

Photos by Mrs. L. Elwell

APR • 59



Butt ends of spruce log rip rap used to
reinforce Dyke.

BIRDS OF THE KENAI NATIONAL MOOSE RANGE

Kenai National Moose Range is a 2,000,000-acre reserve located on the west side of the Kenai Peninsula along Alaska's south coast. It extends from the north side of the Caribou Hills on the south to Turnagain Arm on the north, and from the Chugach National Forest Boundary on the east to Cook Inlet on the west. Moose Range headquarters is maintained at the village of Kenai, Alaska. This Range, established in 1941, is administered by the Bureau of Sport Fisheries and Wildlife, U. S. Fish and Wildlife Service, Department of the Interior.

The Moose Range is bounded by the Kenai Mountains, which form a scenic back-drop to the east. The Range extends west through low lying flatlands to Cook Inlet. It is made up of swamps, bogs, lakes, river valleys and low ridges. The mountainous area comprises approximately one-fourth of the Range. Vegetative cover varies from open muskeg swamps and tundra to a white spruce climax on favorable sites. Stands of birch, aspen, cottonwood, willow, alder and black and white spruce are found both pure and in mixtures, with sedges, grasses, lichens, shrubs, herbaceous plants and mosses covering the floor. The area is drained by four principal rivers--the Swanson, Chickaloon, Kenai and the Kasilof--the last one having its origin in the Harding Ice Field and its glacier.

Created primarily to ensure the continued abundance of the large Kenai moose, the area also provides an interesting variety of wildlife. Bands of Dall sheep may be found on the western slopes of the Kenai Mountains between Skilak Lake and the head of Kachemak Bay. Mountain goats inhabit the area in the vicinity of Skilak Glacier. Brown bear, in limited numbers, and the more abundant black bear are distributed over the area. Beaver, land otter, lynx, coyote, mink, weasel and wolverine are among the fur-bearers found. Willow, white-tailed and rock ptarmigan are indigenous to the area and are found usually in the mountains, with spruce grouse in the low areas. Ducks and geese use the Chickaloon Flats and some of the lakes and rivers during migration--a few nesting in the area. Of special interest is the trumpeter swan which nests on the lakes north of the Kenai River.

The Moose Range provides a public area for outdoor recreation and being near Alaskan population centers, is heavily utilized for that purpose. Over 125 lakes are suitable for float-plane operations. Areas along lakes and streams near the Sterling Highway from the eastern boundary of the Range to its western limit have been developed to provide recreational use by Highway travelers. Fishing--both trout and salmon, and hunting--moose, bear, goat and sheep, have been the main attractions.

The following bird list contains 186 species observed chiefly between the period 1948 to 1957. Those marked with an * are present occasionally in winter. This list, using species names except for Canada geese and Swainson's thrush is generally in accordance with the Fifth (1957) A.O.U. Checklist. Where new names are sufficiently different, the former name is added in parenthesis. Special acknowledgment is hereby given Mrs. Mary A. Smith, Cohoe, Alaska, for use of her very complete yearly records of observations from 1955 through 1957.

Status and abundance symbols are as follows:

PR - Permanent resident	a - abundant
SR - Summer resident	c - common
WR - Winter resident	u - uncommon
SV - Summer visitor	o - occasional
WV - Winter visitor	r - rare
TV - Transient visitor	
AV - Accidental visitor	

Common Loon	SR-c	Barrow's Goldeneye	SR-u
Arctic Loon (Pacific)	SR-o	Bufflehead	TV-u
Red-throated Loon	SR-u	Oldsquaw	TV-c
Red-necked Grebe (Holboell's)	SR-o	Harlequin Duck	PR-u
Horned Grebe	WV-u	Steller's Eider	WR-u
Short-tailed Albatross	AV-r	Common Eider (Pacific)	PR-u
Double-crested Cormorant	* SR-c	King Eider	WV-o
Pelagic Cormorant	* SR-u	Spectacled Eider	WV-r
Great Blue Heron	AV-r	White-winged Scoter	PR-c
Whistling Swan	TV-o	Surf Scoter	PR-o
Trumpeter	SR-c	Common Scoter (American)	PR-c
Canada Goose	TV-r	Common Merganser (American)	SR-c
Lesser Canada Goose	SR-c	Red-breasted Merganser	SV-u
Cackling Goose	TV-c	Goshawk	PR-u
Black Brant	TV-r	Sharp-skinned Hawk	PR-o
Emperor Goose	TV-r	Cooper's Hawk	AV-r
White-fronted Goose	TV-c	Red-tailed Hawk	SR-u
Snow Goose	TV-u	Swainson's Hawk	SV-o
Mallard	SR-u	Rough-legged Hawk	SR-c
Gadwall	TV-u	Golden Eagle	SR-c
Pintail	SR-c	Bald Eagle	PR-c
Green-winged Teal	SR-u	Marsh Hawk	SR-c
Blue-winged Teal	AV-r	Osprey	SR-o
American Widgeon (Baldpate)	TV-a	Gyr Falcon	PR-u
Shoveler	TV-u	Peregrine Falcon	SV-o
Canvasback	TV-r	Pigeon Hawk	SV-o
Greater Scaup	SR-a	Spruce Grouse	PR-a
Lesser Scaup	SR-a	Willow Ptarmigan	PR-a
Common Goldeneye (American)	SR-c	Rock Ptarmigan	PR-a

White-tailed Ptarmigan	PR-c	Thick-billed Murre	WV-o
Sandhill Crane (Little Brown)	SR-o	Pigeon Guillemot	TV-o
Black Oystercatcher	TV-o	Marbled Murrelet	* SR-o
Semipalmated Plover	SR-c	Kittlitz's Murrelet	TV-o
American Golden Plover	SR-o	Horned Puffin	PR-o
Black-bellied Plover	TV-o	Tufted Puffin	PR-c
Surfbird	SV-o	Great Horned Owl	PR-c
Ruddy Turnstone	TV-r	Snowy Owl	WR-c
Black Turnstone	TV-o	Hawk-Owl	PR-o
Common Snipe	SR-c	Great Gray Owl	PR-r
Long-billed Curlew	SV-o	Short-eared Owl	PR-c
Whimbrel (Hudsonian Curlew)	TV-r	Boreal Owl	PR-u
Eskimo Curlew	formerly TV-o	Rufous Hummingbird	AV-r
Upland Plover	TV-o	Belted Kingfisher	SR-c
Spotted Sandpiper	TV-u	Yellow-shafted Flicker	SV-o
Wandering Tattler	SR-o	Hairy Woodpecker	WV-o
Greater Yellowlegs	SR-c	Downy Woodpecker	PR-c
Lesser Yellowlegs	SR-c	Black-backed Three-toed Woodpecker	PR-o
Knot	TV-r	Northern Three-toed Woodpecker	PR-c
Rock Sandpiper	TV-o	Traill's Flycatcher	PR-c
Pectoral Sandpiper	TV-o	Western Wood Pewee	TV-r
White-rumped Sandpiper	TV-r	Olive-sided Flycatcher	SR-c
Baird's Sandpiper	TV-o	Horned Lark	SR-o
Least Sandpiper	SR-u	Violet-green Swallow	SR-c
Dunlin (Red-backed Sandpiper)	TV-r	Tree Swallow	SR-a
Short-billed Dowitcher	SV-o	Bank Swallow	SR-a
Long-billed Dowitcher	TV-r	Cliff Swallow	SR-o
Semipalmated Sandpiper	TV-o	Gray Jay (Canada)	PR-c
Western Sandpiper	SV-u	Steller's Jay	PR-o
Buff-breasted Sandpiper	TV-r	Black-billed Magpie	SR-c
Hudsonian Godwit	AV-r	Common Raven	PR-a
Sanderling	TV-c	Northwestern Crow	SV-u
Red Phalarope	TV-o	Clark's Nutcracker	TV-r
Northern Phalarope	SR-c	Black-capped Chickadee	PR-c
Pomarine Jaeger	SV-o	Boreal Chickadee (Brown-capped)	PR-a
Parasitic Jaeger	SR-c	Brown Creeper	PR-c
Long-tailed Jaeger	SV-u	Dipper (Water Ouzel)	PR-o
Glaucous Gull	* SR-c	Winter Wren	PR-o
Glaucous-winged Gull	SR-c	Robin	SR-a
Herring Gull	* SR-a	Varied Thrush	SR-u
Ring-billed Gull	SV-r	Hermit Thrush	SR-c
Mew Gull (Short-billed)	SR-c	Russet-backed Thrush	SV-o
Bonaparte's Gull	SR-c	Olive-backed Thrush	SR-c
Ivory Gull	AV-r	Gray-cheeked Thrush	SR-c
Black-legged Kittiwake	SR-u	Golden-crowned Kinglet	SR-c
Sabine's Gull	TV-o	Ruby-crowned Kinglet	SR-a
Arctic Tern	SR-c	Water Pipit	SR-c
Aleutian Tern	SR-o	Bohemian Waxwing	SR-c
Black Tern	TV-r	Cedar Waxwing	AV-u
Common Murre	PR-c	Northern Shrike	PR-c

Loggerhead Shrike	AV-u	Pine Siskin	SR-o
Orange-crowned Warbler	SR-c	Red Crossbill	TV-o
Yellow Warbler	SV-o	White-winged Crossbill	PR-u
Myrtle Warbler	SR-c	Savannah Sparrow	SR-c
Townsend's Warbler	SR-o	Slate-colored Junco	SR-a
Blackpoll Warbler	SR-o	Oregon Junco	SV-o
Northern Waterthrush (Grinnell's)	SR-c	Tree Sparrow	SR-c
Wilson's Warbler (N. Pileolated)	SR-c	White-crowned Sparrow	SR-a
Rusty Blackbird	SR-u	Golden-crowned Sparrow	SR-c
Brewer's Blackbird	AV-u	Fox Sparrow	SR-u
Pine Grosbeak	PR-c	Lincoln's Sparrow	SV-o
Gray-crowned Rosy Finch	PR-o	Song Sparrow	SR-c
Hoary Redpoll	PR-a	Lapland Longspur (Alaska)	SR-c
Common Redpoll	PR-a	Snow Bunting	PR-a

NOTES

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