

BRANCH OF WILDLIFE REFUGES

NARRATIVE REPORT

ROUTING SLIP

DATE May 15, 1952

~~Mr. Salter~~ *JCSH*

~~Mr. DuMont~~ *PAJ*

~~Mr. Krummel~~ *WK*

~~Miss Baum~~

SECTION OF OPERATIONS:

~~Mr. Bell~~

Dr. Morley

~~Mr. Hogan~~

SECTION OF HABITAT IMPROVEMENT:

Mr. Griffith

Mr. Kutichek

~~Mr. Bourn~~ *WSB*

Mr. Stiles

SECTION OF LAND MANAGEMENT:

Mr. Ackerknecht

Mr. Davis

STENOGRAPHERS:

REFUGE

Seney

PERIOD

January-April, 1952

SENEY NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

January 1, 1952 to April 30, 1952

UNITED STATES DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

GERMFASK, MICHIGAN

SENEY NATIONAL WILDLIFE REFUGE

LIST OF PERSONNEL

January 1, 1952 to April 30, 1952

<u>NAME</u>	<u>TITLE</u>
C. J. Henry	Refuge Manager
Edward J. Smith	Biologist
(Vacant)	Refuge Manager (trainee)
John H. Nowak	Refuge Clerk
Harvey C. Saunders	Forestry Aid
Clarence W. Nelson	Maintenance Supervisor
George Orlich	Refuge Mechanic
William G. Anderson	Maintenance Man (Gen)
Axel N. Mortensen	Maintenance Man (Gen)

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Seney National Wildlife Refuge

Narrative Report

January 1, 1952 to April 30, 1952

I. ~~GENERAL~~

A. Weather Conditions

Climatological data for the above indicated period is as follows:

<u>MONTH</u>	<u>SNOWFALL</u>	<u>PRECIPITATION</u>	<u>MAX TEMP</u>	<u>MIN TEMP</u>
January	29.5	2.53	39	-6
February	9.5	.54	38	-10
March	19.6	2.69	47	-12
April	7.3	1.93	79	14
	65.9	7.69	79	-12

The weather for the pe riod can be classed as excellent. This is in rather sharp contrast to the preceding pe riod which produced some rugged weather and excessive precipitation.

On the 13th of April we had one of the worst snowstorm of the winter (which indidentally coincided with the peak of the spring flood). This was the last precipitation of the month, and the weather during the last 17 days of the month was perfect. April actually ended with drought conditions and severe fire hazard.

In spite of the pleasant weather during this pe riod, the total winters snowfall amounted to 137.2 inches which is only three inches less than last year when we felt quite abused. The station "normal" is 109.5 inches. Maximum snow depth for the winter was 28 inches, reached on March 22nd. The last of the snow recorded at the weather station was on April 23rd. The last of the ice on the pools disappeared on April 21st.

COMPARATIVE DATE - FIVE YEAR PERIOD

<u>MONTH</u>	<u>MEAN MAXIMUM</u>	<u>MEAN MINIMUM</u>
January	27.0	12.4
February	30.5	12.3
March	34.2	15.7
April	55.8	31.5

A comparison of the above will show that January, February and April were unusually warm, while march was about average.

B. Water Conditions

The spring flood was moderate and failed to give us any bad moments or damage to structures. The April drought caused the flow to drop off very rapidly.

Unit I

All pools in Unit I in satisfactory condition and at approximately approved levels with the exception of E which is being reduced to facilitate construction.

Unit II

All pools in satisfactory condition. It is planned to circulate more water thru T pool than has been done in the past in an attempt to clear up the deep humus stain.

Unit III

The usual overwhelming crush of flood-water from the Walsh, the Marsh and the Ducey failed to materialize. There was plenty of water to bring the levels up to any desired level -- they were held at 1036.0 (one foot below crest), however, due to the condition of the dike and for biological objectives the matter was covered by letter and request made to hold at that level pending further investigations.

C. Fires

No fires occurred in spite of a very high fire hazard during the last part of April.

II. WILDLIFE

A. Migratory Birds

1. Population and Behavior

Waterfowl

With minor exceptions the numbers of spring migrants using the Seney Refuge this period were as great or greater than for the same period last year. Canada geese, first arriving on March 12, are back in slightly better numbers than last year. Other slight increases were observed for blacks, ring-necked ducks and buffleheads. Those species that showed little change from the previous year include baldpates, green-winged teal, blue-winged teal, wood ducks,

scaup, goldeneyes and mergansers. An apparent decrease in numbers was noted for the mallard and pintail. Birds that did not make an appearance for this periods inventory include the whistling swan, and the snow goose. Their numbers were never great but a few have almost always been seen in previous spring migrations. Only one blue goose stopped over long enough to be recorded this year.

The pattern of spring migration was characterized by a gradual influx beginning in March and punctuated by three small peaks in April. From the middle to the end of March only three species, the Canada goose, the black duck and the goldeneye, had made an appearance. From April 1 thru the 9th a general influx of these species was observed and many new arrivals such as the mallard, pintail, green-winged teal, wood duck, ring-necked duck, bufflehead and the mergansers made their presence known. Populations then became rather static for a short period. After the Easter snow storm another wave of migrants began pouring in on the 15th and dropped off sharply after the 17th. By this time peak concentrations had been reached for all species that had previously made an appearance. Later in the month of April another small influx reflected the arrival of such late comers as the baldpate, blue-winged teal and the scaup. Peak numbers for these species have been recorded for the end of the month, but, since the time of migration laps over into the next reporting pe riod, the complete picture of their population status cannot be derived yet.

A goose nesting survey of the same three pools in Unit I was again conducted on the ground this year. All islands in I, J and G pools were covered. Repeating the survey on the same dates as last year (April 24-28) disclosed a total of 44 nests in 1952 as compared with 41 nests in 1951. All nests with the exception of two were under incubation at the time of investigation. Clutch size averaged 5.2 eggs per nest in 1952 as compared with 5.8 eggs per nest in 1951.

To derive an estimate of the total nesting goose population for the entire refuge a simple proportional equation based on last year's combined aerial and ground censuses was used. The following illustrates our computations:

	<u>1951</u>	<u>1952</u>
Ground Survey (I, J & G Pools	41 nests	44 nests
Total Nesting Population (Canada goose pairs)	*225 pair	X pair

*Total population based on combined aerial and ground coverage in 1951.

In 1951 the combined ground count and aerial observation determined the total nesting population of canada geese to be 225 pairs. By simple proportion, in a ratio of sample to

whole, we arrive at a figure of 241 or to put it in round numbers, 240 nesting pairs estimated for 1952.

A follow-up survey of the 44 nests will be taken about the middle of May to determine fate or hatching success. First goslings are predicted to appear about May 13.

Shore Birds

Wilson's snipe, greater yellowlegs and the killdeer, the three most common shorebirds on the refuge, are the only ones recorded to date. The jacksnipe have been observed in all parts of the refuge and seem to be present in greater numbers than in the previous year.

Food and Cover

Burning of the brush piles on the cleared islands in I, J and G pools was accomplished last fall. At the time of the nesting survey this spring the new green vegetation had still not replaced the charred areas of the burn. Even though the overall number of nesting pairs was greater this year, it appeared that nesting was somewhat reduced from the full potential because of the lack of herbaceous vegetation on the burned over areas. By next spring this situation should be remedied.

Small scale experiments using chemical sprays on the encroaching alder and willow vegetation will be undertaken in May to determine the effects and feasibility of chemical control over woody plants.

B. Upland Game Birds

1. Population and Behavior

Several early morning sessions with the State Conservation observer were made this spring to check sharp-tail grouse and Prairie chicken dancing grounds. From these observations it appears that sharptail populations remain at high status, but prairie chickens are gradually becoming more scarce. Only four chickens were sighted this year and only two booming grounds were found active.

Ruffed grouse have been heard and seen often enough to indicate they are still present in good numbers. The Spruce grouse, on the other hand, is still a rather rare bird.

Sandhill Cranes ARE SEEMINGLY ON THE INCREASE. More frequent sight observations this year by all refuge personnel during the last month lead to the above conclusion. Woodcock exhibit little change in number. Only occasional records of this bird have been noted this spring.

2. Food and Cover

Ample food is present for all upland species throughout their respective habitats. Cover for the woodland and marsh species is adequate. However, the open upland areas frequented by the sharptail grouse and prairie chicken are gradually diminishing under the pressure of encroaching willow, aspen and other woody vegetation. State officials say they will burn this coming fall if the opportunity and weather conditions permit. Since the refuge is also interested in establishing a burn on these boundary uplands, we shall cooperate in this measure to the fullest extent possible. However controlled burning, like deer management, is still very unpopular in Michigan.

C. Big Game Animals

Deer were first observed out of their yards and up on refuge dikes by April 15.

Since most of the refuge herd winters over in the Blaney Park cedar swamps, a visit was made there on March 14 to check on the animal and yard condition. Cedar logging operations which have sustained the deer in this yard in past years had been moved to another location some seven miles to the east. As predicted in previous reports the starvation loss which would occur because of the cessation in cedar cutting operations within the yard had begun to take its toll. Several starved fawns were found dead in their beds. Those deer still alive appeared to be nothing more than walking skeletons of hide and bones. The browse line on balsam was also indicative of precarious conditions. Several photos in this report illustrate the overbrowsed condition. Later in the month State Biologists checked the yard and estimated one dead deer for every eleven acres. Final tabulation on the deer losses have not yet been published.

A special hunting season on antlerless deer which would help alleviate the problem was prescribed by Michigan Conservation Officials for this area during the coming fall. Again this recommendation was turned down by the State Legislature. Which August body is obviously infinitely more interested in politics than in intelligent management of the deer herd.

No sign of bear has been observed for this reporting period.

D. Fur Animals, Predators, Rodents and Others

A beaver season was opened on the refuge again this spring for a period of 11 days beginning on March 27 and ending April 8. This coincided with the season set by the State of Michigan for most of the Upper Peninsula. Refuge trappers harvested only 29 beaver and no otter. The taking of otter was not

permitted. A short early season was blamed for the small catch. Also the low price of pelts gave little incentive for expending much effort.

Coyote sign was observed more frequently this spring in many of the remote sections of the refuge. During the latter part of March and early April the heavy traffic of these animals along the dikes and ditch banks was very much in evidence. It is our impression that they have increased in numbers over last year's estimates. One coyote was trapped in the goose pen by refuge maintenance men.

Many of the smaller rodents are believed to have reached peak numbers, particularly the field mice. Woodchucks and red squirrels seem quite plentiful also. Porcupine were observed occasionally in pine stands along main refuge trails.

Snowshoe rabbits are still holding at a fairly high level of abundance.

The NR-4 forms in the back of this report contain the current population estimates regarding all animals under this category.

E. Predaceous Birds, Including Crows, Ravens, etc.

Crows were among the first of the early spring migrants to appear. Their numbers seem greater than in past years. Bald eagles were observed as winter residents throughout the period within the near vicinity of the refuge. A pair of eagles are active around the nest at M-2 pool. The raven population drops off considerably as soon as spring arrives. During the winter months ravens are a common refuge bird. One snowy owl was observed regularly along the Diversion ditch throughout the month of February by the Cusino Biologists. Great horned owls were observed on occasion and frequently heard near headquarters and along the Manistique River. Marsh hawks were first sighted on March 29 and are now present in fair numbers. The usual influx of sparrow hawks came through the 1st week of April. A few rough legged hawks arrived with the wave of other migrant species during the same week.

R. Fish

No winter kill of fish was evident at all this year. Since the circulation of waters throughout the pool system during winter months has been practiced, the winter fish kill has been avoided. Northern pike, perch, suckers and bullheads were observed in abundance in many of the spillway control structures and flooded shallows during the spring spawning season

III. REFUGE DEVELOPMENT & MAINTENANCE

A. Physical Development

Gravel Hauling

As soon as road conditions permitted the repairs and improvements to dikes and roads was resumed. The balance of the crushed gravel held in stock pile over the winter totaling about 1200 yards was used. Most of this was placed on the main trunk line between Units I and II; this is the road that receives great abuse each November by the deer hunters. Considerable spot patching was also accomplished on the main dike roads. We are now hauling pit run gravel in continuation of improvement of the refuge dikes.

Bridge Repairs

In continuation of the repairs or replacement of bridges, the bridge across the F to E structure was re-decked and creosoted. The bridge across the J to H structure had the deck removed only to find that the untreated timbers were also in bad shape. These consist of 40 - 10 X 12" timbers, 12 ft. long. As it is practically impossible to purchase members of such size, at least at reasonable cost, it was necessary to "hot-log" enough pine to cut out the required timbers. These are being thoroughly treated with creosote because of their green condition; they will also be protected by a cover of heavy roofing material to keep them dry. This bridge is 110 feet long.

Island Clearing

A crew of two temporary laborers assisted Mr. Anderson in clearing off the islands in D pool. Due to an extraordinarily heavy stand this was probably the worst pool in the refuge. All funds allotted for the current fiscal year under this project have been expended.

Painting

A considerable number of signs such as are used in marking and instructing in connection with the fishing area, deer hunting, etc. were repainted. Some new signs were also made. A large refuge sign was painted and erected on the NW corner of the refuge, a point previously without such a sign.

Equipment Repairs

These repairs were a major item this period when outdoor working conditions were impractical until mid-April. Considerable time and effort was put into the putting of the dump trucks into shape for this year's work. One of the Cletracs had a complete major overhaul including painting. The Novo and Barnes pumps also received "majors". The Lima dragline was unloaded and a start made on making repairs. The 1948 International pickup was completely overhauled. Most of the other vehicles received some attention.

Two units, the 1939 Dodge dump and the 1940 Ford pickup were sold. Replacements were received, which included a GMC dump truck and a Ford pickup. Both are excellent units and are greatly appreciated.

Trips during the period included a meeting at Higgins Lake, attended by Refuge Manager Henry and Biologist Smith; a trip to Pontiac, Michigan by Mechanic Orlich; a trip to Chicago, Ill. by Maintenance Man Mortensen to pickup the GMC and Ford. A trip was also made to the Horicon Refuge by Biologist Smith to pick up a truckload of materials transferred from the Crab-Orchard Refuge

A considerable amount of time was expended in writings in addition to the regular routine reports.

Checking and handling of the spring flood also required the usual diligent attention. Several beaver dams were removed with dynamite.

Under miscellaneous a considerable amount of work was accomplished to facilitate operations when weather conditions were favorable. These included construction of new sawhorses, sharpening and repairs to tools, repainting boats and revising facilities in shops. Other activities included blacksmithing, plumbing repairs, snow removal, hauling wood, stoking fires, scaling timber and marking trees for selective cutting.

IV. ECONOMIC USE OF THE REFUGE

- A. Grazing - none
- B. Haying - none
- C. Fur Harvest

An eleven day beaver and otter season from March 27 to April 8 was permitted by the State of Michigan in the Upper Peninsula this year. Limits allowed six beaver and three otter per trapper. The refuge was opened for beaver, but not otter, on a 50-50 share trapping basis. Otter numbers on the refuge were believed too few to justify a take. Six permits garnered a total of 29 beaver.

Many trappers refused to trap at all this season because the price of pelts did not justify the efforts. Prices paid locally for beaver were much lower than last year. Blanket beaver brought \$20.00, extra large \$18.00, large \$15.00, medium \$8.00 to \$10.00 and small \$6.00. In addition to his license each trapper had to pay a tagging fee of \$2.00 to the state for each pelt.

The refuge share of beaver has not yet been sold on auction, therefore no comparison of local prices with auction prices can be made at this time.

Muskrat and mink pelts harvested on the refuge in November 1951 have now been sold and prices received as follows:

316 muskrat	427.30
41 mink	<u>829.50</u>
	1266.80
Less auction fee	<u>25.34</u>
	<u>\$1241.46</u>

Prices paid by local fur buyers were \$26.00 for male mink, \$18.00 for female mink and \$1.60 for muskrat. The refuge share contained 26 male and 15 female mink pelts and 316 muskrat. Had the Government share been sold locally a sum of \$210.14 would have been gained over the auction price. Year after year it is the same old story -- a loss for the Government. We shall continue to report this situation with the hope that it may someday be investigated.

D. Timber Removal

Logging conditions during the period on the refuge from a weather standpoint could be considered as only fair. Intermittent and early thaws would not allow complete operations on some tracts. Then to add to the confusion the pulp mills found themselves over stocked and in March placed an embargo on jackpine. What jackpine the operator's had cut and banked on the refuge after that date had no market. The embargo is not expected to be lifted until early next fall. Consequently pulp operations are now at a dead standstill.

Of the ten permits on file during the period two were completed, three were in actual operation and five were inactive due to market conditions or operating difficulties.

Operations from January to April removed 932.69 cords of pulpwood for an income of \$4909.54 to the refuge.

E. Other Uses

Other sources of income received this period were from the sale of surplus property and the rental of lands.

<u>Property No.</u>	<u>Item</u>	<u>Amount</u>
330326	Ford pickup, 1940	260.00
330314	Dodge dump, 1939	226.50
	Rental of land for sawmill site	<u>100.00</u>
		<u>\$586.50</u>

Total revenue derived from the sale of all refuge products covered by this section is as follows:

Fall fur harvest.	\$2141.46
Timber Removal.	4909.54
Other Uses.	<u>586.50</u>
	\$6737.50

V. FIELD INVESTIGATION OR APPLIED RESEARCH

Time was taken during the winter months to write up the 1951 aquatic plant inventory report. Included with the data collected during the last summer is the history of development and water management in each pool and a section on conclusions and management suggestions for the twenty refuge impoundments. All that remains to be done to achieve completion of this work is the typing of the report. Sympathy cards for the Clerk are in order.

Canada goose nesting surveys were again conducted on I, J. and G pools of Unit I. The purpose of this annual survey is to provide some of the information links to derive goose production figures and to check on utilization of the cleared islands with respect to habitat improvement.

Refuge sharp-tail dancing grounds and prairie chicken booming grounds were again censused and checked for activity by the State Conservation Department this year. Mr. Raymond E. Reilly, last year's Seney Student Assistant was appointed for the work because of his previous knowledge of the area. Working from April 25 to May 3 he was able to check all known grounds and uncovered several new ones except those situated near the inaccessible portions of the Walsh Ditch. Details concerning his observations are pending submission of his report.

VI. PUBLIC RELATIONS

A. Recreational Uses

None during the period unless beaver trapping might be thus classified (Prices were so low that the few trappers that turned out did it mainly for recreation!)

B. Refuge Visitors

Earnest Reucker, Dist. Conservation Supervisor, courtesy call, January 3.

Leland Anderson, District Fisheries Biologist, courtesy call January 30.

Ranger Crooks and Dist. Supv. St. Amant, U. S. Forest Service, discussions on fire-fighting cooperation, March 18.

Geo. T. Hurley, Dep. Warden in Charge, Prison Camps in the Upper Peninsula, April 3.

Geo. T. Hurley and Hubbard, Chief Engineer, Marquette State Prison, April 8.

O. McNaughton and party, Marquette Normal, bird study and photography, April 30.

R. E. Rielly, Upland Game Survey for Conservation Department, 1 week.

Wahlstrom and Peters, State Game Wardens, numerous visits concerning trapping, protection, etc.

C. Refuge Participation

On March 5 and 6, Refuge Manager Henry and Refuge Biologist Smith attended the Conservation Department meeting at Higgins Lake. In addition to the Michigan Conservation Dept. representatives, the meeting also included the Forest Service the Soil Conservation Service and the above noted Seney personnel. This was an exceedingly profitable meeting.

D. Fishing - none

E. Hunting - none

F. Violations - none

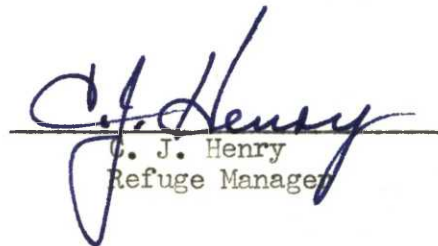
VII. OTHER ITEMS

A. Credits

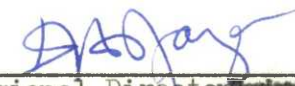
Sections I, III, VI and VII of this Narrative were prepared by Refuge Manager Henry and Sections II, IV, V by Biologist Smith.

B. Photographs

Some pictures portraying aspects and activities of the refuge were produced by Refuge Manager Henry and Biologist Smith and are herewith presented in the back of this report.


C. J. Henry
Refuge Manager

January 8, 1952


Regional Director

MAY 12 1952

WATERFOWL

Refuge Seney Months of January to April 19452

(1) Species Common Name	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u> Whistling swan									
II. <u>Geese:</u> Canada goose	2	3/12	1800	4/17					4000
Cackling goose									
Brant									
White-fronted goose									
Snow goose									
Blue goose	1	4/8			1	4/11			
III. <u>Ducks:</u> Mallard	2	4/1	400	4/15					800
Black duck	2	3/21	1500	4/9					3500
Gadwall									
Baldpate	2	4/21	200	4/30					400
Pintail	5	4/9	50	4/11					100
Green-winged teal	2	4/8	100	4/17					200
Blue-winged teal	3	4/21	50	4/30					100
Cinnamon teal									
Shoveller									
Wood duck	3	4/9	50	4/30					50
Redhead									
Ring-necked duck	1	4/8	300	4/15					500
Canvas-back									
Scaup	3	4/21	50	4/30					100
Golden-eye	5	3/10	250	4/9					450
Buffle-head	2	4/8	200	4/17					300
Ruddy duck									
IV. <u>Coots:</u> American Merganser	3	4/1	300	4/15					350
Hooded Merganser	4	4/2	200	4/17					250

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 11,100

Peak waterfowl numbers 5,450

Areas used by concentrations All pools in Units I, II and III, beaver ponds and seepages

Principal nesting areas this season Brushed off islands

Reported by _____

INSTRUCTIONS

- (1) **Species:** In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) **First Seen:** The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) **Peak Concentration:** The greatest number of the species present in a limited interval of time.
- (4) **Last Seen:** The last refuge record for the species during the season concerned in the reporting period.
- (5) **Young Produced:** Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) **Total:** Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

3-1751
Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Sagey

Months of January to April 19452

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Sandhill Crane	2	4/9								
Pied-billed Grebe	1	4/16								
Great Blue Heron	1	3/28								
American Bittern	1	4/24								
Common Loon	1	4/18								

II. Shorebirds, Gulls and

Terns:

Wilson's Snipe	3	4/12
Greater yellowlegs	2	4/23
Killdeer	1	4/21
Herring Gull	25	3/20
Ring-billed Gull	10	3/30

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove					
IV. <u>Predaceous Birds:</u> Golden eagle Duck hawk Horned owl Magpie Raven Crow Bald eagle Rough legged hawk Marsh Hawk Sparrow hawk Red tailed hawk Osprey	Resident Resident 1 3/13 2 4/1 3 4/9 1 3/29 1 4/1 1 4/18 1 4/20	400 12 10 20 25	4/15 4/21 4/21 4/15 4/21 1 4/18 1 4/20		
Reported by.....					

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.

Months of **January** to **April**, 194**52**.

*Population status more clearly defined pending completion of dancing, booming and singing ground surveys.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1754
Form NR-4
(June 1945)

SMALL MAMMALS

Refuge Seney

Year ending April 30, 1952

(1) *Species	(2) Density		(3) Removals					(4) Disposition of Furs					(5) Total Popula- tion		
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re- stocking	For Re- search	Share Trapping			Total Refuge Furs Shipped	Furs Donated	Furs Destroyed		
								Permit Number	Trappers Share	Refuge share					
Muskrat	10,000	11													
								5627	22	23					
								5628	34	34					
								5629	21	20					
								5630	28½	28½					
								5631	58	58					
								5632	108	108					
								5633	29	30					
								5635	15	15					
									315½	316½	316				
Mink	20,000	100		83				5627	3	3					
								5628	4	4					
								5629	4	4					
								5630	6½	6½					
								5631	11	11					
								5632	6	6					
								5633	3	2					
								5635	4	5					
									41½	41½	41				
* List removals by Predator Animal Hunter															

* List removals by Predator Animal Hunter

REMARKS: * One muskrat and one mink sold by Ed Kelly permit No. 5630, half price given to the Government, (Government share \$13.80). Permit No. 5634 cancelled.

Reported by _____

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

- (1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)
- (2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headings listed.
- (4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
- (5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.
- REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

3-1754
Form NR-4
(June 1945)

SMALL MAMMALS

Refuge Soney

Year ending April 30, 1952

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs					(5) Total Popula- tion	
Common Name	Cover Types & Total	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re- stocking	For Re- search	Share Trapping			Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	
	Acreeage of Habitat							Permit Number	Trappers Share	Refuge share				
Rassoon	12,000	260	7	3				5630 5632 5633 5635	3 1 2 1	*				75
Weasel	50,000	50	1					5638	1	*				1000
Common Skunk	12,000	120	1	6				5635	1	*				100
Coyote					26									100
Red Fox					1									50
Bob Cat					1									25
* List removals by Predator Animal Hunter														

* List removals by Predator Animal Hunter

REMARKS: These animals are disposed of on a trapper take all basis.

Reported by _____

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

- (1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)
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3-1754
Form NR-4
(June 1945)

SMALL MAMMALS

Refuge Seney

Year ending April 30, 1952

(1) Species	(2) Density	(3) Removals	(4) Disposition of Furs							(5) Total Popula- tion			
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re- stocking	For Re- search	Share Trapping		Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	
								Permit Number	Trappers Share				Refuge share
Beaver	21,000	30		29				5637	2	3	15		700
								5640	2	3			
								5642	4	4			
								5643	2	2			
								5645	1½	1½*			
								5646	2	2			
Otter	12,000	150						13½	15½			80	

* List removals by Predator Animal Hunter

* List removals by Predator Animal Hunter

REMARKS: * One beaver sold by Frank Short permit No. 5645, one-half price to Government.
(Government share \$10.00.)

Reported by _____

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

(1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)

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(5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.



A sample of the thousands of deer that die of
starvation each winter because the Michigan
Legislature refuses to let the Conservation
Department manage the deer herd.

RL05-1

by Ed Smith



Photo showing the browse-line in the Blaney yard;
note that most of the trees here are balsam.

not in refuge

R105-2

Ed Smith



Deer-yard trail and over-browsed balsam.
Blaney yard, March 1952.
R105-3

Ed Smith

Not in refuge



Maple reproduction , Blaney yard.

R105-4

Ed Smith

Not a refuge



Birch Reproduction

R-105-5

Ed Smith

not in refuge



Unthrifty balsam as a result of deer browsing;
note that large thrifty balsam in background is
also browsed as high as the animals can reach.

R 105-6

Ed Smith

not made

The following two pictures show views of the mill
operated under permit on the refuge at the Walsh
Siding.

R 105- 7 & 8

Ed Smith





The use of the power-saw has greatly accelerated timber harvesting operations with the final result longer periods of unemployment for the cutters.

R 105-9

Ed Smith

After the pulpwood is cut into "sticks" it is skidded to the access roads where it is later loaded into trucks. The smaller operators often cannot afford tractors to do the skidding.

R 105-10

Ed Smith

A typical pulp-wood cutters shack; the cutters, or in fact all residents of the upper peninsula, are often referred to as "jack-pine savages"

R 105-11

C. J. Henry.



Jobber cutting and peeling cedar posts for the
Horicon Refuge

R 105-12

C. J. Henry

Peat "boulders" in the Walsh below C-3; this illustrates the cutting back of the stream resulting in the loss of excellent waterfowl marsh. The only solution is a series of substantial channel plugs to kkep the stream out of the channel. The natural tendency of the stream is to meander through marshes and it is only by virtue of a man-made drainage ditch that the stream ever started cutting.

R 105-13

C. J. Henry



The "Sno-Cat" used by the Michigan Conservation
Department in winter game studies.

R 105-14

Ed Smith

A sharp-tailed grouse trapping and banding site
operated on the refuge by the Michigan Conservation
Department. This is on a dancing ground

R 105-15

Ed Smith





Otter tracks in the snow.

R 105-16

Ed Smith



Pileated woodpecker workings in a defective
hard maple.

R 105-17

C. J. Henry

Gulls on an off-shore island in Lake Michigan.
There are tremendous nesting populations on these
islands including several species of ducks.

R 105-18

C. J. Henry

