

ROUTING SLIP

BRANCH OF WILDLIFE REFUGES

DATE: MAY 21 1961

MR. SALYER _____

MR. KRUMMES _____

MR. DUMONT PHD _____

MISS BAUM _____

SECTION OF HABITAT IMPROVEMENT:

MR. GRIFFITH REG _____

DR. FOURN WSR _____

SECTION OF OPERATIONS:

MR. BALL _____

MR. REGAN _____

DR. MORLEY _____

SECTION OF LAND MANAGEMENT:

MR. ACKERKNECHT _____

as

STENOGRAPHERS:

NARATIVE REPORT

REFUGE: MISSISQUOI

PERIOD: JANUARY-APRIL, 1951

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MISSISQUOI NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

JANUARY, FEBRUARY, MARCH, AND APRIL, 1951

I. GENERAL

A. Weather Conditions

The data in the following table was supplied through the courtesy of the U. S. Weather Bureau Station at Burlington, Vermont. This station is located about 40 miles south of the Refuge. As the monthly reports are received too late for inclusion of the last month, the data is generally included in the next report.

	Precipitation		Snowfall		Temperatures			
	Total	Normal	Total	Normal	Max.	Min.	Mean	Normal
Dec.	4.10	1.88	10.9	12.2	57	-8	24.6	24.4
Jan.	1.72	1.76	12.6	14.8	52	-13	22.3	18.8
Feb.	3.69	1.57	12.2	14.0	46	-21	22.5	19.4
Mar.	2.57	2.04	7.0	13.6	61	15	32.5	29.1
Totals	12.08	7.25	42.7	54.6	Ave. 54	-6.75	25.47	22.9

Temperatures averaged above normal for the period, resulting in more than the usual amount of rainfall and less than normal snowfall. A few short periods of excessively low temperatures when there was little snow coverage, resulted in more than the average thickness of ice for the past two years.

B. Water Conditions

Mild wet weather the latter part of February and most of the month of March, rotted the ice quite early this season, with the result that several ice fishermen fell through the ice at times when it is usually quite safe. Considerable leaching, caused by thawing and rain, rotted the ice from top and bottom as well.

The ice went out of the river on March 30th and 31st, but as the ice had rotted mostly before this time, there were not the jams and the grinding of the banks as is the usual thing. The water didn't rise much until most of the ice had cleared. On April 14th the ice was still jamming the mouth of the river.

Almost constant daily rains beginning about the 1st of April and continuing until about the third week, caused excessively high waters, flooding all of the woodlands and most of the meadows. As of this writing, about 40% of our meadows are still under water, mostly the portions away from the river and adjacent to the marshes.

To date the water gauges haven't been re-set at the mouth of the Missisquoi River and at Big Marsh Slough, due to the press of other duties.

C. Fires

No fires occurred on or adjacent to the refuge during the period. During the greater portion of the period, the refuge is covered with snow and ice, and after the spring break-up, everything is under water. The only hazard at this time of the year is a building fire, which is greatly reduced because of the personnel limitations.

II. WILDLIFE

A. Migratory Birds

1. Populations and Behavior

a. Waterfowl - The first arrivals this year were the geese, both Canada~~x~~ and Snow. These weren't on the refuge proper, but were seen in the vicinity. The first duck arrivals were represented by several small flocks of American and Hooded Mergansers, and a small flock of American Golden-eyes. These are the usual first arrivals, who show up here as soon as there is any open water at all.

It is probable that the high water this year, flooding woods, meadows, etc, is a partial cause for the apparent lack of the usual numbers of waterfowl. Practically the whole delta is under water, affording ideal conditions for ducks most everywhere. As a result, they are spread over more territory than is the usual thing, and consequently appear to be down in population. The other reason is that the previous manager had other pressing business at hand about the time of the heaviest migration, occasioned by his proposed transfer, and a trip to the southern part of the region.

The present population of breeding pairs seems to about equal that of past years. A black duck nest was found on May 1st that contained 7 eggs. This was located on top of a rotting stump about 2 feet above the water. There is a real lack of nesting habitat on the refuge at this date, because of high water conditions, forcing most of the early nesters to resort to hay and agricultural fields where their nests are in constant danger from farming activities. The development of nesting islands throughout the marsh area, to coincide with other development projects, would alleviate much of the early nesting problem here.

Nearby agricultural fields have been utilized extensively by migrant geese this spring. This is most unusual, as it is the usual thing for the geese to just stop off for a time in the lake, and then pass on to the northern areas in Canada. It is also noteworthy that local residents have seen flocks of black ducks feeding in the fields this spring, a thing that has never occurred in this locality before, in fact it has been intimated that the manager didn't know his ducks when he has stated that he has seen black ducks feeding in grain fields in other localities. These ducks were feeding on ladino clover. The geese fed in the same fields. Last fall was the first time that geese had fed in grain fields locally, and it has caused quite a stir amongst the local gunners and other residents.

b. Other Waterbirds - Great Blue Herons and American Bitterns are the only birds in this category which have been seen this spring. A few Herring Gulls have been seen on the river and bay. Personnel changes have prevented any amount of time being spent in observations during the height of the migration.

c. Shore Birds - The usual census of Woodcock singing grounds has been started, but results are not as yet apparent. The wetter than usual spring may have some bearing on this check.

2. Food and Cover

The more complete water coverage of woodland and meadows this year, made many more acres available as feeding grounds for the puddle ducks. It is not apparent yet whether or not the buckwheat fields left standing last fall, have provided much additional feed for spring migrants. Much of this area is still under considerable water, and a goodly portion of the buckwheat was consumed by deer during the winter months. It may be that the current of water which flowed over these fields during the early spring, has washed away a considerable portion of the seed. Further study of these areas will be necessary before any conclusions can be drawn.

With water coverage in wooded and brushy sections, cover is adequate at this time of the year, although leaf growth has barely started.

B. Upland Game Birds

It is thought that at least 4 ruffed grouse wintered on the refuge this season, but these birds will never be very plentiful here because of the lack of winter cover and the fact that much of the area is under water during the spring season. Acquisition of additional lands last summer provides us with more acreage of a type suitable for grouse. The two additional birds this year, were observed on this tract.

C. Big Game Animals

The usual number of White Tailed Deer are present this year as in the past. They are confined to a smaller acreage this year however on account of the extra high water. Feed is plentiful in the form of browse, but winter cover is lacking on the refuge proper. The deer herd made use of the buckwheat fields which were left standing last fall.

D. Fur Animals, Predators, and Other Mammals

1. Fur Animals

The muskrat spent a good winter with adequate water coverage of marshes, and was not forced off the feed beds by low water, as they were the previous year. The ice was thick this winter but the condition of rats which were caught locally this spring would indicate that they spent a good winter, being in good flesh.

Fluctuating water levels this spring made it hard on trappers, with the result that a good breeding stock is left. Shooting of 'rats as allowed for ten days by state law, was generally poor after the first few days. High water was a blessing to the muskrat population this winter and spring, which hadn't made a very good come-back after several low water seasons.

A pair of beaver that have moved in on Metcalf Island (adjacent to the refuge), did some cutting of poplars on Shad Island. It is rumored that one of them was shot during the winter season or this spring. It may be that these animals will be attracted to our impoundment area after water levels are stabilized.

The usual few skunks are seen occasionally foraging for food about the meadows. The weasels and mink are known to be present by signs only. No otter have been seen this period.

2. Predators

The raccoon is the most serious predator at the time of this writing, being out prowling the water edges. They are more adept at nest finding than the writer, being constantly hunting to fill in the lean places after their semi-hibernation. Their tracks are seen everywhere along the wet, muddy shorelines. It has been reported that several dead 'coons have been found locally. Perhaps this is caused by the same disease or parasite that accounted for numerous 'coons in Delaware this past winter.

Foxes "enjoyed" a lean season this winter as far as muskrat hunting was concerned. The adequate depth of water over the feeding grounds cancelled the necessity for 'rats to forage on the ice as they have had to do in several recent winters. The ice coverage in the winter allows the fox to range at will over any portion of the refuge.

There was some indication of dogs running deer on the refuge again this winter. This same condition has been noted in the past on several occasions. Some of these dogs are running foxes, as well as the deer.

3. Other Mammals

About ten pair of grey squirrel are present along the hardwood ridges, where they find ample food in the form of mast and berries to tide them over the winter. There are a lesser number of red squirrels.

All open grassy areas which are above water, have a fairly heavy population of meadow and white-footed mice. During the winter and low water periods of summer, these little buffers move out into the marshes and keep the marsh hawks pretty busy. With expanded farming operations scheduled for the next few years, we may have a problem on our hands in controlling these rodents.

E. Predaceous Birds, including Crows

Crows arrived in their usual numbers at the first hint of spring during late March. They are practically non-existent during the winter months. They are sort of a welcome sight after the dead of winter when all bird life is very scarce, but soon make themselves obnoxious.

Two ospreys were seen on the last day of the reporting period. Undoubtedly other birds of prey were present, but lack of time for observations prevents accurate knowledge of the fact.

F. Fish

There is no fishing being done in refuge waters, but there is considerable activity along these lines immediately ~~the~~ adjacent to refuge boundaries.

Horned pout fishermen are concentrated at Charcoal Creek as in the past, and good catches have been made.

The spawning run of wall-eyed pike is nearly over in the river, but fishermen are meeting with some success at Alburg Bridge. The fishing was average in the river just below the Swanton dam this year, the better fishermen getting some good catches.

The ice fishing during the winter occupied a good many local residents. These fish are sold commercially in this part of the state, and some men spend a good deal of time in their shanties during the cold months. They catch perch and pike mostly.

A few carp have been seen in the flooded meadows adjacent to the river lately. These fish did considerable damage to beds of aquatics along the river and in the bays last year.

Frogging is about over for this year. It is quite an industry locally, many residents gaining a livelihood thereby. Others just get enough for their own use.

III REFUGE DEVELOPMENT, MAINTENANCE

A. Physical Development

The materials which were assembled for construction of a barge during the winter, were fitted together into barge sections in a shop in town, which was rented for the purpose. These were made in sections small enough to be handled in hauling to the refuge in a truck and there assembled into the complete barge. The planking was secured and some of it beveled for the caulking. These sections were completed and hauled to the refuge.

The portable oil shed was completed at the manager's residence and taken to the refuge. It was towed over the road behind the pick-up truck.

The biggest job of the period was the moving of the shop and combined boat house across the river to its new location on tract #9. This had to be done during mid-winter when the ice was thick enough to support the tractor and building. Considerable difficulty

was experienced through lack of traction on the ice with a rubber-tired tractor. A system of blocks and cables had to be rigged in order to gain the necessary power to move the building. After the ice crossing was accomplished, the pick-up truck was also put into service along with the tractor in order to supply the additional power needed to move the building along the meadow to the selected site.

A goose pen was built on field #3 for retention of a decoy flock of geese. These were obtained from the flocks at Bombay Hook Refuge and Blackwater Refuge on April 8th

B. Receipts of Seed

Ten bushels of soybeans and 16 bushels of winter rye was obtained from the Brigantine and Blackwater Refuges on the same trip when the geese were picked up. This will be used for planting agricultural fields on the refuge this spring, and next fall.

IV ECONOMIC USE OF REFUGE

A. Fur Harvest

Due to low populations of muskrat and anticipated future developments, no trapping was done during the period.

B. Timber Removal

The only removal of timber during the period, was in connection with the construction of the barge. Three white oaks were cut for use as timbers and taken to the local saw mill for milling, 560 board feet were obtained.

V FIELD INVESTIGATION OR APPLIED RESEARCH

The annual census of Woodcock, in co-operation with Mr. Mendall of the Maine Co-operative Wildlife Research Unit, has been started, but has not progressed far enough for any tangible results as yet.

The annual census of waterfowl breeding population is about to get under way, and will be reported on in the next Narrative.

VI PUBLIC RELATIONS

A. Recreational Uses

Five free use permits were issued for access to Tract #9, 3 for passage through to private property, one for mooring boat, and one for removal of some old straw. Three free use permits were issued for frogging on Tracts #9 and #13.

B. Refuge Visitors

February 5 - Mr. A. F. Miller, Regional Refuge Supervisor, was at the refuge on official business.

C. Violations

Some trespassing on the refuge was evident during the winter. It was next to impossible to prevent this due to the pressure of other duties.

VII OTHER ITEMS

A. Items of Interest

The present manager arrived for duty on April 23rd, 1951. The previous manager had left for Bombay Hook Refuge several days prior to this date.

This report is, for the most part, prepared from material which was on file here, and from some notes left by the previous manager.

Respectfully submitted,

Ralph H. Minns
Ralph H. Minns, Refuge Manager

May 4, 1951

Approved:

Arthur Imien
Regional Refuge Supervisor

5/7-51
Date

Regional Director

Date

WATER FOWL

REFUGE

Missisquoi

MONTHS OF January

to April

1951

(1) Species	(2) First Migrants Seen		(3) Peak Concentration		(4) Last Migrants Seen		(5) Young Produced		(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
1. <u>Swans:</u> Whistling swan									
2. <u>Geese:</u> Canada goose	10	3/26	2000	4/7-14					2000
Cackling goose									
Brant									
White-fronted goose									
Snow goose	7	3/26	only observation						7
Blue goose									
3. <u>Ducks:</u> Mallard	2	4/7	40	4/25	still here				50
Black Duck	5	3/30	200	4/26	still here				400
Gadwall									
Baldpate									
Pintail									
Green-winged teal	4	4/10	only observation						4
Blue-winged teal									
Cinnamon teal									
Shoveller									
Wood duck	4	4/10	50	4/25	still here				80
Redhead									
Ring-necked duck									
Canvas-back									
Scaup	12	4/30	only observation						12
Golden-eye	20	3/27/51	150	4/10	still here in lesser numbers				200
Buffle-head									
Ruddy duck									
Hooded Merganser	4	3/27/51							4
American Merganser	10	3/27/51	150	4/10	still here				200
4. <u>Coot:</u>									

Form NR-1

4. Coot:

3-1750

(June 1949)

Form NR-1

(over)

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 2800Peak waterfowl numbers 2600Areas used by concentrations Geese at mouth of river and in bay where cleared of ice. Ducks in flooded woods and marsh, and in river as soon as cleared of ice.

Principal nesting areas this season _____

Reported by Ralph H. Mims

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 MassachusettsMonths of Januaryto April194 51

(1) Species Common Name	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total Estimated Number
	Number	Date	Number	Date	Number	Date	Colonies	Total # Nests	Total Young	
I. Water and Marsh Birds:										
Great Blue Heron	1	4/12	12	4/26	still here					15
American Bittern	3	4/27	only observation							6
II. Shorebirds, Gulls and Terns:										
Herring Gull	2	4/25	only observation							2

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove					Form NR-1A (Nov. 1945)
IV. <u>Predaceous Birds:</u> Golden eagle Duck hawk Horned owl Magpie Raven Crow Osprey	Number Colonies	Date	Number Date	Number Date	Common Name
	20	3/26	50	3/27	50
	2	3/30	only observation	4/30	12
Reported by <u>Ralph H. Minne</u>					

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.

Refuge MissisquoiMonths of January

to

April, 1951

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ruffed Grouse	Swamp hwd - 795 Bog brush - 560 Meadow - 100 Upland hwd - 68	381							4	Estimation by previous manager based on observations through- out the winter.

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.

Refuge MisisquoiApril 30, 1951

(1) Species	(2) Density	(3) Removals	(4) Disposition of Fur										(5) Total Popula- tion	
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control	For Re- stocking	For Research	Share Trapping			Total Refuge Furs Shipped	Refuge Income	Furs Donated	Furs Destroyed
								Permit Number	Trappers' Share	Refuge Share				
Maskrat	Entire Refuge (seasonal) *	10		None										180
Beasoon	Swamp hdwd - 795 Bog Brush - 560 Meadow - 100 Upland hdwd - 68	30												50
Red Fox	*Same type as for 'coon during winter & including water areas	150												12
Grey Squirrel	*Swamp hdwd - 795 Upland hdwd - 68	43												20
Skunk	*Same as Squirrel plus 100 acres meadow	40												24
Weasel	Same as for 'coon	152												10
Mink	Entire refuge	900												2

REMARKS: * The entire refuge is used by rats during the spring of the year when practically the entire refuge with the exception of the meadows is inundated. Winter habitat is restricted to the area of water coverage at freeze-up time, generally only 200 to 300 acres.

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. "List of North American Recent Mammals" by G. S. Miller, Jr., a very good reference, is now out of print, although a revision is scheduled for publication in the near future.)
- (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, 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. Also show any removals not falling under heading 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 and the total income to the refuge by species, including share-trapped furs and furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimness 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.