

ROUTING SLIP

DIVISION OF WILDLIFE REFUGES

DATE: 9/20 1945

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Mr. Griffith

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WV 9/27

REMARKS:

Missisquoi

Narrative Report

May-August 1945

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# MISSISQUOI NATIONAL WILDLIFE REFUGE

## NARRATIVE REPORT

MAY, JUNE, JULY and AUGUST, 1946

### I. General

#### A. Weather Conditions

The figures given below were furnished the Missisquoi Refuge through the courtesy of the United States Weather Bureau Station at Burlington, Vermont. This station is located about 40 miles south of the Refuge.

	<u>Rainfall</u>		<u>Snowfall</u>		<u>Temperature</u>			
	Mean	Normal	Mean	Normal	Maximum	Minimum	Mean	Normal
May	5.90	2.85	T	0.1	61.1	43.3	52.2	56.5
June	2.93	3.38			77.1	54.1	65.5	65.7
July	4.57	3.50			80.7	59.2	70.0	70.3
	13.40	9.73						

The four months covered by this report were generally cold and wet. May passed into history as the wettest May on record at the Weather Bureau Station. It rained 24 out of the 31 days of the month, plus snow on the 10th, 11th and 31st. It is also recorded as one of the coldest. The average temperature was 52° or 4.5° lower than normal for the month. Extremes in temperature for May were 86° on the 22nd and 29° on the 12th. A killing frost occurred on May 12th causing untold damage to the fruit and berry crops.

The June weather was close to average. The mean temperature was 65.6° or .1° less than normal and the total precipitation of 2.93 inches was .45 inch less than the established normal for June. No extremes in temperature were recorded. The highest was 92° on the 30th. The prevailing direction of the wind was southerly.

July was about normal for temperature but it was wetter than usual. During the first half of the month 4.06 inches of rain fell which was 2.32 inches more than is normal for the first half of the month. July 25th with a temperature of 88° and 80° of humidity made the heat quite unbearable, as have a number of other days during the period.



Although no official report has been received from the Weather Bureau Station at Burlington, Vermont, the Northfield University Weather Bureau located at Northfield, Vermont reports a close to average in temperature for August. Its average temperature of  $66.5^{\circ}$  was somewhat about the  $63.4^{\circ}$  mean for the last 57 years but it broke no records for the month. August was nearly normal as far as rainfall was concerned, 4.25 inches fell during the month. In Swanton on August 27th the temperature reached  $93^{\circ}$ , a record for this year and on August 30th a very heavy thunderstorm accompanied by very high winds did considerable damage throughout the town. Heavy winds blew during most of the period. The official weather report for the month of August as furnished by the Weather Bureau Station at Burlington, Vermont will be included in the next report in order that the chronological report will be complete.

#### B. Water Conditions

The heavy rainfall during the summer months has accounted for the high water in the River, Creek and Lake. 4.25 inches more of rain fell during this period than is normal. At no time during the season has the water dropped below low water mark. On August 31st the lake level was 2'2" above low water mark.

### II. Wildlife

#### A. Waterbirds.

##### 1. Population and Behavior

##### a. Species

PIED BILLED GREBES. A small number of these birds were seen during the observation period near Martindale's Point.

GREAT BLUE HERON. The rookery of the Great Blue Heron on Shad Island was visited several times during the nesting period. There was a slight increase in the number of nests located this year over last year. The Heron apparently nested earlier this year and on a visit to Shad Island on July 4th it was found that most of the young had left the nests. Two nests in adjoining trees contained 7 young standing on the edges of the nest and nearly branches. These birds appeared to be about ready to fly. The Heron were present in good numbers on all parts of the refuge. The greatest number seen on any one day being 14 on August 7th.

AMERICAN BITTERN. The Bittern could be heard "pumping" well back in the marshes during the first part of the observation period but it was not until May 16th that any were seen and on that date 6 were noted at various places during a patrol of the refuge.



Their number appear to be about the same as last year. No data is available on the nesting period or young produced of these birds. However it is thought they nest on the Refuge as one young Bittern about half grown was seen on August 8th along the south boundary meadow.

MALLARDS. About 25 Mallards were noted for the first time on August 31st along the south boundary shore line. These were among a small flock of Black Ducks.

BLACK DUCKS. A small flock of Black Ducks remained on the Refuge for breeding purposes; but the majority use the refuge only as a feeding ground and sanctuary during the latter part of the summer. From observations made on a patrol of the refuge on July 27th it was apparent that the migration of Black Ducks had begun to the refuge and vicinity.

The extreme high water on the refuge in the spring is believed to have either destroyed those black duck nests which were built or prevented the black ducks from building their nests in accustomed places as no nests were located either on the refuge or in the immediate vicinity.

Broods. While patrolling the refuge by way of Dead Creek on June 26th a brood of 4 young were seen. This brood was thought to be about 4 weeks old.

On the morning of August 15th a brood of 7 young were seen near Shad Island. This was evidently a late brood as they were unable to fly.

adult

BLUE WINGED TEAL. Only two/Teal were observed on the area during the period.

Broods. While patrolling the Refuge on August 15th by way of the River a brood of 7 young was found among the rushes near the south boundary meadow. The size of these young would indicate that they were not over two weeks old.

WOOD DUCK. The first check on the developed nesting sites was started on May 1st. On this occasion two nests were found near the East Branch; one nest containing eggs of both the Wood Duck and the Goldeneye and the other eggs of the Goldeneye only. A further check upon nest sites was made and completed on June 7th. Nest No. 25 in the region of Big Marsh Slough was found to contain 12 Wood Duck eggs. This nest was checked again on June 26th at which time there were only 8 eggs, the rest having been destroyed. Within the next few days this brood had hatched but were never seen. On the second



checkup two other nests near the mouth of Big Marsh Slough and opposite Shad Island were found to be used by Golden Eyes. Broods seen later are thought to have been from these nests. No broods of Wood Ducks have been seen during the period.

AMERICAN GOLDENEYES. A fairly large number of Goldeneyes which were noted during the period were thought to be breeding birds.

Broods. The first brood of American Goldeneyes to be seen was on June 6th near the refuge side of Dead Creek. There were 6 young in this brood and were estimated to be one week old. This is thought to have been the brood hatched from Nest No. 1 opposite Noake's Island.

On June 26th a brood of 5 young were found near Martindale's Point. These were estimated to be about 5 weeks old.

On July 21st a brood of 7 young were observed near the East Branch. These were about 6 weeks old and about ready to fly.

WILSON'S SNIPE. Snipe were heard "winnowing" practically every day throughout the period, but none were actually seen. This was probably due to the high water. However, it is thought that there is a moderately good breeding population on the area.

SPOTTED SANDPIPER. These little birds were noted practically every day along Dead Creek and the Missisquoi River. The largest number recorded for any one day was four on June 6th.

BLACK TERN. These graceful birds were noted for the first time on June 9th which was about one month later than the year previous. The greatest concentration of these birds was at the mouth of Big Marsh Slough. They were most interesting to watch as they came down to the water to pick up their prey, which consisted mostly of minnows. From 25 to 30 Tern were seen on several consecutive days. The boundary line markers were the favorite perching places of the Tern. They were known to have left the Refuge sometime during the first week in August. The migration of Tern seem to vary each year.

#### b. Groups.

Waterfowl. The Black Ducks, American Goldeneyes, Wood Ducks and Blue Winged Teal were the only ducks known to have nested on the refuge this year. American Goldeneyes were found to be the most abundant breeding duck on the refuge as indicated by the number of broods seen. It is believed that the high water during the nesting period kept the Black Duck population down.



Waterbirds. Pied-billed Grebes were observed in small numbers in Goose Bay and near Martindale's Point.

Shorebirds. Wilson's Snipe and Spotted Sandpipers were the only species present on or in the immediate vicinity of the refuge during the observation period. Shore birds were limited in the species recorded due probably to the lack of suitable feeding areas. Sandbars, the preferred feeding places, were inundated throughout the period.

Gulls and Terns. Herring Gulls were seen in small numbers in the Missisquoi River and the Bays. The Herring Gulls breed on Four Brothers Island in Lake Champlain near Burlington, Vermont.

Although no nests of Black Tern were found, it is thought they nest either on or in the immediate vicinity of the Refuge. A Black Tern's nest was reported found by Mr. Will Sheets, caretaker of the Webb property. This nest was located in so-called drift grass.

Hérons and Bitterns. The Great Blue Herons were noted on all parts of the Refuge and it is thought there was a slight increase in their numbers over the preceding year as indicated by the number of nests made this year. It is estimated that about 36 young heron were hatched on Shad Island.

American Bittern were frequently heard "pumping" in the marshes. Their number is thought to compare favorably with that of last year.

#### B. Upland Birds

1. Only on two separate occasions were Ruffed Grouse seen during the period and these were flushed along the river trail. Predators, the red fox chiefly, are thought to be responsible for the small number of Grouse on the area and in the immediate vicinity.

2. No Mourning Dove have been seen on the Refuge this year. However, Mr. Cheney has reported that up to six doves at one time have been seen on his farm during the period. It is apparent that the dove population on or near the refuge remains about the same from year to year.

### C. Songbirds.

A few song birds were bound on or in the vicinity of the Refuge. Those which were notes are as follows:

<u>Species</u>	<u>Relative Abundance</u>
✓ Whip-poor-will	Scattered
✓ King Fisher	Abundant
✓ Flicker	Scattered
✓ Hairy Woodpecker	Scattered
✓ Downy Woodpecker	Common
✓ Eastern King Bird	Common
✓ Breasted Flycatcher	Abundant
✓ Wood Pewee	Abundant
✓ Tree Swallow	Common
✓ Bank Swallow	Common
✓ Barn Swallow	Common
✓ Cliff Swallow	Scattered
✓ Black-capped chickadee	Abundant
✓ Long-billed Marsh Wren	Abundant
✓ Catbird	Common
✓ Robin	Common
✓ Veery	Abundant
✓ Bluebird	Common
✓ Starling	Common
✓ Yellow Warbler	Common
✓ Northern yellow-throat	Abundant
✓ House sparrow	common
✓ Bobolink	Abundant
✓ Meadow Lark	Common
✓ Redwing	Common
✓ Baltimore oriole	Scattered
✓ Bronze grackle	Common
✓ Savannah sparrow	Abundant
✓ Chipping sparrow	Common
✓ Field sparrow	Scattered
✓ White-throated sparrow	Scattered
✓ Swamp sparrow	Scattered
✓ Song sparrow	Abundant

It is thought that the majority of the birds in the previous listing are breeding birds of the refuge and its immediate vicinity.



#### D. Big-game Animals.

Deer. No deer were seen during the observation period, but from signs noted from time to time they have been using the refuge extensively, especially the fourth boundary meadow. It is estimated that there are now from 12 to 15 deer on the refuge. Reports from surrounding areas would indicate an increase in the deer population.

#### E. Fur-bearing Animals.

1. Muskrats. Muskrat signs were not plentiful during the summer months. This was perhaps due to the high water conditions which prevailed during most of the period. During the latter part of the period when the water had reached its lowest level, mussel shells along the refuge shore line of the river would indicate an average population of 'rats. Only a few signs were noted in the Bays, Dead Creek and Big Marsh Slough. Although the trapping season ended on April 20th, the skins caught the latter part of the season were not sufficiently dry to ship with the first allotment. Therefore they were shipped on May 31st. At that time a shipment of 65 'rats and 1 'coon were expressed to the New York Auction Co., of New York, N. Y.

2. Fox. Even though Red Fox can be trapped or shot in Swanton at any time of the year they appear to be on an increase. Several litters were reported seen on the Giles Cheney farm and the Julian B. Clarke properties adjoining the Refuge. Signs indicate that there is an increase in the fox population on the Refuge as well. A freshly killed and partly eaten muskrat was recently found near Martindale's Point. Signs near the scene would indicate the predator to be a fox. Some local sportsmen are of the opinion that the disappearance of small game in surrounding areas is due to the fox.

#### 3. Skunks and Raccoon.

Skunks were seen at various times during the early part of the period. Signs indicate they were quite plentiful in the area of the south boundary meadow. On May 14th a litter was found in the base of a hollow tree at the meadow. The exact number could not be determined. As soon as the water leaves the ridges skunk signs are noted as far as the East Branch.

Signs on most parts of the refuge show a marked increase in the number of Raccoon. Throughout their range they apparently seek the shoreline of the River, Bays and Dead Creek, leaving well trodden little trails in their search for food. It is thought that they feed on fresh water clams or mussels, frogs, and fish occasionally. There is an unlimited amount of possible den trees on the refuge.



## F. Predators.

### 1. Eagle.

On several occasions an immature Bald Eagle was seen on and in the vicinity of the Refuge. During the latter part of the period an adult Bald Eagle was noted flying over Goose Bay.

### 2. Hawks.

Broad-winged Hawks and Marsh Hawks were the only two species recorded during the period. The second named being the more abundant. It is thought that they cause some destruction among the ducks.

Osprey were noted at irregular intervals, but not more than one at any one time.

### 3. Owls

Only two Great Horned Owls were noted on the area during the summer months.

### 4. Crows.

Crows were on the refuge and in the vicinity in about their usual numbers. It is believed that they eat the eggs of the tree nesting ducks whenever found. At the East Branch two nests containing Goldeneye eggs were found to have been robbed by some predator, presumably the crow which was the only known predator in the immediate vicinity at the time.

Mr. John Tracey, caretaker of the Clarke property, reports that he has found evidences the latter part of the period where some night flying bird has been catching and devouring ducks. He is of the opinion that the Marsh Hawks are responsible for this destruction.

## III. Plants.

The water fowl food and cover have been sufficient for the wild life on the refuge. The wild rice beds, though not as productive as last year, are expected to give an adequate supply of food. The bulrushes have produced heavily and there is an excellent supply of wild celery in Goose and Gander Bays.

## IV. Refuge Development.

About 85 boundary line markers were cut, peeled and painted to replace those that were either broken off or taken out during the spring breakup. The posts that need it will be painted again before duck season starts on September 20th.



Some time was spent during the summer mowing the the hand scythe around the tree plantings at the south boundary meadow. There has been a good growth of the larger White Spruce. The Jack Pine and Pitch Pine also show an exceptionally good growth. The Nanny berries appear to be going well. The Mountain Ash plantings at various spots on the refuge are not doing as well as could be expected, in comparison to the other trees, and it is thought that the soil is not suitable to the good growth of these trees.

The greater part of August was spent in sprouting an additional section of land at the south boundary meadow. It is hoped to get this section plowed, harrowed and planted this fall.

Mr. Fred Cheney, son of the late Giles W. Cheney, started to cut the hay at the south boundary meadow on August 5th, but has not been able to complete this job yet because of help shortage and the pressure of other work on his own farm. The hay on the first section of the meadow was very heavy this year.

It was not necessary to make any repairs to the camp or to the foot bridge near the camp.

A new trail was developed between a point opposite Metcalf Island to Gander Bay to enable me to make a more complete patrol of the refuge as such times when it is dangerous to go into the lake because of high winds.

The Old Town canoe was given two coats of paint on the outside and one coat of varnish on the inside. The three board canoe was also given a coat of paint.

All other tools and equipment are kept in good condition.

The International pick-up truck is given a monthly lubrication job at the local Socony station and a semi-annual check up was preformed by the personnel of the same station on June 1st.

The duck traps were given necessary repairs and one was set up in Big Marsh Slough and the other on a small island in Missisquoi River at approximately the same sites as used last year.

## V. Public Relations.

### A. Visitors.

May 12. Mr. Gilbert Bohannon, State Game Warden, stopped at the refuge for a short while on his way up the River to check on fishing licenses.

May 26. Mr. Roland Magoon and son, Ronald, of Barton, Vt., made a patrol of the refuge with me and both were very favorably impressed with the work being done and the amount of wildlife on the refuge.



June 30. Mr. Fred Cheney made a visit to inspect the stand of hay at the south boundary meadow.

July 2. Mr. Robert Dunbar and son, Bruce, of Swanton, Vt., again visited the refuge this year and was more than favorably impressed with the improvements over last year. They were very much interested in the hay and rye crops at the south boundary meadow.

July 4. The patrol of the refuge was doubly interesting to me today as I was accompanied by my wife and son.

July 7. Mr. Will Sheets, one of the caretakers of the so-called Payne marsh, made the patrol with me. This was the first time in about 25 years that Mr. Sheets had been over the territory included in the refuge and noted many changes. The stand of rye and hay at the south boundary meadow was particularly interesting to him.

July 16. Mr. Gilbert Bohannon again visited the refuge for a short period during which time we discussed game laws in general.

August 11. Mr. George C. Frey of Port Chester, N. Y. visited the refuge today. This was the first time he had ever inspected a refuge.

#### B. Refuge Participation.

On August 22nd a meeting of the Vermont Conservation Commission held at the town hall at Swanton, Vermont was attended. This meeting was presided over by Mr. George W. Davis, Vermont Director of Fish and Game. Other members of the commission present were Mr. Francis Morrissey, Mr. Harold Stacey and Mr. Brower Hall. Mr. Gilbert Bohannon and Mr. Wayne G. Church, Vermont Game Wardens were also present. A general discussion of such rules and regulations governing fishing and hunting of interest to those present was held. 20 interested sportsmen attended this meeting.

On August 25th a visit to the government fish hatchery at West Swanton, Vt. was made in order to observe the seining for fish by the Vermont game wardens, Mr. Gilbert Bohannon, Mr. Wayne G. Church and their assistants. This seining was under the supervision of Mr. Dowers, Chief Game Warden for the State of Vermont. I observed two seinings at which time northern pike, wall-eyed pike, suckers, mullets, ells, black and calico bass, perch, sun fish or blue-gills and other fish were obtained. These fish were sent to the various state fairs for exhibition.

Respectfully submitted,

*Ellis D. Truax*

Ellis D. Truax,  
Refuge Manager

September 8, 1945  
Approved



## MIGRATORY BIRDS

Refuge Mississippi National Wildlife Months of May to September, 1945

1612

(1) Species	(2) First Observed		(3) Became Common	(4) Peak Concentration		(5) Last Observed		(6) Young Produced			(7) Total
Common Name	Number	Date	Date	Number	Date	Number	Date	No. Broods Obsvd.	Avg. Size	Esti- mated Total	Number Using Refuge
Great Blue Heron	4	5/1/45	5/15/45	14	8/7/45	5	8/31/45	12		36	50
American Bittern	16	5/16/45	5/30/45	8	7/20/45	4	8/31/45				20
Black Duck	15	5/10/45	7/17/45	250	7/27/45	300	8/30/45	2		18	500
Blue Winged Teal	2	5/15/45	8/7/45	200	8/24/45	100	8/31/45	6		5	250
Wood Duck	6	5/1/45	5/25/45	100	8/7/45	150	8/30/45				250
American Golden Eye	25	5/2/45	6/6/45	25	7/21/45	18	8/31/45	3		20	50
Spotted Sandpiper	1	6/2/45	6/6/45	4	8/6/45	3	8/25/45				20
Herring Gulls	5	5/6/45	6/15/45	10	7/15/45	8	8/29/45				18
Black Terns	1	6/9/45	6/13/45	30	7/15/45	30	7/31/45				50

REMARKS: (Pertinent information not specifically requested)



## INSTRUCTIONS

Form NR-1 - MIGRATORY BIRDS (Include species in families Gaviidae through Strigidae; also doves and woodcocks)\*

In case a resident form occurs, such as mottled duck on the Gulf Coast, use only the columns that apply.

- (1) SPECIES: Use correct common names as found in the A.O.U. Check List, 1931 Edition, and list in A.O.U. order. General terms are to be avoided, such as "scaup", "teal", etc.; use "green-winged teal" or "lesser scaup".
- (2) FIRST OBSERVED: The first refuge record for the species during spring migration, fall migration, wintering, or summering, and the number observed. In the case of resident species this column may be disregarded.
- (3) BECAME COMMON: The date the species became common on the refuge.
- (4) PEAK CONCENTRATION: The greatest number of the species present on any one date or limited interval of time.
- (5) LAST OBSERVED: The last refuge record for the species during the spring or fall migration, wintering, or summering, and the numbers observed exclusive of obvious cripples or non-migrants.
- (6) YOUNG PRODUCED: Estimated number of young produced based upon 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 are to be omitted.
- (7) 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 manner in which birds come through; i.e., in waves or all at once. On refuges representing the terminus of the flight lane, the figures would probably be the same in many cases..

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



Refuge Missisquoi National Wild LifeMonths of May to September, 1944

(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 specificioally requested. List introductions here.
Ruffed Grouse	Swamp Hardwood 730 and Bog-brush								8	The total usage made of the bog-brush by the Ruffed Grouse is not known.



## 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.