ROUTING SLIP DIVISION OF WILDLIFE REFUGES DATE: 9/26 194 5

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STENOGRAPHERS:

REMARKS:

Mud Lake

Narrative Report

May-August 1945

Return to:

11528

MUD LAKE NATIONAL WILDLIFE REFUGE
Narrative Report
May-Aug., 1945

1. GENERAL

A. Weather Conditions

1945	Snowfall	Rainfall		Max. Temp.	Min. Temp.
May		1.46		78	20
June		3.29		89	30
July		3.29		93	39
August		3.82		96	38
Totals		11.86	(Extremes)	96	20
1944					
May		3.92		86	22
June		5.46		89	35
July		.76		86	44
August		8.08		90	40
Totals		18.22		90	22

Precipitation readings were obtained from the City Power Plant at Thief River Falls, and temperature readings from Mr. Clifford Daily, official weather observer, at Red Lake Falls, Minn.

Cold weather prevailed throughout the entire reporting period. The temperature dropped to below freezing during 13 days in May and one day in June. The moisture condition was about normal. The frost in June, which occurred on the 4th caught the Juneberries, highbush cranberries, chokecherries and pincherries in full blossom. Consequently the fruit crop from these species was a total failure. The various dogwood species, blackhaw, rosebush, and thornapple came into blossom at a more favorable period and are producing abundantly.

B. Water Conditions

In discussing the water conditions it seems necessary to cover the whole season rather than the reporting period in order to get a complete picture of the water situation on this refuge.

This spring's runoff was the largest since the establishment of the refuge from the smallest accumulation of winter snows. The soil absorbed very little water owing to the fact that it was in an extremely wet condition when the freezeup occurred last fall. Consequently, there was a maximum runoff from the melting snows and the spring rains.

The release of water from the refuge pools was started on March 14 - about 10 days before the runnoff started - and was kept~~ed~~ at the maximum carrying capacity of Thief River until May 26 when the Ditch 11 control was closed to permit repair work to the ditch banks below the control. At that time the water levels had dropped to about about 6 inches above the spillway crest in the Mud Lake pool, 2 inches below the spillway crest in the Green Stump Lake pool, and 3 inches below the spillway crest in the Headquarters pool.

The gradual eroding conditions during the past few years; the damage by ice expansion; and the high water levels during the past spring period have deteriorated many of the refuge dikes to the extent that extensive repairs have now become necessary.

During the reporting period, repair work to the dikes has been carried on whenever it has been found possible to do so. The eroded ditch below the ditch 11 control has been repaired, and about 1200 yards of dirt placed on the eroded portions of the road "E" east of the Headquarters site. It is estimated that an additional 400 yards of dirt will be required to put this road in a fair condition.

The Madsen pool spillways and washouts have now been repaired; the beaver dams in the ditches south of the Headquarters pool have been lowered; and the upstream area from the Headquarter's pool spillway has been bulldozed from the spillway to the pool - all as per instructions contained in recent engineers' inspection reports.

The water situation from a wildlife standpoint appears to be the best when the pool levels are carried to full capacity, and aside from this fact, it seems highly advisable to maintain them at all times at their maximum capacities so that there will be a reserve of water supply when the next drought period occurs. The present wet period has extended over a period of about 8 years and it is not unreasonable to expect that a dry period will occur in the near future. It is during dry periods that a waterfowl refuge really pays dividends in the maintenance of the bird population if there is an ample water supply. As I see it, a prudent refuge management plan calls for a careful conservation of water at all times so as to be prepared for dry seasons which are sure to come.

Experience has shown that the present dike structures on this refuge are inadequate for the maintenance of capacity pool levels because the fluctuations which occur from time to to time above the water levels at spillway levels results in severe damage to the structures by erosion.

We are conscious of the fact that the repaired structures will not stand up any better than the original ones as nothing has been planned to improve the design of the structures

or to protect them from erosion by wave action. In this connection three remedies suggest themselves:

1. To leave present structure design as is and maintain pool levels from 12 to 18 inches below the crests of the spillways.

2. To protect present structures from erosion damage by wave action so that capacity pool levels can be maintained.

3. To enlarge the structures to such an extent that capacity pool levels can be maintained without damage to the structures by fluctuations which occur from time to time.

Of the three remedies suggested, No. 2 seems to be the most feasible and the most economical.

The following is a comparison statement of the water condition between this and the corresponding period for the previous year.

Name of Pool	Spillway Crest Elevation	Gauge Readings 8/31/45	Gauge Readings 8/31/44
Mud Lake	1141.00	1141.00	1141.66
Green Stump Lake	1140.00	1139.24	1140.24
Headquarters	1142.00	1140.80	1141.30

11. WILDLIFE

A. Migratory Birds

1. Population and Behavior

The waterfowl bird population on the refuge increased substantially over the corresponding period for the previous year. Taking this part of the country as a whole the duck population is believed to be about the same as last year, but the concentration on the refuge is larger this year due to the fact that the water and food on areas outside of the refuge are rather scarce as compared to previous years. At the present writing (Sept. 7) the waterfowl population on the refuge is somewhat larger than during the reporting period due to the fact that the baldpate ducks have started to return from the north in large numbers.

The following Form NR-1 gives applicable data for the reporting period. Estimates contained therein are based on census count made on August 7, 1945.

C. Big Game Animals

1. Population and Behavior

Very little change has taken place in the moose and deer populations on the refuge during the past year. The The present moose population is estimated to be around 15 and the deer population around 300. The increase in deer population by the production of young has been offset by the number which moved to higher grounds outside the refuge area during the periods when the water levels were high.

2. Food and Cover

The food supply is more than ample for the present population as revealed by periodic inspections. There is a great abundance of various food species, including dogwood, young willows, young aspen, bog birch and elder.

D. Fur Animals, Predators, Rodents and Other Animals

Beaver

The beavers have increased to the point where they have become a nuisance. Last year's beaver trapping program contemplated the taking of 80 of these animals, but due to adverse weather and season conditions only 40 were taken. The next trapping program, which will be recommended at the proper time, will be on an increased control basis, as it has now become necessary to reduce the number of these animals to conform to the best carrying capacity of the refuge.

Muskrat

Not much can be said about the muskrat population at the present time asthere is at yet no house building activity. Their summer activities, however, indicates that the population is somewhat larger than it was during the corresponding period last year. A trapping program will be recommended at the proper time.

Mink

The mink population is at least as large as it was last year at this time. 315 of these animals were taken last year and it is expected that around 400 will be taken this year during the open season. A trapping program will be recommended at the proper time.

Weasel

The weasel population is so small that no special effort will be made to take any of these animals. A few will be taken in connection with the mink trapping and that will be the extent of the take.

Skunk

The skunk population is somewhat larger than during the previous year at this time. A special effort will be put forth to reduce the number of these animals as much as possible. The best way to accomplish the desired reduction, in my opinion, is to let the trappers take all of these animals. A recommendation to that effect will be included in the next trapping program.

111. REFUGE DEVELOPMENT MAINTENANCE

A. Physical Development

Dikes and Spillways

The eroded ditch banks below the Ditch 11 Control have been repaired during the reporting period. This was accomplished by a dirt fill and riprapping the bottom and the south side of the ditch to well above the flow line for a distance of about 200 feet.

The washouts on the spillways and other places on the river bank at the west side of the Madsen pool have been repaired during the reporting period. This repair job is more or less of a temperory nature as there has as yet not been any permanent spillway structure provided for this pool that will stand up under high water conditions.

The repair work to the eroded portions of the road "E" east of the Headquarters site has progressed to the final stage as far as the dirt fill is concerned. Approximately 1200 yards of dirt have been placed on this job and about 400 yards more will be needed to complete the job.

B. Plantings

3 cooperative farming permits were in force, covering about 130 acres, during the season and they were issued on the basis of 2/3 to the permittees and 1/3 left standing for the refuge's share. The refuge's share consist of barley, proso millet and buckwheat.

Under the approved farming plan about 75 acres were treated for weed eradication last year and an additional 50 acres this year. The area treated last year produced an excellent crop this year. However, the treatment was only moderately successful from a quack grass eradication standpoint due to the wet weather conditions which prevailed during the treatment period. A heavy growth of quack grass is again emerging, but in spite of that fact the summer cultivation restored new vitality and fertility to the soil and it was therefore a well worth effort.

During the early part of October last year a shipment of 815 pounds of wild rice seed was received from the Rice Lake refuge and planted immediately on various parts of the refuge.

A recent inspection of these plantings revealed the fact that of the 15 areas on which the plantings were made growths showed up on only two and these were so poor that they can hardly be called growths. The seed appeared to be in excellent condition when received and it was in that same excellent condition when planted. Ironically enough, and excellent stand of wild rice has emerged in ditch 11 from the camp-headquarters bridge and east for a distance of about two miles. Plantings have never been made on that location. It showed up to some extent last year, but this year the growth is really excellent. It extends from bank to bank almost the entire distance of the two miles.

Ever since the establishment of the refuge, wild rice plantings have been made almost every year on various parts of the refuge, except in ditch 11 east of the bridge, under various and diverse conditions, but with very little success. No reason can be ascribed for these failures unless it is effected by the high content of peat ashes in the soil. There are no peat ashes in the soil where it is now volunteering.

C. Seed Collections

One Special Use Permit was issued permitting the harvesting of June grass seed and ten Special Use Permits were issued permitting the harvesting of volunteer sweet clover seed.

Luxuriant growths of volunteer sweet clover emerged on many open areas on the refuge this season and it appeared during the early season that the seed production would be very large, but the seed failed to develop according to expectations due to cold and wet weather conditions and the returns will, therefore, not be nearly as large as had been expected. Unless extreme wet wet conditions prevail during the harvest period, the returns to the government from this activity willprobably amount to around $2000. The June grass seed was harvested on the basis of 1½¢ per pound and the sweet clover seed on the basis of 5¢ per pound. These prices corresponds to 1/2 of the market price.

IV. ECONOMIC USE OF REFUGE

A. Grazing

7 grazing permits were in force, permitting the grazing of cattle for 655 animal use months. Rates are on the basis of 50¢ per head per month for adults and 35¢ per head per month for yearlings and no charge for calves running with their mothers.

B. Haying

lo haying permits, covering approximately 700 acres and an estimated 300 tons, were in effect during the season. Rates are on the basis of $1.00 per ton on stump for clean areas and 50¢ per ton on stump for stands with a heavy mixture of dead vegetation from the previous years.

E. Cattail

The cattail crop on the refuge this year is excellent. It is estimated that there are a million pounds of fluff available for harvesting, but only part of this amount will be harvested dur to the fact that the buying is on a limited quota basis. The harvesting will be conducted on the permit basis established last year under which the Government receives 1/4¢ per pound.

VI. PUBLIC RELATIONS

B. Refuge Visitors

The following Service officials and employees visited the refuge during the reporting period on the dates set opposite their names.

F.C. Gillett	Regional	June 7
Wm. V. Taylor	Central	July 15
Arthur Huey	Regional	July 15
Albert M. Day	Central	July 24
A.C. Elmer	Central	July 27
Harry A. Jensen	Regional	Aug. 7
O.H.Johnson	Regional	Aug. 7

Mr. Harold Titus, writer for the Saturday Evening Post, accompanied Mr.O.H.Johnson on August 7.

Carl B.Vogen
Refuge Manager

APPROVED:

REGIONAL DIRECTOR

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VI. PUBLIC RELATIONS

B. Refuge Visitors

The following Service officials and employees visited the refuge during the reporting period on the dates set opposite their names.

P.C. Gillett	Regional	June 7
Wm. V. Taylor	Central	July 18
Arthur Huey	Regional	July 18
Albert M. Day	Central	July 24
A.C. Elmer	Central	July 27
Harry A. Jensen	Regional	Aug. 7
O.H.Johnson	Regional	Aug. 7

Mr. Harold Titus, writer for the Saturday Evening Post, accompanied Mr.O.H.Johnson on August 7.

Orel B.Vogen
Refuge Manager

APPROVED:

REGIONAL DIRECTOR

Form NR-1

MIGRATORY BIRDS

Refuge Mud Lake National Wildlife Refuge Months of May to August, 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
Mallard								115	6	20,000.	37,000.
Blue-winged Teal								84	7	15,700.	26,300.
Redhead								21	6	3,400.	6,100.
Scaup-lesser								8	6	1,400.	2,500.
Black Duck								8	6	1,400.	2,600.
Ruddy Duck								8	6	1,300.	2,400.
Shoveler								3	6	600.	1,000.
Pintail								12	6	2,000.	3,700.
Baldpate								6	6	1,000.	1,900.
Gadwall								10	7	2,000.	3,600.
Ring-necked Duck								3	9	1,000.	1,500.
Canvasback								3	9	1,000.	1,500.
Coot								18	6	3,000.	5,800.
Wood Duck								2	5	20.	30.
Pie-billed Grebe								0			50.
Holboell's Grebe								0			10.
Western Grebe								0			10.
Great Blue Herron								0			280.
Cormorant, Double-crested								6	5	200.	300.
Bittern, American								0			20.
Herron, Black-crowned, Night								2	6	70.	100.
										54,090.	98,820.

REMARKS: (Pertinent information not specifically requested)

Actual count was made on August 7, 1945 on 3½ % of representatives areas and this was used as a basis in arriving at the total birds.

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.

2. Food and Cover

There seems to be an abundance of aquatic foods on the refuge. This is evidenced by the fact that a large number of ducks have been present during the entire season. The most common species include: narrow-leafed pondweeds, coontail, chara, sago, milfoil, bladderworth, redhead grass, bushy pondweed, and duck potatoes.

About 130 acres of grain were planted this season under the cooperative farming plan. One third of this, or about 43 acres, including barley, proso millet and buckwheat will be left standing for the birds.

No complaints about duck depredation have been made by farmers in the immediate vicinity of the refuge this season, but one complaint from a farmer living six miles south of the refuge came indirectly through the State Game Warden at Thief River Falls.

B. Upland Game Birds

1. Population and Behavior

The upland game bird population on the refuge is about the same as during the previous year. There has been very little change over the years since the establishment of the refuge and it is fairly evident by this time that the present small population is about normal for this refuge.

2. Food and Cover

The berry crops while in season and grain crops left standing make up an ample food supply for these birds. Grain is on hand for emergency feeding during severe winter periods if it becomes necessary to do so.

The following Form NR-2 gives applicable data for the reporting period.

Form NR-2 UPLAND GAME BIRDS 1613

Refuge Mud Lake National Wildlife Refuge Months of May to August, 1945

(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.
Prairie Chicken	Supplied in previous reports		1	20					50	
Hungarian Partridge			1	20					50	
Sharp-tailed Grouse			3	40					160	
Ruffed Grouse			2	10					50	
Ring-necked Pheasant			3	50					500	

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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.