ROUTING SLIP DIVISION OF WILDLIFE REFUGES DATE: January 17 1946

_____ MR. SALYER

_____ MR. ELMER

SECTION OF HABITAT IMPROVEMENT:

~~Mr. Griffith~~ REG 3-6

~~Dr. Bourn~~ 1/21

~~Miss Cook~~ 1-24

____ SECTION OF OPERATIONS:

Mr. Regan

~~Mr. Ball~~ J. & B.

Miss Baum

_____ SECTION OF LAND MANAGEMENT:

~~Mr. Krummes~~ WK 3/3

~~Mr. Dufont~~ PAD 2/14

_____ SECTION OF STRUCTURES:

~~Mr. Taylor~~ WOT 2/15/46

_____ STENOGRAPHERS:

REMARKS:

Tamarac National Wildlife Refuge

Narrative Report

Sept.-Dec. 1945

Return to: _____

11528

TAMARAC NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

SEPTEMBER, OCTOBER, NOVEMBER, DECEMBER

1945

UNITED STATES DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

ROCHERT, MINNESOTA

TAMARAC NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

SEPTEMBER OCTOBER NOVEMBER DECEMBER

1945

I. GENERAL.

A. WEATHER CONDITIONS.

Total precipitation for the past four months was 6.14 inches which is about normal. Total precipitation for the year was 21.9 inches, less than in 1944 and about four inches less than normal. For the period as a whole the temperatures were below normal with the freeze up arriving on the second and third of November. This was about three weeks earlier than last year and a few days earlier than in a normal year. There is about six inches of snow on the level, most of which came during the latter part of December. The ice on the lakes is approximately twenty two inches thick.

B. WATER CONDITIONS

Although the rainfall has been below normal for the year all the lakes in the refuge are at spillway elevation or above. The swamps and pot holes scattered throughout the refuge all have an abundant supply of water and were used by the surface feeding ducks this fall. The Tamarack swamps near Tamarac Lake, Flat Lake and the Egg Lakes suffered additional damage this year due to high water during the summer.

C. FIRES.

The first killing frost this fall was on October 9. The month of October was very dry and with the dense growth of vegitation presented a very serious fire hazard. All the State towers in the vicinity were maned and it was probably due to their efforts that serious forest fires were prevented in this area. There have been no forest fires on the Tamarac refuge the past year.

II. WILDLIFE.

A. MIGRATORY BIRDS

1. Population and Behavier.

There were no large flights of ducks through this area this fall as most of the birds arrived in scattered numbers. At the opening of hunting season there was a heavy concentration of wood ducks, ringnecks and blue winged teal on the lakes in the south part of the refuge. The big bluebill flight did not arrive at all and the small flight that did come through this area arrived at about the time the lakes froze over which was on November 3. Most of these ducks

concentrated in the lakes south and west of Detroit Lakes. Canvasback and redheads decreased about fifty percent from last year. The concensus of opinion amongst the game wardens and sportsmen in this area seems to be that about a third less ducks were killed this year than last year. This was also true of the 1944 season when about a third less ducks were killed than in the previous few seasons. The biggest concentrations of ducks were on Rice, Johnson, Blackbird and Tamarac lakes and this is where most of the ducks were killed. The coot were much scarcer than last year and the biggest concentrations were on Tamarac, Upper Egg and Rice lakes. The attached table gives the waterfowl numbers during the fall flights from 1939 to 1945.

2. Food and Cover.

There was an excellent crop of wild rice this year on all the refuge lakes with the heaviest stand being on Rice and Johnson lakes where it was practically impossible to pull a boat through the stand. Tamarac lake had a stand of wild rice along the west shore for the first time in years. This lake also had an excellent growth of other vegetation this year and hunting was better than for the past few years. Chippewa lake is practically covered with cattails and rushes but did not have its usual fall concentration of ducks. The swamps that have been flooded for the past two or three years had a good supply of food and cover and were used by the surface feeding ducks. It may be possible that the heavy vegetation kept the diving ducks away from this area as most of them stayed on Shell and Height of Land lakes both of which are very large lakes just east of the refuge.

B. UPLAND GAME BIRDS.

1. Population and Behavior.

The upland game birds are still few in number in this part of the State. The ringneck pheasant is probably at the lowest point in it's cycle as they are very scarce on the refuge this year. The past three springs have been cold and damp with the result that most broods were lost and some of the brood stock was also taken by hunters. Ruffed grouse are on the increase again as many more were seen this fall than in the past two falls. The sharp tailed grouse may be still on the decline as they are seen only occassionally. Prairie chicken is seen on the area during the early winter when they probably migrate in from the prairie. It is doubtful if they nest on the refuge. The Hungarian partridge is again present on the refuge this fall and they may also have migrated in from the prairies. All in all the upland game bird population is very small probably due to natural conditions rather than due to hunters and predators.

2. Food and Cover.

Most of this refuge is ideal for upland bird propogation. There are the open meadows, seed producing shrubs, agricultural lands and the necessary underbrush for both food and nesting cover.

With the proper weather conditions and a few brood stock this refuge should be able to produce an abundant crop of upland game birds.

C. BIG GAME ANIMALS.

1. Population and Behavior.
There are possibly a few more deer on the refuge now than there were at this time last year. Last winter was mild with very light snow until early in the spring. As a result the deer did not yard and there were no winter losses. Most of the does had twin fawns last spring which came through the summer and fall in excellent condition. There were more hunters on the refuge boundary this fall than in any previous season and as a result more deer were killed and a great many more wounded. There was no snow during the first part of the deer season and many wounded deer entered the refuge and probably died during the early winter. All the deer that were taken near the refuge were in excellent condition. At the present time the deer still have not yarded and are still browsing in the open meadows and cutover lands.

2. Food and Cover.
Practically the entire refuge is cut over lands and the rest is a very dense growth of red osier, dogwood, hazel brush, alder and aspen with other mixed hardwoods which is excellent winter browse. During the past fall and winter a great deal of the refuge has been covered on foot while cruising the jack pine and aspen stands and also looking at all the tamarack swamps. Much of the refuge was also covered on foot during the deer hunting season while assisting deer hunters in trailing wounded deer. Although we found some very large stands of red osier, shumack and hazel brush we did not find a single instance where there was any sign of over browsing. Chester S. Wilson, director of the Minnesota Conservation Commission made an inspection of the refuge this fall and stated that it was probably one of the best deer yards in Minnesota. We estimate our present deer population at about a thousand animals and I believe this could be doubled without any danger of overbrowsing. So far this winter many of the deer are feeding in the hay fields which had an excellent second growth of red clover and alfalfa.

3. Disease.
Although a great deal of the refuge has been covered on foot during the past fall and winter no dead deer have been found. All the deer that were shot in the vicinity of the refuge were in excellent condition and from this I would gather that the herd is free of disease. A few wounded and three legged deer have been seen but they appear to be in good health.

D. FUR ANIMALS, PREDATORS, RODENTS AND OTHER MAMMALS.

1. Fur Animals.
There are more muskrats on the refuge than last year but there are

not enough to warrant a trapping program. It is possible that due to high water many of the rats have moved into the banks rather than try to build houses. On Chippewa lake, which has an excellent stand of cattail and rushes, there are not over twenty five houses and an area of that carrying capacity should have around four hundred houses. The muskrats that were on the refuge area were mostly in the south part of the refuge on the lakes which were open to public trapping.

Very few mink tracks have been seen this year. Around the beaver dams and rapids where the mink would naturally travel it is only occassionally that a mink track is noticed. It is possible that they have migrated to the more open areas west and south of the refuge where the muskrats are more plentiful.

Thirty six beaver were removed from the refuge last spring and they have not caused a great deal of trouble since that time. They have constructed a few more dams on the Ottertail river, the Egg river above the Egg lakes and also on some of the swamp areas near the larger lakes. So far there seems to be a plentiful supply of aspen near their present dens and there will be no migration until next fall. They have constructed dams across some of the marsh areas which has raised the water elevations and has killed a great deal of tamarack. These tamarack swamps however are being cut over and will be developed as duck nesting sites.

The raccoon population on the refuge seems to stay about the same from year to year. Their numbers are not plentiful and so far no damage to other forms of wildlife has been noticed.

2. Predators.

Coyotes were quite numerous on the south part of the refuge during the summer, but during the fall and winter they appear to have moved into the north part of the refuge and range west over to the Strawberry lake country. Although we have crossed most of the refuge this fall and winter and have noticed numerous coyote tracks we have never found where any deer or other types of wildlife have been killed by them. Trapping along the boundaries seems to have kept the coyote under control for the past few years.

There are a few fox on the south part of the refuge; trapping by the local farmers in this area seems to be reducing their numbers from former years. No fox tracks have been noticed on the parts of the refuge that have been crossed this winter.

Skunks are not as numerous on the refuge this year as they have been in previous years. Most of the skunks that have been seen on the refuge are small and runty and when disturbed do not appear to be very active. It may be possible that due to a change of food resulting from the movement of settlers away from the refuge area has caused this sickly condition of the skunk.?

Weasels have never been very numerous on the refuge and only an occasional one is noticed now and then.

Bobcat tracks are probably a little more numerous this year than in previous years. Of the common predators on the refuge probably

only the coyote and bobcat will have to be controled within the next year or two.

3. Rodents and Others.
Rabbits are very definitely on the increase again after being nearly extinct in this area for the past few years. Cottontails are the most numerous with the snowshoes increasing in numbers slightly. The jack rabbit has not been seen here for the past two years and it may be possible that the few that were seen here in former years were attracted here when the lands were under cultivation and settlers still resided here.
Pocket gophers, woodchucks and porcupine do not appear in larger numbers than in former years. All thsee of these rodents are kept in check by the larger preditors. The only serious damage that has been done is where the pocket gophers have been making mounds in the hay fields making them practically impossible to cut. Diversified farming should keep the pocket gopher under control and would also be better from a wildlife standpoint.

E. PREDACEOUS BIRDS.

About 500 flue heron used the heron rookery near Lost lake again this summer. During the summer and fall these birds can be seen along the rivers and creeks where they feed on the rough fish such as bullheads and perch.
Both the the golden and the bald eagle were present in larger numbers this fall than in previous years. Two nests were observed, oneon the lookout tower in section one in the east part of the refuge and the other in a large white pine tree north of Two Island lake. They were mostly observed feeding on deer that had been either killed by pochers or were wounded by hunters and later died on the refuge.
Hawks were quite numerous this fall with the marsh hawk being present in the largest numbers and the red tailed hawk next in numbers. Some of the hawks may have been the cause of the disappearance of the late hatch of ducks. They seem to be present near the swamps and marshes where the ducks were hatched.
Crows were very scarce in this area this fall and at no time were any large concentrations present. These birds are usually present in large numbers in the spring but it appears that they use another flyway when going south in the fall.
The green horned owl has never been present in very large numbers and they appear to be less numerous this fall. Their numbers may have been depleted during the low cycle of the rabbits and upland game.

F. FISH.

Bullheads are present in large numbers in most of the refuge lakes and appear to be the main food for the northern pike in the lakes on the Egg river. Tamarack lake at times last fall was practically covered with schools of bullhead. There are a few dark houses on Tamarack lake this winter and the fishermen using them state that the bullheads

are very numerous and that they have never seen them quite as large in other lakes. The northern pike have been speared in Tamarac Lake weighing up to twelve pounds, but the walleyes are still at about the one pound stage. The lakes on the Egg River chain on some occassions appear alive with crappie and bluegill. These lakes were stocked with these species in 1944 and they should be large enough to furnish some sport fishing next summer. The fish that were caught in the refuge lakes were in excellent condition and were full of food. During the past calandar year there was no loss of fish from either disease or suffocation.

III. REFUGE DEVELOPMENT MAINTENANCE.

A. PHYSICAL DEVELOPMENTS

A bridge and control structure was partly completed on the Egg river at the outlet of Two Island lake. This is a concrete double barrel five foot culvert and will control the water elevation in Two Island, Carman, Upper and Lower Egg and Waboose lakes. The excavation was completed, cougher dam built and the concrete floor has been poured. All the forms for the walls and deck were built and all the steel has been cut and formed for the remainder of the structure. This structure was not completed due to severe cold weather the first part of November and during the latter part of the month we were unable to secure additional help.

The septic tank at headquarters was cleaned and two new tile lines were laid to drain off the liquids. The two old lines were completely plugged with solids and the liquid was escaping through a crack in the ground above the septic tank.

The septic tank at Secondary was cleaned and the tile lines were flushed and were then extended for additional seepage area.

Additional piling for the bridge at the Ottertail River were cut and hauled to the site. We now have sufficient piling and timbers on the site although the piling caps and stringers will be squared at one of the nearby mills. The County pile driver was secured and has been cut down and partially rebuilt to suit our needs.

The fire line telephone system was partially rebuilt again this fall and is now connected with the State fire line system to the Elbow Lake Ranger Station. This ranger station is always occupied and will be a direct means of contacting the State Forest Ranger about fires or smokes in the vicinity of the refuge.

A great deal of time has been spent during the past fall in establishing lines on the areas where we expect to cut either dead or green timber. Some additional areas on the east side of the refuge were posted and some of it was reposted.

B. PLANTINGS.

1. Aquatics.

Most of the lakes had an abundance of aquatic vegitation this year. Tamarac lake, which has been barren for the past few years had an

excellent stand of wild rice and also of submerged plants. Most of the lakes on the refuge have mud bottoms in places werer there is a good growth of aquatic foods. It may be necessary to plant some of the more valuable aquatics such as duck potato and wild celery but the more common aquatics are present in all the lakes.

2. Trees and Shrubs.
No trees or shurbs or shrubs were planted during the past year. If a long range development program is undertaken at this refuge there are large areas which should be planted to better species of trees such as red and white pine instead of the present mixed hardwoods. This would increase the enonomic value of the refuge as well as making it more adaptable for deer and upland game by furnishing much needed winter cover.

3. Upland Herbaceous Plants.
Tracts No. 4AH, 5AH and 7AH totaling twenty nine acres was planted to alfalfa this past spring. There seemed to be a fair catch and was heavily browsed by the deer during the past fall. There is a tendancy for the land in this vicinity to become quite weedy and one method of controling the weeds is to let it grow back to sod. However, in a few years the land becomes sod bound and the grass is short resulting in a small hay crop. By cultivating the alfalfa after the third year we expect to increase the fertility of the land as well as making the area more adaptable to wildlife.

4. Cultivated Crops.
A total of 116 acres was under cultivation during the past year. Of this 20 acres was sowed to a mixture of proso millet, buckwheat and barley and was left standing in the field. Thirty six acres was planted to barley which yielded 522 bushels. Forty acres was planted to oats which yielded 1293 bushels. Of the total acreage six acres was leased on a cash rental basis and the remainder was farmed on the cooperative basis. Of the 116 acres, 29 acres were sowed to alfalfa with barley being used as a nurse crop this year. Our agricultural lands are now leased on a three year basis which should give the farmer a little incentave to build up the land which will result in larger returns to the refuge.

C. COLLECTIONS.

1. Seed and other Propagules.
409 pounds of wild rice was collected on Flat, Little Flat, Carmon and Two Island lakes. This was the government's share of seven percent collected from the indians. The wild rice crop was excelent this year but one week of heavy rains and winds shattered much of the crop. This wild rice was shipped to Horicon Union Slough, Necedah and Upper Mississippi refuges. There are some excellent stands of hard stem bullrush on the refuge byt as was the case in previous years there was very little or no seeds on the plants.

2. Specimen.
No specimen were taken on the refuge during the past year.

D. RECEIPTS OF SEEDS AND NURSERY STOCK.

Because of the large abundance of all types of aquatics and upland food plants no seed or nursery stock was received here during the past year.

IV. ECONOMIC USE OF THE REFUGE.

A. GRAZING.

In previous years grazing was permitted on the refuge beginning on May 15. This year the date was changed to July 15 at which time the best grazing period is over. Most of our grazing areas are near lakes or pot holes and it is possible that the nesting birds would be disturbed by having an earlier grazing date.

? July 1 at Dahl's recommendation. not ?
R. O. has been asked to clarify Dahl's statement.
REG.

B. HAYING.

Ten permits for the cutting of wild hay was issued. 248.1 tons of wild hay were cut on 456 acres. This was sold for a dollar a ton giving a total cash income of $248.10. The hay lands appear to be coming sod bound as the grass is short and thin. On many of the hay tracts this year there was a light catch of red clover which may rejuvinate the soil if the stand lasts for a few years. The hay cutting date on the refuge begins July 15, which in most years is probably a little late as the blue grass seed has shelled out and some of the clover plants have started to wilt. However due to the late nesting seasons the past few years it is still advisable to leave the hay cutting date at July 15.

C. FUR HARVEST.

Because of the scarcity of muskrats and mink on the refuge area this fall a trapping program was not undertaken. There was a very large fur harvest in Becker County this past season but most of the mink and muskrats were caught on the prairie largely in the west and south part of the county. Scarcity of fur bearers is general all through the heavily wooded part of the county.

D. TIMBER REMOVAL.

The demand for dead or down tamarack has been very great this fall with the result that practically every swamp is either leased or a lease is contemplated. At the present time we are removing tamarack from the southwest and the northwest parts of Tamarac lake, the west side of Flat lake, on all sides of Little Flat lake, west of Lost lake and north of Two Island lake. We also expect to cut the large swamps north of Flat lake and west of the Egg lakes along the refuge boundaries. Only about 100 cords of dead or down jack pine has been

removed this fall. We receive $1.00 per cord for the tamarack and fifty cents per cord for the jack pine. A timber management program is being developed with the idea of removing the large stands of jack pine and aspen. At present the stands do not furnish the refuge either food or cover for wildlife and by removing them we expect to start a new sequence of plant and will furnish food and cover for deer and upland game.

E. OTHER USES.

No other economic use has been made of the refuge the past year.

VI. PUBLIC RELATIONS.

A. RECREATIONAL USES.

The refuge is used quite extensively as a scenic area by many visitors from nearby resorts and towns. Numerous visitors climbed the towers and drove through the area in the evenings to watch the deer and other wildlife. Weather conditions at the present time have kept most of the visitors from the area.

B. REFUGE VISITORS.

NAME	TITLE	LOCATION
Albert M. Day	Fish & Wildlife Service	Chicago, Ill.
Oscar H. Johnson	" " "	Minneapolis, Minn.
Francis Gillett	" " "	" "
W. E. Conover	" " "	Detroit Lakes, Minn.
Arthur G. Huey	" " "	Minneapolis, Minn.
Robley Hunt	" " "	" "
S. Otis	" " "	Chicago, Ill.
Harold H. Emerson	Wild Rice Commissioner	Walker, Minn.
Roy Swan	Photographer, Star Journal	Minneapolis, Minn.
Wm. McFadden	" " "	" "
Emil Frank	State Warden	Detroit Lakes, Minn.
D. D. Centerwall	" "	" " "
C. U. Landrum	U. S. Attorney	" " "
Wm. Clayson	County Land Commissioner	" " "
Wm. Stevens	State Forest Ranger	Osage, Minn.
John Kirkvold	" " "	Park Rapids, Minn.
Marvin Hendricks	" " "	" " "
George McCarthy	Pres. Sportsman Club	Detroit Lakes, Minn.
Chester C. Wilson	State Conservation Commissioner	Minneapolis, Minn.
Col. Fierro	" " "	Minneapolis, Minn.
Dr. Marshal	University of Minnesota	" "
Lou Benshoit	Editor D. L. Record	Detroit Lakes, Minn.

D. HUNTING.

The duck flight this past fall was rather poor and spotted. During

the opening of the duck season there was a large concentration of wood ducks, ringnecks and teal. Later on there was a small flight of redheads with a very small scattering of canvasbacks. The blue bill flight came throughhere during the first part of November at which time most of the lakes were frozen. The average hunter shot very few ducks this past fall. At some of the choice hunting spots owned by the gun clubs there was a fair kill of ducks. It appears that most of the ducks and geese followed their old flyways through the Dakotas using this flyway only during seasons of drought. There were more deer hunters along the refuge boundaries this fall than in previous falls and we estimated approximately 150 deer were killed near the refuge boundaries. The severe hunting pressure along the refuge for the past few years has kept the refuge deer herd from increasing too rapidly as would be the case if the hunting pressure was removed. The opening of Itasca Park to the North of the refuge probably relieved the hunting pressure near the refuge to some extent. The Conservation Commission states that 1812 deer were taken in Itasca Park. One of the State checkers told us on the fourth day of the season that about 2500 deer had been taken up to that time and that on Sunday he estimated there were 3200 hunters in the park. This situation would probably prevail on this refuge if it were ever opened to hunting.

E. FISHING.

Fishing season on the refuge closed in September. There were a few persons fishing for Northerns on the Ottertail river and a great many people were fishing on Tamarac lake for the first time in a number of years. Fishing pressure at the refuge was not increased over former years.

F. VIOLATIONS.

Jack H. Iverson of Sartell, Minnesota was apprehended after he had killed a deer on the refuge. He was charged with transporting an illegially killed big game animal and was fined $450.00 plus $15.00 trial costs. James Dunn of Frazee, Minnesota, who assisted Mr. Iverson was given a three months suspended sentence and placed on probation for a year. At the present time there are nine cases pending for hunting deer on the refuge during the Minnesota open deer hunting season. One case is pending for the theft of firewood from the refuge. The local law enforcement officials have been very cooperative during the past year and the refuge personnel have assisted them with other game law violations that took place near the refuge.

Respectfully submitted.

John M. Dahl

John M. Dahl
Refuge Manager

January 10, 1946

Regional Office Approval.

WATERFOWL NUMBERS DURING FALL FLIGHTS

	1939	1940	1941	1942	1943	1944	1945
Lesser scaup	13,000	17,900	22,000	22,000	11,000	20,000	10,000
Ringnecks	6,000	7,500	15,700	21,000	10,500	20,000	12,000
Redheads	7,000	6,500	10,000	11,000	3,000	20,000	10,000
Canvasback	1,200	800	3,000	3,000	1,500	5,000	3,000
Goldeneyes	400	500	1,500	1,700	1,200	1,500	1,500
Bufflehead	100	250	400	300	300	500	400
American Merganser							100
Ruddy ducks	1,000	1,000	2,500	5,000	2,500	500	600
Hooded Mergansers	250	350	100	200	200	800	300
Blue-winged teal	23,000	21,500	15,720	16,000	8,000	11,000	10,000
Green-winged teal	500	300	600	600	500	1,400	2,000
Mallards	10,000	14,600	5,000	7,600	7,600	10,000	10,000
Baldpate	1,000	1,400	700	750	750	2,000	2,000
Gadwalls	0	0	0	50	0	100	200
Shovelers	1,000	1,700	2,100	1,800	1,800	5,000	500
Pintails	700	1,680	1,100	1,000	1,000	4,000	2,000
Black ducks	600	800	500	1,000	1,000	3,000	2,000
Wood ducks	25	10	50	200	100	600	2,000
Coots	6,000	3,000	7,000	8,500	4,300	30,000	10,000

WATERFOWL NUMBERS DURING FALL FLIGHTS (Cont'd)

	1939	1940	1941	1942	1943	1944	1945
Canada geese	30	200	0	0	0	0	250
Whistling swan	0	0	0	0	0	25	25
TOTAL:	71,777	79,890	87,970	100,460	45,250	138,800	78,875

3-1750
Form NR-1
(Nov. 1945)

WATERFOWL

Refuge Tamarac National Wildlife Months of September to December 1945

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. Swans:									
Whistling swan	25	Nov.18			25	Nov.18			25
II. Geese:	50								
Canada goose	50	Nov. 1	150	Nov. 15	100	Nov. 25			250
Cackling goose									
Brant									
White-fronted goose									
Snow goose									
Blue goose									
III. Ducks:									
Mallard			3,000	Sept.22	15	Nov. 18			10,000
Black duck			500	Sept.20	20	Nov. 3			2,000
Gadwall			100	Sept.25	10	Oct. 15			200
Baldpate			1,000	Sept.25	10	Oct. 20			2,000
Pintail			500	Sept.30	50	Oct. 25			2,000
Green-winged teal			800	Sept.30	15	Oct. 20			2,000
Blue-winged teal			3,000	Sept. 1	50	Oct. 10			10,000
Cinnamon teal									
Wood duck			1,000	Sept.20	10	Oct. 5			2,000
Red head			3,000	Sept.28	40	Nov. 2			10,000
Ring-necked duck			4,000	Sept.20	100	Nov. 1			12,000
Canvas-back			500	Oct. 4	15	Nov. 1			3,000
Scaup			3,000	Nov. 1	50	Nov. 5			10,000
Golden-eye			500	Sept.25	2	Oct. 20			1,500
Buffle-head			200	Oct. 15	10	Oct. 29			600
Ruddy duck			200	Oct. 15	2	Nov. 2			600
American Merganser					5	Nov. 1			100
Hooded Merganser					5	Nov. 1			300
Shovelers			100	Oct. 15	6	Oct. 15			500
IV. Coot			5,000	Sept. 1	500	Oct. 25			10,000

(over)

SUMMARIES

Total Production:

Geese.....

Ducks.....

Coots.....

Total waterfowl usage during period.....78,875.....

Peak waterfowl numbers.....26,325.....

Areas used by concentrations..Rice Lake, Tamarac Lake, Egg Lakes and Pine Lake.....

Principal nesting areas this season..Chippewa, Little Flat, Flat and Egg Lakes.....

Reported by..John M. Dahl, Refuge Manager.....

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 <u>during the period</u>. 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 <u>Summaries</u> 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 Tamarac National Wildlife Months of September to December 1945

(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. Water and Marsh Birds:										
Common loon					2	Oct. 27				100
Holboells grebe					6	Sept. 30				150
Pied-billed grebe					12	Oct. 20				200
Double crested cormorant					4	Oct. 15				30
Great blue heron					4	Oct. 15				500
Little blue heron					2	Oct. 10				50
American bittern					1	Oct. 15				500
II. Shorebirds, Gulls and Terns:										
Killdeer					4	Sept. 30				100
Wilson's snipe					2	Sept. 30				150
Spotted sandpiper					6	Sept. 15				30
Greater yellow-legs					12	Sept. 15				100
Lesser yellow-legs					4	Sept. 15				50
Herring gull					100	Sept. 10				500
Common tern					7	Sept. 15				50
Sora rail					2	Sept. 20				40

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove			6 Sept. 18		50
White-winged dove					
IV. Predaceous Birds:					
Golden eagle			1 Oct. 15		0
Duck hawk					10
Horned owl					40
Magpie					0.
Raven					0
Crow			2 Nov. 21		500
Turkey vulture			6 Oct. 20		15
Sharp-shinned hawk					12
Coopers hawk					12
Red-tailed hawk					50
Red-whouldered hawk					20
Rough-led					10
Bald eagle					2
Marshhawk					100

Reported by John M. Dahl, Refuge Manager

Osprey 12
Sparrow hawk 20
Coopers hawk 10
Snowy owl 6
Canada jay 30
Northern blue jay 50
Golden eagle 10

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.

Form NR-2 UPLAND GAME BIRDS 1613

Refuge Tamarac National Wildlife Months of September to December, 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.
Ringneck Pheasant	10,000 acres	20							500	Scarce in this part of Minn.
Ruffed Grouse	18,000 acres	18							1,000	" " " " " "
Sharptailed Grouse	10,000 acres	100							100	" " " " " "
Hungarian Partridge	10,000 acres	200							50	Not seen here for a few years.
Prairie Chicken	10,000 acres	250							40	

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.

Form NR-3
(June 1945)

BIG GAME

Refuge Tamarac National Wildlife Calendar Year 1945

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re-stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
White tailed deer	Alder, hazel brush, red osier dogwood, willow, balsam, mixed hardwood trees, meadows and hay fields. 50 square miles	300	150				50						1000	40%bucks 40%does 20%fawns
Black bear	Entire refuge	2											5	

Remarks: Refuge boundary hunted heavily this fall.

Reported by John M. Dahl, Refuge Manager

INSTRUCTIONS

Form NR-3 - BIG GAME

(1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.

(2) DENSITY: 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 total number of young produced on refuge.

(4) REMOVALS: Indicate total number in each category removed during the year.

(5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.

(6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

(7) TOTAL REFUGE POPULATION: Give the estimated population of <u>each</u> <u>species</u> on the refuge at period of its greatest abundance and also as of Dec. 31.

(8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

116008

Form NR-5 DISEASE 1616

Refuge Tamarac National Wildlife Year 1945

Botulism

Period of outbreak none

Period of heaviest losses

Losses:

	Actual Count	Estimated
(a) Waterfowl		
(b) Shorebirds		
(c) Other		

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl		
(b) Shorebirds		
(c) Other		

Areas affected (location and approximate acreage) none

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.

Condition of vegetation and invertebrate life Excellent

Remarks

Lead Poisoning or other Disease

Kind of disease none

Species affected

Number Affected Species	Actual Count	Estimated

Number Recovered

Number lost

Source of infection

Water conditions Good

Food conditions Good

Remarks

Form NR-6 FISH 1617

Refuge Tamarac National Wildlife Year 1945

Species	Relative Abundance	Sport Fishing		Commercial Fishing		Restocking		Number removed for Restocking
		Man days Fishing	Number Taken	No. of Permits	Pounds Taken	Number Stocked	Area Stocked	
Northern Pike	Abundant	250	1000	None		None		None
Walleyed Pike	Scarce		None	"		"		"
Crappie	Plentiful		None	"		"		"
Bluegill	"		50	"		"		"
L. M. Bass	"		None	"		"		"
Bullheads	Abundant		100	"		"		"

REMARKS: Crappie, bluegill & L. M. Bass were restocked in 1944 and are still small.
Walleyes plentiful in Tamarac Lake but scarce in others.
Bullheads abundant in all lakes and very large.

Form NR-7

PLANTINGS
(Marsh - Aquatic - Upland)

Refuge Tamarac National Wildlife Year 194 8

Species	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount & Nature of Propagules	Date of Planting	Survival	Cause of Loss	Remarks
none								

TOTAL ACREAGE PLANTED:

Marsh and aquatic none
Hedgerows, cover patches none
Food strips, food patches none
Forest plantings none

1618

Form NR-8
(Revised)

CULTIVATED CROPS

Refuge Tamarac National Wildlife Year 1945

42675

Permittee (If farmed by refuge personnel, so indicate)	Permit No.	Unit or Location	Crops Grown	Ave. Yield per Acre	Permittee's Share		Government's Share or Return				
							Harvested		Unharvested		Compensatory Services, or Cash Revenue
					Acres	Bu. Harvested	Acres	Bu.	Acres	Bu.	
R. L. Blanchard	13219	3A	Oats	30	35	1050					
			(Proso Millet								
		2A	(Buck wheat						20	300	
			(Barley								
Albert Moser	13236	6AH	Barley	21	3	63	1	21			
		7AH	Oats	20.3	9	183	3	61			
	12030	8A	Barley	30	3	90					$12.00
Walter Nelson	13229	5AH	Barley	12	6-3/4	81	2¼	27			
		4AH	Barley	12	6	72	2	24			
		1A	Barley	12	9	108	3	36			
Arthur Nordgulen	12033	11A	Oats	20	3	60					6.00

Summary of Crops Grown:

Crop	Acreage	Permittee's Share		Government's Share				Total Revenue
		Acres	Bushels	Harvested Acres	Harvested Bu.	Unharvested Acres	Unharvested Bu.	
								$ 18.00
Barley		27-3/4	414	8¼	108			
Oats		47	1293	3	61			
Millet						20	300	

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS

Cultivated Crops Report Form NR-8 should be prepared on a calendar-year basis for all crops harvested or utilized during the calendar year and submitted with the December 31 refuge report.

Permittee - List each permittee separately. If lands of the refuge are farmed by refuge personnel or hired labor, this should be indicated in the Permittee column.

Permit No. - List the number of the Special Use Permit issued to the individual.

Use or Location - The Unit No. or name specified in the Economic Use Plan should be listed in this column.

Crops Grown - A separate line of the form should be used for each crop grown by each permittee or by refuge personnel. This is important, since if each crop grown by each operator is not specifically enumerated, the report will be of no value for statistical purposes.

Average Yield per Acre - It is important that the average yield per acre of each crop grown by each operator should be shown.

Permittee's Share - Only the number of acres harvested or utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. It is requested that all crops harvested be reduced to bushels wherever possible, or, as in the case with the harvesting of seed such as that of sweet clover, alfalfa, bromegrass, etc., the total harvested crop in pounds may be shown. Timothy, alfalfa, or other hay harvested by the permittee should be shown on Form NR-10 and should not be shown in the Permittee's Share column.

Government's Share or Return - Harvested - Show the number of bushels harvested for the Government and the acreage from which this share is harvested, both for grain raised by refuge personnel and by permittees. Unharvested - show the exact number of acres of crops allowed to remain unharvested as food and cover for wildlife. An estimate of the number of bushels of grain that is available for the wildlife in such unharvested crops should be shown in the Bushels column.

Compensatory Services, or Cash Revenue - Show other services received by the Government in cooperative farming activities, the number of acres of food strips planted for wildlife, the amount of wildlife crops not otherwise reported that are planted by cooperators for the Service, or the cultivation of wildlife plantations. If the permit is on a fee basis, the total cash revenue received by the Service.

42675

3-1570
NR-8a

REFUGE GRAIN REPORT

Refuge Tamarac National Wildlife Months of September thru December 1945.

(1) VARIETY	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED USE		
				TRANS-FERRED	SEEDED	FED	TOTAL		SEED	FEED	SURP.
Wheat	26		26			15	15	11		11	
Barley	166	108	274			34	34	240		240	
Oats	85	61	146			16	16	130		130	

(8) Indicate shipping or collection points Detroit Lakes, Minnesota

(9) Grain is stored at headquarters granary.

(10) Remarks Some of this grain is four years and is becoming mouldy and caked. Fed near headquarters to attract upland game birds in fall and winter. Fed near Flat Lake early in fall.

NR-8a REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)--55 lbs., Corn (ear)--70 lbs., Wheat--60 lbs., Barley--50 lbs., Rye--55 lbs., Oats--30 lbs., Soy Beans--60 lbs., Millet--50 lbs., Cowpeas--60 lbs., and Mixed--50 lbs. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

(1) List each type of grain separately: Corn, wheat, proso millet, etc. Include only domestic grains; aquatic and other seeds will be listed on NR-9.

(3) Report all grain received during period from all sources, such as transfer, share-cropping, or harvest from food patches.

(4) A total of Columns 2 and 3.

(6) Column 4 less Column 5.

(7) This is a proposed breakdown by varieties of grain listed in Column 6.

(8) Nearest railroad station for shipping and receiving.

(9) Where stored on refuge: "Headquarters grainary", etc.

(10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

Form NR-9

COLLECTIONS AND RECEIPTS OF PLANTING STOCK
(Seeds, rootstocks, trees, shrubs)

1620

Refuge Tamarac National Wildlife Refuge Year 1945

Species	Collections				Receipts		Total Amounts on Hand	Amount Surplus
	Amount	Date or Period or Collection	Method	Unit Cost	Amount	Source		
Wild Rice	409 lbs.	Sept. 4 - 12	Share crop with Indians				None	

Form NR-10

HAYING AND GRAZING

Refuge Tamarac National Wildlife Year 1945

Permittee	Permit No.	Unit or Location	Actual Acreage Utilized	Animal Use Months	Tons of Hay Harvested	Period of Use From - To	Rate	Total Income	Remarks
John N. Bunnis	12022	1H, 2H	18		12.2	7/15 - 2/28	1.00	12.20	Haying
Walter Nelson	12023	3H	4		24.1	7/15 - 2/28	1.00	24.10	"
Albert Moser	12024	9H,10H,11H, 12H,13H,18H	78		37.1	"	1.00	37.10	"
Arthur Nordgulen	12025	22H	30		17.3	"	1.00	17.30	"
Lennert Eliassen	12026	7H,15H,8H,5H	54		24.4	"	1.00	24.40	"
Archie Fry	12027	10AH,14H,21H,5G	64		36.6	"	1.00	36.60	"
R.P. Wachsmuth	12031	6H, 9AH	22		24.4	"	1.00	24.40	"
John Nasset	12032	16H, 17H	43		27.3	"	1.00	27.30	"
Edw. F. Engleson	13216	24H,25H,26H, 5G,19H,23H	124		26.7	"	1.00	26.70	"
R.L. Blanchard	12398	4H,	19		18	"	1.00	18.00	"

Totals:

Acreage grazed 0 Animal use months 0 Total income Grazing .00

Acreage cut for hay 456 Tons of hay cut 248.1 Total income Haying 248.10

1621

Form NR-11

TIMBER REMOVAL

Refuge Tamarac National Wildlife Year 1945

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B.F., ties, etc. Cords	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
Sylvester Cogger	11952	9-141-39	3	30	1.00	30.00	Dead and Down	Tamarack
R.H. Jeffery	11992	4-140-39	1	10	1.00	10.00	"	"
Gust Haaland	11997	29&30-141-39	8	90	1.00	90.00	"	"
C.C. Ceborn	11998	23-141-39	2	20	1.00	20.00	"	"
Cleve Graham	12012	9&17-141-39	2	25	1.00	25.00	"	"
Severt Walstrom	12021	1-140-40	1	2	1.00	2.00	"	"
John Graves	12028	1-140-40	3	30	1.00	30.00	"	"
John Sandberg	12029	1-140-40	1	10	1.00	10.00	"	"
Otis Halverson	12593	18-141-39	1	11	1.00	11.00	"	"
John Bloom	12594	23-141-39	7	75	.50	37.50	"	"
Claude Graves	12596	35-141-39	6	65	1.00	65.00	"	"
Joe E. Visenor	12597	14-141-39	1	20	.50	10.00	"	"
Albert Moser	12599	14-140-40	1	10	1.00	10.00	"	"
Lennert Eliassen	12400	1-140-40	2	22	1.00	22.00	"	"
Otis Halverson	12034	18-141-39	2½	25	1.00	25.00	"	"
John Bloom	12035	24-141-39	5	100	.50	50.00	"	Jack Pine
John I. Bakken	12036	12-140-40	1	10	1.00	10.00	"	Tamarack
Anthony Rolfes	12037	Along Blvd.	1	10	.50	5.00	"	Poplar
Lennert Eliassen	12038	34-141-39	1½	15	.50	7.50	"	Jack pine
C.M. Lorensen	12039	1-141-39	1	10	.50	5.00	"	"
Sylvester Cogger	12040	9-141-39	5	25	1.00	25.00	"	Tamarack
John Swan	12041	23-141-39	1	10	.50	5.00	"	Jack pine
Archie Fry	12042	1-140-39	1	10	1.00	10.00	"	Tamarack
U.S. Indian Service	12043	Roads	5	50	M.C.		"	Jack pine
Lennert C. Eliassen	12044	10-140-39	1	13½	.50	6.75	"	Poplar
Carl J. Anderson	12045	14-140-40	3	30	1.00	30.00	"	Tamarack
Severt Walstrom	12046	1-141-39	1	10	1.00	10.00	"	"

Total acreage cut over_____ Total income_____

No. of units removed B. F._____ Method of slash disposal_____

Cords_____

Ties_____

_____

SEE NEXT PAGE

1622

Form NR-11 Page 2 TIMBER REMOVAL

Refuge Tamarac National Wildlife Year 1945

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B.F., ties, etc. cords	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
Albert Moser	12047	14-140-40	1	10	1.00	10.00	Dead or down	Tamarack
James Shimek	12048	18-141-39	1	10	1.00	10.00	" "	"
Gust Haaland, Jr.	13649	29&30-141-39 1-140-40	8	100	1.00	100.00	" "	"
Roy Englund	13650	14-140-40	5	50	1.00	50.00	" "	"
Frank Schmits	13651	14-140-40	1	10	1.00	10.00	" "	"

Total acreage cut over 80 Total income $761.75

No. of units removed B. F. _____
Cords 838.5
Ties _____

Method of slash disposal Spread on ground.

1622