

TAMARAC

NARRATIVE REPORTS

JANUARY-DECEMBER 1963

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NARRATIVE REPORT ROUTING SLIP

REFUGE

TAMARAC

PERIOD

September - December 1963

OFFICE OF THE CHIEF: Mr. Gillett

2

Mr. ~~Asmermeche~~

Ca

Mr. ~~Fernandez~~

2

Miss. Baum

7B

Mr. Goldman

LS

WILDLIFE MANAGEMENT: Mr. Webster

Mr. Stiles

RESOURCE MANAGEMENT: Mr. Stollberg

BP

Mr. Lumb

EL

OPERATIONS: Mr. ~~Bueneche~~

A

Mr. ~~Regan~~

HR

PUBLIC USE: Mr. DuMont

Mr. Monson

TAMARAC NATIONAL WILDLIFE REFUGE  
NARRATIVE REPORT  
SEPTEMBER, OCTOBER, NOVEMBER, DECEMBER  
1963

U.S. DEPARTMENT OF THE INTERIOR  
BUREAU OF SPORT FISHERIES AND WILDLIFE  
ROCHERT, MINNESOTA

## REFUGE PERSONNEL

Robley W. Hunt . . . . . Refuge Manager  
Robert L. Wright . . . . . Assistant Refuge Manager  
Wayne D. Schmidt . . . . . Refuge Clerk  
James L. Stillings . . . . . Wildlife Aid  
Robert K. Seemel . . . . . Forester

## TEMPORARY EMPLOYEES

Dean C. Ash . . . . . Wildlife Aid  
David A. Annette . . . . . Operator, General  
Clifford C. Boswell . . . . . Laborer  
Thomas W. Jones . . . . . Maintenceman  
Thomas Jones Jr. . . . . Laborer  
Ned L. Larson . . . . . Tractor Operator  
Carl G. Peterson . . . . . Laborer  
Charles Stone . . . . . Maintenceman  
Gilbert D. Wicker . . . . . Foreman II Laborer  
Harry J. Smith . . . . . Foreman II Laborer



TEMPORARY EMPLOYEES (APW LABORERS)

Albert Basswood Sr.	Harry M. Keezer
Albert Basswood Jr.	Herbert Libby
Richard L. Basswood	Alof A. Olson
Wayne E. Conklin	Leonard R. Olson
John Bellanger	Norbert S. Reller
Simon Bellanger	Bernard J. Rock
William W. Bellanger	Reuben Rock
Alvin H. Bloom	Reuben S. Sailor
Robert C. Brown	Earl H. Stearns
Samuel J. Brown	Ralph D. Stevens
Simon M. Bunker	George Stone
Arthur G. Butcher	Kenneth L. Sullivan
Kenneth L. Charboneau	James W. Thompson
Clarence A. Clark	Alexander H. Vizenor
Darrell A. Felker	George Warren
Karol E. Hanson	John J. Warren
Henry A. Hokenson	Fred B. Weaver
George R. Fineday	Leonard Weaver
Charles L. Hanks	Wilbur J. Wilkins
Hugo P. Harvala	Frank R. Williams
Harold L. Jackson	Virgil L. Krogstad
Wayne E. Conklin	Albin O. Nordstrom
Victor Dodd	George O. Tyge
Charles J. Foster	Edward R. Warren
Wesley W. Heinonen	

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TAMARAC NATIONAL WILDLIFE REFUGE  
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1963

I. GENERAL

A. Weather Conditions.

	<u>Snowfall</u>	<u>Precipitation</u>		<u>Max</u>	<u>Max.</u>
		<u>This Month</u>	<u>Normal</u>	<u>Temp.</u>	<u>Temp.</u>
September	<u>--</u>	<u>.90</u>	<u>1.96</u>	<u>78</u>	<u>33</u>
October	<u>--</u>	<u>.13</u>	<u>1.37</u>	<u>90</u>	<u>21</u>
November	<u>--</u>	<u>.03</u>	<u>3.00</u>	<u>57</u>	<u>4</u>
December	<u>6.0</u>	<u>.27</u>	<u>.75</u>	<u>43</u>	<u>-32</u>
Total:	<u>6.0</u>	<u>1.33</u>	<u>7.08</u>	<u>90</u>	<u>-32</u>
Extremes					
Annual					
Total	<u>21.0</u>	<u>21.15</u>	<u>25.59</u>		

During the past period we had unusually mild weather. The temperature did not get down to the freezing mark until October 3rd.

There was a lack of moisture during the entire period.

B. HABITAT CONDITIONS

1. Water

Although we did not receive much water during the period, the lakes with controls were at or above the approved levels. Lakes without controls dropped moderately, but continued to provide attractive feeding and resting for the fall migrants.

Some of the shallower potholes were dry. Overall, however, there was enough water for the migrant birds. Water levels in the streams dropped but continued to flow throughout the period.



Gauge readings on lakes with controls are as follows:

<u>Lake</u>	<u>Approved Level</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
Chippewa	1461.0	1461.70	1461.45	1461.35	1461.35
Flat	1467.5	1468.37	1468.45	1468.40	1468.40
Two Island	1484.0	1484.43	1484.40	14884.40	1484.40

## 2. Food and Cover

Aquatic food, especially wild rice, was in sufficient supply.

There was a record crop of wild rice on the refuge this year. A day by day tally is reported under "Collections". Records indicate that Flat Lake accounted for much of the increased harvest of rice. Also, this year, we did not experience losses from high winds or heavy rains. Harvesting conditions were ideal.

Cultivated crops, with the exception of 3 acres of wheat-alfalfa and 10 acres of millet re-planted to winter wheat, did well this year. All of the refuge-raised crops, except for the winter wheat harvested, were left in the fields. The refuge-raised winter wheat, spring wheat, corn, millet, oats, barley, and buckwheat.

Permittee farmers on the refuge raised mostly oats (277 acres), some barley (13 acres), and one field of corn (11 acres). Yields ran from 22 bushels per acre to 31 bushels per acre for oats; about 29 bushels per acre for barley; and  $4\frac{1}{2}$  tons per acre of corn silage. The refuge received oats for its share of corn. The permittee chose to cut his corn for silage rather than harvest it for grain.

This year we had permittees on two of the wetland areas - the Green tract and the Vondra tract. On the Green tract, Ted Green, the former owner, raised 1,640 bushels of corn on 35 acres (average 46 bushels per acre). He also raised 31 bushels per acre of barley on 13 acres, as well as 1,596 bushels of oats on 31 acres (51 bushels per acre). 25 acres of the tract was shared on a  $2/3 - 1/3$  basis with the Government share being left standing.

Alvin Eklund share-cropped the Vondra tract. He raised an average of 42 bushels per acre of barley on 25 acres.

On both these tracts the share basis was  $3/4 - 1/4$  for small grain harvested,  $2/3 - 1/3$  for small grain left standing, and  $4/5 - 1/5$  for corn harvested. This is the same share basis as made by refuge permittees who, however, deliver their grain to refuge storage bins. In the case of wetland tracts, refuge personnel picked up the grain.

I think next year the refuge should receive a larger share, perhaps 5% more, if refuge personnel again pick up the grain.

## II. WILDLIFE

### A. MIGRATORY BIRDS

During the fall migration we had as many as 600 Canada geese (including about 100 Lessers) using the refuge grain fields at headquarters. This is about 400 more than the peak a year ago.

The buildup started about the end of September and lasted until about the end of October. There were still as many as a hundred migrants here on December 7. Since then, about 25 geese (mostly refuge-released) have remained. They will probably remain until spring.

As mentioned earlier, the geese used the headquarters and Flat Lake fields. These fields had wheat, winter wheat, buckwheat, barley, and alfalfa planted. This (the plantings) plus Flat Lake for resting and wild rice feeding plus the decoy flock added up to an excellent attraction for the geese.

Chippewa Lake with the same setup, however, drew fewer geese but attracted up to 8,000 mallards late in the season.

Total goose use days were over twice as many as last year (22,755 vs 9,135).

We had some reports of blue and snow geese on some of the refuge lakes. Most of these stayed only a day or less. A few (10) snows remained with the Canadas at Flat Lake.

During the week of October 6 - 12, there were about 138,000 ducks using the refuge. This is more than twice the peak recorded last year (57,000). Some of the bigger increases in duck use days were: mallards up (815,010 vs. 533,834), ring-necked up (602,350 vs. 544,068), scaup up (353,920 vs. 159,075), baldpate up (47,460 vs. 23,205), and unknown up (1,434,450 vs. 567,760).

Part of this increase was offset by the decrease in wood duck use. This year there were only 33,250 days recorded while last year there were 78,585 days. Production of wood ducks this year (3,699) was down slightly from last year (3,963). Why the total use was down 58% is unknown.

There was a slight increase in the day-use by blue-winged teal (73,465 vs. 71,050).

Over all there was a 55% increase in duck use days (3,077,200 vs 1,983,212).

There were quite a few more coot this year (57,000) than last (29,250) at the peak which occurred a week earlier this year (9/29-10/5/63).



The first recorded flock of whistling swans since April, 1961, landed on Flat Lake November 14th. There were between 30 and 35 birds in the flock. They remained until November 16th.

Earlier this year, GMA Swendson brought in a sick whistling swan. We banded it and released it in the Ottertail River near the Chippewa goose pens. The swan remained in that general area where it was observed almost weekly until the end of October.

#### B. UPLAND GAME BIRDS

Ruffed grouse, our most common upland game bird, wasn't very common this period. Very few were seen in the open hunting area and no hunter success was reported.

The consensus of opinion in the area was that grouse were down all over.

We continue to support a few (less than 100) pheasants on the refuge. A few of them are wintering in the goose pen.

There have been no reports of wild turkeys this period.

#### C. BIG GAME

The deer population this year is estimated to be up from last year. The results of the deer season are given in Section VI, D, "Hunting". The following table shows how the population was estimated:

	Males	Females	
12/31/62	371	458	829 total; M/F 81.0/100
	172	120	Fawn crop based on 1963 fawn
			total = 35.2:100 and a 59:41
			male:female ratio among fawns
	543	578	Pre-hunting season population
	105	78	Hunting removal
12/31/63	438	500	938 total; M/F = 87.6/100

We have seen no evidence of disease or predation this period. Some predation is to be expected and what does occur probably wouldn't be of importance.

Black bears are on the increase. We have not had a season on the refuge for the past two years. We have asked for a season in both 1962 and 1963 but neither time was permission printed in the Federal Register.

I think we should have a season in 1964 for two reasons: (1) there are several farmers nearby who suspect "refuge-raised" bears of preying on their livestock, and (2) it is an opportunity to give the hunter another trophy animal.

Moose tracks have been seen in a couple of places on the refuge. No reports of sightings were received this period.

We received a report of a bull elk near the Indian Graves in November.

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

No muskrat were trapped this season. Populations are low here on Tamarac and that is one reason. The other is the low price.

Mink are at about the same level as last year.

Beaver were, and still are, plugging culverts at various spots on the refuge. Five were removed.

There was no state beaver season this year.

No signs of an increase in wolves or coyotes were noted this period.

One otter was seen on the road going into the Chippewa fields. There are very few otter on the refuge.

Predators continue to take our captive geese. Within the past period we have lost 4 geese to owls. Usually we're not bothered by owl predation until February or so. We have trapped one great horned owl so far in the goose pen and have shot an additional owl.

We kept the jump traps set for raccoon until freeze-up but we caught only one. Nine coon have been shot by refuge personnel since September first.

#### E. HAWKS, EAGLES, OWLS, CROWS, RAVENS, AND MAGPIES

Golden eagles were seen occasionally during the period.

As mentioned in Section D, we have been bothered by Great Horned Owls. In addition to the one caught in the goose pen, one was caught in a bird trap on September 27th, and a second was shot on December 27th.

#### F. OTHER BIRDS

Nothing to report.

#### G. FISH

The Minnesota Department of Game and Fish has been seining bass from Pine Lake, which they regard as a marginal lake for survival. This fits in with our plans to eventually maintain the lake at an optimum level for waterfowl.

To date, the State has removed 206,864 large mouth bass fingerlings. (This includes the 72,000 reported last period).

The State has been conducting fish rescue operations on Flat and Egg Lakes. As of December 31st, 350 northern pike (350 lbs.) and 4,250 small bullheads (170 lbs.) were taken from Egg Lakes. 362 northern pike (362 lbs.), 63,250 small bullheads (2,530 lbs.), and 150 suckers (150 lbs.) were taken from Flat Lake. The pike were planted, the bullheads destroyed, and the suckers given away.

In September, Paul Hooper and Charles Maas from Regional Office made fish surveys on Wauboose and Pine Lakes. Mr. Hooper recommended that Wauboose be managed for northern pike and black crappies on a continuing basis.

Because Pine Lake is a marginal lake with respect to winter kill and because we plan to lower the lake, Mr. Hooper said that attempts to manage this lake on a long term basis do not appear practical.

Very few fish houses are on any of the refuge lakes.

#### H. REPTILES

One nest of snapping turtles was seen hatching in September.

#### I. DISEASE

None noticed this period.

### III. REFUGE MAINTENANCE AND DEVELOPMENT

#### A. PHYSICAL DEVELOPMENT

As a result of the \$100,000.00 APW project being initiated on September 23, it was possible to accomplish a great many jobs, even though expenditures were limited to forest management operations.

Accomplishments under such categories as timber stand improvement, forest access road construction, reforestation, forest watershed control, forest recreation, forest product processing, etc. were as follows:

1. Planted 90,800 white spruce, white pine, and red pine on understocked areas mostly in the south portion of the refuge.
2. Cleared right-of-way, removed timber cut, and constructed .8 mile of new road in the NE $\frac{1}{4}$  of Section 12, T141N, R39W; installed two culverts in this section, and graded approach to Round Lake picnic area.
3. Picked rock, re-shaped shoulders, bladed, and graveled 5 miles on Bruce Boulevard.
4. Same job on 2 miles of Pine Lake Scenic Drive.
5. Bladed and spot graveled all of Tea Cracker trail, Wauboose, Flat Lake, Tamarac picnic area (north end), Lost, Chippewa goose pen, and Egg Lake (excepting 1 $\frac{1}{2}$  miles of north end), public access into Blackbird, Cotton, and Tamarac (old Casga tract).



6. Spread a total of 6,648 yards crushed gravel, and 357 yards pit-run gravel on all roads to recreational access and picnic sites.
  7. Removed old rotted bridges at Egg Lake and Blackbird, and installed culverts.
  8. Local Indian truckers: loaded and hauled 10.5 cords of shaving wood (Bruce Boulevard), 10.4 cords firewood from Round Lake; 28.6 cords of jack pine posts from old thinning sites.
  9. Constructed new crossing, installed culvert, and dozed old trail from Ogemash crossing to west boundary.
  10. Dozed old trail and used rotary mower from Chippewa Dam to dead end between Blackbird and Johnson Lakes; same job from Bruce Boulevard to Ogemash on old CCC trail.
  11. Logged and had sawed into square timbers and lumber 5.84 MBF for use on picnic tables and refuge signs.
  12. Hauled and delivered from right-of-way cuttings additional 27.25 cords of shaving wood and 33.75 cords of firewood.
  13. Drove new point, installed new pipe and cylinder at Boy Scout camporee area.
  14. Constructed two new latrines at same camporee area.
  15. Repaired steps, bracing, rails, landings, and cab floors of two wooden lookout towers.
  16. Constructed one 6'x9' APW sign and 12 individual APW project signs.
  17. Developed legends and had 8 granite markers (21"x31"x6" and 10 small granite plaques constructed for permanent historical sites.
  18. Cleared, dozed, graveled, and marked new access and picnic sites at Tamarac, Blackbird, Cotton, Lost, Round, Two Island, Pine Lakes.
  19. Constructed 13 new picnic tables w/benches and set out (to be stained yet).
  20. Constructed 79 rustic type signs, with posts, and erected.
  21. 12,000 linear feet (of 26,000 feet constructed by dragline varying from 12 - 15 feet in width) of channel constructed at headquarters site for Canada goose nesting sites, wider ditches, and a total of 17 islands completely surrounded by water - varying from 20'x60' to triangular shapes.
- Also in headquarters channeling, extensions averaged about 12'x17' - a total of about 150 especially for Canada geese.
22. Constructed additional 302 potholes with dragline - varying from 12' x 15' to 15' x 60', a minimum of 300 nesting mounds adjacent to potholes.
  23. Constructed a total of 150 expansions on channels in headquarters area.
  24. Constructed a total of 200 nesting mounds in headquarters area - not counting continuous spoil on one side of channel.
  25. Constructed an additional 40 extensions and nesting mounds along Indian Service Road.
  26. Brushed out trail (1/4 mile) to homestead historical site off Ponsford road - constructed bridge crossing over creek bottom; removed large rock from trail bed.

27. Brushed, pruned, and removed debris for roadside and pine grove clearing on three different locations totalling 14.5 acres on Ponsford road.
28. Burned old brush piles in goose nesting area - Flat Lake.  
Note: additional site clearing on Bruce Boulevard and Indian Service Road accomplished after December 31st, will be reported<sup>n</sup> in Jan.-April report.
29. Peeled and treated over 3500 posts; peeled only additional 700-800.
30. Cut estimated 3000 tamarack posts to be trucked to headquarters.
31. See section under "Timber Removal" for additional forestry accomplishments under thinning, discing, etc.
32. Lakeshore brushing for forest recreation and scenic drive purposes:  
Northeast Tamarac - .8 miles by 1 chain - 6.4 acres  
North side Pine Lake - 1½ miles by ¾ chain - 9 acres
33. Nature trail brushing on east side of Pine Lake - ~~3.1~~ 3.1 miles.
34. Hiking trails on "Old Government Road" - 44 chains by 12' wide (brushing out).
35. Brushing new picnic sites at Round and Two Island Lakes -  
.1 mile by 1 chain, 1 chain by 2 chains
36. Brushing strip of roadside (both sides) from Stillings hilltop to Bruce Boulevard - 2 miles.
37. Brushing pine groves both sides of Indian Service road for esthetic purposes, 17 separate sites for a total of 33.4 acres. Job includes removal of brush, pruning dead limbs to 12 feet, removal and burning of debris, cutting and burning all decrepit, diseased, deformed, and otherwise unsightly brush and tree growth - to be followed by spraying to encourage regeneration of pine seedlings - many compliments have been received on this roadside beautification work.
38. An estimated 200 cords aspen salvaged from land clearing and former relief wood shaving cuttings peeled by Morbark debarker.
39. A new hardwood timber dray constructed for skidding shaving wood materials.
40. One old settler cabin moved, repaired, and treated with Penta preservative.
41. An additional old log cabin moved, repaired, treated - to be re-shingled.
42. Installed barrier fencing and new pole gates on 5 refuge trails.
43. Salvaged 1½ miles old fencing along Pine Lake scenic drive.
44. Moved all materials from Hopstad barn to Knauf barn.

Accomplishments other than APW for period:

1. Installed new picture window, new wood chute window, renovated bathroom, painted dining room, living room, bathroom, stairwell, Quarters 13.
2. Painted new window, screens, doors, interior living room, bathroom, installed picture window Quarters 4.
3. Painted kitchen, bathroom, stairwell, bedroom, installed bathroom linoleum and tile Quarters 11.
4. Installed and finished window ledges in office and washroom.
5. Installed gutters and downspouts in Office, Quarters 11 and 13.



6. At Knauf residence:

Installed sewer and septic tank system

Installed water pressure system, plumbed bath and kitchen

New roofing on residence, salvaged cabinets from Artim building and installed

Installed linoleum on kitchen and bathroom floors

Complete interior paint job

Renovated two outbuildings for vehicle storage

7. Cleaned five septic tanks.

8. Cleaned all residence chimneys and furnaces.

9. Installed new bottom sections on overhead doors Service building.

10. Installed yard light and controls at headquarters.

11. R.O. w/help of refuge personnel completed engineering surveys on Balsam, Ogemash, and Egg Lake control structures.

B. PLANTINGS

Between September 20th and October 5th, we planted over 90,000 conifers. The areas planted are shown on the map in the appendix. 50,000 Norway pine, 20,000 white pine, and 20,800 white spruce were planted. These trees were 2-0 stock obtained from the state nursery at Badoura, Minnesota.

These trees should aid in furnishing winter cover for deer and grouse, and will eventually supply a cash crop for the refuge.

This fall we planted 3,575 pounds of wild rice in the lakes and amounts shown on NR-7. In Flat, Mud, and Evans lakes the rice was planted in the holes where there was no rice. In Little Rice Lake the entire shoreline was re-seeded. Last year we planted this lake but there were very few spears of rice showing this year. Aken's pond showed good possibilities so we seeded 258 pounds in it.

C. COLLECTIONS

As noted on NR-7 we bought 100,000 conifers from the State. Those that weren't planted were heeled in and will be planted in the spring.

This year a record total of 63,859 pounds of wild rice was harvested. The refuge share (7%) amounted to 4,412 pounds.

The first two days harvest (most of which was green and not suited for seed) was sold for \$.35 lb.

The price received by the harvesters varied from 30¢ to 40¢ lb.

43 boats were permitted on the refuge this year. Before the season started, we predicted a lesser crop, thus the decrease in permits. The actual number of ricers was more than 86 because of the usual shifting of partners.

On the next page is a day by day and by lake tabulation of the harvest.

# RICE HARVEST 1963

	8/26	8/28	8/30	9/2	9/3	9/4	9/5	9/6	9/9
Total 7%									
Big Flat	1278 90.0	2046 142.0	3105 212.5	3297 224.5	3200 218.5	2757 190.5	2740 181.5	1926 133.5	1945 136.5
Little									
Flat	692 48.0	1182 82.0	2129 148.5	1892 134.5	2293 159.0	2070 145.0	1819 127.0	1281 88.0	1291 91.0
North									
Chippewa	281 20.0	506 35.0	594 41.5	-----	1387 97.5	1252 88.0	1025 70.5	728 51.5	621 44.0
South									
Chippewa	235 16.5	655 45.5	908 63.0	-----	1061 74.5	686 47.5	1038 72.5	574 39.4	733 50.5
Two									
Island	159 11.0	203 14.0	290 20.0	466 33.0	382 26.0	503 35.5	345 24.0	365 25.5	539 37.5
Carmine	55 4.0	141 9.5	164 11.5	-----	385 27.0	402 27.0	-----	41 3.0	357 24.5
TOTAL	2700 189.5	4733 328.0	7190 497.0	5655 392.0	8708 602.5	7670 533.5	6967 475.5	4915 340.5	5486 384.0

	9/10	9/11	9/12
Big Flat	1823 117.5	1027 62.5	-----
Little			
Flat	1031 72.5	650 45.5	-----
North			
Chippewa	805 57.0	788 55.0	379 27.0
South			
Chippewa	776 55.5	641 44.5	594 41.5
Two			
Island	477 33.0	126 8.5	-----
Carmine	487 33.5	231 16.0	-----
Total	5399 369.0	3463 232.0	973 68.5

GRAND TOTAL 63,958

Total 7% 4,412.0

D. CONTROL OF VEGETATION ✓ *gaw*

One farmer used herbicide on one of his fields on the refuge. It amounted to only 2 $\frac{1}{4}$  gallons on a 13 acre field.

Refuge personnel sprayed 1 1/8 miles of trails with a mixture of 2,4-D and 2,4,5-T at the rate of 2 2/3 pints per mile.

E. PLANNED BURNING

None this period

F. FIRES

Refuge personnel answered a fire call near Height of Land Lake. It was only a small brush fire that was out by the time they got there.

Refuge personnel aided at a fire on the Hubbel Pond refuge just south of us. It was a fire in the residence-headquarters building.

There were no fires on the refuge.

G. ACCELERATED PUBLIC WORKS

Tamarac received an allotment of \$100,000.00 of tax money for work related to forest improvement in September. The first group of men was hired on September 23rd. They were put to work brushing out the scenic drive on the north end of Pine Lake.

Since then, the APW personnel (who now total 50) have worked on a variety of forest management jobs. These jobs are listed under Physical Development III A.

About the middle of December, some of the crew was put in the woods to thin and prune selected trees. Both hardwood and conifers areas were worked on.

This is discussed further under IV D, Timber Removal.

IV. RESOURCE MANAGEMENT

A. GRAZING

None on the refuge.

On the Green tract in Mahanomen County, Theodore Green grazed 47.9 AUM's at the rate of \$1.00/AUM.

B. HAYING

The hay crop on Tamarac Refuge was less than last year by quite a bit. 94.1 tons of tame, 300.45 tons of wild, and 9.38 tons of oat straw were cut on the refuge. Total income was \$620.06.

Theodore Green cut 63 tons of wild hay from the Green WPA.



### C. FUR HARVEST

This fall the refuge trapped five beaver that had been plugging the Chippewa crossing. They were all good sized animals. One of the refuge employees stretched and dried them. We turned them over to the State Warden who will return our share (one-half) as the pelting fee.

Two mink were also trapped by refuge personnel. One was more or less accidental - it was caught in a No. 2 jump trap that was set to catch a mouse in the shop. The other was caught in a trap set for predators near the goose pen. Both of these will be sent in with the permittee trapped furs.

Only one trapper on the refuge attempted to trap mink this year. He got 11 mink of which he kept 6. He also trapped 7 raccoon. The two other trappers were mainly interested in predators, such as wolves, bobcats, and foxes. We have no report on their success as yet.

### D. TIMBER REMOVAL

#### Site preparation

12 acres were disced with the refuge D-4 and one set of discs on cutting areas 19 and 25. The time required was 26 hours or slightly more than 2 hours per acre.

9 acres are mature, porcupine damaged, jack pine which will be cut by a permittee. Healthy trees less than 12" DBH are to be left as well as larger trees where they are necessary to provide sufficient seed trees.

The other 3 acres is around scattered large red and white pine in brush areas.

#### Jack pine thinning

5 acres of jack pine were thinned along the Indian Service Road on cutting areas 11 and 16. About 500 good quality posts were removed along with about 250 cull posts. The work was accomplished by APW labor and was carried out along with other roadside improvement, therefore, accurate cost figures for the thinning operation cannot be determined.

This type of operation is desirable in that the area looks better from a recreational standpoint, will produce better growth of the remaining trees, and provides a monetary return from the sale of the posts.

#### Hardwoods

A strip 150 feet wide along County Road 29 on cutting area 34 was thinned to improve the stand of sugar maple, birch, and basswood. Approximately 159 man-days or about 16 man-days per acre were spent to thin approximately 10 acres. About 40 cords of fuelwood and about 2 MBF of sawlogs were removed. The primary species removed was

ironwood. The stand is now nearly pure maple-basswood. The basal area before cutting averaged 120 square feet and was reduced to 75 square feet.

Large trees in poor condition which may be suitable for wood duck nesting or other wildlife use were left even though normal forestry practice would have dictated their removal.

The stand is opened up to the extent that the remaining trees should put on good growth and maple-basswood regeneration will come in.

There are scattered balsam fir on the area which will probably seed in also. The conifer and hardwood regeneration is justifiable both from a wildlife and forestry standpoint.

#### Tamarack thinning

Approximately 3,000 posts were cut in 28 man days.

Healthy trees averaging 6 inches in diameter are left spaced 9' x 9' for future saw timber.

#### Turkey wood

131.66 cords of turkey wood were cut by welfare workers on cutting area 27. (See "Physical Development")

#### E. COMMERCIAL FISHING

None

#### F. OTHER USES

None

### V. FIELD INVESTIGATION OR APPLIED RESEARCH

#### A. PROGRESS REPORTS

In September, Lauritz Krefting made checks on his brouse study plots. He was aided by refuge personnel.

### VI. PUBLIC RELATIONS

#### A. RECREATIONAL USES

1. This year we opened the access from the north to Blackbird for waterfowl hunting. It was used by many hunters but not by as many as expected.

2. During the peak of the migration we gave an invitation over the local radio station to people to observe the waterfowl on the Flat Lake and Headquarters fields. About 200 people showed up during the afternoon.

3. Five men from the Becker County Sportsmen Club aided in planting rice during September.

4. New public access was also provided on Cotton, Tamarac, and Pine Lakes. The public made extensive use of newly developed access on Pine Lake - both for hunting waterfowl and for sightseeing.

5. Throughout the summer, scouts from the Manypoint Scout Camp made use of the refuge for canoeing, camping, and sightseeing. Listed below is a summary of use as made by Jim Seeden, Assistant Camp Director:

LOCATION	NUMBER OF GROUPS	NUMBER OF PERSONS
Refuge Headquarters (Day Trip)	4	81
Egg Lake (overnight)	3	56
Indian Graves (overnight)	18	287
Ice Cracking Lake (overnight)	73	1534
Round Lake ("Dog Pete's") (Day Trip)	16*	348*
TOTALS (Excluding Round Lake stopover)	98 groups	1958 Scouts & Leaders 348* <hr/> 2306

\*Stopovers on Egg, Ice Cracking Lake, or Indian  
Burial Ground trips



<u>Date</u>	<u>Name</u>	<u>Organization</u>	<u>Purpose of Visit</u>
9/3/63	Mr. Storley	U.S. Indian Bureau	Road repair
9/3/63	Ned Peabody	Lostwood Refuge	See refuge
9/5/63	Kahle, Peterson	Becker Co. Sportsmen	Plant rice
9/5/63	Krefting, Robinette, Dr. Hanson	FWS & Univ. of Minn.	See deer study plots
9/9/63	Capt. Crawford, Sgt. McBride	U.S. Army	Leasing area for Army personnel use
9/10/63	John Dahl	Upper Souris Refuge	See refuge
9/16/63	Paul Hooper, Charles Maas	R.O.	Fish survey on Pine and Wauboose
	Intermittent State fisheries crew	Minn. Cons. Dept.	Seining Pine, Flat, Egg Lakes
9/27/63	Phil Aus	Fergus Falls AAO	See refuge
10/1/63	Martin, Johnston, Wright	R.O.	APW engineering
10/3/63	Eldridge & Steufer		Cabin rental
10/4/63	Jordan, Barrett, Gottenborg	Detroit Lakes	See refuge
10/7-9/63	Johnston	R.O.	Surveys for controls
10/9/63	Eppison & Johnson	R.O.	Engineering surveys
10/13/63	Paul Skoda	WDAY - Fargo, N.Dak.	pictures of geese
10/15-16	Gale Monson	C.O.	See refuge
10/16/63	Scout director	Moorhead, Minn.	Camporee
10/18/63	Dr. V. Watson	Detroit Lakes	See new access
10/18/63	Abrahamson, Blixt	State Wardens	Enforcement
10/21/63	Boots Hanson	Manypoint Scout Camp	Equipment use
10/22/63	Carl Nelson	County Engineer	Balsam Lake structure
10/22/63	DeWitt Clason	Becker Co. Land Comm.	Report illegal hunting
10/23-25	Lauritz Krefting	FWS	Deer brouse survey
10/28/63	Kermit Wilhelm	R.O.	Boundary survey
10/29/63	Abrahamson, Granke	State Wardens	Enforcement
11/4/63	Grady Mann	Fergus Falls AAO	Wetlands acquisition
11/5/63	George Gard	Fergus Falls AAO	Wetlands
11/5/63	Ted Abrahamson	State Warden	Deer shine patrol
11/5/63	Dave Swendsen	GMA	Deer shine patrol
11/6/63	Ted Abrahamson, Ray Jenson	State Wardens	Deer shine patrol
11/12/63	Gordon Nielson	Area Game Manager	Deer season

<u>Date</u>	<u>Name</u>	<u>Organization</u>	<u>Purpose of Visit</u>
11/15/63	Ken Prentice	Detroit Lakes Newspapers	Photographs APW
11/15/63	Frank Martin	R.O.	Wetlands administration
11/15/63	George Gard	Fergus Falls AAO	" "
11/18-19	W. Aultfather, Clair Rollings	R.O.	Land management
11/21/63	Paul Nyberg	SCS	Soil samples
11/21/63	Jerry Sevada	State fish hatchery	Seining on refuge lakes
11/21/63	DeWitt Clason	Becker Co. Land Comm.	Moving log cabin to refuge
11/22/63	Eppison & crew	R.O.	Boundary surveys
11/27/63	Jerry Sevada	State Fish Hatchery	Seining on refuge lakes
12/17/63	Ted Abrahamson	State Warden	Pick up refuge-trapped beaver

#### C. REFUGE PARTICIPATION

<u>Date</u>	<u>Organization</u>	<u>Pictures</u>	<u>Talk</u>	<u>Attendance</u>	<u>Presented by or Attended by</u>
9/9/63	Quarterback Club			100	Hunt
9/17/63	Communications Workshop	x	x	15	Griffith
10/1/63	World War I Vets - Waubun	x	x	30	Hunt
10/7/63	Quarterback Club			100	Hunt
10/10/63	Rural Area Development		x	12	Hunt
10/10/63	Sportsmen Club (Becker Co.)	x	x	30	Wright, Hunt, Seemel
10/14/63	Izaak Walton			8	Hunt
10/23-24/63	U.S. Forest Svc.			4	Hunt
10/29/63	Perham Sportsmen Club & Farmer's Night	x	x	350	Hunt
10/30/63	N.W. Area Resort Assn.		x	10	Hunt
12/6/63	Wetland area tour				Wright, Aus, Mann
12/12/63	Becker Co. Sportsmen		x	40	Wright, Seemel, Stillings, Hunt

# D. HUNTING

The duck season was fairly successful. There were daily hunting parties on Blackbird on Blackbird due to the newly opened access from the north.

On other parts of the refuge, hunting pressure seemed to be less than last year.

No geese were reported shot on the refuge.

New public access landings on Tamarac Lake were used moderately (Chilton and old tower site).

Very few people hunted grouse on the refuge. As mentioned earlier, grouse appear to be on the decline.

No pheasants were reported shot on the refuge.

The deer season this year was not as good as many people hoped for. Again, as last year, lack of snow cover hindered many hunters. In addition, there was a heavy fog cover until 10:00 am on opening day which further limited hunting.

Given in the table below is the day by day tally of the harvest:

THROUGH STATION							ENTIRE REFUGE						
		Adult Fawn							Adult Fawn				
Cars	People	M	F	M	F		Cars	People	M	F	M	F	
11/9	74	166	9	7	4	1	155	341	19	15	8	2	
11/10	137	381	16	17	14	7	244	678	28	30	25	12	
11/11	43	116	2	1	-	1	107	274	5	2	-	2	
11/12	15	32	5	1	1	-	42	89	14	3	3	-	
11/13	23	54	1	-	-	-	69	153	3	-	-	12	
Total	292	749	33	26	19	13	617	1536	69	50	36	28	
Harvest		91							183				
Fawn/Doe:	32/26	= 123/100					64/50	= 128/100					
Male/Female:	52/39	= 133/100					105/78	= 134/100					

The data for the "Entire Refuge" was based on a car count on the whole refuge, the average number of hunters per car through the checking station, and the number of deer checked through the station.

# E. VIOLATIONS

Refuge personnel, GMA Swendsen, and State Wardens Abrahamson, Blixt, and Jenson made three deer shining patrols during the period. No violators were apprehended.



<u>Violator</u>	<u>Violation</u>	<u>Disposition</u>	<u>Warden</u>
Gary Alfson 209 2nd Street Moorhead, Minn.	Transport loaded firearm in motor vehicle	\$25.00 bail forfeited	Wright Abrahamson
Duane Zick, Detroit Lakes, Minn.	"	\$25.00 fine \$4.50 cost \$15.00 suspended	Stillings Abrahamson
Arlow Bien, 1115 Wilson, Detroit Lakes, Minn.	"	"	Stillings Abrahamson
Delbert D. Tysdal Box 324 Fergus Falls, Minn.	"	"	Schmidt Stillings Abrahamson
Jeffrey Matson 12730 26th Ave. No. Minneapolis, Minn.	(1)Hunting ducks w/● duck stamp (2)Hunting ducks w/shotgun capable of holding more than 3 shells	\$10.00 + \$4.00 \$20.00 + \$4.00	Abrahamson Wright
Dennis Greenwood Richville, Minn.	Transport loaded firearm in motor vehicle	\$15.00 + \$5.00	Stillings Wright
Donald Wagner 333 Sherman Detroit Lakes, Minn.	Hunting in closed portion of refuge	\$15.00 + \$4.00	Wright Stillings
Gary Brekken 1215 Minnesota Ave. Detroit Lakes, Minn.	"	"	Wright Stillings

#### F. SAFETY

During the period one accident occurred to permanent personnel.

APW workers have suffered 4 accidents since September 23rd when they started work. Alvin Bloom cut his leg with a chain saw on October 10th. He was off work for about a week. Wilbur Wilkins broke his finger on December 4th. Kenneth Charboneau injured his knee on December 2nd. Herbert Libby was hit in the eye by a chip of wood on December 17th.

APW foreman and crews were given a brief "safety" talk at the time of employment. Only licensed employees were permitted to operate Government vehicles. Foreman were cautioned to assign various power and cutting tools to qualified personnel.

Considering the number of temporary employees assigned to jobs involving use of axes, brush hooks, power saws, etc., we believe the accident record was not at all bad. For the most part, it perhaps represented the fact that we had mostly experienced woods workers, farmers, and other manual laborers.

#### VII. ITEMS OF INTEREST

60 potholes were dug on the Green WPA this past fall. Also, 3 plugs were put in drainage ditches; the old building site was filled in, and 3 potholes were bulldozed.

10 press releases were given to the Becker County Record and Detroit Lakes Tribune and 2 were given to radio station KDLM. These concerned waterfowl season, deer season, and APW projects.

The section on "Physical Development" was completed by Hunt; Bob Seemel completed the section on timber management and pictures; Wright and Hunt collaborated on "Visitors" and "Participation". Wayne Schmidt accomplished all typing and final preparation.

With the exceptions noted above, the report was prepared by trainee Bob Wright.

SIGNATURE PAGE

Submitted by:

*R. W. Hunt*

(Signature)

Robley W. Hunt  
Refuge Manager

Title

Date: January 23, 1964

Approved, Regional Office:

Date: 1/31/64

*Frank R. Martin*  
(Signature)

Asst.  
Regional Refuge Supervisor

# CANADA GOOSE FLOCK - 1963

- 12/28/62 Approximately 155 geese on hand in pens
- 1/28/63 Lost 1 goose - probably to owl
- 2/6/63 Pulled stubs of primaries on 48 3 and 4 year olds
- 2/20/63 Lost 1 goose - probably to owl
- 2/22/63 " " and 1 to uremia
- 2/25/63 Lost 1 goose near mail box - probably to fox
- 3/5/63 Lost 1 goose to dehydration and coccidiosis
- 3/25-29 Several single pairs in; 2 pairs in pothole by granary, 1 pair fliers in pothole 6#N
- 4/1/63 3, 2, and 1 pair flew over pens; 3 geese at Chippewa
- 4/2/63 Flock of 13 in grain field east of pen
- 4/4/63 4 pairs in pothole east of pen
- 4/6/63 Flock of 13, flock of 29, and several pairs flew over pens. 50 geese present.
- 4/7/63 Flocks of 13 and 17 in Flat Lake, 14 near Height of Land
- 4/9/63 Put mated pair in separate pen; put 14 pinioned geese in Chippewa pen
- 4/10/63 Groups of 5 and 6 over pens; 18 from Tamarac Lake; 40 over pens
- 4/11/63 73 geese on Flat (15 refuge released fliers)
- 4/12/63 2 mated pairs in marsh by Flat Lake; 1 mated pair in marsh south of pen; hen nesting in pothole by granary; 1 mated pair in dozed pothole in Flat Lake fields; flushed 60 - 70 geese along Flat Lake (including estimated 4 - 6 mated pairs). About 100 fliers in area.
- 4/13/63 Three nests started in pens. Groups of 3, 4, 5, 20, and 30 over pens daily; mated pairs flying over
- 4/15/63 101 geese in pens
- 4/17/63 8 nests in pens
- 4/20/63 100 fliers present
- 4/27/63 80 fliers present
- 5/1/63 Lost 1 goose to malignant edema
- 5/4/63 80 fliers present
- 5/9/63 2 goslings hatched in pen
- 5/15/63 Brood of 3 and brood of 5 hatched in pens
- 5/16/63 2 Canada geese seen on Little Flat Lake - one on each side of lake
- 5/18/63 6 goslings hatched in pen - makes a total of 16
- 5/22/63 6 geese hatched on level ditch 7
- 5/25/63 Brood of 7 and brood of 4 hatched in pens
- 5/29/63 Lost 1 adult goose to virus (suspected); found 1 dead gosling
- 5/31/63 2 goslings seen in pothole 16R
- 6/2/63 3 goose wings found near fox den
- 6/2/63 Hen and 6 goslings seen heading across field to Flat Lake
- 6/3/63 1 gosling found dead in pen
- 6/16/63 1 gosling found dead in pen
- 7/3/63 Wing clipped goslings and 1 and 2 year olds
- 7/10/63 " " " "
- 7/16/63 Picked up 35 goslings and 16 yearlings from Round Lake Game Farm, Worthington, Minn. (all are thought to be B.C. maxima).
- 7/17/63 Wing clipped all geese
- 7/19/63 Goslings #3 and #18 found dead in pen
- 7/31/63 About 143 geese in pens



8/1/63 19 geese feeding in Flat Lake fields - some w/red bands, others  
 couldn't tell  
 8/10/63 34 geese feeding near Flat Lake duck trap.  
 8/12/63 Gosling #13 found dead in 2 year pen  
 8/21/63 12 pinioned birds moved to Flat Lake pen  
 9/14/63 80 fliers using headquarters area  
 9/21/63 100 " " " "  
 9/28/63 120 " " " "  
 10/5/63 500 fliers using headquarters area (including 100 lessers)  
 10/12/63 500 " " " " "  
 10/19/63 600+ " " " " "  
 10/22/63 170 geese on hand in pens (several fliers)  
 10/26/63 500 fliers using headquarters area  
 11/2/63 100 " " " "  
 11/5/63 43 new fliers came in  
 11/9/63 25 fliers in w/captive birds - rest gone south  
 12/2/63 No. 64 and 518-06133 found dead in pens  
 12/10/63 27 fliers flushed from pens  
 12/23/63 No. 71 found dead  
 12/31/63 180 geese in pens

Total estimated production: 60 - 70 -- 30 in pens and 30 - 40 outside of pens



#### DIMENSIONS OF DITCH - POTHOLE AREAS

The ditches were dug 10 to 30 feet away from the road. The ditches themselves are 6' (a few) to 30' (a few) wide. Most of them are about 20' wide. The ditches along the road are from 100' to 700' long. Some of the ditches that curve into the marsh (Fig. 2 & 3) are over a quarter mile long; others may be only a few hundred feet long. The ditches are about 5' deep.

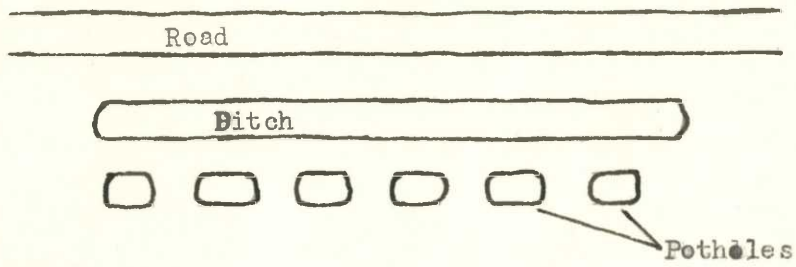
Potholes are those areas less than 100' in length. They range in size from 10' x 15' to 20' x 50'. They are separated from the ditch by a piece of undisturbed marsh 2 to 10 feet wide, and from each other by either undisturbed marsh or by nesting mounds (spoil banks) 2 to 25 feet wide. They, too, are about 5' deep.

Extensions are potholes that are joined to the ditch. They are the same depth as the ditches and are from 10' x 15' to 20' x 25' in area.

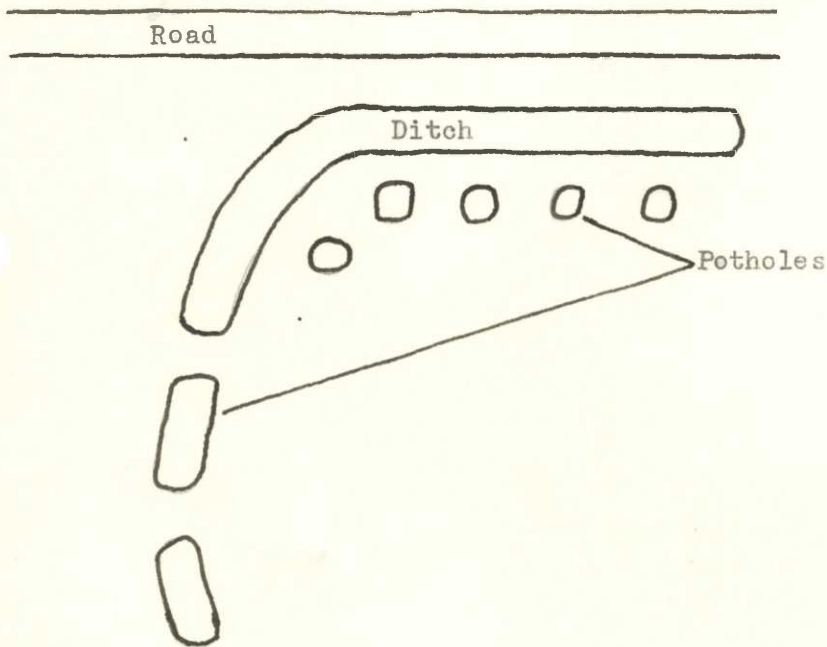
Nesting mounds are spoil banks thrown up between potholes and extensions and along the ditches. They are usually 2 - 3 feet high.

TYPES OF DITCH \* POTHOLE AREAS

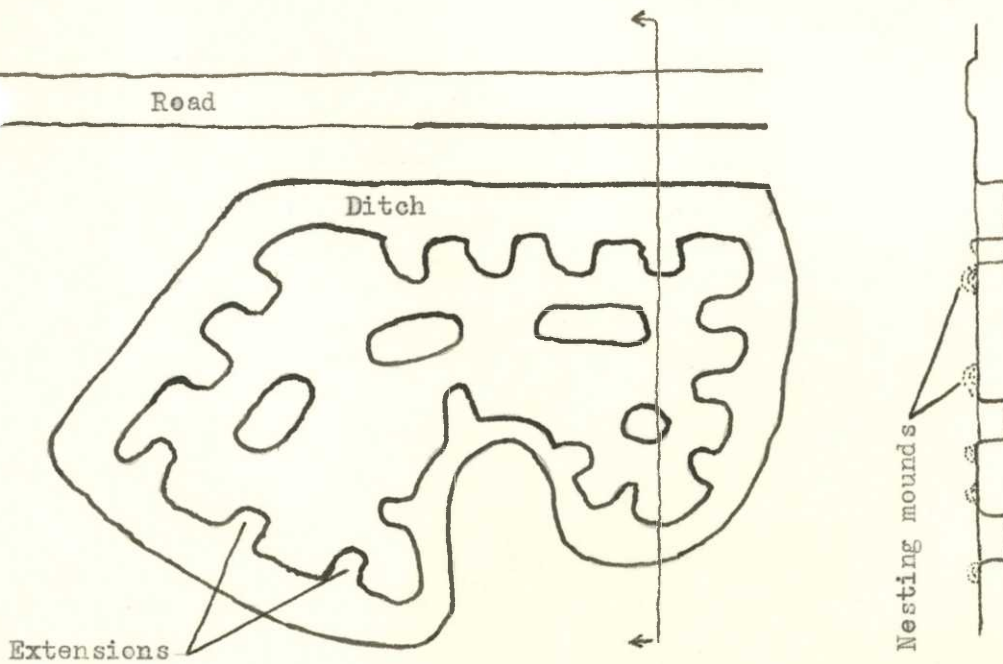
1.



2.



3.



# Conifer Planting Areas -- Fall, 1963

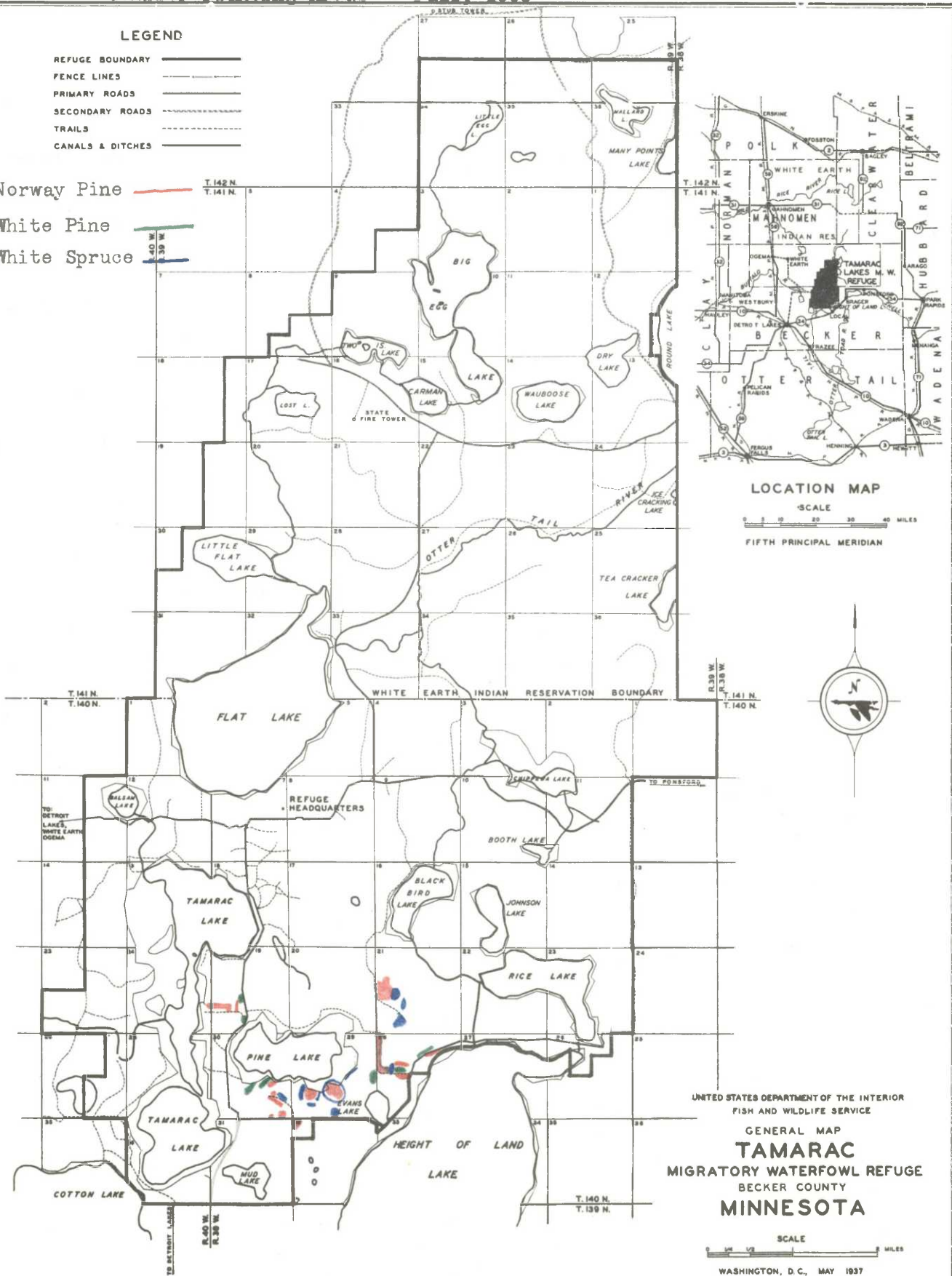
## LEGEND

- REFUGE BOUNDARY —————
- FENCE LINES - - - - -
- PRIMARY ROADS ————
- SECONDARY ROADS - - - - -
- TRAILS - - - - -
- CANALS & DITCHES ————

Norway Pine ———— T. 142 N.  
T. 141 N.

White Pine ————

White Spruce ————



## LOCATION MAP

SCALE  
0 10 20 30 40 MILES  
FIFTH PRINCIPAL MERIDIAN



UNITED STATES DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
GENERAL MAP  
**TAMARAC**  
MIGRATORY WATERFOWL REFUGE  
BECKER COUNTY  
**MINNESOTA**

SCALE  
0 1/2 1 MILES  
WASHINGTON, D. C., MAY 1937

W A T E R F O W L

REFUGE Tamarac National Wildlife Refuge

MONTHS OF September TO December, 19 63

(1) Species	(2) Weeks of reporting period									
	: 9/1-7 1	: 9/8-14 2	: 9/15-21 3	: 9/22-28 4	: 9/29-10/5 5	: 10/6-12 6	: 10/13-19 7	: 10/20-26 8	: 10/27-11/2 9	: 11/3-9 10
Swans:										
Whistling		1	1	1	1	1	1	1		
Trumpeter										
Geese:										
Canada	80	80	100	120	400	100	500	500	100	100
Cackling					100	100	100			
Brant										
White-fronted										
Snow					20	10	20	10		
Blue										
Other										
Ducks:										
Mallard		12000	10820	13000	15700	32610	17000	11200	3000	1000
Black				40	100	10				
Gadwall					100			10		
Baldpate			10	60	400	800	3000	2500		
Pintail					100	10			10	
Green-winged teal					100	15	100			
Blue-winged teal		5000	4215	1000	200	30	50			
Cinnamon teal										
Shoveler										
Wood		1400	960	1000	1050	30	300	10		
Redhead				100	450			10		
Ring-necked		4000	5530	15000	29000	20280	10000	2200	100	
Canvasback										
Scaup		110		300	1000	1050	8000	25000	10000	5000
Goldeneye				20				10		
Bufflehead										
Ruddy										
Otherunk.		4000	13850	10000	15000	82400	20000	16000	2100	
Coot:		5000	17810	25000	57000	26565		14340	1000	



WATERFOWL  
 (Continuation Sheet)

REFUGE Tamarac National Wildlife Refuge

MONTHS OF September TO December, 19 63

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total
	11/10-16	11/17-23	11/24-30	12/1-7	12/8-14	12/15-21	12/22-28	12/29-31		
Swans:										
Whistling	15									
Trumpeter										
Geese:										
Canada	100	100	100	100	50	25	25	25		
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	100	Water Areas Frozen Over							815010	
Black									1050	
Gadwall									770	
Baldpate									47460	
Pintail									840	
Green-winged teal									1505	
Blue-winged teal									73465	
Cinnamon teal										
Shoveler										
Wood									33250	
Redhead									3920	
Ring-necked									602350	
Canvasback										
Scaup	100								353920	
Goldeneye									210	
Bufflehead										
Ruddy										
Other unk									1143450	
Coot:									1027005	

(over)

	(5)	(6)	(7)	
	Total Days Use	Peak Number	Total Production	SUMMARY
Swans		30 - 35	None	Principal feeding areas Flat Lake fields, Chippewa fields,
Geese	22755	600	"	rice beds
Ducks	3077200	137685	"	Principal nesting areas
Coots	1027005	57000	"	
				Reported by Robert L. Wright

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (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) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: 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.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: - Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

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

MIGRATORY BIRDS  
(other than waterfowl)

Refuge Tamarac National Wildlife Refuge Months of September to December 1963

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Common Loon						Sept.				70
Great Blue Heron						Sept.				
Red-Necked Grebe						10/26				
Pied-Billed Grebe			100	10/17						
II. <u>Shorebirds, Gulls and Terns:</u>										
Ring-Billed Gulls						11/2				
Killdeer						Sept.				

(over)

[illegible]

## INSTRUCTIONS

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



3-1752  
Form NR-2  
(April 1946)

UPLAND GAME BIRDS

Refuge Tamarac National Wildlife Refuge Months of September to December, 1963

(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'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked Pheasant	1000		0	-	unknown	0	0	0	75-100	
Ruffed Grouse	24000		0	-	unknown	50	0	0	2500	Population down much from last year
Wild Turkey										None seen

## INSTRUCTIONS

### Form NR-2 - UPLAND GAME BIRDS.\*

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

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

3-1753  
Form NR-3  
(June 1945)

BIG GAME

Refuge Tamarac National Wildlife Refuge Calendar Year 1963

(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-tail Deer	27,500	292	200 est	0	0	0	unknown			0		1121	938	M/F 88/100
Black Bear	27,500	unk	0	0	0	0	unknown			0		15 - 20	15 - 20	unk.
Moose	27,500	unk	0	0	0	0	unknown			0		1 - 2	1 - 2	unk.

Remarks:

Reported by Robert L. Wright

## 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 each species 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.



DISEASE

Refuge Tamarac National Wildlife Refuge Year 1963

Botulism None

Lead Poisoning or other Disease

Period of outbreak \_\_\_\_\_

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) \_\_\_\_\_

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

Condition of vegetation and invertebrate life \_\_\_\_\_

Remarks \_\_\_\_\_

Kind of disease See Below

Species affected Canada Goose

Number Affected Species	Actual Count	Estimated
<u>4</u>	_____	_____
_____	_____	_____
_____	_____	_____

Number Recovered \_\_\_\_\_

Number lost 4

Source of infection Unknown

Water conditions \_\_\_\_\_

Kind of disease; number affected: Uremia - 1,  
Dehydration & coccidiosis - 1, Malignant edema - 1,  
Virus (suspected) - 1

Food conditions \_\_\_\_\_

Remarks All 4 geese were captive birds and died during March, May, and June, 1963

PUBLIC RELATIONS  
(See Instructions on Reverse Side)

 Refuge Tamarac National Wildlife Refuge

 Calendar Year 1963

## 1. Visits

 a. Hunting 4200      b. Fishing 3000      c. Miscellaneous 20,207      d. TOTAL VISITS 27,407

## 1a. Hunting (on refuge lands)

TYPE	HUNTERS	ACRES	MANAGED BY
Waterfowl	<u>2500</u>	<u>12800</u>	
Upland Game	<u>100</u>	<u>12800</u>	
Big Game	<u>1600</u>	<u>26000</u>	
Other	<u>-</u>	<u>-</u>	

 Number of permanent blinds none

 Man-days of bow hunting included above 10

 Estimated man-days of hunting on lands adjacent to  
refuge 1000

## 1b. Fishing (area open to fishing on refuge lands)

TYPE OF AREA	ACRES	MILES
Ponds or Lakes	<u>3150</u>	<u>-</u>
Streams and Shores	<u>-</u>	<u>-</u>

## 1c. Miscellaneous Visits

 Recreation 18,014      Official 143  
 Economic Use 2050      Industrial -

## 2. Refuge Participation (groups)

On Refuge      Off Refuge

TYPE OF ORGANIZATION	NO. OF GROUPS	NUMBER IN GROUPS	NO. OF GROUPS	NUMBER IN GROUPS
Sportsmen Clubs	<u>1</u>	<u>5</u>	<u>14</u>	<u>778</u>
Bird and Garden Clubs	<u>1</u>	<u>15</u>		
Schools	<u>2</u>	<u>200</u>	<u>2</u>	<u>250</u>
Service Clubs			<u>11</u>	<u>371</u>
Youth Groups	<u>11</u>	<u>8300</u>		
Professional-Scientific	<u>4</u>			
Religious Groups	<u>1</u>	<u>15</u>		
State or Federal Govt.	<u>62</u>	<u>79</u>	<u>1</u>	<u>15</u>
Other (tourists)	<u>many</u>	<u>9400</u> <u>18014</u>		

## 3. Other Activities

TYPE	NUMBER	TYPE	NUMBER
Press Releases	<u>19</u>	Radio Presentations	<u>4</u>
Newspapers (P.R.'s sent to)	<u>3</u>	Exhibits	<u>1</u>
TV Presentations	<u>-</u>	Est. Exhibit Viewers	<u>250</u>

## INSTRUCTIONS

Item 1: Total of a, b, and c, equal d.

"Visit" - definition. Any person who is on refuge lands or waters during a day or part thereof for the purpose of: hunting, fishing, bird-watching, recreation, business or economic use, official visit, or similar interest. INCLUDE - those who stop within the refuge while traveling on a public highway because of an interest in the area. EXCLUDE - persons engaged in oil or other industry not directly related to the refuge, persons using refuge as most direct route or principal avenue of traffic, and those boating on navigable rivers or the Intercoastal Canal, unless they stop to observe wildlife on the refuge.

Computing visits. Where actual counts are impractical, "sampling" is used with midweek and week-end samples varied by season or weather. A conversion factor of 3.5 (of passengers per car) is used when accurate figures are not available. Each refuge will develop a conversion factor for boats based on range of usage. Count a camper once for each 24-hour period or fraction thereof.

Item 1a: Acres - of refuge open for each type of hunting.

Managed hunts require check in and out of hunters, issuance of permits, or assignment of blinds.

Other - INCLUDE crow, fox, and similar hunting.

Lands adjacent to refuge. Normally considered within 1 mile or less of boundary, unless established sampling procedures cover a wider area. For big game hunting, the distance may be greater.

Item 1b: Acres of streams open to fishing, if practical; otherwise just miles open. Information on "shores" is primarily for coastal fishing.

Item 1c: Recreation. INCLUDE photography, observing wildlife, picnicking, swimming, boating, camping, visitor center use, tours, etc. TOTAL Recreation, Official, and Economic Use visits under Item 1.

Industrial. INCLUDE persons engaged in industry, i.e., oil industry or factories. EXCLUDE these from Item 1.

Item 2: INCLUDE the "On Refuge" groups in Items 1c and 1. In "Off Refuge" column include only those group meetings in which refuge employees actually participate. EXCLUDE these from Items 1c and 1.

Item 3: Exhibits - INCLUDE displays, fairs, parades, and exhibits OFF the refuge; EXCLUDE those ON.

3-1756  
Form NR-6  
(April 1946)

FISH

Refuge Tamarac National Wildlife Refuge Year 1944

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	
Large mouth Bass	very many in Pine Lake	2500 est.	17000+					206,864 fingerlings (3283 lbs.)
"						5851	Wauboose	
"						5073	Tamarac	
"						3026	Lost	
"						57924	State fisheries Region 5; most of which were to be stocked in Superior National Forest	
"						134990	25 lakes in State Fisheries Region 4	
Bullheads	common in all lakes	unknown	unknown			none		67500 (2700 lbs.) (destroyed)
Northern pike	abundant	"	"			"		712
Walleye	present	"	"			"		none
Suckers	"	"	"			"		150 (lbs.) given away

REMARKS:

Removals and restocking made by Minnesota Fisheries



3-1757  
Form NR-7  
(April 1946)

PLANTINGS  
(Marsh - Aquatic - Upland)

Refuge ~~Tamarac National Wildlife Refuge~~ Year 194~~3~~

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
Wild Rice	Flat	30#/acre (est.)	70 acres	2084 lbs.	9/5 & 11	unknown		
"	Little Rice	"	15 acres	461 lbs.	9/6	"		
"	Mud	"	10 acres	315 lbs.	9/7	"		
"	Evans	"	15 acres	457 lbs.	9/10	"		
"	Aken's pond	"	10 acres	258 lbs.	9/16	"		
Norway Pine	See map	908/acre (6'x8')	50 acres (est.)	50,000 seedlings	9/20-10/5/63	good	drought	Early checks indicate some loss due to dry spell
White Pine	"	"	20 acres (est.)	20,000 seedlings	"	"	"	"
White Spruce	"	"	20 acres (est.)	20,800 seedlings	"	"	"	"

TOTAL ACREAGE PLANTED:

Marsh and aquatic.....120 est.  
Hedgerows, cover patches.....  
Food strips, food patches.....  
Forest plantings.....90 est.

3-1758  
Form NR-8  
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

(PERMITTEE) CULTIVATED CROPS - HAYING - GRAZING

Refuge Tamarac National Wildlife Refuge County Becker State Minnesota

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water- fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./Tons	Acres	Bu./Tons			
Oats	208	3870 bu.	69	1290 bu.			277		
Barley	10	285 bu.	3	95 bu.			13		
Corn (silage)	11	50 ton		*			11		
*15 bu. oats received instead of 9 rows of corn									
								Fallow Ag. Land	0

No. of Permittees: Agricultural Operations 8 Haying Operations 12 Grazing Operations 0

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING None	Number Animals	AUM'S	Cash Revenue	ACREAGE
Tame (alfalfa, brome, clover, timothy)	94.10		188.20	1. Cattle				
				2. Other				
Oat straw	9.38	16	18.76	1. Total Refuge Acreage Under Cultivation				496
Hay - Wild	300.43		413.10	2. Acreage Cultivated as <sup>permittee</sup> <del>Service</del> Operation				301

DIRECTIONS FOR PREPARING FORM NR-8  
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres 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. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

3-1758

Form NR-8

(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges  
(REFUGE)

CULTIVATED CROPS - HAYING - GRAZING

Refuge

Tamarac National Wildlife Refuge

County

Becker

State

Minnesota

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water- fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
Winter wheat (planted fall 1962)			16	95 bu.				Winter wheat (planted fall 1963)	60
Spring wheat					25*		25	Alfalfa	50
Buckwheat					29		29		
Barley					30		30		
Oats					16		16		
Alfalfa					50*		50		
Corn					27		27		
Millet					21**		21		
*3 acres plowed down and re-seeded to winter wheat & alfalfa									
**10 acres plowed down and re-seeded to winter wheat & alfalfa									
								Fallow Ag. Land	0

No. of Permittees: Agricultural Operations \_\_\_\_\_ Haying Operations \_\_\_\_\_ Grazing Operations \_\_\_\_\_

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING none	Number Animals	AUM'S	Cash Revenue	ACREAGE
Alfalfa		50		1. Cattle				
				2. Other				
				1. Total Refuge Acreage Under Cultivation				496
Hay - Wild				2. Acreage Cultivated as Service Operation				195



DIRECTIONS FOR PREPARING FORM NR-8  
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres 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. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

3-1758  
Form NR-8  
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge \_\_\_\_\_ WPA Tracts \_\_\_\_\_ County Mahnomen State Minnesota

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water- fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
Corn	28.0	1230 bu.	7.0	410 bu.			35		
Barley	28.5	1080 bu.	9.5	360 bu.			38		
Oats	45.27	1197 bu.	9.5	399 bu.	8.33		73		
								Fallow Ag. Land	

No. of Permittees: Agricultural Operations 2 Haying Operations 1 Grazing Operations 1

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle	22.5	47.9	47.90	
				2. Other				
				1. Total Refuge Acreage Under Cultivation				
Hay - Wild	63		94.50	2. Acreage Cultivated as <del>Permittee</del> <del>Service</del> Operation				146

Note: Both haying and grazing permitted on Green tract.

DIRECTIONS FOR PREPARING FORM NR-8  
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres 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. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.



## REFUGE GRAIN REPORT

Refuge Tamarac National Wildlife RefugeMonths of September through December 1963, 195

(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 OR SUITABLE USE*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Oats	1300	603	1903			1143	1143	760	x	x	
Corn (shelled)	132	0	132			92	92	40		x	
Corn (ear)	0	410	410			148	148	262		x	
Eye	212	0	212				0	212	x		
Barley	275	0	275				0	275	x	x	

(8) Indicate shipping or collection points Detroit Lakes, Minnesota(9) Grain is stored at Headquarters and Lunde granaries(10) Remarks Ear corn received from Green WPA; oats from refuge permittees

\*See instructions on back.



## 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 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. 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 break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters granary," etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

3-1759  
Form NR-9  
(April 1946)

COLLECTIONS AND RECEIPTS OF PLANTING STOCK  
(Seeds, rootstocks, trees, shrubs)  
Tamarac National Wildlife Refuge

63

Refuge \_\_\_\_\_ Year 195\_\_

Species	Collections				Receipts		Total Amounts on Hand	Amount Surplus
	Amount	Date or Period of Collection	Method	Unit Cost	Amount	Source		
Norway Pine				\$.01 each	50,000	Badoura State Nursery	0	0
White Pine				"	25,000	"	5000	0
White Spruce				"	25,000	"	4200	0
Wild Rice	4412 lbs.	8/26-9/12/63	7% share of harvest					

Interior Duplicating Section,  
Washington 25, D.C. 84267

TIMBER REMOVAL

Refuge Tamarac National Wildlife Refuge Year 1963

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
Donavan Thompson	37975			21.29 cds.	4.00	85.16		Spruce
J.D. Bergstrom	37977			50.53 cds.	.75	37.90		Aspen
David Annetts	37966			19.80 cds.	.75	14.85		Aspen
James Litchfield	Tam. 1			.86 MEF	30.00	25.80		Jackpine bolts
				39.00 cds.	3.00	117.00		Jackpine
Joe Butcher	39602			13.50 cds.	4.50	60.75		Spruce
				5.75 cds.	3.00	17.25		Balsam
James Thompson	37979			19.50 cds.	3.00	58.50		Jackpine
				3.00 cds.	.75	2.25		Aspen
				17.07 MEF.	11.00	187.77		Jackpine
E.J. Larson	37967			12.95 cds.	1.00	12.95		Aspen bolts
				9.10 MEF	4.00	36.40		Aspen
				133.70 cds.	.75	90.28		Aspen
				3.41 MEF	11.00	37.51		Jackpine
				38.80 cds.	3.00	116.40		"
				84.02 cds.	3.00	252.02		Balsam
				5.00 cds.	4.00	20.00		"
				8.50 cds.	4.50	38.25		"
				12.25 cds.	4.50	55.13		Spruce
				6.00 cds.	4.00	24.00		"

Total acreage cut over..... Total income.....

No. of units removed B. F. .... Method of slash disposal.....

Cords.....

Ties.....

.....



TIMBER REMOVAL

Refuge Tamarac National Wildlife Refuge Year 1963

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
Maynard Swan	37970			32.50 cds. 20.83 cds. 37.16 cds. 21.45 cds. 3.33 cds.	4.50 4.00 3.00 3.00 1.50	146.25 83.32 111.48 64.35 5.00		Spruce " Balsam " Jackpine posts
Lloyd Jellum	37969							
Floyd Leu	37973							
Hank Smith	35716			52.00 cds.	.75	39.00		Aspen
Park Region Timber	37978			8 each 8.95 cds.	.12 17.00	.96 152.15		Jackpine Jackpine
Charles Brown	37971			26.59 cds. 8.50 cds.	4.00 4.50	106.36 38.25		Spruce "
Carl Jenson	37972			35.10 cds. 10.07 MEF 3.59 MEF 1.54 MEF .23 MBF	3.00 4.00 10.00 8.00 12.00	105.45 40.28 35.90 12.32 2.76		Balsam Aspen Jackpine Balsam Basswood
Carl Jenson	Tam. 5			3.18 MEF 46.57 cds. .33 MEF 16.00 MEF 3.47 MEF	8.00 2.00 5.00 30.00 25.00	32.88 93.14 1.65 480.00 86.75		Tamarack " rails Mixed hdwds. Red, jack, white pine Mixed hdwds.

Total acreage cut over..... Total income.....

No. of units removed B. F. .... Method of slash disposal.....

Cords.....

Ties.....

.....



TIMBER REMOVAL

Refuge Tamarac National Wildlife Refuge Year 1962

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
Delmas Vizenor	Tam. 15			20.00 cds.	1.00	20.00		Hardwood
Becker Co. Welfare	Co-op. agreement			460 posts pth3"	.12	55.20		Jackpine
				62 posts pth5"	.15	9.30		"
				1342 posts ph3"	.02	26.84		"
				94 posts ph5"	.05	4.70		"
				617 posts PTM5"	.25	154.25		"
				1206 posts Btm3"	.19	229.14		"
				69.76 cds.	1.50	104.64		"
				21.2 cds.	3.00	63.60		" pulp
				81.93 cds.	.50	41.32		Firewood d&d
Elder Rishof	39601			6.95 MBF	12.00	82.40		Basswood
				1.47 MBF	8.00	11.76		Balsam

Total acreage cut over..... Total income \$3,731.57

No. of units removed B. F. 59.75  
Cords 940.38 Method of slash disposal lopped and scattered  
Ties.....

## ANNUAL REPORT OF PERSTICIDE APPLICATION

Proposal Number

Reporting Year

1963

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Broad leaf brush	Refuge trails		2,4,D				Spray
	Weeds	Field 1 of Farm Unit 901 Sec. 7&8 140-40	13	2,4,D	2 1/4 gal.	.17 gal./acre	1:52 water	Tractor
	Weeds, brush	Bruce Boulevard	5 miles	2,4,D 2,4,5T	12 gal. 72 gal.	.6 gal./acre 3.6 gal./acre	1:250 water	spray Truck mtd.
	Weeds	Chippewa, east field	5 1/4	2,4,D 2,4,5T	13 1/2 pts. 13 1/2 pts.	.25 pt./acre .25 pt./acre	1:42 Water	Tractor spray
		Chippewa, west field	4	2,4,D 2,4,5T	1 pt. 1 pt.	" "	" "	" "
		Headquarters field	4	2,4,D 2,4,5T	1 pt. 1 pt.	" "	" "	" "
	Weeds, brush	SSW, Sec. 1, 141-19 (haul road)	9	2,4,D 2,4,5T	1 1/2 pt. "	1/8 pt./acre "	12.5 gal. acre/water	Tractor spray

10. Summary of results (continue on reverse side, if necessary)



Some of the APW brushing crew along the north shore of Pine Lake. The public scenic drive road is just beyond the small birch. The trail was graded and graveled, and is ~~an~~ exceptionally picturesque trail - even for this country.

Pine Lake also blossomed into the "hottest" large-mouth bass fishing lake in the State this past summer. If there is no winter-kill, the lake should be a first rate tourist attraction next summer.



Thirteen heavy-type picnic tables were constructed, treated, and temporarily set out during the period. Wood timbers and planking were cut from dry pines and spruce by members of the APW crews - all materials were treated with preservative - they will be stained, and given an additional finish in the spring. Tables were erected on newly developed recreational sites as a part of the forest recreation project.





A close-up of the type of rustic sign constructed for a variety of refuge facilities, developments, project work, etc.

This sign indicates public access to a beautiful drive along the north shore of Pine Lake. The shoreline was brushed and slightly improved for better vision.

We believe the APW crew work accomplished on this drive is a considerable addition to the public use value of the area without any deterioration of wildlife values. In fact, much waterfowl habitat development was completed along the same drive.



As of December 31st, 64 rustic type signs had been constructed and erected on the refuge.

All materials were produced on the refuge. This is a facet of forest recreation and public use financed largely by APW.





This channel (which will definitely produce waterfowl where none was produced previously) was completed in December - in a former water area that had completely filled in with peat, sedges, willows and tamarack.

It now provides new waterfowl habitat and can be observed without getting out of a vehicle - on a good graveled road, open to the public.



Construction of over 5.5 miles of channels and 250 pot-holes were completed as of the end of December. Working conditions were reasonably good considering the time of year.

Drainage of many sections of refuge access roads was improved, along with improving public opportunity for observation of waterfowl in wooded areas. Waterfowl production habitat was decidedly increased.



Over 2.5 miles of channel from 10-50 feet wide were constructed in the numerous "filled-in" marshes on Tamarac during the period.

Over 250 small potholes and nesting islands were also constructed.

This area is in the headquarters vicinity. Ditches, potholes and islands were all developed with the objective of enhancing Canada goose nesting habitat within intensive "predator - control" distance of headquarters.



A shot showing one of the holding pens for the captive geese - beyond which are the newly developed grain fields.

These fields were utilized by over 500 migrant geese and 4-5000 ducks after they cleaned up the available grain on the Flat Lake fields in October.

This shows that timbered areas will attract waterfowl, given a combination of decoy birds, food, water, and sanctuary.



A group of early settler log buildings is being repaired, moved and otherwise preserved for public use. The refuge has had many such buildings - some still in use.

There already is much interest in this project, and we believe the Service will, in years to come, receive much good publicity from this project.

We have already received much volunteer offerings of furnishings, pioneer equipment, etc.