

LOWER SOURIS NATIONAL WILDLIFE REFUGE  
QUARTERLY NARRATIVE REPORT  
AUGUST, SEPTEMBER, AND OCTOBER, 1940

United States Department of the Interior  
Fish and Wildlife Service  
Upham, North Dakota

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PERSONNEL

Cordia J. Henry	Refuge Manager
Merrill C. Hammond	Biologist
Wilfred Anderson	Clerk
Harry A. Jensen	Patrolman
Thomas W. Lawson	Patrolman
Ingvald J. Martinson	Patrolman

I. GENERALA. Weather Conditions

<u>Month</u>	<u>1940 Rainfall</u>	<u>(1939) Rainfall</u>	<u>Maximum Temperature</u>	<u>Minimum Temperature</u>
August	2.33	1.90	95	42
September	.48	.58	92	30
October	<u>1.14</u>	<u>.33</u>	<u>76</u>	<u>20</u>
Totals	3.95	2.81	Extremes 95	20

Rainfall records for 1940 were taken from the official rain gauge at refuge headquarters, with records for 1939 from the Bottineau station. The deficiency in rainfall for the three-months period in 1939 was 2.31 inches, while the deficiency for the same period in 1940 was only 1.17. The average temperature for the entire period has been above normal, and the weather for the most part has been exceptionally nice. Because of rainfall deficiency the ground is quite dry, although not as bad as during the past few years. There has been no weather cold enough to create more than a little ice along the shores in early morning.

B. Water Conditions

There still exists a fair quantity of water in the refuge, but of course there is less than at this time last year. This is due to lack of runoff this past spring, and the lack of any heavy rains that might have caused runoff.

Water condition by units

Rubble-masonry area. Not quite full, but is still in excellent condition. Was full at this time last year.

Unit 320. Gates wide open for winter. Some water trapped in west end, and some water still in river channel. Same as last year.

Unit 326. Lacks 3 feet of being full. Almost same as last year.

Unit 332. Lacks .44 feet of being full. Lacked an inch at this time last year.

Unit 341. Lacks 2.75 feet of being full. Lacked 3.1 feet last year.

Unit 357. Lacks over 8 feet of being full. Lacked 4.65 feet last year.

A good flow of water was entering the Lower Souris from Lake Darling at this time last year.

#### C. Fires

Despite the moisture deficiency, the past quarter has been fairly moderate with considerable damp or cloudy weather. The fire hazard has probably been lower than usual, with not many days that could be classed as dangerous. Fire-breaks in the south end of the refuge were plowed in August. Patrol roads were mowed and cleaned in late August and September, and most of the weeds along these roads were burned in October.

## II. WILDLIFE

### A. Waterbirds

#### 1. Populations and behavior

##### a. Species

White Pelican. The maximum number of pelicans observed on the refuge at any one time was 350 as compared to 600 last year. The birds dwindled away in late September and early October, with the last record that of four birds on October 15th.

Double-crested Cormorant. This bird was quite common during most of the period although they thinned out rapidly in October and disappeared entirely during the last half of the month.

American Egret. Refuge personnel were astounded to observe an American Egret in the 332 unit on November 2nd and again on November 3rd, a new refuge record. Other birds of the heron tribe were of about the same status as last year.

Canada Goose. Very few other than the refuge flock.

Hutchin's Goose. Only one small flock in late October.

White-fronted Goose. Uncommon this fall. First record September 23rd, and a few birds present during most of October. At present one bird stays with Canadas in Goose pen.

Snow Goose. Eight Snow Geese were seen in the 320 unit on October 15th.

Mallard. The fall flight of Mallards was as heavy as last year, but the peak period was not until the last of October, as compared to the middle of October in 1939.

Black Duck. An occasional record, and a black duck and black-mallard cross were banded.

Gadwall. These birds were common up to early October, but only a sprinkling is now left on the refuge.

Baldpate. The Baldpate population was very satisfactory this summer. Most of them had left, however, by early October.

Pintail. This species has been much more common this fall than in any previous fall, and has stayed later.

Green-winged Teal. The fall flight of Green-wings was about the same as usual.

Blue-winged Teal. The status of this bird was very satisfactory. They dwindled away rapidly in late August and September, and were all gone by late October.

Shoveller. There has been no apparent change in this bird.

Redhead. These birds have been uncommon this fall. There have been a few scattered flocks, but no real flight.

Ring-necked Duck. Five of these birds were observed in the 326 unit in early October.

Canvas-back. There were a few Canvas-backs here in late summer and up to the first week in October, but there has been no fall flight.

Scaup Duck. The outstanding feature of the fall flight has been the lack of Scaups. Ordinarily we have a nice fall flight of these birds but this fall there have been only a very few. Since the first of October they have actually been rare!

American Goldeneye. This bird has been rare during the past quarter, with less than a dozen being observed in the period.

Buffle-head. These birds have always been uncommon here, although we have seen more this fall than during any previous migration.

Ruddy Duck. The status of the Ruddies has remained about the same. There was a fine concentration in the 320 area in September.

Hooded Merganser. These birds were concentrated in the 320 area in late September and early October in far greater numbers than have ever been noted here before.

Sandhill Cranes. For the first time since the refuge was established, Sandhill Cranes have made real use of the area. A group of these birds stayed in the 320 marsh during September and the first half of October. The maximum number was about 16 or 18 birds. They flew out of the marsh every morning and evening to feed in neighboring grain fields, and were also observed in a refuge corn field.

#### b. Groups

Grebes were inconspicuous during this quarter as most of them leave early. Only a few pied-billed lingered to the end of the period.

Geese were very scarce this fall, with just a very thin sprinkling on the refuge in October. It was impractical this year to make a count of the total number of young geese raised on the refuge, but the estimate is about 25 or 30.

Ducks. There were very good numbers of ducks here in August, probably better than any previous August concentration. As usual, the local ducks dwindled away in late September until they were quite scarce by the first of October. During October the northern flight filtered in slowly, but the migration in general was slow and backward. In 1939 we reached a peak of an estimated 750,000 ducks by the middle of October, whereas at that time in 1940 we probably did not have more than 300,000. The increase continued, however, until by the present time we have at least as many ducks as we had during the peak last year.

There has been about the same number of complaints of duck damage to crops as last year. Refuge personnel cooperated in giving demonstrations in the use of spinner reflectors and duck bombs with fair success.

Shore birds were here in about the usual numbers. The favorite areas for these birds were principally the bare flats of the 320 and 357 units.

Gulls. The only gulls here in any great numbers were the Franklin's Gulls. In late August and early September there were many thousands of them, but they thinned out rapidly in mid-September with the last record in the first week of October.

## 2. Food and Cover

As stated in the last report this past summer was the best yet from the standpoint of improvement in natural food and cover plants. Grain crops put in by farmers under cooperative agreement were very good. A total of 709 acres of crops were left standing as feed for wildlife. These include Durum Wheat, Barley, Corn, Oats, and Millet. The total quantity of grain left in the field on these 709 acres is 18,198 bushels.

Far greater utilization has been made of refuge grain crops this fall than ever before. The principle reason for this has been due to



our experimental efforts to make the grain more available to the birds by dragging, mowing, and burning. A total of 140 acres were dragged, 65 acres were mowed, and 10 acres were burned. The drag proved to be the fastest, the most economical, and the most successful method. The drag was constructed of three parallel planks linked together, with overlapping salvaged hog wire between them. With this drag each swath had to be dragged twice, each time in opposite directions. The final appearance of the field was that of a field that had been badly hailed out. Ducks by the thousands work in these fields until they are almost thoroughly cleaned. At some distance the birds hovering and circling over these fields resemble clouds of smoke. In dragging these fields we always left a considerable border of grain standing to take care of the upland game birds.

### 3. Disease

No evidence in this quarter.

### B. Upland Game Birds

Prairie Chicken. There has been an increase in these birds during October and they are now more common than at any time since the establishment of the refuge.

Sharp-tailed Grouse are still on the upswing of their cycle in this locality, as they have been since the first observations were made in 1935. These birds have been abundant this fall.

European Partridges are still continuing to increase, and are very common in grain-raising areas.

Ring-necked Pheasants made a spectacular jump in 1940, and there are at least twice as many as there were last fall. Negotiations are now under way to allow the State to live-trap up to 5,000 birds for propagation purposes.

Pheasants have become so abundant that it is feared they may soon offer serious competition to native species of birds. There is the very good possibility, however, that most of them will be killed off in the first real tough winter we have. Many perished in blizzards in the winter of 1935-36. Food patches are used extensively by all four species of upland game birds, although the prairie chicken and grouse do not depend upon them as extensively as do the pheasants and partridges. There is plenty of natural food for the sharptails as the rose-hip crop is excellent, as are most other natural foods.

C. Big Game Animals

No inventory of the deer population has been attempted yet this year. The animals are abundant, and are in excellent condition. Three additional specimens were taken for Major E. A. Goldman during the period. He states that one buck was the largest, if not the largest, in the entire collection of white-tailed deer.

The food and cover conditions are still excellent. New salt blocks (three in number) were put out in October to replace salt blocks that have been consumed and weathered away. Most does observed with young during the summer had two fawns each.

D. Fur-bearing Animals, Predators, Rodents, and other Animals

1. Population and behavior

Mink have increased rapidly during the past year. They have become so numerous as to offer a serious check to bird populations and to muskrats. Every effort will be made to reduce them to a reasonable number during the winter. Muskrats have not shown the increase expected in 1940, due in our opinion to the abundance of mink. There has been some increase in raccoons and beaver, but other species are approximately the same as before. Beavers are becoming sufficiently numerous so as

to cause appreciable damage to timber and to retard the natural flow of the river. They also cause considerable inconvenience by their activities in obstructing the operation of dams. It may soon become necessary to commence the removal of surplus beavers each year.

## 2. Control

The following table shows predators taken during the past three months:

	<u>August</u>	<u>September</u>	<u>October</u>	<u>Total</u>
Skunk	9	4	1	14
Mink	2	4	1	7
Coyote	1			1
House Cat		1		1

Note: The mink and most of the skunk were taken in steel traps set to protect ducks being trapped for banding purposes.

## E. Fish

There has been no apparent change in the status of the fish on the refuge during the past quarter.

### III. REFUGE DEVELOPMENT AND MAINTENANCE

#### A. Physical Development

##### 1. Residences

Work has been continued on the rehabilitation of the Simengaard House in the north end of the refuge. This has also included the start on the construction of the garage. Approval for bids for the construction of the well has not yet been received; so it will probably be a long time before the place is ready for occupancy.

##### 2. Upham-Willow City Road

The work on this major project was completed in October.

##### 3. Patrol Roads

One and a half miles of trail south of headquarters were graveled in October. Work on the important road in to the Tommy Thompson place (Martinson's residence) has been going along quite well.

##### 4. 341 Road

The dragline has been moved to the 341 area and dirt moving has started on the raising of the public road across the refuge at Dam 341.

##### 5. Bridges

A bridge was constructed across the diversion ditch at Dam I in connection with the construction of the road to the Tommy Thompson place. Another bridge in the patrol road south of the Hillman bridge has almost been completed.

##### 6. Fencing

Considerable fencing was done during the period and the refuge boundary is now almost completely fenced. Interior fencing along the Nelson bridge road and its branches has been finished, as has some fencing of outlying tracts, pastures, and cattle easements.

## 7. Dams

Riprap was relaid and improved around the control gates of Dams 320 and 332.

## 8. Corn Crib

A corn crib was constructed during the quarter. This is located at the headquarters granary site near refuge headquarters.

## 9. Wells

A well at the Meddaughs Park Recreational area has been cleaned and reconditioned, and is now ready for use.

## 10. Loading Ramps

Six of these were built during the quarter, and are located at strategic points on the refuge.

## 11. Headquarters Residence

The addition to the coal bin at the refuge headquarters residence was installed.

## 12. Razing

Buildings on six tracts were razed during the quarter.

## B. Plantings

### 1. Aquatics and Marsh Plants

The wild rice planted in November, 1939, did exceptionally well. An excellent new stand was started just below the west end of the 320 dam, and another just below Dam III. We were able to plant the rice just as the ice was forming, and the freeze-up then occurred to protect the seed from any possible deprecations by waterfowl until April. In our opinion the ideal time to plant wild rice seed is just before the freeze-up.

### 2. Cultivated Crops

This subject was discussed under II-A, Food and Cover. A detailed report will be included in the January 31 report.

### 3. Trees and Shrubs

The following is a complete list of trees and shrubs planted in <sup>1940</sup>1939,  
with approximate numbers surviving to October 1, <sup>1940</sup>1939:

<u>Species</u>	<u>Planted</u>	<u>Survived</u>
Tartarian Honeysuckle ( <i>Lonicera tatarica</i> )	7,191	6,112
Russian Olive ( <i>Eleagnus angustifolia</i> )	4,177	2,715
Green Ash ( <i>Fraxinus pennsylvanica lanceolata</i> )	3,035	2,125
Chokecherry ( <i>Prunus virginiana</i> )	8,478	7,206
Caragana ( <i>Caragana arborescens</i> )	2,688	2,285
American Plum ( <i>Prunus americana</i> )	610	518
Juneberry ( <i>Amelanchier alnifolia</i> )	1,999	1,600
Highbush Cranberry ( <i>Viburnum trilobum</i> )	100	90
Flowering Currant ( <i>Ribes</i> sp.)	294	280
Buckthorn ( <i>Rhamnus cathartica</i> )	405	325
Ginella Maple ( <i>Acer</i> sp.?)	126	107
Fragrant Sumac ( <i>Rhus aromatica</i> )	40	8
Cotoneaster ( <i>Cotoneaster</i> sp.)	111	80
Staghorn Sumac ( <i>Rhus typhina</i> )	605	300
Black Haw ( <i>Viburnum lentago</i> )	22	20
Thornapple ( <i>Crataegus chrysocarpa</i> )	59	30
Rose ( <i>Rosa</i> sp.)	818	565
Red-osier Dogwood ( <i>Cornus stolonifera</i> )	907	632
Aspen ( <i>Populus tremuloides</i> )	1,148	460
Willow ( <i>Salix</i> sp.)	643	322
Western Snowberry ( <i>Symphoricarpos occidentalis</i> )	100	80
Chinese Elm ( <i>Ulmus</i> sp.)	55	45
Japanese Walnut ( <i>Juglans</i> sp.)	12	7
Cottonwood ( <i>Populus deltoides</i> )	210	175
Lilac ( <i>Syringa vulgaris</i> )	130	78
Virginia Creeper, or Woodbine ( <i>Parthenocissus quinquefolia</i> )	425	340
Red Cedar ( <i>Juniperus virginianus</i> )	1,512	910
Jack Pine ( <i>Pinus banksiana</i> )	374	205
Ponderosa Pine ( <i>Pinus ponderosa</i> )	97	48
Scotch Pine ( <i>Pinus sylvestris</i> )	40	20
<b>Total</b>	<b>36,474</b>	<b>27,688</b>

(See Henry's  
2-4-40  
letter re  
correction)  
ab

### 4. Nursery

Considerable work was done in the nursery during the period, and the unit is in very good condition. Work has included cultivation and watering, preparation of seed beds, digging and heeling in of stock for transfer and for spring planting.

### 5. Grasses

This has been the most favorable year for grasses since the refuge

was established. A definite "come-back" in waste areas has occurred, and all grass seeded made a good start.

### C. Collections

#### 1. Tree seeds collected and cleaned for planting are as follows:

Chokecherry ( <i>Prunus virginiana</i> )	87 pounds
Caragana ( <i>Caragana arborescens</i> )	77 pounds
Plum ( <i>Prunus americana</i> )	38 pounds
Red-osier Dogwood ( <i>Cornus stolonifera</i> )	32 pounds
Tartarian Honeysuckle ( <i>Lonicera tatarica</i> )	25 pounds
Silverberry ( <i>Eleagnus argentea</i> )	25 pounds
Cotoneaster ( <i>Cotoneaster</i> sp.)	4 pounds
Thornapple ( <i>Crataegus chrysocarpa</i> )	1 pound, 3 ounces
Wild Grape ( <i>Vitus vulpina</i> )	1 pound, 2 ounces
Flowering Currant ( <i>Ribes</i> sp.)	13 ounces
Total	291 pounds, 2 ounces

These seeds are now stored dry in sacks, except some that are being fall planted. Certain varieties will be stratified at a later date.

<u>Estimated cost of collection:</u>	<u>Labor*</u>	<u>Other</u>
Chokecherry	\$57.00	\$6.00
Caragana	8.00	6.00
Plum	37.00	8.00
Red-osier Dogwood	46.00	2.00
Tartarian Honeysuckle	10.00	1.00
Silverberry	3.00	1.00
Cotoneaster	2.00	1.00
Thornapple	1.00	---
Wild Grape	4.00	2.00
Flowering Currant	17.00	4.00

\*Figuring CCC labor at \$1.00 per day.

2. Other seeds collected are approximately 3 bushels of bulrush seed picked on the refuge in late summer. This is both hard-stem and soft-stem. Cost of collecting the bulrush seed was \$75 for labor and \$15 for other costs.

#### 3. Specimens

Very few specimens were preserved during the quarter. These include one mink (*Lutreola vison*), one mouse (*Peromyscus*), and one blackbird (Partial albino).



#### D. Distribution of Seed and Nursery Stock

##### 1. Receipts

Russian Olive (*Eleagnus angustifolia*). 200 pounds from Sand Lake Refuge by freight on October 18th.

Wild Rice (*Zizania aquatica*). 500 pounds from Tamarac Refuge by truck on October 18th.

##### 2. Transfers

Crested Wheat Grass seed (*Agropyron cristatum*). 100 pounds to Sand Lake Refuge by freight on October 2nd.

Crested Wheat Grass seed (*Agropyron cristatum*). 500 pounds to Arrowwood Refuge by freight on August 29th.

Brome Grass seed (*Bromus inermis*). 200 pounds to Arrowwood Refuge by freight on August 29th.

#### IV. PUBLIC RELATIONS

##### A. Recreational Uses

##### 1. Recreation Areas

The recreational area near Westhope is still incomplete, and is not yet open to the public. The recreational area near the Freeman bridge, and the adjacent public fishing area, had considerable usage during late summer. It was probably used by 200 to 300 people during the quarter.

##### 2. Fishing

Nothing but a few Bullheads were caught in the public fishing area during the period.

##### 3. Hunting

There is no part of the refuge open to public shooting. The hunting season for waterfowl in the vicinity of the refuge has not been quite as good as last year. Most of the local ducks had departed before the first of October, while the northern flight was quite backward. Many good bags



were secured, but more often the hunter was unsuccessful.

The season on upland game birds was highly successful, and there were more than enough for everyone. At the end of the season there was still an abundance of birds, and no depletion was apparent.

#### 4. Number of Visitors

There were a great many hunters and other visitors that stopped in to see the refuge during the period. Hunters, especially, flocked in in an attempt to find out the best places to hunt.

On October 15th a girl scout group from Bottineau was taken on a tour of the refuge. The refuge manager talked to the Bottineau State School of Forestry on October 25th and showed the Service movie on bird banding. The refuge biologist gave a talk to the Bottineau County Wildlife Federation on September 23rd on the subject of wildlife cycles and identification of game birds. The refuge manager attended the fifty-eighth stated meeting of the American Ornithologist's Union in Boston in September, and also visited the Washington office after the meeting.

#### Officials and Important Visitors

#### Time Spent

A. G. Hamel, U. S. Forest Service, Milwaukee, Wisc.	1 hr.
S. E. Schoonover, U. S. Forest Service, Milwaukee, Wisc.	1 hr.
Wm. J. O'Leary, Deputy U. S. Marshall, Fargo, N. Dak.	1 da.
Daniel H. Janzen, Asst. Regional Director, Minneapolis, Minn.	1½ da.
Anthony Erickson, Pitman-Robertson worker, Bismarck, N. Dak.	Several visits
Robert H. Smith, Fish & Wildlife Service, Washington, D. C.	2 da.
Robert W. Dougall, Fish & Wildlife Service, Minot, N. Dak.	Several visits
M. O. Steen, Pitman-Robertson project, Minneapolis, Minn.	2 da.
Conservation officials from Ohio	1 da.
R. P. Turnquist, Bremerton, Washington	2 da.
J. A. Stacy, Fish & Wildlife Service, Washington, D. C.	1 da.
W. Bannerman, Royal Canadian Mounted Police	2 hr.
J. H. Harmer, Royal Canadian Mounted Police	2 hr.
Wm. J. Howard, Fish & Wildlife Service, Washington, D. C.	1½ da.
Stanley Saugstad, Pitman-Robertson project, Bismarck, N. Dak.	Several visits
Burnie Maurek, Regional Director, Minneapolis, Minnesota	2 da.
A. C. Storz, Omaha, Nebraska	2 da.

## B. Violations

Gust Kornkven, Souris, 10/6/40, hunting upland game after hours, and with gun not plugged.

Oliver Nees, Paul Nees, and Vic Anderson, Garske, 10/25/40, hunting waterfowl after 4:00 P.M.

Morton P. Aakrann, Minot, 10/27/40, hunting waterfowl after 4:00 P.M.

Victor H. Boll, Russell, 10/29/40, hunting waterfowl before sunrise.

C. S. Troyer, Bottineau, Alex Henderson, Glen Walker, and Albert N. Baumann, Westhope, 10/29/40, hunting waterfowl after 4:00 P.M.

None of these cases have yet come up for trial.

## V. ECONOMIC USES OF REFUGE

### A. Grazing

The grazing season ends the 15th of November and a complete and detailed summary will be given in the next report. Special use permits were issued for six pastures (numbers 6, 7, 11, 21, 22, and 23), totaling approximately 3,410 acres.

### B. Cooperative Farming

Cooperative farming was highly successful during the past season. Total acres planted were 2,986, and the total bushels raised were 72,762. The Government share of grain delivered was 4,335 bushels, and the Government share left standing in the field was 18,198 bushels on 709 acres.

A summary of the crops raised is as follows:

<u>Crop</u>	<u>Total Acres</u>	<u>Bushels Raised</u>	<u>Govt.-Share Harvested (Bu.)</u>	<u>Govt.-Share Standing (Acres)</u>	<u>Govt.-Share Standing (Bu.)</u>
Durum	1,673	32,540	2,782	334	6,240
Barley	620	17,383	1,172	163	4,704
Oats	458	17,228	366	118	4,887
Corn	205	5,375	0	90	2,335
Millet	28	236	15	4	32
Garden	2	---	0	0	0
Totals	2,986	72,762	4,335	709	18,198

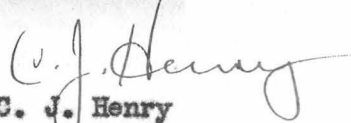
## VI. FIELD INVESTIGATION AND APPLIED RESEARCH

This activity has been conducted along the lines outlined in the last report. No important developments have occurred, and a detailed account will be included in the next report.

A good number of birds have been banded in the past quarter. A detailed summary of this activity will also appear in the next report.

-oOo-

Respectfully submitted, 11/8/40

  
C. J. Henry  
Refuge Manager

PHOTOGRAPHS

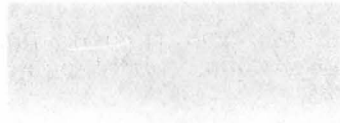




Photo showing destruction to trees in the Westhope Recreational Area  
by a bad windstorm last summer.  
R115-1, Aug. 1940



CCC crew relaying riprap on the down-stream side of Dam 320  
R115-2, Sept. 1940



Blue-winged Teal with brood of twelve in the Rubble-masonry area.  
R114-1&2, Aug. 1940





Ducks in the 332 marsh. (By MCH)  
R114-7, Aug. 1940



Using refuge Combine to harvest Crested Wheat  
Grass seed. (By MCH)  
R114-8, July 1940





A flock of Canada Geese on the Lower Souris.  
R114-3, Oct. 1940



Canada Geese, probably semi-domestic  
R114-4, Oct. 1940





Dowitchers resting and feeding on a mud bar in the 320 unit.  
R115-3&4, Sept. 1940





More Dowitchers.  
R115-5, Sept. 1940  
R115-6, Sept. 1940





Lesser Yellowlegs  
R114-9, Sept. 1940



Typical view of river channel just below Dam 341  
R114-10, Sept. 1940