BRANCH OF WILDLIFE REFUGES NARRATIVE REPORTS

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REFUGE LONG LAKE PERIOD JANUARY-APRIL 1957

LONG LAKE NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

JANUARY, FEBRUARY, MARCH AND APRIL 1957

PERSONNEL

Homer L. Bradley	-	Refuge Manager
Allen D. Kendall	-	Maintenancemen
(Vacant)	-	Clerk-Typist

WAGE EMPLOYEES

Harry Feist	-	Truck Driver
John Hehn	-	Truck Driver
William M. Backhaus	-	Laborer
Francis R. Johnson	-	Laborer

LONG LAKE NATIONAL WILDLIFE REFUGE
NARRATIVE REPORT
JANUARY, FEBRUARY, MARCH AND APRIL 1957

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LONG LAKE NATIONAL WILDLIFE REFUGE
NARRATIVE REPORT
JANUARY, FEBRUARY, MARCH AND APRIL 1957

I. GENERAL

A. Weather Conditions.

The following weather summary is taken from data recorded at the refuge headquarters:

	Snowfall		Precipitation		Max. Temp.		Min. Temp.	
	1956	1957	1956	1957	1956	1957	1956	1957
Jan.	6.7	2.7	.42	.10	42	33	-25	-35
Feb.	1.2	5.0	.06	.09	40	50	-29	-21
Mar.	7.6	.4	.74	T	54	67	-20	- 3
Apr.	T	2.0	.08	.81	72	82	12	7
	15.5	10.1	1.30	1.00 Ext.	72	82	-29	-35

January was cold, with precipitation below normal. There were no severe storms, but visibility was reduced to less than a mile on the 3rd, 16th, 20th, 21st and 28th by snow or blowing snow.

February was a relatively pleasant month, with temperatures above normal but very dry. A trace of freezing rain on the 27th was unusual for this month.

March was mild and extremely dry, with only a trace of precipitation for the entire month.

April was cool, with a fair amount of moisture. More precipitation fell than during the previous 4 months, but the total was still below normal. The 7-degree minimum reading on the 11th was a record low for that date.

Total precipitation for the period was 1.34 inches below average, or only 43 percent of the normal. This is the fourth year with low precipitation for this period as a result of light snowfall and lack of rainfall. Most of the moisture from snow melting during February was lost by run-off, as the ground froze up early last fall. Topsoil moisture conditions are good as yet, but subsoil moisture is deficient. Considerable rainfall will be needed to produce good crops this season.

B. Water Conditions.

The outlet for Long Lake was blocked off last December in order to repair "A" spillway, and it was allowed to remain in that condition until spring.

This was deemed advisable to conserve water, as there was no prospect of any appreciable run-off during the period.

The entire flow from Long Lake Creek spilled into Unit II during the winter. That unit raised to the approved level of 1715.50 by late March. At that time stop-logs were removed from the box culvert at "C" dike to release any surplus into Unit III. About 3.75 cfs was spilling into Unit III after March 28. This was increased to about 6.25 cfs on April 9 and continued at that rate until the close of the period.

Unit I was held from one to three inches below the spillway during most of April to reduce the loss of water through the outlet. High winds from the south or southeast will push much water out over "A" spillway when the pool is full during the windy season of the year.

End of the period gauge readings for the past 3 years are indicated below:

	Unit I	Unit II	Unit III
1955	1716.20	1716.20	1715.48
1956	1716.04	1715.96	1714.60
1957	1715.84	1715.54	1714.70

Approved levels: Unit I-1716.00, Unit II-1715.50, Unit III-1715.00

The ice attained a thickness of about 26 inches during the winter. It was slow in breaking up this spring owing to the lack of run-off and cool weather the first part of April. The last ice broke up in Unit III on April 21.

C. Fires.

No wild fires occured on the refuge during the period. Field burning was quite common during the latter part of the period outside of the refuge, but no wild fires occured in this vicinity.

II. WILDLIFE

A. Migratory Birds.

1. Populations and Behavior.

(a) Waterfowl.

Overall waterfowl use did not increase as much as it did last year, but it was up nearly 7 percent. This year ducks were responsible for the entire increase, while last spring geese, ducks and coot all made favorable gains.

Goose numbers recorded dropped to a low point after a good increase last spring. There were reports of several flocks being on or near the refuge, but in most cases they were just overnight stops. The migration of birds passing over was noted on 3/26, 3/29, 4/2, 4/5 and 4/18.

Canadian Honkers were not observed on the refuge this spring. Lesser Canadas were first sighted on April 2, but made use of the refuge for only a few days. White-fronts appeared on April 11--nearly a week later than last year. Apparently all geese had moved on north prior to the end of the period, as none were found during the census on April 29.

The presence of over 4 times as many Mallards and a good increase for Pintail boosted overall duck use above that for last spring. A few Mallards continued using the refuge after the fall period until about January 12--the latest winter date for many years. Mallards appeared again on March 20, followed by Pintail on the following day--just a day or two earlier than last year. Com. Goldeneye and Com. Merganser were present before the end of March. Mallard and Pintail numbers increased only slightly during March. Many common species arrived during the period April 1 to 3, when there was a rather large movement of waterfowl. This was a few days to nearly a week later than last year for several species. Widgeon and Shoveler were not recorded until April 11, and B W Teal were not seen until April 21--more than 2 weeks later than last spring.

Bufflehead and B W Teal were the only species other than Mallard and Pintail which accounted for greater use this spring. The most drastic decline for other species was that for Lesser Scaup followed by Ruddy, Shoveler, Widgeon, Redhead, Ring-neck, Com. Merganser, G W Teal, Com. Goldeneye, Canvasback and Gadwall in that order. Usually diving ducks are present in only minor numbers, but a good population of Scaup were recorded a year ago. At that time they were feeding on winter-killed fish, which seemed to be the attraction for the large increase in use at the time.

Coot were first noted on April 3, but not more than 5 birds were present for the next 3 weeks. No increase occurred until April 27, when they showed up on all pools. Total use was down nearly 22 percent below that for the previous year.

Open water was limited to a small waterhole at "B" spillway and another at the mouth of Long Lake Creek when the first migrants arrived. The ice melted very slowly after that. Unit I was free of ice, but only part of Unit II was open by April 14. Unseasonably cool weather froze most of the open water each night from April 10 to 14. The major part of the migration was over by mid-April and most of the waterfowl passed right on over.

Ice and water conditions are especially unfavorable for early migrants here when there is little if any run-off such as was experienced this spring.

It was expected that more ducks might feed in the small grain and corn stubble, since most of the small potholes and low spots were dry. Over 30 acres of corn was picked on one crop unit, leaving much waste grain, but only occasional ducks were noted feeding anyplace in the fields. The corn in this case was adjacent to Unit III, where the ice did not break up until after most of the migrants moved on north.

The presence of lone drake Mallards and Pintail on territory indicated that nesting got underway about April 10--nearly a week earlier than last year. Low minimum temperatures for several days after that may have frozen some early eggs.

(b) Other Waterbirds.

Habitat used by some birds of this group is reduced this spring as a result of lower water levels in Unit II. No doubt periods of cool weather did delay the migration, but as a general rule some of the common species do not arrive until May.

Horned Grebe arrived April 19 and are still present in small numbers. Pied-billed Grebe appeared on the same date--2 days earlier than last year. Western Grebe, Great Blue Heron, and American Bittern have not been seen as yet. White Pelicans were first noted on April 17, with an increase to 300 birds later as compared to a peak of 70 last year. The first Double-crested Cormorants were also recorded on April 17, with 10 to 15 present at the close of the period. Black-crowned Night Heron were not observed until April 27--10 days later than last year.

Sandhill Cranes started north rather early, with the first going over on March 26. Cranes were not observed on the refuge this period, but they were noted passing over on several occasions. A noticable movement of both geese and cranes occured on April 17 and 18. The estimated number of cranes passing over was 7½ percent less than a year ago.

(c) Shorebirds, Gulls and Terns.

Lower water levels in Unit II has probably affected this group of birds more than any others using the refuge. Mud flats are scarce and surface water is also lacking over the territory because of the relatively dry winter.

Killdeer were more than 2 weeks later this period, while Western Willet arrived the same date as a year ago. Two to three Lesser Yellowlegs were present for a few days, but they did not show up until May last year. Baird's and Least Sandpiper and Avocet were a few days later this spring and have been represented by only a few birds as yet.

Gulls and Terns arrived on essentially the same dates as a year ago. Occasional Herring Gulls have been present since first recorded. Ring-bills increased to 700 on April 7, as compared to a peak of 400 last spring. Only a few Franklin's Gull and Common Tern have been noted to date.

2. Food and Cover.

The aquatic food and cover supply remains low, as it has been for years. Carp are again present in numbers, but not as abundant as they were 2 years ago. There is some hope for improvement in the food and cover situation providing water levels are not increased too much by rainfall, as they were last year.

Marsh areas support good stands of bulrushes, which supply food when there is sufficient run-off to flood those areas in the spring. They are nearly always dry by fall, but are usually attractive at this time of the year. This spring most of the shallow flats are dry.

Much waste grain and standing grain was available on the refuge which was carried over from the fall period. Very little of this, or waste grain outside of the refuge, was used this year. Better utilization of such food generally occurs during wet years, when there are shallow puddles of water scattered over the fields.

3. Botulism.

No evidence of this disease during the period. At present conditions do not seem favorable for the disease this summer. One prospective area south of Unit II is much reduced in size as a result of the present water level.

4. Lead Poisoning.

None evident during the period.

B. Upland Game Birds.

Upland game birds came through the winter in good condition for the fifth consecutive year--a near record in this territory. Conditions were better than last year, as the ground was bare for a considerable time during the winter.

Winter losses were light, as the birds were not forced to seek food and grit along roads, where traffic takes a heavy toll some years.

No change was noted in the Pheasant population over that of the previous period. Birds did not concentrate on the refuge, as they did last year, in search of food and cover. The total is estimated at 50 birds, as compared to 150 for the same period a year ago.

Hungarian Partridge are seldom seen. The population seems to be dwindling away slowly year by year. The total is estimated at 5 birds, as compared to 10 a year ago.

The population of Sharp-tailed Grouse remains fairly stable. Lack of upland acreage on the refuge is one factor limiting the number using the area. The estimated population of 40 birds is the same as last year at this time.

2. Food and Cover.

More grassland is broken up each year outside of the refuge despite the Soil Bank Plan and huge surpluses of grains. Favorable habitat will be reduced further this year, as even the hilltops are being plowed up for flax.

There was an abundance of both natural and supplemental food throughout the period. Most important, adequate amounts were available at all times except in isolated cases. Grain was in short supply at the old Jensen place and the headquarters area. A small amount of barley was fed at those locations from mid-January to early March.

Cover conditions were much above average. Only a narrow band of rushes, cattail and spartina along the lakeshore was filled with snow this year. This left a large acreage of this preferred cover almost free of snow. Plans are underway to establish a tree and shrub planting at the old Jensen place this spring adjacent to crop land. This has always been a favorable spot for upland birds in the past.

3. Disease.

None evident during the period.

C. Big Game Animals.

1. Populations and Behavior.

White-tailed Deer bunched up during the winter, but moved about freely throughout the period. A total of 11 animals were counted southeast of the headquarters area. Another group was using the area along the north side of Unit III. Reports indicated that this herd ranged from 12 to 17 head. The population varies from time to time, with from 23 to 29 head present near the end of the period. All animals appeared to be in excellent condition after the relatively mild winter.

2. Food and Cover.

Food conditions were excellent and the supply was available throughout the period. Grasses, forbs and wolfberry were abundant at all times. Standing corn at scattered locations showed some evidence of light utilization. There was enough left that it was necessary to harvest the crop this spring to prevent undue waste.

Marsh vegetation and wolfberry provide adequate cover where other woody vegetation is lacking, as it is here. Unlimited quantities of such cover was available this past winter.

D. Fur Animals, Predators, Rodents and Other Mammals.

Muskrat: Two to three "rats" were observed near the headquarters last fall, but not a single one has been seen as yet this spring. The winter loss may have further reduced the very low population.

Mink: Single individuals have been noted several times. Estimated population of only 10 animals.

Raccoon: No sight records for the period, and sign has not been found as frequently as in the past. It is estimated that the population has dropped slightly.

Skunk: Sight records have been rare and traffic kills have been below average. The overall number is estimated at 30 animals--the same as last year.

Weasel: No observations during the period. Population remains very low.

Badger: Fresh diggings were not noticed until near the end of the period. No indications of any appreciable change in the population.

Red Fox: Thirteen fox were removed by Mr. Harry A. Olson, Mammal Control Agent. Three of those were shot from a plane and 10 were taken with getters. A slight increase in the population is estimated for the year, as sight records are common.

Coyote: No reports of coyotes during this period for the second consecutive year. As a rule, one or two are reported on the refuge each winter.

Rabbits: Cottontails are present in low numbers at only 2 or 3 locations on the refuge. No apparent change in status during the period. White-tailed Jacks are down an estimated 50 percent from the total a year ago. This decline was caused primarily by intensive hunting over the surrounding territory as a result of an all-time high fur price.

E. Predaceous Birds, Including Crows, Ravens and Magpies.

In general, hawks have been very scarce during the period. Only the Sparrow Hawk and Marsh Hawks have actually been observed on the refuge. One Sparrow Hawk was noted on April 19 for the only record to date. Marsh Hawks were absent during the early part of the period and were not seen again until March 27. It is estimated that the population is down 50 percent this year.

One Golden Eagle stopped off during the previous period and was present off and on until March 9. One or two birds usually hang around the old Jensen place each winter.

Crows were not sighted on the refuge until March 30--later than usual for these birds. There was a considerable migration of birds through the area from April 10 to 12. The overall total moving through is estimated at 1000 birds, the same as last year.

A single Snowy Owl was seen on January 2 for the only record during the past winter. These birds have also been scarce during the past 3 years.

F. Fish.

Conditions for fish were above average during the past winter. Snow cover on the ice was light and it did not last long at any time. The ice was only about 26" thick, as compared to 36" last year. Water levels were higher this period in Unit I than a year ago, but slightly lower in Units II and III. The difference for Unit III, which is the shallowest pool, was only .10.

Winter kill can be expected any year here with pools ranging from 4½' to 7' in depth. There was very little loss in Units I and II, as only occasional dead fish were noted. Winter kill was a little heavier in Unit III, as might be expected. It is estimated that the loss run from 10 to 15 percent in that unit. Fortunately, the kill consisted almost entirely of Carp, along with an occasional Bullhead. The ratio was about 200:1. Practically all Carp run from 6 to 10" long, with only a very few larger fish being found.

Water in the drainage below Long Lake is so low it is not connected with the lake as yet. This will prevent entry of more Carp from the Missouri River this season unless there is heavy rainfall in the future.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development.

1. Soil and Moisture - Project 170.

The principal activity under this program has been the preparation of ground for a tree and shrub planting at the old Jansen place. About 4 acres were leveled with the D-7 tractor and scraper to eliminate wet spots. A deep tiller was then used both ways to mix up the soil and to allow better drainage. One day was spent cultivating one 8-acre tree planting already established.

(a) Maintenance.

1. Riprap Dikes and Roads - Project 712R.

Work was resumed on this job April 9, but was soon delayed by cold weather. Progress was slowed down later by frequent breakdowns of the Massey-Harris "Colt" tractor and loader. This unit is definitely inadequate for this type of work, but we have been stuck with it for the past 3 years.

Three wage employees, using 2 dump trucks and the Massey-Harris tractor with loader, placed 197 CY of heavy riprap by the end of April. 157 CY of this was used to complete work on "C" dike, for a total of 2,078 CY on that dike. The remaining 40 CY was placed on "B" dike, where there is much space to be covered yet.

2. Other Maintenance.

Reconditioned 3 recognition sign panels and changed opening dates and revarnished informational signs for boating-fishing area.

Removed cement mixer from trailer, cleaned mixer and wheelbarrow, replaced steel wheels with semi-pneumatic tires and painted both.

Block replaced and complete overhaul of motor for Jari power scythe.

Rebuilt pump for Hudson power weed sprayer.

Maintained feeding stations for upland game birds until wearly March.

Conference with individual farm cooperators concerning reduction of wheat acreage and production of price-supported crops, divided crop Unit A-14 into two strips, arranged for harvest of standing corn on share and cash basis and assisted SCS Soil Scientist complete soil survey on Burleigh County portion of refuge.

Much time spent in contacting SCS at both Bismarck and Steele regarding capability and land use plans for Burleigh and Kidder County portions of refuge. Also transferring soil survey data to latest aerial photos.

Hauled in 520 bushels of ear corn which was picked this spring, helped load out 72 bushel for Sanke Creek Refuge and 180 bushel for Lower Souris Refuge and stored balance in grain bin.

Removed 450' of snow fence from ice along lakeshore at headquarters site and stored same.

Cleaned and painted buoys for boating-fishing area and made 2 new anchors for same.

Preventative maintenance checkups and safety inspections have been made, along with minor repairs on the following equipment: 4 dump trucks, 1 stake truck, 2 pickups, Massey-Harris tractor with loader, D-7 tractor with dozer and scraper, concrete mixer, Hudson power weed sprayer and Jari power scythe.

Performed all office work during the period without clerical assistance owing to vacancy in the Clerk-Typist position.

C. Plantings.

1. Aquatic and Marsh Plants. - None

2. Trees and Shrubs. - None

3. Upland Herbaceous Plants. - None

4. Cultivated Crops.

More than the usual acreage will be seeded to grass or grass-legume this year rather than leave the surplus idle, as was done last year. Very few nests were found on idle lands last summer, and it is also necessary to spray such plots for weed control. It is believed that grass or grass-legume mixtures will afford equally as good or better nesting cover, eliminate the need for weed control, and improve the soil for future production in the event that it is needed.

Some field work was noted over the surrounding country the last days of March, but this was delayed for a considerable time later by cold weather. Operations were in full swing by April 15, but very little planting was done on the refuge before April 22.

D. Collections.

1. Seed - None

2. Specimens. - None

E. Receipts of Seed and Nursery Stock.

None

IV. ECONOMIC USE OF REFUGE

A. Grazing.

Much cover was carried over on grazing units from last year, but new growth is developing slowly this spring. The dry period, to the end of April, is responsible for retarded growth this year. A good rain on May 2 and 3 has brightened the prospects considerably at this writing.

B. Haying.

The prospects for hay are about the same as for grazing. The exception is that some hay will be available in the event of a dry summer. This results from the fact that most of the upland acreage is cut only every other year. Tracts which were not cut during 1956 are supporting a better than average crop of forage.

C. Fur Harvest. - None

D. Timber Removal. - None

E. Other Uses. - None

V. FIELD INVESTIGATION

A. Banding Recoveries.

Returns from banding during the past 2 years are indicated below:

1. Ducks.

A total of 119 Local and 4 Adult ducks were banded during 1955 as follows:

	Local	Adult
Mallard	6	
Gadwall	14	
Pintail	25	2
GW Teal	16	
BW Teal	46	2
Shoveler	6	
Redhead	6	

Returns received to date on this group of birds is as follows:

577-35009 - Mallard, local, banded 8-2-55. Shot 12-18-55 near Squaw Creek Refuge, Mound City, Mo.

556-99047 - Gadwall, local, banded 8-3-55. Killed 11-20-55 at Sea Rim Marsh, Sabine Pass, Texas.

556-99045 - Gadwall, local, banded 8-3-55. Shot 11-4-56 at Elgin, Nebraska

556-99035 - Pintail, local, banded 8-2-55. Killed 11-2-55 about 30 miles southeast of Bay City, Texas.

556-99022 - Pintail, local, banded 8-2-55. Killed 10-31-56 at Los Banos, California.

525-59532 - BW Teal, local, banded 8-3-55. Shot 10-1-55 at Rush Lake near Hannah, No. Dakota.

525-59508 - BW Teal, local, banded 8-2-55. Captured 4-28-56 at Falla, Camaguey, Cuba.

556-99024 - Shoveler,local, banded 8-2-55. Killed 11-5-55 at Lake McAlester, McAlester, Oklahoma.

577-35004 - Redhead, local, banded 8-2-55. Shot 10/8-11/21/55 at Geneva Lake, Geneva, Minnesota.

2. Mourning Dove.

A total of 170 nestling doves were banded last year during the period June 4 to September 10. The following band recoveries have been received to date:

573-63809 - Nestling, banded 6-13-56. Shot,probably near Catarina, Jalisco, Mexico, on 10-15-56.

573-63846 - Nestling, Banded 6-26-56. Killed 9-1-56 at Haskell, Texas.

Upon checking the records, it was found that both of the above birds were banded at the same farm--one of 8 locations where banding was done.

VI. PUBLIC RELATIONS

A. Recreational Uses.

Sport fishing through the ice or the commercial removal of rough fish, which attracts many spectators, are usually the only activities during this period. Fishing use fell to zero this winter, as was to be expected after the heavy loss of fish a year ago.

The remaining rough fish were too small to market, so it was impossible to obtain the services of commercial operators during the past winter. Improved sport fishing in the Missouri River is also reducing the demand for fishing in this vicinity.

Estimated public use for the period is as follows:

Fishing	Miscellaneous	Total
None	100	100

B. Refuge Visitors.

Name		Address	Date	Time Spent
Willard McClellan	G & F D	Bismarck	1/7	½ Hr.
Don Smith	FWS	Minneapolis	2/5	1 Hr.
Harry A. Jensen	FWS	Jamestown	2/5	1 Hr.
R. W. Burwell	FWS	Minneapolis	3/4	½ Hr.
Harry A. Jensen	FWS	Jamestown	3/4	½ Hr.
Jerry Wilson	FWS	Snake Creek	4/5	3 Hrs.
Al Brandt	FWS	Lower Souris	4/8	1½ Hrs.
M. C. Hammond	FWS	Lower Souris	4/9	3 Hrs.
Harry A. Jensen	FWS	Jamestown	4/11	½ Hr.
L. J. Bonde	FWS	Grand Rapids, Minn	4/11	½ Hr.
James Long	SCS	Bismarck	4/23	¼ Hr.
Mr. Stout	SCS	Bismarck	4/24	3 Hrs.
Lt. J. T. Neville	GOC	Bismarck	Monthly except Feb.	
Howard Woon	FWS	Slade	Occasional visits	

C. Refuge Participation.

The refuge manager attended all monthly meetings of the Missouri Slope Chapter, Izaak Walton League, at both Mandan and Bismarck during the period.

D. Hunting. - None

E. Fishing. - None

F. Violations.

There were no reports of violations during the period and no apprehensions were made.

May 6, 1957

Homer L. Bradley
Homer L. Bradley.

Refuge Manager

Approved:
R. W. Burwell

3-1750
Form NR-1
(Rev. March 1953)

WATERFOWL

REFUGE Long Lake MONTHS OF January TO April 30, 1957

(1) Species	(2) Weeks of reporting period 1 (1-7)	2 (1-14)	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	175	60								
Black										
Gadwall										
Baldpate										
Pintail										
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										
Coot:										

Int. Dup. Sec.,
Wash., D. C. 37944

3 -1750a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Long Lake MONTHS OF January TO April 30, 1957

(1) Species	(2) Weeks of reporting period: 11	12 (3-23)	13 (3-30)	14 (4-7)	15 (4-14)	16 (4-22)	17 (4-29)	18	(3) Estimated waterfowl days use	(4) Production: Broods seen	(4) Production: Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada											
Cackling											
Brant											
White-fronted ---				[redacted]	4/11- 51	4			370		
Snow											
Blue											
Other Les. Canada				4/2- 24					120		
Ducks:											
Mallard		3/20-45	100	1200	4000	660	230		44,500		
Black											
Gadwall				4/1- 25	50	320	350		4,500		
Baldpate					4/11-25	50	50		725		
Pintail		3/21-100	300	4800	6000	2560	600		94,020		
Green-winged teal				4/2- 20	50	150	70		2,100		
Blue-winged teal						4/21-200	70		1,350		
Cinnamon teal											
Shoveler					4/11-20	50	80		825		
Wood											
Redhead				5	10	30	35		450		
Ring-necked				4/6- 1					5		
Canvasback						25	25		250		
Scaup				4/2- 30	60	200	230		3,090		
Goldeneye			3/29-10	10	20				250		
Bufflehead				4/2- 10	5	5	5		185		
Ruddy						15	5		80		
Other											
Com. Merganser		3/21- 5	10	200	20	30	30		1,910		
Coot:				4/3- 5	5	5	330		1,410		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese	490	51	
Ducks	154,240	10,260	
Coots	1,410	330	

SUMMARY

Principal feeding areas Units II and III

Principal nesting areas

Reported by Homer L. Bradley.

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).

Interior Duplicating Section, Washington, D. C. 37944
1953

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge Long Lake Months of January to April 30 1957

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Horned Grebe	1	4-19								
Pied-billed Grebe	1	4-19								
White Pelican	10	4-17	300	4-24						
Double-crested Cormorant	4	4-17								
B-c Night Heron	1	4-27								
Sandhill Crane	15	3-26	Heavy migration 4/17-18.				(All passing over)			1300
II. Shorebirds, Gulls and Terns:										
Killdeer	1	4-12								
Western Willet	2	4-21								
Lesser Yellowlegs	2	4-16								
Bairds & Least Sandpiper	15	4-29								
Marbled Godwit	4	4-22								
Avocet	2	4-21								
Herring Gull	1	3-26								
Ring-billed Gull	10	3-22	700	4-7						
Franklin's Gull	1	4-21								
Common Tern	2	4-25								

(over)

(1)	(2)		(3)		(4)		(5)		(6)
III. Doves and Pigeons:									
Mourning dove	1	4-22							
White-winged dove									
IV. Predaceous Birds:									
Golden eagle	Previous	period			1	3-9			2
Duck hawk									
Horned owl									
Magpie									
Raven									
Crow	1	3-30							1000
Sparrow Hawk	1	4-19							2
Marsh Hawk	1	3-27							10
Snowy Owl	1	1-2			1	1-2			2

Reported by Homer L. Bradley.

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 Gruiiformes)
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

1613

Refuge Long Lake Months of January to April 30, 19~~X~~57

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifioally requested. List introductions here.
Ring-necked Pheasant		30							50	
Hungarian Partridge		600							5	
Sharp-tailed Grouse		125							40	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

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

3-1754
Form NR-4
(June 1945)

SMALL MAMMALS

Refuge Long Lake Year ending April 30, 1957

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs						(5)
								Share Trapping						Total Popula-
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re-stocking	For Re-search	Permit Number	Trappers Share	Refuge share	Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	tion
Muskrat				0				None						15
Mink				0				"						10
Raccoon				0				"						30
Skunk				0				"						30
Weasel				0				"						5
Badger				0				"						20
Red Fox					13									30
Coyote					0									2
Cottontail Rabbit			0											10
White-t Jack Rabbit			0	0	0									20

* List removals by Predator Animal Hunter

REMARKS: 13 Red Fox removed by Harry A. Olson, Mammal Control Agent, Dawson, No. Dakota.
(3 shot from plane and 10 taken with getters)

Reported by Homer L. Bradley.

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

(1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)

(2) DENSITY: Applies particularly to those species considered in removal programs. 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, bottom land 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) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headingslisted.

(4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.

(5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

116007

3-1570
NR-8a

REFUGE GRAIN REPORT

Refuge Long Lake Months of January through April 30, 1957

(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
Barley	153	0	153			4	4	149		19	130
Ear Corn	0	520	520	252			252	268			268
Crested wheat grass(Brome grass) Slender wheat grass(	750# mixed	0	750#				0	750#	750#		

(8) Indicate shipping or collection points

(9) Grain is stored at Refuge Headquarters, 4 miles southeast of Moffit, No. Dakota

(10) Remarks App. 72 Bu. of ear corn transferred to Snake Creek Refuge and 180 Bu. to Lower Souris Refuge.

*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.