

NARRATIVE REPORT

JANUARY, FEBRUARY, MARCH, APRIL, 1957

DES LACS NATIONAL WILDLIFE REFUGE

LOSTWOOD NATIONAL WILDLIFE REFUGE

LAKE ILO NATIONAL WILDLIFE REFUGE

&  
EASEMENT REFUGES - DISTRICT IV & IVa

Permanent Personnel

Edward J. Smith, Jr.	- Refuge Manager
Thomas P. Hunt	- Refuge Manager - Lostwood
Chesley M. Dinkins	- Refuge Aid - Lake Ilo
Donald L. Berg	- Clerk Typist
Elmer M. Richwalski	- Mechanic, Heavy Duty
Wallace G. Amon	- Maintenceman

Temporary Personnel

Peter Goetz	- Truck Driver
Robert Neuenfeld	- Laborer
Henry Jackson	- Laborer

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## I. GENERAL

### A. Weather Conditions.

The following is a tabulation of weather data covering this period and corresponding periods of the two preceding years. These were obtained from the Kenmare weather station:

1957	Snowfall	Precip.	54-year		Temperatures			42-yr. Mean
			Av. Precip.		Max.	Min.	Mean	
January	.7	0.14	0.41		33	-26	1.3	6.6
February	1.00	0.19	0.44		42	-20	9.8	10.2
March	.7	0.12	0.74		60	0	19.7	23.6
April	0	1.10	1.01		82	3	37.6	40.8
Total	1.00	1.55	2.60	Ext.	82	-26		
1956								
January	3.8	0.25			38	-25	4	
February	1.4	0.09			35	-21	7	
March	2.0	1.37			49	-18	20	
April	7.8	0.66			68	10	34	
Total	15.0	2.37		Ext.	68	-25		
1955								
January	14.9	0.99			35	-20	9	
February	2.7	0.18			39	-25	5	
March	14.0	0.93			56	-21	14	
April	0	1.83			76	25	44	
Total	31.6	3.93		Ext.	76	-25		

As the weather data indicates, this reporting period was an "open winter" with temperatures and precipitation averaging below normal. Snow cover was practically non-existent over most of the period. Some relief to dry conditions in the form of rain occurred late in April.

Spring was late in coming because the frost was deep. Farming operations are behind schedule due to these late frost conditions. Ice on the lakes didn't disappear until April 23. Maximum thickness of lake ice measured 33" this year.

### B. Water Conditions.

Because of the lack of snow at the time of spring break up and the low pool elevations carried through the winter, we encountered no problems with run-off.

Most impoundments are below approved levels at this writing but believe a good spring rain would make up most of

the difference. The following is a tabulation of Des Lacs pool elevations and comparisons of maximum, approved and end of the period readings for the last four years.

Unit	Maximum for period	Approved Level		End of the Period			
		Gauge	Sea Level	1957	1956	1955	1954
1	14.06	14.00	1784.00	14.06	17.00	17.50	15.36
2	7.90	10.00	1787.00	7.90	9.90	10.50	9.05
3	10.16	10.00	1787.00	10.00	9.80	10.50	9.26
4	8.14	10.00	1787.00	8.14	9.80	10.50	9.26
5	7.24	7.50	1784.00	7.24	7.40	7.80	7.70
6	6.06	6.50	1783.50	6.04	6.10	7.40	6.50
7	5.58	5.00	1782.00	5.08	5.40	7.40	5.98
8	7.06	7.00	1784.00	6.76	6.90	7.26	6.90

### C. Fires.

One fire covering approximately .2 acre before extinguished occurred on April 27. Location of the burn was  $\frac{1}{2}$  mile north of the Welsch Sub-headquarters and east of the railroad tracks. Grass prairie cover was all that burned. The fire was easily put out by Mr. Richwalski and the refuge manager with back pack water pumps. Relative humidity had been low during that period and hazard was high. Cause of the fire could not be determined.

## II. WILDLIFE.

### A. Migratory Birds.

#### 1. Population and Behavior.

##### Waterfowl

The general spring migration seemed to be later in coming and there were no waves or large concentrations of arrivals this year. Peak numbers were slightly down from last year also. We hope that spring was late enough in this area to indicate that more birds can be expected to appear.

Specific features of the migration indicating abundance and population peaks can be found on NR-Form 1. Dates of arrival compared with 1956 are listed on Table I. A comparison of peak populations and total waterfowl use with 1956 can be found on Table II.



TABLE I. Comparison of Waterfowl Arrival Dates in 1957 - 1956.

Species	Arrival Dates	
	1957	1956
Whistling Swan	4/2	4/13
Canada Goose	3/23	3/26
Lesser Canada	4/6	-
White-fronted Goose	4/3	4/10
Snow Goose	-	4/13
Blue Goose	-	4/16
Mallard	3/21	3/25
Gadwall	4/22	3/31
Baldpate	4/12	4/10
Pintail	3/21	3/19
Green-winged Teal	4/1	3/31
Blue-winged Teal	4/22	4/23
Shoveler	4/12	3/26
Redhead	4/3	4/13
Ring-necked Duck	4/16	4/12
Canvasback	4/12	4/13
Scaup	4/12	4/10
Goldeneye	4/3	3/26
Bufflehead	3/21	4/21
Ruddy Duck	4/22	4/13
American Merganser	4/3	3/26
Red-breasted Merganser	4/6	4/9
Coot	4/15	4/20

TABLE II. Comparison of Peak Waterfowl Populations and Total Use-Days in 1957 and 1956.

Species	Peak Populations		Total Use-Days	
	1957	1956	1957	1956
All Waterfowl	6,410	12,606	103,719	193,991
Swans	60	30	847	448
Geese	100	160	2,135	2,037
Dabblers	2,400	2,180	44,527	58,583
Divers	3,800	10,620	55,860	131,159
Coots	50	200	350	1,764

By the end of the period nesting activities for the mallard and the pintail were well underway. Courtship activities amongst the scaup were common sights during the latter part of April. Because open water was so late in appearing, most waterfowl had to crowd these activities in some very small areas for a time. By the last week of April all water areas were open and the birds pretty-well dispersed.

#### Water and Marsh Birds

Three of the grebe species were present by the end

of the period. A Pied-billed grebe was sighted on April 17. A week later Eared and Horned grebes appeared on April 24. Horned grebes were the most numerous.

White Pelicans arrived on April 26 and peak numbers reached 275 on April 28. Double-Crested Cormorants were first sighted on April 23. Black-Crowned Night herons were first recorded on April 22 and the American Bittern on April 29. The great blue heron has not yet been observed.

#### Shorebirds, Gulls and Terns

In this group many species common to this area have not yet appeared. The following is a listing of recorded first dates on the species observed: Killdeer April 3, Dowitcher April 26, Marbled Godwit April 28, Lesser and Greater Yellowlegs April 30, Willet April 30, and the Avocet May 1. Ring-billed gulls and Common Terns have been seen but no first dates recorded.

#### Cranes

Sandhill Cranes moved through in large numbers during the weekend of April 20. No whooping cranes were sighted in this area during this year's migration.

#### Mourning Doves

The first dove was sighted on April 24, the day following complete disappearance of lake ice. Transect census routes will be run in late May and June.

### 2. Food and Cover

Little snow the past winter and bare ground conditions at the time of spring arrivals of migrant birds would seem to indicate that adequate food and cover existed in this area. Waste grains from last fall's harvest were being utilized by flights of mallards and pintails.

Evidence of a winter kill did not appear in the Upper lake and live minnow concentrations were observed around Dam No. 2. Pelicans were observed feeding in that area regularly.

## B. Upland Game Birds.

### 1. Populations and Behavior

#### Sharp-tailed Grouse

Des Lacs still has a good population of Sharptails. Dancing ground census this spring indicates the present population to be an estimated 735 birds.

#### European Partridge

Population status is about the same as last year 125 birds. Frequent pairs were sighted on this year's grouse survey.

#### Ring-necked Pheasant

Several crowing roosters can be heard in the Tasker's Coulee area. Only one hen has been sighted this spring. The population is at a low level but a good nucleus appears to be present in some nearby areas outside the refuge.

### 2. Food and Cover

Upland game birds should have survived the winter weather. No blizzards or heavy snow storms occurred and as a result adequate winter cover and food were available.

Two grain box feeding stations were placed near headquarters shelterbelts and sharp-tailed grouse were observed frequently in these areas.

Pheasants were flushed occasionally from the proso millet patch at Tasker's Coulee.

## C. Big Game Animals.

### 1. Population and Behavior.

#### White-tailed Deer

An aerial census on big game was not made this winter because snow background conditions which facilitate census work were lacking. The population at the end of the period is estimated at 75 head.

#### Antelope

No animals have been seen on the refuge but four antelope were observed near the town of Niobe, North Dakota the last week of April.

### 2. Food and Cover.

Food and cover were adequate for the small number of deer present. Wolfberry seems to be the most important winter browse plant for deer in this area.

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

Muskrats: This species is at a very low level. Some movement was observed in February in the channel between Units 2 and 4. Only 25 were trapped last fall.

Mink: Were frequently seen along shorelines, spillways and control structures.

Weasel: No observations this past period. Believed to be low in abundance.

Beaver: One new dam observed this spring located at the mouth of Ankenbauer's Coulee. Only one was trapped during the season.

Raccoon: Apparently some increase in number because of the increased catch during the trapping season. One caught in 1955-56 vs. twenty-three trapped in 1956-57.

Skunks: None sighted yet this spring. Some road kills evident along Highway 52. Not believed overly abundant.

Badger: Numbers remain at a low level.

Fox: Den hunting on the surrounding area is in progress. Results have been poor. Three sight records by the writer during the period.

Coyote: Very low in abundance. No observations this period. Some tracks observed on Dike No. 6 during February.

Porcupine: Several have been seen on the west lake side road north of Kenmare. Reported as abundant last year. Infrequent observations this year might indicate a decrease in numbers.

Other Mammals: Jack rabbits are the only rabbit species sighted this period. Striped ground squirrels are active again at this writing. Meadow mice are plentiful.

E. Predacious Birds, Including Crows and Magpies.

A good movement of Swainson's Hawks was noted in this area 4/24 - 4/26. Marsh Hawks are plentiful and were first observed on 3/29. Sparrow Hawks were common by the third week of April. No Red-tailed Hawks have been observed this spring.

Only two observations made by the writer on Golden Eagles but other people have reported more in this area. No Bald Eagles have been observed this period.

Horned Owls have been observed several times near headquarters and along the Upper lake trail.

Magpies are regular year around residents and were quite common.

Crows were first observed this year on March 15 and are quite abundant at present.

The following species which have visited this area in the past in small number have not yet been observed: Duck Hawks, Pigeon Hawks, Burrowing Owl and the Raven.

### III. REFUGE DEVELOPMENT-MAINTENANCE

#### A. Physical Development.

##### Buildings

Under Project 712-R we renovated the interior of the office building. This included removal of old floor linoleum and replacement with asphalt tile. The ceilings in this building were stripped with nailing stock and acoustical asbestos tile installed. Walls and moldings were then painted.

Interior painting of several rooms in the Clerk's quarters was completed this period. Painting in the Mechanic's and Manager's residences was begun.

A general housecleaning was made on all buildings this spring and fire extinguishers were checked. An intensive cleanup of the "boneyard" was made at this time which has resulted in a much nicer appearance in this area. Scrap iron was collected and hauled to the local junk dealer.

##### Habitat

Cattail removal was accomplished during the winter months in Unit 6. This year, instead of using a mower, we used the D-7 cat and dozer. While the ice was still thick enough to support a heavy dozer we sheared the cattail growth at ice level with the blade and pushed the debris into large piles. These piles of vegetation will be left to see if some use is made for nesting and loafing by waterfowl. We believed they would be utilized much the same as an over sized Muskrat house. Ice was too thin for this method in other units where cattails need some control.

Some help from Des Lacs was furnished to Lostwood to construct hay islands on the piles of rock in the Goose Pool enclosure.

Annual spring adjustments were made on all impoundment control structures and stop logs inserted or replaced as needed.

#### Maintenance and Equipment Repairs.

The marking of major and minor property was completed at Des Lacs this period.

Engine overhauls involving ring replacement and/or valves reground were accomplished on the following:

1950 Jeep, I-19157 Des Lacs - Rings and valves.

1956 Jeep, I-16861 Lostwood - Rings and valves.

1952 GMC Dump, I-19156 Des Lacs - Valves.

1952 Ford Tractor, I-16857 Des Lacs - Rings and valves.

Briggs & Stratton Lawn Mower, Des Lacs - Rings and valves.

Clinton Lawn Mower, Lostwood - Rings and valves.

Wisconsin Engine - Grain Auger Lostwood - Rings and valves.

In addition the 5000 mile checks were run on practically all vehicles.

The 1951 Jeep I-19227 was given a new paint job and new decals installed.

The 1957 Ford Courier was received and checked. This needed a new head assembly replacement (a factory defect) free of charge covered by the 90 day warranty.

Worn rollers on the D-7 Caterpillar track assembly were replaced and the dozer assembly was lengthened to facilitate greater control.

The LS-80 Dragline was partially dismantled to initiate repairs to center pin.

#### Miscellaneous.

Damaged boundary signs were replaced.

Signs were removed from the abandoned Clearwater and Lake Charles Easements.

Refuge entrance roads were bladed after the frost went out.

Rearrangement of office files and records disposal were begun. A shortage of office space has us stymied at present.

Ordinarily we do not list the administrative accomplishments but because they seemed to be a heavier load than usual this past period, we believed they justified mention.

Ten year Development Plans - Lostwood, Lake Ilo and Des Lacs.

Budget Estimates - Lostwood, Lake Ilo, and Des Lacs.

Sign up Permittees on Cooperative Agreements - Lostwood, Lake Ilo and Des Lacs.

Major Property Inventory - Lostwood, Lake Ilo and Des Lacs.

Refuge Managers Classification Survey - Des Lacs.

Water Management Plan - Des Lacs.

Revise Land Use Plans - (initiated) Lostwood and Lake Ilo.

Narrative Reports - Lostwood, Lake Ilo, and Des Lacs.

Also trips were made by the manager to Dearborn, Michigan to take delivery on a new Ford vehicle and trips to Lake Ilo and easements regarding land acquisition data and management improvement surveys.

#### B. Plantings.

None this period.

Cultivated Crops: All farming on the refuge will be performed by share-cropping permittees with the exception of two small food patches located near Unit 8 and the mouth of Tasker's Coulee.

First seeding on the refuge was begun the last week of April.

A total of 1424.3 acres will be farmed this year; of this total there will be 1010.8 acres of grain crops, 236.9 acres of grass-legume plantings and 176.6 acres of summer fallow.

C. Collections.

None this period.

D. Receipts of Seed and Nursery Stock.

None this period.

IV. ECONOMIC USE OF REFUGE.

A. Grazing.

None this period.

B. Haying.

None this period.

C. Fur Harvest.

Trapping success was a little better than last year as the weather this year was more favorable. The season which is still in progress for beaver opened November 10 and closed for mink and muskrat on December 15. The beaver season closes May 15.

Three permits were issued for trapping on Des Lacs. The total harvest was as follows: 25 muskrats, 38 mink, 1 beaver, 2 weasel, 23 raccoon, 10 skunk, and 1 badger.

See NR-4 for disposition of furs.

The refuge share of furs was shipped to the New York Auction Co. in Minneapolis for sale. Results of same have not been received.

D. Other Uses.

None this period.

V. FIELD INVESTIGATION AND RESEARCH.



### Sharp-tailed Grouse Study

The sharp-tailed grouse study initiated by Messrs. Kirsch and Hammond in 1954 was continued and the dancing ground sites were again visited to census populations. The Des Lacs survey this year was conducted by Mr. Hammond and the writer beginning April 26 and ending May 2. A total of 24 dancing ground sites were checked. Total population is estimated at 735 sharp-tailed grouse this year.

In addition to the population check, a record of the land use of the dancing site and surrounding area is being made to determine what, if any, relationship exists between grouse population densities and land use types.

### VI. PUBLIC RELATIONS.

#### A. Public Uses.

1. Hunting - None.
2. Fishing - None.
3. Miscellaneous Uses - Bird Observation by Kenmare Bird Club members and Boy Scouts has been the chief use made by the public the past period.

Permittees and students have made various inquiries at the office.

Picnicking at the Tasker's Coulee Recreational Area began shortly after Easter or about the third week of April.

#### B. Refuge Visitors.

<u>Date</u>	<u>Name</u>	<u>Organization</u>	<u>Purpose</u>
2/21	Wm.J. Murphy	Burke Co. Eng.	Rights-of-Way
2/13;4/22	C.M. Dinkins	Refuge Aid Lake Ilo	Discuss Work Plans & Pick up Materials
2/23;4/23-26	M.C. Hammond	FWS Biologist	Grouse Survey & Land Use
2/26	R.W. Dougall	Reg. Eng., Minneapolis	Snow Survey Water Mgt.
4/30	H. Jensen, G. Bonde	USGMA	Mourning Dove Program

Occasional visits by State Warden Ken McKeague.

C. Refuge Participation.

As Scoutmaster of the Kenmare Troop, the manager counselled several scouts on conservation projects. In addition, the manager cooperated with warden Ken McKeague giving instruction in a Gun Safety Course to Troop 44.

On April 14 the manager conducted the Kenmare Bird Club on a birding trip through portions of the refuge.

D. Violations.

None detected this period.

VII. OTHER ITEMS.

Credits

Mr. Berg is to be credited with the complete typing of this report.

Respectfully submitted:

*Edward J. Smith, Jr.*  
Edward J. Smith, Jr.  
Refuge Manager

May 10, 1957

Approved: *[Signature]*

Date: 5/24/57

WATERFOWL

REFUGE Des Lacs

MONTHS OF January TO April, 1957

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

3-7150a  
Cont. NR-1  
(Rev. March 1953)

**WATERFOWL**  
(Continuation Sheet)

REFUGE Des Lacs

MONTHS OF January TO April, 19 57

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production : Broods: Estimated : seen : total	
	3/11	3/12	3/13	4/6	4/13	4/20	4/27	5/4			
<b>Swans:</b>											
Whistling				60	2	45	12	2	647		
Trumpeter											
<b>Geese:</b>											
Canada		35	35	35	75				1260		
Cackling											
Brant											
White-fronted						100			700		
Snow											
Blue											
Other Lesser Canada				25					175		
<b>Ducks:</b>											
Mallard		50	50	75	250	400	500	500	12775		
Black											
Gadwall							100	100	1100		
Baldpate					10	50	200	200	3200		
Pintail		100	100	125	200	300	800	800	16925		
Green-winged teal				10	50	100	300	200	4620		
Blue-winged teal							50	300	2150		
Cinnamon teal											
Shoveler					1	50	200	200	3157		
Wood											
Redhead				2	5	50	400	300	5299		
Ring-necked											
Canvasback					5	150	1000	1000	15085		
Scaup						50	2000	2000	28350		
Goldeneye				50	30	50			910		
Bufflehead		2	2	2	2	10	10		196		
Ruddy							150	200	2450		
Other Am. Merganser				10	50	150	200	100	3570		
Red-breasted Merganser				1							
<b>Coot:</b>								50	350		

(over)



	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	847	60	
Geese	2135	100	
Ducks	100387	6200	
Coots	350	50	

# SUMMARY

Principal feeding areas

Principal nesting areas

Reported by Edward J. Smith, Jr.

## 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  
(Aug. 1952)

MIGRATORY BIRDS  
(Other than Waterfowl)

Refuge Los Lacs Months of January to April 1957

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. <u>Water and Marsh Birds:</u>										
Horned Grebe	10	4/24	200	4/27						
Horned Grebe	10	4/24	10	4/27						
Pied-billed Grebe	1	4/17								
White Pelican	3	4/26	275	4/28						
Double Crested Cormorant	5	4/23	75	4/28						
Black Crowned Night Heron	5	4/22								
American Bittern	1	4/29								
Sandhill Crane	20	4/13		4/13-4/19						

(over)



(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove	1	4/24	Common by end of period		
IV. <u>Predaceous Birds:</u> Golden eagle Duck hawk Horned owl Magpie Raven Crow		Winter resident - one seen 3/5  resident - one seen 4/12 - 5/4 resident - no court made			
Marsh Hawk Swainson's Hawk Sparrow Hawk Am. Rough-legged Hawk	1 3 2	3/15 3/29 4/24 4/18 Winter resident	Common by end of period		
Reported by <u>Robert J. Smith, Jr.</u>					

#### INSTRUCTIONS

(See Sec. 7532, Wildlife Refuges Field Manual)

- (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 migration record for the species for the reporting period.
- (3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.
- (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 species days use (average population X no. days present) of refuge during the reporting period.

UPLAND GAME BIRDS

Refuge Des Moines

Months of January to April, 1957

(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.
	1600 - Agricultural 8200 - Grassland 3000 - Brushland and Wooded Coulees 13000 - Total Upland Habitat									
Sharp-tailed Grouse									735	Based on Dancing Ground
European Partridge									125	
Ring-necked Pheasant									50	



## 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.

~~Doc 7-200~~ Refuge

Year ending April 30, -1957-

REMARKS:

\* List removals by Predator Animal Hunter

**MASSACHUSETTS**

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100-443881

**Boyle**

**FOR**

**Radgar**

**अनुसूची-४**

DOOOOg

**TOPIC**

COMMON NAME

Cover Types & Total	Acres of Habitat
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3	3
4	4
5	5
6	6
7	7
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Species  
(1)

(2) Density

(3)  
Removals

(4) Disposition of Funds



# 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 headings listed.
- (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 unprime-ness 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.

NARRATIVE REPORT

JANUARY, FEBRUARY, MARCH, APRIL

1957

LOSTWOOD NATIONAL WILDLIFE REFUGE

&

DISTRICT IV A EASEMENT REFUGES

T. P. Hunt  
Refuge Manager

UNITED STATES DEPARTMENT OF THE INTERIOR

UNITED STATES FISH AND WILDLIFE SERVICE

LOSTWOOD, NORTH DAKOTA

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## I. GENERAL

A. Weather Conditions.

1957							
<u>Month</u>	<u>Snowfall</u>	<u>Precipitation</u>		<u>Temperature</u>			
				<u>Max.</u>	<u>Avg.</u>	<u>Min.</u>	<u>Avg.</u>
January	5.6			31	11	-29	-10
February	1.75			40	23	-22	1
March	1.48			59	37	-3	14
April	1.18	.94		81	52	0	27
Total	10.01	.94					

60 Year Normal							
<u>Month</u>	<u>Snowfall</u>	<u>Precipitation</u>		<u>Temperatures</u>			
				<u>Max.</u>	<u>Avg.</u>	<u>Min.</u>	<u>Avg.</u>
January	5.1	.47		70	17	-56	-4
February	4.7	.43		69	21	-60	-1
March	5.9	.76		90	35	-48	13
April	3.3	1.23		99	54	-22	30
Total	19.0	2.89					

Temperatures appear about average for the period. Snowfall fell off during the last three months totalling about half of what is expected in the normal year. Precipitation too, was slight, equalling about one-third of the rain received in previous years. The last heavy frost was received on April 27.

B. Water Conditions.

Although rainfall was light and very little snow had accumulated during the winter; the high water levels of last fall and a half inch rain which fell on April 23, have left the potholes and lakes well filled as of this writing. The smaller potholes at higher elevations were free of ice by the middle of April. Thompson Lake lost the last of it's ice by April 28. This is eleven days later than the final break-up reported last year.

C. Fires.

There were no fires on the refuge this period.

## II. WILDLIFE

A. Migratory Birds.1. Population and Behavior.

The first migratory waterfowl to arrive this year were probably not seen by the writer because he was hospitalized most of the month of March; however on March 31, 17 pintails were seen circling some of the frozen ponds west of headquarters. By April 14, both mallards and pintails were seen on the refuge. On the 19th, 75 white-fronted geese were seen heading north. Three days later, coots, scaup and cans were present and the last week in April saw most of the remaining species arrive.

The following is a list of spring migrants and the dates on which they were first observed at Lostwood:

March 29	- crow
	- tree sparrow
31	- pintail
	- bald eagle
	- western meadowlark
April 6	- redwing blackbird
10	- slate-colored junco
10	- killdeer
14	- mallard
	- shoveller
15	- lesser scaup
	- marsh hawk
	- sparrow hawk
17	- pied-billed grebe
	- redhead duck
	- ring-billed gull
21	- semipalmated sandpiper
22	- canvasback
23	- horned grebe
	- ring-necked duck
	- green-winged teal
	- yellow-shafted flicker
25	- gadwall
	- blue-winged teal
	- bufflehead
	- ruddy duck
	<del>red-breasted merganser</del>
26	- lesser yellowlegs
28	- whistling swan
	- baldpate
	- tree swallow
29	- mourning dove

By the last week in April, mallards and pintails were frequently flushed from buckbrush and fields. Both Holboell's and eared grebes were observed courting, mourning doves were cooing and the refuge appeared to be back in business.

## 2. Food and Cover.

The amounts and types of aquatic vegetation will undoubtedly be influenced by the distribution of rain during the next two or three months. Nesting cover appears to be plentiful. The effect of stopping the haying and the greater part of the farming will probably not be noticeable until at least next year.

## B. Upland Game Birds.

### 1. Population and Behavior.

A very mild winter was experienced with little snow to cover feeding areas. The record number of sharptails visiting the refuge feeding station was 26 as compared to 50 counted by Mr. Dybsetter the winter before. Dancing ground counts were incomplete and probably started too late this year, as almost two weeks of rain and fog hampered the count in the middle of April. Another year the count should probably be started by the end of March.

A covey of Hungarian partridge were observed in the interior of the refuge around the middle of April. The first pair was seen on April 22.

Neither prairie chickens nor pheasants were seen this period, but a crowing cock pheasant was heard near the northern refuge boundary and some of our neighbors reported seeing pheasants.

### 2. Food and Cover.

The major change in this category will result from the cessation of haying and also of the greater part of the refuge farming program. The effect this may have on upland game birds will probably not be felt until next year. It is interesting to note that North Dakota State Game Commissioner Morgan has predicted an increase in the pheasant population in certain areas of the state as a result of farmer participation in the Soil Bank Program.

### 3. Disease.

One sharp-tailed grouse which frequented the feeding station had a crippled foot. This bird did all right on one foot and did not seem subject to the attacks and feeding jealousies of the other grouse.



## C. Big Game Animals.

### 1. Population and Behavior.

White-tailed deer did not herd this year as they have in years past. The writer saw a group of five and one of seven but these were the biggest gatherings observed. The absence of snow may account for this departure from reported previous behavior.

One mule deer doe was seen a couple miles west of the refuge. No other deer of this species were seen or reported this period.

Apparently the antelope have left the refuge. It may be that they prefer more open country than we have at Lostwood because plenty of reports of antelope of all ages and sexes are received from the surrounding country. The writer saw nine antelope reoccupy the area near the northeastern part of the refuge about the middle of April. The local state warden K. McKeague said that they had wintered about five miles south of their present location.

### 2. Food and Cover.

There is no shortage in the food department on Lostwood, judging from reports of the fat found on evisceration of last fall's whitetail deer kills. Perhaps food is a limiting factor for the mule deer and antelope but the writer leans to the idea that topography and/or perhaps some less obvious factor or factors in combination make the refuge less inviting to these species than the southwestern part of the state.

### 3. Disease.

One white-tail doe was reported as having died in January on a neighboring farm. The writer did not see the body but the fact that death occurred shortly after the deer season may indicate a delayed hunting mortality.

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

Raccoon - There have been a repeated number of observations and trapped animals reported during the last ten years. This animal has apparently established itself, at least until the next cycle of dry weather occurs.

Mink - A good trapper seemed to find plenty of mink sign on the refuge this last trapping season. Prime male pelts brought an average of \$31.00 at one Minot fur house. North Dakota pelts topped even Alaskan and Yukon mink this year according to a United Fur Brokers Market Bulletin.

- Weasel - One was reportedly seen by a neighboring farmer just across the road from the refuge.
- Skunk - Remain numerous and are frequently seen or smelled.
- Badger - Seldom seen but may have an even higher population than indicated in NR-4, judging by frequency of diggings.
- Coyote - Neighboring sheep ranchers have complained of losses and a dead coyote was seen near the tower trail. It was lying about 1.5 miles east of a known 1080 station and blood had been emitted through the mouth.
- Red Fox - Two were trapped during this last season. This fox is supposed to have invaded this area in the last 15 years. Perhaps it is partially filling the ecological niche of the coyote which it is understood has been pretty well eliminated from the surrounding country.
- Grey Fox - One specimen was seen in a permittees fur catch.
- Wild Cat - One was reportedly seen by a farmer on the Dimond township road that crosses the north-western corner of the refuge.
- Muskrat - There is a fair population which seems to elicit no enthusiasm on the part of our trapping permittees; although a few were taken by locals from lands outside of the refuge with .22 cal. firearms. The pelts brought between \$.50 and \$.60 either skinned or on the carcass. Some evidence of predation by mink was noted on some of the marsh style houses. (Fig. 1).
- Beaver - Several houses are known to be active but no refuge wide census has been taken.
- Porcupine - A few have been observed on the refuge and several carcasses have been seen along the roads.
- Jack Rabbit - Frequently seen but not an abundant population as judged by some areas. Their pelts brought as high as \$.90 a piece this winter.
- Snowshoe Hare - Occasionally seen but definitely inferior in numbers to the jack.

According to the North Dakota Game and Fish News, trappers have had the second best year financially that they have had in the last ten years. Of almost \$850,000.00 paid to trappers over half was

E. Predaceous Birds, Including Crows and Magpies.

The writer was on sick leave during the period when the migration of hawks appeared in the Lostwood area. Observations were recorded on the following species:

First Marsh Hawks were seen on 4/15, first Sparrow Hawk was observed on 4/15. One Bald Eagle, immature, was sighted on 3/31. First crows, a flock of about 50, were seen on 3/20, and they have become quite numerous at this writing. Winter residents include the Magpies which are common in this area. An occasional Great Horned Owl could be heard near headquarters during the winter months.

obtained from the sale of jackrabbits. The reason for the increase in demand for jacks is because the introduced Myxamatox has cut down the supply of Australian rabbits.

The present rating of furbearers based on total amount of income received by the state's trappers is as follows:

1. Jackrabbit
2. Mink
3. Muskrat
4. Beaver
5. Raccoon
6. Weasel
7. Skunk

Other furs are taken in too few amounts to rate a listing as income.

### III. REFUGE DEVELOPMENT MAINTENANCE

#### A. Physical Development.

1. One dug-out was placed in grazing unit G-13 last fall but was omitted from the last Narrative Report.
2. Nut and bolt bins in the service garage were sorted.
3. Two rock nesting islands in the pothole below the goose compound were covered with 30 bales of alfalfa in an attempt to make them more inviting for nesting. The alfalfa was excess goose flock feed.
4. The office floor was painted.
5. 1725 lbs. of scrap was sold to a Kenmare ironmonger.
6. The scrap lumber pile was sorted and piled.
7. An old cattle corral close to headquarters was torn down.
8. Broken window panes in service buildings and the residence were repaired.
9. Refuge stocks of grass and legume seeds were identified, bagged and tagged.

#### B. Plantings.

##### 1. Cultivated Crops.

In compliance with a recent Service directive, the agricultural program is being discontinued. Only those fields which our permittees had summer fallowed last year and the units of two cooperative farmers who had long term contracts will be farmed again this year.

## IV. ECONOMIC USE OF REFUGE

A. Grazing.

Five additional sections of land are proposed for grazing this year. These new units will be stocked at the rate of five acres per AUM in line with recent grouse research recommendations. Old grazing units will be stocked at last years actual utilized rate. These two rates of stocking plus natural areas and discontinued crop lands should enable us to better evaluate land use effects on both ducks and upland game birds.

B. Haying.

Because it has been so difficult to restrict haying operations to slough margins and also because of its deleterious effect on cover and late nesting ducks and upland game birds, it has been decided to stop haying on Lostwood altogether.

C. Fur Harvest.

Three trapping permits were issued this last season. One trapper was called to jury service for the entire season; another became discouraged after two weeks because of the high percentage of trash fur he was taking; the third took 24 mink. The total take for the season was 27 mink, the refuge share was 14.

## V. FIELD INVESTIGATION OR APPLIED RESEARCH

A. Captive Canada Goose Flock Progress Report.

One goose suffered a dislocated second leg joint when the leg band numbers were recorded on the 30th of December. In a few days the bandaged leg froze stiff and it was amputated at the joint. This goose did all right until it was found decapitated on the morning of March 31. As only the injured goose was killed; no revisitation was made and the predator probably scaled the fenced enclosure; the most logical conjecture as to the killers identity seems to center around raccoon.

The goose flock was brought through the winter on wheat, oats, barley and alfalfa. When corn is placed in the pen, they seem to prefer it over the grains but no visible ill effects resulted from feeding them grain. The alfalfa was eaten regularly and needs to be kicked up daily to expose succulent vegetation trampled in the previous day's feeding. On really cold, windy days the geese sit on their feet and won't feed unless they are herded into the goose shelter. The colder the day, the easier it is to herd them into the shelter. It becomes apparent that geese aren't always as silly as they are made out to be.

## VI. PUBLIC RELATIONS

A. Recreational Uses.

Fourteen use days by bird watchers were recorded during the period.

B. Refuge Visitors.

Permittees are estimated to have used the refuge about 100 days this period. Other visitors were recorded as follows:

<u>Date</u>	<u>Visitor</u>	<u>Organization</u>	<u>Purpose</u>
1/4	H. Cosby	SCS, Minot	Preliminary range capacity estimate.
1/14	K. McKeague	State game warden	In area
1/25	C. Tibbetts	Plumber, Powers Lake	Refuge Plumbing
1/28	J. Klassen	Plumber, Bowbells	Refuge Plumbing
1/29	J. Klassen	Plumber, Bowbells	Refuge Plumbing
1/30	E. Smith	U.S.F.&W.S.	Conference on land use
	M. Hammond		
2/13	M. Clarke	State Highway Dept.	In area
2/13	B. VanBerkom	Rancher, Powers Lake	Grazing inquiries
2/21	M. Anderson		
	B. VanBerkom	Ranchers, Powers Lake	Grazing inquiries
2/26	B. Skredsvig	Farmer, Lostwood	In area
3/5	E. Smith	Des Lacs Refuge	Farming contracts.
	D. Berg		sign-up
3/6	E. Smith	Des Lacs Refuge	Farming contracts
	D. Berg		sign-up
4/10	E. Zahn	U.S.F.&W.S.	Predator Control Placing 1080 station west of refuge.
4/13	M. Anderson	Ranchers, Powers Lake	Grazing inquiries
	B. VanBerkom		
4/17	H. Nordloff	County Commissioner	Township road on refuge
4/20	H. Nordloff	County Commissioner	Township road on refuge
4/22	M. Hammond	Lower Souris Refuge	Sharptail count
4/23	M. Hammond	Lower Souris Refuge	Sharptail count
4/24	H. Ness	SCS, Bowbells	Confer on construction
	T. Kroner	SCS, Bowbells	
4/25	M. Hammond	Lower Souris Refuge	Sharptail count

C. Hunting.

Although no seasons were open during the period, the state released some interesting figures on last falls hunting as follows:

<u>Species</u>	<u>Kill</u>	<u>Ranking by year</u>
Pheasants	325,000	Highest since 1949

cont'd.

<u>Species</u>	<u>Kill</u>	<u>Ranking by Year</u>
Sharptail grouse	167,000	Best season on record
Hungarian partridge	126,000	Best season on record
Ducks	640,000	Highest since 1953
Deer	26,000 Success ratio 68%	Third highest in last 10 years.
Antelope	1,155 Success ratio 96.3%	Highest success ratio on record, although some drop in number of license issued.

An interesting footnote to the duck data is that North Dakota had 8.5% of the Central Flyway's hunters and bagged 13.8% of the ducks harvested in this flyway in 1955. Each hunter averaged 7.5 days of hunting and bagged a seasonal average of 12.3 ducks.

#### VII. DISTRICT IV A EASEMENT REFUGES

##### A. Shell Lake.

A visit to this easement was made on April 10. Refuge signs were in good shape and a easement trapper reported having taken two mink during the season. A few mallards had arrived at the time but the lake was still frozen over for the most part.

##### B. Lake Zahl.

This refuge was not visited during the period. Three easement trapping permits were issued for the season. One trapper reported taking one mink and the other two failed to report.

#### VIII. OTHER ITEMS

##### A. Items of Interest.

According to a statement made in the Burke County Commissioner's Office, the State Highway Department intends to lay a macadam surface on State Highway 8 from Stanley to the junction with State Highway 50, this year. The same source said that this surfaced road is to be extended to Bowbells by next year.

Respectfully submitted,

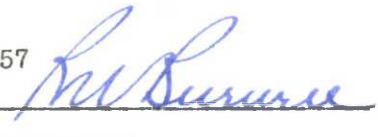


T. P. Hunt  
Refuge Manager

May 9, 1957

Approved

Date



B. Photographs.

Fig. 1 Muskrat House on Rock Lake  
showing hole made by rat  
hunting mink.



WATERFOWL  
 (Continuation Sheet)

REFUGE Lestwood MONTHS OF January TO May, 1957

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	March 11	12	13	14	April 15	16	17	18			
<u>Swans:</u>											
Whistling								1	7		
Trumpeter											
<u>Geese:</u>											
Canada											
Cackling											
Brant											
White-fronted							75		(in flight)		
Snow											
Blue											
Other											
<u>Ducks:</u>											
Mallard							64	100	1148		
Black											
Gadwall								8	86		
Baldpate								2	14		
Pintail				17			13	25	595		
Green-winged teal								4	28		
Blue-winged teal								15	106		
Cinnamon teal											
Shoveler								8	56		
Wood											
Redhead								47	329		
Ring-necked								31	7		
Canvasback								44	448		
Scaup								4	500		
Goldeneye											
Bufflehead								37	259		
Ruddy								2	14		
Other											
breasted merganser								1	7		
lean merganser								8	21		
<u>Coot:</u>								29	203		

(over)

(5) (6) (7)  
Total Days Use : Peak Number : Total Production

## SUMMARY

Swans

Principal feeding areas

~~Lake Thompson, Inverness and Rock~~

Geese

Principal nesting areas

Ducks

Coots

Reported by

L. J. Hunt

## 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 Lostwood Months of January to May 1954

(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>										
redwing blackbird	10	4/8								
killdeer	1	4/10								
pied-billed grebe	1	4/17								
horned grebe	15	4/23								
II. <u>Shorebirds, Gulls and Terns:</u>										
ring-billed gull	11	4/17								
semipalmated sandpiper	8	4/21								
lesser yellowlegs	13	4/26								

(over)



(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove	1	4/79			
White-winged dove					
IV. <u>Predaceous Birds:</u>					
Golden eagle	1	2/18 ( winters near here)			
Duck hawk					
Horned owl					
Magpie	numerous	( winters here)			
Raven					
Crow	50	8/29			
bald eagle	1	8/31			
marsh hawk	1	4/15			
sparrow hawk	1	4/15			
Reported by.....T.P. Hunt.....					

#### 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.

UPLAND GAME BIRDS

Refuge Lake Umbagog Months of January to May, 1947

(1) Species	(2) Density	(3) Young Produced	(4) Sex Ratio	(5) Removals	(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird Number broods obs'v'd. Estimated Total	Percentage	Hunting For Re- stocking For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
sharp-tailed grouse Hungarian partridge					1000 200	

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



# 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 Lanwood

Year ending April 30, 1957

(1) Species	(2) Density	(3) Removals	(4) Disposition of Furs									(5) Total		
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control	For Re- stocking	For Re- search	Share Trapping			Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	Popula- tion
								Permit Number	Trappers Share	Refuge share				
raccoon								7 5120	2					10
mink								7 5120	12	14	14			36
weasel	One seen by farmer near refuge.							7 5120						
skunk								7 5120	all					11
badger								7 5120	all					11
coyote														
red fox								7 5120	2					2
gray fox								7 5120	1					1
wild cat	One reportedly seen by farmer on refuge.													
muskrat														
beaver														
porcupine														
jack rabbit														
snowshoe hare														

(1) List removals by Predator Animal Hunter

\* List removals by Predator Animal Hunter

REMARKS: Additional skunks and badgers were trapped under license No. 7 5120 but were not counted or saved by the trapper. The one coyote listed probably shot as a result of U.S. Fish & Wildlife Service station placed by Mr. E. John west of refuge.

Reported by T.P. Hunt



# 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.)

- | (a)                     | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) | (k) | (l) | (m) | (n) | (o) | (p) | (q) | (r) | (s) | (t) | (u) | (v) | (w) | (x) | (y) | (z) |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| (1) SPECIES:            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| (2) DENSITY:            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| (3) REMOVALS:           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| (4) DISPOSITION OF FUR: |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| (5) TOTAL POPULATION:   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| REMARKS:                |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
- 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.)
- 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.
- 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 headings listed.
- 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.
- Estimated total population of each species reported on as of April 30.
- Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.



## LAKE ILO REFUGE

### I. GENERAL.

#### A. Weather Conditions.

Total precipitation for the period was below normal. The precipitation for April was .58 inch above average. Snowfall was below average. The largest amount on the ground at one time was 6 inches. There were no severe storms during the period.

Temperatures were below average for January, March and April and above average for February. The winter was considered mild.

Weather data for the period and for corresponding periods in 1956 and 1955 are shown below:

<u>1957</u>		<u>20-Year</u>		<u>Temperatures</u>	
<u>Month</u>	<u>Snowfall</u>	<u>Precip.</u>	<u>Ave. Precip.</u>	<u>Max.</u>	<u>Min.</u>
January	5.7	.36	.43	35	-30
February	1.1	.06	.46	47	-17
March	0.5	.50	.82	56	- 4
April	7.5	1.91	1.33	79	21
Total	14.8	2.85	3.04	Ext. 79	-30
<u>1956</u>					
January	1.00	.16		43	-25
February	1.00	.11		39	-20
March	6.00	.56		69	-15
April	0.05	.02		72	12
Total	8.05	.85		Ext. 72	-25
<u>1955</u>					
January		.38		46	-25
February		.48		45	-28
March		.10		67	- 6
April		2.30		78	14
Total		3.26		Ext. 78	-28

#### B. Water Conditions.

The ice level was 31 inches below spillway crest on January 1. It remained at this level until February 27 when the water level raised 3 inches. March 4 the water level was 16 inches below. The water level remained at this level until March 21 when run-off raised the water level to 4 inches below. The water level raised to a small stream flowing over the spillway on March 27. A small stream of water continued

to flow over spillway until April 21 and on April 21 an estimated 12 second feet of water was flowing over spillway. This amount of water flowed over spillway until April 27. At the close of the period 6 second feet were flowing over spillway.

The ice was thinner than usual this winter. The maximum depth reached 27 inches the later part of February.

During the winter two dissolved oxygen analyses were made in the lake by Mr. Henry McKirdy, Fisheries Biologist for the State Game and Fish Department. On December 28 oxygen content was as follows: Surface 11.9 ppm, 3½ feet down 11.5 ppm, 7 feet down 10.3 ppm. On February 6 surface 8.8 ppm, on bottom 9.7 ppm. The water appears to be in very good condition at the present time. No fish were lost this winter. The lake was free of ice this year on April 19.

C. Fires. None.

## II. WILDLIFE.

### A. Migratory Birds.

#### 1. Population and Behavior.

No ducks were present on the Lake Ilo Refuge during the winter. Pintail, mallard, green-winged teal, Canada geese, killdeer, meadow lark and crows, marsh hawk and duck hawks arrived during the week of March 17 to 23. White-fronted geese arrived during the week of March 31 to April 4. Shovelers, redheads, canvasbacks and scaup arrived during the week of April 7 to 13. New arrivals during the week of April 14 to 20 were gadwall, bufflehead, goldeneye, great blue heron, sandhill crane, and mourning dove. During the week of April 21 to 27 new arrivals were blue-winged teal, snow geese, coot, white pelican, double-crested cormorant, marble godwit, dowitcher, willet, yellow legs and sparrow hawk.

Total waterfowl use at Lake Ilo was considerably above that of 1956. In the table below waterfowl use-days in 1956 and 1957 are compared.

	1956	1957
All waterfowl	318,388	601,923
Geese	6,447	5,096
Ducks	311,941	596,687

The shorebird migration started the last week of April except for a few early arrivals during the latter part of March. Shorebirds have been fewer in number this spring.

## 2. Food and Cover.

The spring populations of ducks and geese feed extensively on the Lee Paul Slough area on the refuge. This slough was dry last year and 60 acres of barley and 20 acres of millet were seeded last spring. Fifty acres of this grain was left standing, but little was eaten by the ducks last fall. The slough filled with water this spring flooding the grain. The ducks and geese seemed to stay longer due to this food. Ducks and geese were seen feeding in corn fields that were left standing on refuge. An estimated 30% has been consumed by waterfowl and upland game birds to date. Ducks and geese were seen feeding in fields grazed by cattle last fall in this vicinity.

## B. Upland Game Birds.

### 1. Population and Behavior.

It is believed the ring-necked pheasant population is approximately 100 birds this spring. The winter was considered very favorably for upland game birds as there was very little snow and no severe storms.

A few sharp-tailed grouse have been seen on and near the refuge this period.

A good number of European partridge have been observed on the refuge this winter and spring. Their number has increased on the refuge and southwestern portion of the state.

### 2. Food and Cover.

Upland game bird cover is considered inadequate in southwestern North Dakota. This area has been over-grazed by cattle and the precipitation has been below normal during the past several years.

A large portion of the farm land was summerfallowed and soil banked the past year. A large portion of the corn has been cut for silage the past two years, destroying food and cover for upland game birds.

### 3. Diseases.

None noted.

### C. Big Game Animals.

Three mule deer were seen on the refuge this spring and signs were observed where they fed on the refuge corn fields.

No Antelope were seen on the refuge this period. A herd of 25 have been observed several times two miles south of refuge and a herd of 75 were counted eight miles north of refuge this period.

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

One permit was issued for the trapping of fur animals. Three mink, one muskrat and three skunks were trapped during the winter trapping season.

It is estimated a few beaver have been using the refuge, as a small amount of sign has been observed. A few weasel have been on the refuge this period but their numbers are small. Some sign of skunk have been observed this spring. One sick skunk was killed on the refuge this spring. Three were trapped during trapping season. Several mink have been seen on the refuge this period.

No coyotes have been seen on the refuge but it is believed a few were present on the area during the period. Fox are numerous in this vicinity. Several have been seen on and near the refuge. Den hunting has begun in this area.

### E. Predacious Birds.

A few golden eagles and prairie falcon were present during the winter months but were less common than usual. The usual number of marsh hawk, sparrow hawks, American rough-legged hawks used the area during migration.

Crows were common during April but very few stay or nest in this vicinity.

No snowy owls were seen this winter. Several horned owls were present this period.

### F. Fish.

Winter fishing was permitted from December 15, 1956 to March 15, 1957. It is estimated that 1400 man-days of fishing were expended. Four thousand perch, 1000 northern pike, 500 walleyed pike and 50 bass were taken. The perch were a good size 7 to 13 inches but less were caught than ever in the past. An estimated 1000 northern pike were taken

compared to 12000 during the same period last year. A few northern pike weighed 14 to 15 pounds. More walleyed pike were taken during the winter season than ever in the past. There were 29 fish houses on the lake this winter and all were removed from the ice at the end of the season. Some fish houses were left on the north shore of the lake. This land is not owned by the service but is under easement. These fish houses give a rather bad appearance to the recreational area.

### III. REFUGE DEVELOPMENT-MAINTENANCE

#### A. Physical Developments and Maintenance.

1. Removed old shower bath stall and constructed new shower bath stall in residence.
2. Hauled 40 cu. yds. of rack from stock pile and placed on shore line.
3. Installed electric wiring and fixtures in basement of residence.
4. Made property inventory.
5. Hauled coal for heating garages.
6. Made two trips to Des Lacs Refuge.
7. Constructed clothes closet in basement of residence.
8. Repaired interior of garage, building No. 4, that was moved to new location last fall.
9. Assisted making dissolved oxygen analysis of water in Lake Ilo and checked thickness of ice several times.
10. Checked structures and water levels periodically and made weekly waterfowl counts.
11. Cleaned snow and ice out of refuge roads and maintained refuge roads.
12. Constructed and painted three outhouses. Two for Lake Ilo recreational area and one for Stewart Lake Refuge.
13. Cultivated trees on refuge with tandem disc.

14. Plowed 10 acres of sod for tree planting next spring and 7 acres of sod for contoured fields.

15. Transplanted some Kentucky blue grass sod in yard at headquarters and replaced yard fence that was taken down last fall for moving garage.

16. Moved outside toilet out of yard at headquarters.

17. Took up four wooden signs for marking fishing area, cleaned and repainted them.

18. Serviced, greased and made minor repairs to Diamond T truck, Dodge pickup and Ferguson tractor.

#### B. Plantings.

Farm Unit A-4 and A-5 - Charles Schollmeyer (65 acres)

9½ acres will be summer fallowed ; 35 acres of barley and 21 acres of corn will be seeded. Refuge share will be in corn and barley. Barley has been seeded.

Farm Unit A-1 and A-2 - Tom Donohoe (28 acres)

7 acres will be planted to grass, 7 acres seeded to corn and 14 acres to oats. Nothing has been seeded to date.

#### C. Receipts of Seed and Nursery Stock.

Eighty pounds of created wheat grass seed was transferred from Des Lacs Refuge.

### IV. ECONOMIC USES

A. Grazing. None.

B. Haying. None.

C. Fur Harvest.

A trapping permit was issued to Mr. John Bray of Killdeer, North Dakota for taking mink, muskrat, weasel, fox and skunk. Three mink, one muskrat were trapped and shared on a 50-50 basis. Three skunk were trapped and kept by trapper.

### V. FIELD INVESTIGATION OR APPLIED RESEARCH

No projects this period.

## VI. PUBLIC RELATIONS.

### A. Public Uses.

1. Hunting. None.
2. Fishing. An estimated 1400 man-days were expended in winter fishing. Approximately 4,000 perch, 1000 northern pike, 500 walleyed pike and 50 bass were taken.
3. Miscellaneous Use. The Lake Ilo Recreational Area is maintained under cooperative agreement by Dunn County. It has been used very little this spring. Trees were cultivated this spring.

## DISTRICT IV. EASEMENTS

### HIDDENWOOD

#### I. GENERAL.

Hiddenwood was visited on April 5, At that time the lake was still completely ice covered. Area was checked for proposed acquisition and development.

#### II. WILDLIFE.

Only five deer were observed on April 5.

### PRETTY ROCK

#### I. GENERAL.

Precipitation and snowfall were below average for the period. There was not any run-off in this vicinity. The water level on March 21 was 4' 6" below spillway and on April 25 it was the same. This is the lowest the water level has ever been. The structures were inspected and found to be in fair condition.

#### II. WILDLIFE.

When the area was visited on March 21, two mallard and a few pheasants were seen. When visited on April 25 the following birds were seen; 20 pintail, 30 mallard, 100 green-winged teal, 15 acaup, 10 gadwall, 2 eared grebe, 1 coot, 1 dowitcher, 1 great blue heron and 3 pheasants. There is very little cover on the refuge as most of it has been grazed or mowed.



One trapping permit was issued to a local farmer but he did no trapping. Due to the low water level there were very few muskrat or mink present. One mink was seen on the refuge on April 25. Signs of raccoon were observed on the area. Fox are numerous in this vicinity as reported by local farmers.

### III. PHYSICAL DEVELOPMENTS.

1. Checked water level and inspected structures.
2. Observed birds and contacted farmer living near refuge.

#### STEWART LAKE.

##### I. GENERAL.

Precipitation and snowfall was below average during the period. There was very little snow during the winter. There was approximately 1.5 inches of snowfall the later part of April. The water level was 3 feet below spillway crest at the beginning of the period and the same on March 21, and April 25. There was not any run-off in the vicinity this spring.

##### II. WILDLIFE.

On March 21 the lake was covered with ice. The following birds were seen on the refuge on this date; 250 pintails, 4 green-winged teal and 12 mallard. When visited on April 10 the following birds were seen; 1100 pintail, 900 mallard, 250 green-winged teal, 15 canvasback and 4 widgeon. When visited on April 25 the following birds were seen; 50 mallard, 20 pintail, 150 scaup, 100 green-winged teal, 10 shovelers, 40 gadwall, 2 Am. merganser and 8 canvasback.

The severe hail storms last summer killed almost all of the upland game birds in this vicinity.

Four antelope were seen on the refuge on April 25 and 16 were seen near the refuge.

A few muskrat and mink are present but it is believed their number is small. Two trapping permits were issued to local farmers. They did not trap.

### III. PHYSICAL DEVELOPMENTS.

1. Checked water levels and structures.
2. Observed birds on refuge.

## WHITE LAKE

### I. GENERAL.

Precipitation and snowfall was below average in this locality. The water level was 3 feet below spillway crest at the beginning of the period and the same when visited on March 21, April 10 and April 25. There was not any run-off in this area this spring. There was between one and two inches of rainfall in this vicinity during the latter part of April.

### II. WILDLIFE.

The area was visited on March 21 and the lake was covered with ice; no birds were observed. The area was visited again on April 10 and 90% of the lake was covered with ice. Two hundred and fifty ducks were seen on and near the refuge consisting of mallard, pintail and green-winged teal. On April 25 the following birds were seen on the area; 100 mallard, 30 pintail, 150 scaup, 100 green-winged teal, 20 shovelers and 40 gadwall. It is believed a number of ducks used the area the latter part of April. One flock of Canada geese was seen on the refuge the latter part of March.

No pheasant or sharp-tailed grouse were seen on the refuge this period.

Antelope and mule deer are present in this vicinity.

A trapping permit was issued to a farmer living on the refuge and reported he caught three mink. Only a few mink, muskrat and skunk are believed to be present on the refuge. A few signs of raccoon were seen on the area.

### III. PHYSICAL DEVELOPMENTS.

1. Structures and water levels were checked.
2. Observed birds on refuge.
3. Area was visited by Mr. Edward J. Smith, Jr. in regards to refuge development.

## LAKE SUSIE

### I. GENERAL.

This easement was visited on April 5 to obtain Land Acquisition data. At that time the lake was filled at crest elevation and completely ice-covered.

### II. WILDLIFE.

No wildlife observed on April 5.

W A T E R F O W L

REFUGE Lake Ilo

MONTHS OF January TO April, 1957

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

3-7150a  
Cont. NR-1  
(Rev. March 1953)

WATERFOWL  
(Continuation Sheet)

REFUGE Lake Ilo

MONTHS OF January TO April, 19 57

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen: total
	3/4	3/10	3/17	3/24	4/1	4/8	4/15	4/22		
<b>Swans:</b>										
Whistling										
Trumpeter										
<b>Geese:</b>										
Canada		45	162	37	37		35	2212		
Cackling										
Brant										
White-fronted				150	65	150	47	2384		
Snow										
Blue										
Other										
<b>Ducks:</b>										
Mallard		800	5000	8000	10000	16000	1200	217000		
Black										
Gadwall						25	500	3675		
Baldpate							1000	7000		
Pintail		4000	6000	12000	12000	6000	2000	294000		
Green-winged teal		50	150	300	1500	2000	1000	35000		
Blue-winged teal							50	350		
Cinnamon teal										
Shoveler					10	300	400	4790		
Wood										
Redhead					10	50	300	2520		
Ring-necked										
Canvasback					25	150	200	2625		
Scaup					50	1000	3000	28350		
Goldeneye						20	25	315		
Bufflehead						20	25	315		
Ruddy						20	20	280		
Other										
Am. merganser		10	20	20	10	10	10	560		
Red-breasted merganser		1					20	140		
<b>Coot:</b>							20	140		

(over)



	(5)	(6)	(7)
Total Days Use :	Peak Number :	Total Production	
Swans	:	:	:
Geese	5,096	187	:
Ducks	596,687	23,595	:
Coots	140	20	:

# SUMMARY

Principal feeding areas Leo Paul Slough that was flooded this spring, 50 acres of barley & millet left standing last fall.

Principal nesting areas \_\_\_\_\_

Reported by Charles M. Dinkins

## 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  
(Aug. 1952)

MIGRATORY BIRDS  
(Other than Waterfowl)

Refuge Lake Ilo Months of January to April 1957

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. <u>Water and Marsh Birds:</u>										
Horned grebe	2	4/26	10	4/26-30						
Eared grebe	3	4/25	10	4/25-31						
White pelican	26	4/21	62	4/21-27						
Sandhill crane	400	4/13	2000	4/13-20						
Double-crested cormorant	4	4/26	8	4/26-30						
Great blue heron	1	4/13	5	4/13-30						

(over)



(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove	1  	4/16  	20  	4/16-30  	
IV. <u>Predaceous Birds:</u> Golden eagle Duck hawk Horned owl Magpie Raven Crow Am. rough-legged hawk Marsh hawk Prairie falcon Sparrow hawk Snowy owl	Common 1 Common  12 Common 2 Common 2 None seen	 4/21   3/21 3/22 4/26	4 2  300 10 4 6	1/30-2-20 4/20-30  4/1-20 4/1-20 1/1-2/30 4/26-30	
Reported by <u>Chesley M. Dinkins</u>					

# INSTRUCTIONS

(See Sec. 7532, Wildlife Refuges Field Manual)

- (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 migration record for the species for the reporting period.
- (3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.
- (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 species days use (average population X no. days present) of refuge during the reporting period.



## 1613

Refuge \_\_\_\_\_

Months of January to April, 19 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 specificoally requested. List introductions here.
<u>Lake Ilo</u>										
Sharp-tailed grouse									50	
European partridge									100	
Ring-necked pheasant									150	
<u>Pretty Rock</u>										
Sharp-tailed grouse									30	
European partridge									30	
Ring-necked pheasant									150	
<u>Stewart Lake</u>										
Sharp-tailed grouse									10	
European partridge									10	
Ring-necked pheasant									10	
<u>White Lake</u>										
Sharp-tailed grouse									10	
European partridge									10	
Ring-necked pheasant									10	
<u>Lake Susie</u>										
Sharp-tailed grouse									15	
European partridge									30	
Ring-necked pheasant									10	
<u>Hiddenwood</u>										
Sharp-tailed grouse									20	
European partridge									30	
Ring-necked pheasant									20	

# 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.



SMALL MAMMALS

Refuge.

— 12 —

Year ending April 30, 57.

Species	Density	Removals	Disposition of Furs
(1)	(2)	(3)	(4)
Common Name	Cover Types & Total Acres of Habitat Per Animal	Hunting Fur Harvest Predator Control For Re- stocking For Re- search	Share Trapping Permit Number
			Trappers Share
			Refuge share
			Total Refuge Furs Shipped
			Furs Donated
			Furs Destroyed
			Population
			Total

REMARKS:

\* List removals by Predator Animal Hunter

Blank

No report on

1-10-1941

FOX

Stump

Mark

ПОДПИСАНИЕ

How to get

779921 4087

0-  
Cotton-111  
210/00

FOX

**Revised**

**Badger**

BOOK  
SIX

TOBACCO

महामा

॥ श्रीगणेशाय नमः ॥

Common Name

Common Name	Acres of Habitat
1. <i>Agave americana</i>	100
2. <i>Agave schottii</i>	50
3. <i>Agave schottii</i>	50
4. <i>Agave schottii</i>	50
5. <i>Agave schottii</i>	50
6. <i>Agave schottii</i>	50
7. <i>Agave schottii</i>	50
8. <i>Agave schottii</i>	50
9. <i>Agave schottii</i>	50
10. <i>Agave schottii</i>	50
11. <i>Agave schottii</i>	50
12. <i>Agave schottii</i>	50
13. <i>Agave schottii</i>	50
14. <i>Agave schottii</i>	50
15. <i>Agave schottii</i>	50
16. <i>Agave schottii</i>	50
17. <i>Agave schottii</i>	50
18. <i>Agave schottii</i>	50
19. <i>Agave schottii</i>	50
20. <i>Agave schottii</i>	50
21. <i>Agave schottii</i>	50
22. <i>Agave schottii</i>	50
23. <i>Agave schottii</i>	50
24. <i>Agave schottii</i>	50
25. <i>Agave schottii</i>	50
26. <i>Agave schottii</i>	50
27. <i>Agave schottii</i>	50
28. <i>Agave schottii</i>	50
29. <i>Agave schottii</i>	50
30. <i>Agave schottii</i>	50
31. <i>Agave schottii</i>	50
32. <i>Agave schottii</i>	50
33. <i>Agave schottii</i>	50
34. <i>Agave schottii</i>	50
35. <i>Agave schottii</i>	50
36. <i>Agave schottii</i>	50
37. <i>Agave schottii</i>	50
38. <i>Agave schottii</i>	50
39. <i>Agave schottii</i>	50
40. <i>Agave schottii</i>	50
41. <i>Agave schottii</i>	50
42. <i>Agave schottii</i>	50
43. <i>Agave schottii</i>	50
44. <i>Agave schottii</i>	50
45. <i>Agave schottii</i>	50
46. <i>Agave schottii</i>	50
47. <i>Agave schottii</i>	50
48. <i>Agave schottii</i>	50
49. <i>Agave schottii</i>	50
50. <i>Agave schottii</i>	50
51. <i>Agave schottii</i>	50
52. <i>Agave schottii</i>	50
53. <i>Agave schottii</i>	50
54. <i>Agave schottii</i>	50
55. <i>Agave schottii</i>	50
56. <i>Agave schottii</i>	50
57. <i>Agave schottii</i>	50
58. <i>Agave schottii</i>	50
59. <i>Agave schottii</i>	50
60. <i>Agave schottii</i>	50
61. <i>Agave schottii</i>	50
62. <i>Agave schottii</i>	50
63. <i>Agave schottii</i>	50
64. <i>Agave schottii</i>	50
65. <i>Agave schottii</i>	50
66. <i>Agave schottii</i>	50
67. <i>Agave schottii</i>	50
68. <i>Agave schottii</i>	50
69. <i>Agave schottii</i>	50
70. <i>Agave schottii</i>	50
71. <i>Agave schottii</i>	50
72. <i>Agave schottii</i>	50
73. <i>Agave schottii</i>	50
74. <i>Agave schottii</i>	50
75. <i>Agave schottii</i>	50
76. <i>Agave schottii</i>	50
77. <i>Agave schottii</i>	50
78. <i>Agave schottii</i>	50
79. <i>Agave schottii</i>	50
80. <i>Agave schottii</i>	50
81. <i>Agave schottii</i>	50
82. <i>Agave schottii</i>	50
83. <i>Agave schottii</i>	50
84. <i>Agave schottii</i>	50
85. <i>Agave schottii</i>	50
86. <i>Agave schottii</i>	50
87. <i>Agave schottii</i>	50
88. <i>Agave schottii</i>	50
89. <i>Agave schottii</i>	50
90. <i>Agave schottii</i>	50
91. <i>Agave schottii</i>	50
92. <i>Agave schottii</i>	50
93. <i>Agave schottii</i>	50
94. <i>Agave schottii</i>	50
95. <i>Agave schottii</i>	50
96. <i>Agave schottii</i>	50
97. <i>Agave schottii</i>	50
98. <i>Agave schottii</i>	50
99. <i>Agave schottii</i>	50
100. <i>Agave schottii</i>	50

[illegible]

Common Name	Acres of Habitat	Animal	Ref

Common Name	Acres of Habitat	Animal	Habitat	Frequency
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Common Name	Acres of Habitat	Animal	Habitat	Number of	Percent of

Common Name	Acres of Habitat	Animal	Habitat	Endemic	Priority	Conservation	Feasibility
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Common Name	Acres of Habitat	Animal	Habitat	Endemic	Priority	Endemic	Threatened	Extinct
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Common Name	Acres of Habitat	Animal	Hu	Fl	Hs	Pr	Co	Ne	st	Fe	se
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Common Name	Acres of Habitat	Animal	Hu	Fl	He	Pr	Co	Fe	st	Fe	se	Num
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Common Name	Acres of Habitat	Animal	Hill	Pl.	Hs.	Pr.	Co.	Fe.	st.	Fe.	Number
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Common Name	Acres of Habitat	Animal	Hu	M	He	Pr	Co	Fe	st	Fe	Number	Tree
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Common Name	Acres of Habitat	Animal	Hu	En	He	Pr	Co	Fe	st	Fe	Number	Treat	Shall
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Common Name	Acres of Habitat	Animal	Hu	M	Hs	Pi	Co	Fe	st	Fe	Number	Tre	Sha	Re	abu
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Common Name	Acres of Habitat	Animal	Hu	Fl	Hs	Pr	Co	Fe	st	Fe	se	Number	Tire	Sha	Res	shu	Tot
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Common Name	Acres of Habitat	Animal	Hu	Mu	He	Pr	Co	Fc	st	Fc	see	Number	Tra	Sha	Res	sha	To	Full
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Common Name	Acres of Habitat	Animal	Habitat	Feeds on	Feeds at	Feeds in	Number	Tree	Shrub	Reptile	Snake	Totals	Notes
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Common Name	Acres of Habitat	Animal	Habitat	Endemic	Priority	Conservation	Feasibility	Estimated	Number	Threats	Shade	Recreation	Other	Total	Priority	Designation
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Common Name	Acres of Habitat	Animal	Hu	En	He	Pr	Co	Fe	st	Ec	Number	Tra	Sha	Ren	sha	Tot	Fu	Fu	Den
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[illegible][illegible][illegible]



# 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 headings listed.
  - (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 unprime-ness 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.