

SLADE - WATERFOWL PRODUCTION AREA
NARRATIVE REPORT - 1967

SLADE WATERFOWL PRODUCTION AREAS

NARRATIVE REPORT

1967

Administered by Slade NWR

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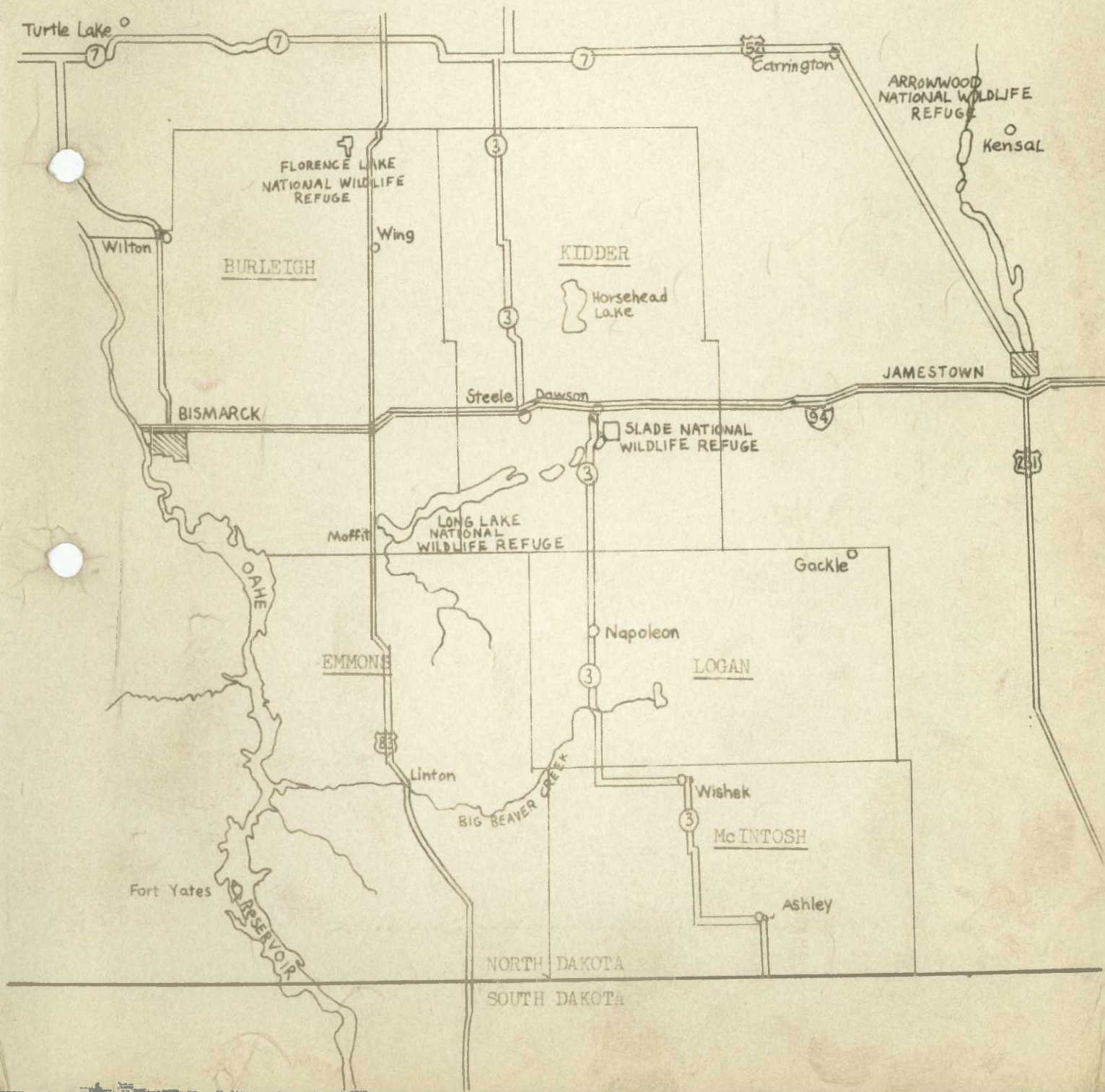
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C O N T E N T S

	<u>Page</u>
I. General (Description of Area, Status of Acquisition)	1, 2
A. Weather Conditions.....	3, 4
B. Habitat Conditions.....	5
1. Water.....	5
2. Food and Cover.....	5
II. Wildlife	
A. Migratory Birds.....	5, 6, 7, 8, 9
B. Upland Game Birds.....	9, 10
C. Big Game Animals.....	11
D. Fur Animals, Predators, Rodents, and Other Mammals.....	1 1
E. Hawks, Eagles, Owls, Crows, Ravens, and Magpies.....	12
F. Other Birds.....	12
G. Fish.....	12
H. Reptiles.....	12, 13
I. Disease.....	13
III. Refuge Development and Maintenance	
A. Physical Development.....	13, 14, 15
B. Plantings.....	15, 16, 17
C. Collections and Receipts.....	17
D. Control of Vegetation.....	18
E. Planned Burning.....	
F. Fires.....	18
IV. Resource Management	
A. Grazing.....	18, 19
B. Haying.....	19, 20
C. Fur Harvest.....	20
D. Timber Removal.....	
E. Commercial Fishing.....	
F. Other Uses.....	
V. Field Investigation or Applied Research	
A. Wildlife Management Studies.....	20
B. Biological "Tinkering"	20, 21
C.	
D.	
E.	
VI. Easement Administration	21
VII. Public Relations	
A. Recreational Uses.....	21
B. Refuge Visitors.....	21, 22
C. Refuge Participation.....	22, 23
D. Hunting.....	23
E. Violations.....	23
F. Safety.....	23
VIII. Other Items	
A. Items of Interest.....	23
B. Photographs.....	
C. Signature.....	

SLAVE WATERFOWL PRODUCTION AREA

DISTRICT MAP



SLADE WATERFOWL PRODUCTION AREA

NARRATIVE REPORT

I. GENERAL

A. Description of Area.

The area covered by this report includes the counties of Burleigh, Emmons, Kidder, Logan and McIntosh. They are located in the south-central part of North Dakota, bounded by the Missouri River on the west and South Dakota on the south (see map). The geological strata ranges from Coteau in parts of Burleigh and Kidder Counties, to outwash, inwash, or terrace in Emmons County.

The district headquarters is located at Slade National Wildlife Refuge.

B. Status of the Acquisition Program.

1. Fee Title Program.

During 1967, 26 tracts were acquired containing 2,602.37 acres. This was a considerable increase over 1966, when seven tracts containing 1,701.00 acres were purchased. At present, there are six options outstanding, all of which should be acquired in 1968.

The Kidder County Commissioners continue to turn down all requests for approval of fee tracts. Appraisers at the Jamestown Wetland Office have ceased this part of the program in the county.

2. Easement.

Kidder County again led the district in total easement acres with 87,928. Table Number 1 compares the easements taken, by county, in 1967.

TABLE NUMBER 1

<u>County</u>	<u>No. Easements Taken</u>	<u>Wetland Acres</u>	<u>Total Acres</u>
Burleigh	38	3,340.00	29,908.18
Emmons	3	398.00	1,211.93
Kidder	130	14,424.00	87,927.69
Logan	73	6,913.00	42,853.50
McIntosh	<u>13</u>	<u>988.00</u>	<u>6,475.12</u>
Totals	257	26,063.00	168,376.22

Table Number 2 shows the status of the fee title and easement programs for the district as of December 31, 1967.

TABLE NUMBER 2

County	Fee Title		Easement		
	No. Mgmt. Units *	Total Acres	No. of Easements	Wetland Acres	Total Acres
Burleigh	6	608.24	84	7,849	63,837
Emmons	6	2,232.91	18	1,867	7,690
Kidder	13	2,936.46	426	50,961	295,200
Logan	13	2,295.33	131	12,874	73,502
McIntosh	21	3,028.01	101	8,730	44,170
Totals	59	11,100.95	760	82,281	484,399

* Includes 2 tracts where the owners were paid by 1/10/68.

In addition, there is under management a 258 acre lease-purchase area (Blumhardt 18,a) in McIntosh County. There are also eight tracts of Public Domain land which are managed as WPA's. The tracts contain 492 acres.

Table Number 3 shows the end of the year totals for fee title and easements for the past five years.

TABLE NUMBER 3

Year	Fee Title		Easement	
	No. Mgmt. Units	Total Acres	No. of Easements	Total Acres
1963	21	5,365	5	2,666
1964	25	6,259	46	22,394
1965	31	6,708	164	92,226
1966	37	8,402	503*	316,022
1967	59	11,100	760*	484,399

* From Jamestown Wetlands Office records. The other three years (1963 - 1965) are from our records. They should be higher when compared to 1966-67 because of the time lag in receiving the completed easement in this office.

C. Weather Conditions.

A moderate amount of snow fell during the first three month period. In March, temperatures reached in the 50's the first week, causing rapid thawing and a resultant run-off. The Schiermeister WPA received a considerable volume of water, causing some dike erosion (see photo section). Temperatures cooled, and a return of freezing weather let us know winter was not yet over.

Snow continued to fall during the month of April. On the 30th a storm, one of the worst on record (40 years) for that late in the spring, began in southwest North Dakota. Blizzard conditions with winds up to 70 MPH were recorded.

Snowfall continued into May 1-2. Low temperatures that followed the storm, set or tied some records for so late in the season. Bismarck's 17° tied the May 2 record of 1907.

Both April and May were favorable in terms of precipitation, with nearly four inches recorded at Linton in April. In terms of moisture, the district appeared headed for an excellent year.

June was much below normal for precipitation and at the end of the month the area was in need of moisture. Linton and Ashley recorded a fair amount, but this was not the case throughout the district.

July and August were warm and dry and all counties in the district were declared drouth disaster areas. Precipitation amounted to approximately .57 of an inch of rain in the vicinity of Slade Refuge, with 16 days reporting 90 degrees or above. A high of 105 was reported at Linton in July along with a low of 30 degrees on the 3rd.

Only the southeast corner of McIntosh County and a few scattered locations throughout the district managed to be in the path of scattered thunderstorms. On July 22nd, a thunderstorm travelled across a portion of Emmons County dumping a reported three to five inches in a short time.

September was near normal with Bismarck reporting a little over two inches of precipitation. Even Slade Refuge managed to attract 1.30 inches of rain.

October was a beautiful month, with no snow and mild temperatures. November followed suit and temperatures reached 59 and 60 degrees at many locations.

Temperatures were in the low 50's on December 5th. By the 12th a trace of snow appeared to remind us that winter was on the way. On December 31, a 43 below reading assured us of that fact.

The information contained in Table Number 4 was obtained from records of the U. S. Weather Bureau stations at Bismarck, Steele, Linton and Ashley.

TABLE NUMBER 4

Weather Data						
<u>Precipitation</u>	<u>Bismarck</u>	<u>Steele</u>	<u>Linton</u>	<u>Ashley</u>	<u>Average</u>	
January	.85	.76	.60	.33	.64	
February	.68	.70	.58	.48	.61	
March	.28	.62	.62	.09	.40	
April	2.79	2.40	2.40	3.48	2.77	
May	1.67	1.54	1.14	.65	1.25	
June	.85	1.02	2.33	3.12	1.83	
July	.29	.33	.44	1.92	.75	
August	1.21	.65	1.25	.47	.89	
September	2.09	1.22	1.56	.67	1.38	
October	1.72	2.00	2.18	1.40	1.83	
November	.16	.22	.31	.10	.20	
December	<u>.95</u>	<u>.89</u>	<u>.72</u>	<u>.53</u>	<u>.77</u>	
Totals	13.54	12.35	14.13	13.24	13.32	
Normal	(15.15)	(17.10)	(16.75)	(16.78)	(16.45)	
<u>Temperature</u>	<u>Max.</u>	<u>Min.</u>	<u>Max.</u>	<u>Min.</u>	<u>Max.</u>	<u>Min.</u>
January	42	-40	42	-30	44	-35
February	42	-26	46	-23	50	-24
March	80	- 9	79	-13	80	-12
April	67	9	67	6	70	8
May	87	15	88	12	91	12
June	91	40	90	43	94	37
July	102	36	101	37	105	30
August	97	40	99	41	100	38
September	87	25	87	27	88	18
October	76	18	79	20	76	16
November	56	- 6	59	- 5	60	- 8
December	52	-43	53	-37	54	-42

D. Habitat Conditions.

1. Water.

Run-off from the early March snow-melt and again from the late snowstorm filled many marshes and potholes. By early June, the water situation was excellent throughout the district.

By the time July arrived, most water areas were receding rapidly. By August, many large marshes and shallow lakes had dried up. The Delzer tract in Emmons County was one of several WPA's that went dry (see photo section).

2. Food and Cover.

Good moisture conditions in the spring resulted in a good production of aquatic plants. All grassland on WPA's was again in excellent condition for nesting. However, as summer progressed, deterioration of grasses was noted.

As a result of the drouth, all five counties were declared drouth disaster areas. This opened the way to emergency hay cutting on federally owned lands which reduced cover somewhat. Excellent cover remained in many marshes where cattail, phragmites and bulrush provided protection.

Very little land was cropped on WPA's, however some type of grain crop is usually nearby. Small grain yields were below normal, and some farmers left their grain standing in the field as it was not worth harvesting.

II. WILDLIFE

A. Migratory Birds.

1. Waterfowl.

The first migrants observed in the district consisted of a small flock of mallards and pintails at Long Lake Refuge on March 22. Based on Burleigh County observations, there appeared to be fewer ducks during the spring migration than in 1966. Blue-winged teal and shovelers were more abundant, while mallards remained about the same.

Interesting June observations include a black duck on the Wentz WPA, and two wood ducks on the Hummel tract, both in Logan County.

The breeding population appeared about the same as 1966, based on counts made at Slade, Long Lake, Florence Lake and three WPA's. The Udhe tract in Burleigh County, the Sisco-Fallgatter unit and Schiermeister tract in Emmons County were censused. No pair counts were made on WPA's in 1966. Table Number 5 compares the number of pairs and per cent species composition for the three WPA's.

Two brood counts were made on the Udhe tract in Burleigh County and on a transect in Kidder County, north of Dawson.

Table Number 6 gives a breakdown on those counts.

TABLE NUMBER 5

Species	Breeding Pair Counts on WPA's					
	Udhe		Sisco-Fallgatter		Schiermeister-Sunburst	
	6/7/67		6/9/67		6/9/67	
	# Pairs	% Species Comp.	# Pairs	% Species Comp.	# Pairs	% Species Comp.
Mallard	11	7.9	15	7.7	17	35.4
Gadwall	20	14.4	25	12.8	6	12.5
Widgeon	1	0.7	3	1.5	3	6.2
GW teal	0	0.0	14	7.1	0	0.0
BW teal	58	41.7	61	31.1	17	35.4
Shoveler	12	8.6	20	10.2	3	6.2
Pintail	5	3.6	14	7.1	2	4.2
Redhead	10	7.2	12	6.1	0	0.0
Canvasback	2	1.4	3	1.5	0	0.0
Lesser scaup	10	7.2	10	5.1	0	0.0
Ruddy	10	7.2	19	9.7	0	0.0
Total Pairs	139	99.9	196	99.9	48	99.9
Coot Pairs	26		13		2	

TABLE NUMBER 6

Udhe WPA Brood Counts

<u>Species</u>	7/13	8/17
	<u>Number of Broods</u>	<u>Number of Broods</u>
Mallard	1	1
Gadwall	1	1
Widgeon	0	1
Bluewing teal	5	6
Pintail	1	0
Canvasback	<u>0</u>	<u>1</u>
Total Broods	8	10
Coot Young	19	20

Brood Count Transect Runs
(North of Dawson)

<u>Species</u>	7/14-15/67		8/17/67	
	<u>No. Broods</u>	<u>No. Young</u>	<u>No. Broods</u>	<u>No. Young</u>
Mallard	2	12		
Gadwall	6	41	6	40
Bluewing teal	2	19	2	11
Shoveler			1	5
Unid. Dabblers	5	46	1	10
Redhead			1	4
Lesser scaup			1	11
Unid. Divers	<u>1</u>	<u>6</u>	—	—
Totals	16	124	12	81
Coots	4	6	Several	140

On the first count 31 out of the 49 water areas censused were dry or nearly dry. On the second count it was 34 out of 49.

The fall migration of ducks practically went unnoticed. Those marshes that survived the drouth, attracted fair populations of ducks. The Buchholz (65) WPA had approximately 800 birds on October 18. Populations of ducks on the Fallgatter-Sisco unit numbered nearly 1,400 on September 19. The Foell WPA held approximately 2,500 ducks during the first week in September. By the first weekend in November, the bulk of the waterfowl had pulled out of the district.

Spring migration of geese and swans was about the same as 1966. Most of the goose use is made up of small Canadas and white-fronts. The first geese (75 Canadas) were seen March 22 in the vicinity of Long Lake Refuge. No geese nest in the district. The fall migration was somewhat lower (except snows and blues) in terms of peak numbers of geese.

Swan use was about normal during the spring, but a decline in numbers was noted during the fall. Some of the larger marshes around Dawson had fair numbers of swans. No swans nest in the district.

One party of hunters from the Northern Prairie Wildlife Research Center reported hearing a trumpeter swan among some whistlers. They were hunting Alkaline Lake in southern Kidder County.

2. Water and Marsh Birds.

Although there was some die-off in the spring blizzard, coots seemed to have done quite well in terms of production. There was adequate over-water nesting cover and a number of broods were seen on WPA's. Production is estimated at 2,000.

Spring use by Sandhill cranes was light. No sandhills nested in the district.

Sandhills began showing up in the district again in late August. A peak of 10,000 was estimated in the Dawson area on October 20 by Manager Mansfield. The peak fall population in the district was estimated at 22,000 birds.

Whooping cranes were in the district this spring. Two, or possibly four, adults were seen many times at Long Lake Refuge from April 13 to May 15. (See item 2, Sec. II, Long Lake Narrative Report).

Other long-legged waders include American bittern, black-crowned night heron, and great blue heron. All three commonly utilize the WPA's, but are not present in any large numbers. Two species uncommon to the district were seen at Long Lake Refuge - snowy egret and white-faced glossy ibis.

Pied-billed, eared, horned, western and red-necked grebes are observed in the district. Only the pied-billed, eared and western are common. The Foell WPA had a fair nesting population of both pied-billed and eared grebes. The hardy western grebe is the last to leave in the fall.

3. Shorebirds, Gulls and Terns.

A large variety of shorebirds are common during the warmer months. Their migration in the spring usually starts with the killdeer during the latter part of March. The killdeer is followed by lesser and greater yellowlegs, avocets, marbled godwits, willet, Wilson's phalarope, long-billed dowitchers, several small sandpipers, upland plover and black-bellied plover.

Franklin's gull are by far the most abundant of the gulls. Other gulls include: ring-billed, herring, California, and, occasionally, the Bonaparte's.

A small nesting colony of Franklin's gulls was found on the Foell WPA. One Franklin's chick was caught and immediately the bird regurgitated 4 salamanders.

Common and black terns also had small nesting colonies on the Foell area. Approximately 50 nests of the common tern were noted.

On July 17, least terns (14) were observed on the Schiermeister WPA. This tract is located approximately three miles east of the Missouri River. The least utilizes this river system.

4. Doves.

The mourning dove is common with most (perhaps all) shelterbelts being inhabited by nesting birds. The spring blizzard killed some of the early arrivals.

B. Upland Game Birds.

The current status of the pheasant looks slightly better than 1966. A few birds are found on several WPA's, but they are more common in the southwest part of the district. The Missouri River bottoms nearby seem to have the most pheasants.

Weather for all upland game species was favorable throughout the nesting and brood rearing seasons.

2. Sharp-tailed Grouse.

The most common of the upland game birds. This native appeared to have enjoyed a good year in terms of production. Although no broods were seen on WPA's, observations on wintering flocks indicate an increase. More sharptails are found in the western part of the district. On one inspection (November 13) of the Schiermeister tract, approximately 90 birds were counted.

No dancing grounds were located on fee title areas.

3. Gray Partridge.

"Hungarian" partridge appeared to have increased in 1967. Coveys were sighted occasionally on the WPA's.

4. Pinnated Grouse.

Truly a rare bird "in these here parts". None were seen in 1967 (see Rare, endangered and Status Undetermined Species).

C. Other Birds.

Several species of hawks and owls are observed on the WPA's, with the marsh hawk being the most abundant. Other species include the rough-legged, red-tailed, Swainson's, and sparrow hawk. Occasionally a prairie falcon is seen.

Among the owls, the great-horned is a year around resident. Other owls include long and short-eared owls, and the snowy and burrowing owl.

Red-winged blackbirds are early spring migrants to the WPA's. Later on the yellow-headed shows up. In the fall, red-wings are very abundant to the point of being a nuisance. Approximately 2,000 were seen on the Buchholz (65) WPA on October 18.

Other birds common to the district are northern yellowthroat, short and long-billed marsh wrens, lark bunting, meadowlark, American goldfinch, bobolink, western and eastern kingbird, and dickcissel. Sparrows include: song, tree, field, vesper, grasshopper, Baird's, Leconte's, Harris', and clay-colored.

During the winter months, prairie horned larks, snow buntings, longspurs and occasionally northern shrikes inhabit the WPA's.

D. Big Game Animals.

White tailed deer are common, mule deer are scarce, and antelope are rare. All of the larger WPA's have white-tails. The population appears to be down slightly.

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

Muskrats are common in the southeast part of the district, but their numbers are not great.

Mink are also more common in the southeast because of their close association with the muskrat. Mink signs are evident on nearly all the wetland tracts. Few actual observations are made.

Raccoon utilize all the wetland tracts in the district. Their sign is noted frequently but few observations are made.

Striped skunk are observed on occasion, while badgers are evident by their diggings but are rarely seen.

Red fox are seen occasionally. Tracks of the animal can be found on most WPA's during the winter.

One coyote was seen on the Schiermeister tract on March 3. Coyote are most abundant along and near the slopes of the Missouri River, but their numbers are low.

Bobcat have not been sighted on any WPA's. Like the coyote, they are found along the river bottoms; rarely, if ever, seen on the open prairie.

The white-tailed jack rabbit is more plentiful this year. The animal is seen uniformly throughout the district. Cottontail rabbits are scarce. A few may be found in thick brush on some individual tracts.

Three species of ground squirrels, the 13-lined, Richardson's and Franklin's are noted throughout the district. The 13-lined is the most abundant and the Franklin's the least. One 13-lined was observed taking his last look of the year on October 31 at the Delzer WPA.

F. Rare, Endangered and Status Undetermined Species.

Whooping cranes visited the district this year. Two adults were first seen at Long Lake Refuge April 13th. The birds were last observed May 15th. (For a more detailed account, see item 2, Sec. II, Long Lake Narrative Report).

Greater sandhill cranes utilize the district in unknown numbers. Determination of their existence has been made from toe length measurements of tracks at roosting sites. Horsehead Lake in Kidder County and the east end of Long Lake (also in Kidder County) are traditional areas used by the cranes.

Northern greater prairie chickens were not seen in the district this year. The last known sighting occurred near Sibly Lake, Kidder County by Manager Mansfield in 1965.

The peregrine falcon and prairie falcon are rarely seen. Two prairie falcons were seen at the Long Lake Refuge.

Hudsonian godwits pass through the district, and they also were observed at the Long Lake Refuge.

Western burrowing owls were not seen on any wetland areas, but an occasional bird or pair is seen in the district. A nesting colony exists approximately two miles west of Robinson, in Kidder County, where 4 to 6 pairs have been observed.

G. Fish.

Fathead minnows and sticklebacks are probably the most common fish species on WPA's. Some bullheads may be found on the larger tracts. The Schiermeister WPA has a larger variety of fish because of its direct connection to the Missouri River. Carp and northern pike have been seen in Horsehead Creek which traverses the area.

H. Reptiles and Amphibians.

Garter snakes are the most common reptile. Other snakes include: western hog-nosed, bull snake, smooth green snake, and rattler. No rattlers were observed this year.

Painted turtles are common. The snapping turtle is less abundant, with observations limited to the Schiermeister tract.

Common amphibians include leopard frogs, salamanders, and a species of toad.

I. Disease.

No losses to report.

III. DEVELOPMENT AND MAINTENANCE

A. Physical Development.

Fencing was done on ten areas this year compared to four in 1966.

Protection from trespass grazing was the primary purpose for fencing. More areas should have been fenced for this reason, but a lack of boundary surveys prevented this.

Table Number 7 shows which tracts were fenced.

TABLE NUMBER 7

WPA Fencing Data

<u>County</u>	<u>Tract Name</u>	<u>Location of Fence</u>	<u>Distance</u>
Burleigh	Hoff (37)*	Entire boundary except part of east side	1.17 miles
Burleigh	Trusty (11)	Fenced out upland	.72 "
Burleigh	Leno (40)	Entire boundary except part of south side	1.10 "
Kidder	Vogel (229)	Southeast part	.75 "
Logan	Buchholz (65)	North boundary	.25 "
Logan	Fandrich (52)	North & west boundary	.25 "
McIntosh	Schneider (53,a)	Parts of SW $\frac{1}{4}$, Sec. 35	.80 "
McIntosh	Sackmann (112)	North boundary	.40 "
Emmons	Haak (17)	Fenced out upland	.57 "
Emmons	Silvernagel (15)	Fenced out upland	.25 "
Totals	10		6.26 miles

* Done by bid for \$.40 per rod.

The following materials were used on the above tracts:

<u>Material</u>	<u>Number</u>	<u>Cost</u>
Sacrete (Ready mix in 70 lb. sacks)	88	154.00
Steel Posts (6')	1,876	1,557.08
Barbed Wire (80 rod spools)	84.75	737.33
Wood Brace Posts	124	85.56
Wood Corner Posts	57	85.50
Wood Stretch Posts	87	108.75
Wood Pointed Posts	188	125.96
Total		\$ 2,854.18

Other areas receiving fence repair included a short stretch (2 rods) of boundary fence on the Fallgatter WPA. A new gate and one new post installed on the Heinrich WPA in McIntosh County. Two stretches of fence, approximately 1,200 feet, were repaired on the Bertsch WPA, Kidder County. Part of a cross fence was fixed on the Larson tract in Logan County.

A number of wooden posts, some barbed wire, and a few steel posts were salvaged from the Silvernagel tract in Emmons County. Most of the steel posts and some of the barbed wire was used when fencing out the upland on August 11.

A small ditch was plugged on the Fallgatter tract. The ditch drained a nice type I pothole.

An old farmsite was cleaned up on the Sisco WPA. Junk and old stretches of fence were removed and pushed into the house foundation.

A spillway was repaired at the Schiermeister WPA after spring runoff caused considerable erosion (see photo section).

Boundary posting was done on 13 tracts, and signs were replaced on numerous areas. Most of these had been shot at, or were off because of wind and corrosion.

Table Number 8 shows the posted areas.

TABLE NUMBER 8

WPA Boundary Posting

<u>County</u>	<u>Unit</u>	<u>Date Posted</u>	<u>Distance</u>	<u>Posts with signs</u>
Burleigh	Hoff	10/4/67	1.62 miles	5
Burleigh	Leno	5/25/67	1.10 "	10
Kidder	Goldsmith	10/4/67	1.62 "	19
Kidder	Vogel	10/20/67	.75 "	18
McIntosh	Sackmann	6/20/67	.40 "	13
McIntosh	Schneider	6/20/67	.80 "	22
Logan	Lepp	11/30/67	.50 "	8
Logan	Fandrich	7/7/67	.25 "	10
Logan	Kosanke	10/3/67	2.00 "	17
Logan	Ketterling	8/24/67	1.65 "	14
Logan	Baltzer	8/23/67	3.50 "	20
Logan	Buchholz	7/7/67	1.10 "	16
Logan	<u>Wentz</u>	8/24/67	.27 "	10
Totals	13		15.56 miles	182

B. Plantings.

1. Aquatic and Marsh Plants. None.

2. Trees and Shrubs.

None. Approximately eight acres were fall plowed on the Schiermeister tract for planting in 1969.

3. Grasslands.

Seeding of WPA's continued to keep pace with the acquisition rate. A total of eight tracts were seeded in 1967 as shown in Table Number 9.

TABLE NUMBER 9

Grass Seeding Data

<u>Unit</u>	<u>Lbs. Seed Used</u>	<u>Type Seed</u>	<u>Month Seeded</u>	<u>Acres Seeded</u>
Bernhardt (46)	230	Mix (Alfalfa (165#) (Sw. Cl. (65#))	June	23
Albright (75)	33	Alfalfa	November	3
Albright (75)	426	Mix**	November	57
Goldsmith (158)	130	Alfalfa	May	13
Goldsmith (158)	401	Mix**	November	40
Baltzer (70)	70	Mix (Alfalfa (60#) (Sw. Cl. (10#))	November	7
Baltzer (70)	360	Mix**	November	35
Sackmann (112)	250	Mix (Alfalfa (200#) (Sw. Cl. (50#))	November	29.5
Sackmann (100,a)*	145	Mix (Alfalfa (125#) (Sw. Cl. (20#))	March	7
Marzolf (87)	120	Mix (Alfalfa (100#) (Sw. Cl. (20#))	April	11
Ketterling (51)	110	Mix (Alfalfa (85#) (Sw. Cl. (25#))	May	10
Totals	2,275			235.5

*Hand seeded by refuge personnel

**See Table Number 10

TABLE NUMBER 10

Pounds of Mix Seeded

	<u>Albright</u>	<u>Goldsmith</u>	<u>Baltzer</u>
Alfalfa	31.52	29.76	26.72
Crested Wheatgrass	13.94	13.20	11.86
Sweet Clover	21.50	20.29	18.21
Russian Wildrye	35.88	33.79	30.33
Tall Wheatgrass	53.84	50.67	45.49
Slender Wheatgrass	89.77	84.43	75.80
Green Needlegrass	35.89	33.78	30.33
Western Wheatgrass	<u>143.66</u>	<u>135.08</u>	<u>121.26</u>
Totals	426.00	401.00	360.00

C. Cultivated Crops.

Clinton Lawlor planted three one-acre corn strips on the Schiermeister WPA and Oscar Sauer planted two one-acre strips on the Bechhold tract. The cost for both areas was \$7.50 per acre, which included seed, planting, and cultivating at least three times. The yield was very poor due to the drought.

The Albright tract was seeded to 95 acres of wheat. Because of a previous arrangement with the ASCS office and the Regional Office, Mr. Albright was allowed to keep the entire crop. This is the final year for this arrangement. About 57 acres of this cropland was seeded to grasses in November. Another three acres was seeded to alfalfa in November and will be used in a nesting study.

The remainder of the cropland (about 35 acres) will be strip cropped to provide wildlife food. Since the tract is in the heart of the sandhill crane country, it is hoped the crops will aid in depredation control.

Mr. Clifford Goldsmith planted 40 acres of oats and 13 acres of barley on the Goldsmith WPA. Alfalfa was seeded with the barley, and the oats stubble was seeded in November.

The Sackmann (112) tract was planted to 29.5 acres of wheat, all of which was stubble seeded to grass in November.

The Baltzer tract was planted to 35 acres of oats and seven acres of flax. The flax stubble was seeded to alfalfa and the oats stubble to a grass mixture. Both seedings were done in November.

D. Collections and Receipts.

1. Seed or other Propagules.

None.

2. Specimens.

None.

3. Building Disposal.

None.

E. Control of Vegetation.

Tordon was applied to about three acres of Canada thistle on the Schneider WPA in McIntosh County. A pickup mounted sprayer from Long Lake Refuge was used to apply the spray. Control appears to be good.

F. Fires.

No fires were reported on WPA's even though conditions were prime due to the drouth. Many prairie fires were accidently started in the district.

One fire, started by a freight train, burned approximately 400 acres and 50 hay stacks on land known as the McKenzie Slough in Burleigh County. This marsh, a fine waterfowl area, is located about 15 miles northwest of Long Lake Refuge.

Another fire at the Lehr State Game Management Area, in McIntosh County, burned approximately 400 acres of marsh and upland. A car driven in during the deer season, became stuck, started the fire and was subsequently burned up itself.

IV. RESOURCE MANAGEMENT

A. Grazing.

Nine grazing permits were issued for eight tracts. This includes one drought emergency permit, and one that was not used. The permittee forfeited the down payment. See Table Number 11 for grazing data.

Rotation grazing was used on the Larson, Sisco, and Ammon WPA's. This practice was started in 1966, and shows promise of providing good wildlife cover along with limited grazing.

TABLE NUMBER 11

Grazing Data

<u>Management Unit</u>	<u>Acres Grazing Habitat</u>	<u>AUM's</u>	<u>Dates of Use</u>	<u>Revenue</u>
Sisco-Fallgatter	320	150	5/16-10/15	309.84
Sisco	260	154	5/16-10/15	319.53
Bechhold	200	66	5/16-9/15	137.16
Bechhold	180	77	6/1-9/13	159.91
Buchholz	75	47	5/16-10/15	96.44
Larson	240	135	5/23-10/15	279.86
Ammon	140	87	6/10-10/1	179.18
Baltzer*	140	44	8/7-8/27	91.14
Bertsch**				30.00
Totals	1,535	760		\$ 1,603.06

* Drouth emergency request

** Forfeited down payment - no grazing

B. Haying.

All five counties in the district were in the drouth disaster area of North Dakota. The WPA's were opened to emergency haying on a first come - first serve basis. No haying took place where grazing occurred. Also, areas recently purchased and badly in need of a rest were not touched. Only four of 21 management units were hayed in McIntosh County because the hay supply was not nearly so short.

Cutting was not allowed until August 1. A limit of 25 tons was set at a price of \$ 1.50 per ton. Only two areas had hay cut at a higher cost. Three dollars per ton was charged for hay cut on a tract in Kidder County, and \$ 2.00 per ton was charged on one tract in Burleigh County.

Table Number 12 shows emergency haying data.

TABLE NUMBER 12

Drouth Emergency Haying

<u>County</u>	<u>No. Permittees</u>	<u>No. Tons Removed</u>	<u>Total Revenue</u>
Burleigh	3	66.40	100.60
Emmons	6	149.47	224.21
Kidder	7	281.94	461.51
Logan	4	46.78	70.17
McIntosh	<u>4</u>	<u>78.75</u>	<u>118.14</u>
Totals	24	623.34	974.63

C. Fur Harvest.

No trapping is known to have occurred on fee title land.

V. FIELD INVESTIGATION OR APPLIED RESEARCH

A. Wildlife Management Studies.

The Albright WPA in Kidder County was selected by Wetland Manager Mansfield and Area Biologist Hammond for a cooperative nest cover width study area. The study called for a WPA that was now mostly in crop or recently retired crop, and having a good potential for waterfowl nesting. The three primary objectives are: (1) To compare dummy nest survival rates in different cover block widths; (2) To compare natural nest densities in different cover block widths; (3) To compare natural nest survival rates in different cover block widths.

The study plan was prepared by Lewis M. Cowardin, Harvey Miller (NPWRC) and M. C. Hammond, Area Biologist, Lower Souris Refuge. The area was seeded to alfalfa in November, 1967 and the study will begin when the alfalfa is established.

B. Biological "Tinkering".

The Fandrich WPA was selected by USGS in connection with a study of water levels and evaporation rates on various potholes throughout North Dakota.

A 15' long aluminum pole was driven nine feet in the marsh bottom. Water measurements are read on certain dates selected by the USGS, and sent to them for tabulation.

VI. EASEMENT ADMINISTRATION

An aerial check of easements did not materialize before the close of the year. Plans to check easements were held up when the regional plane was put out of commission by a faulty part. The easements will be checked as soon as snow cover permits.

VIII. PUBLIC RELATIONS

A. Recreational Uses.

Hunting is the only known use on fee title lands. Other uses, such as nature study, bird watching and photography offer excellent opportunities, especially on the larger tracts.

B. Refuge Visitors.

<u>Date</u>	<u>Name</u>	<u>Affiliation-Address</u>	<u>Purpose</u>
1/13/67	Burdette Morrison	Farmer - Robinson	Grazing
1/13/67	Haaken Leland	Farmer - Robinson	Grazing
1/17/67	Gordon Markel	FCIC Director-Bismarck	FCIC Info.
2/20/67	Alvin Patzner	Farmer - Lake Williams	Grazing
3/21/67	Harold Duebbert	Biologist NPWRC	WPA Research
3/21/67	Tom Klett	Biologist NPWRC	WPA Research
3/29/67	James DeKrey	Farmer - Tappen	Bechhold
3/29/67	Magnus Thompson	Farmer - Kintyre	Grazing
3/29/67	Harold Thompson	Farmer - Kintyre	Grazing
3/29/67	Don Fallgatter	Farmer - Steele	Grazing
3/29/67	Oscar Sauer	Farmer - Tappen	Grazing
3/29/67	Ed Wilen	Farmer - Gackle	Grazing
3/29/67	Mr. & Mrs. Luther Buchholz	Farmer - Lehr	Grazing
3/29/67	Burdette Morrison	Farmer - Robinson	Grazing
3/29/67	Haaken Leland	Farmer - Robinson	Visit
4/25/67	Norman Miller	Farmer - Gackle	Grazing
6/19/67	Robert Wells	Banker - Robinson	Visit
6/20/67	John DeKrey	Farmer - Tappen	Pick up posts
6/30/67	Forrest Lee	Biologist - NPWRC	Nesting Platforms

B. Refuge Visitors (Cont'd.).

<u>Date</u>	<u>Name</u>	<u>Affiliation-Address</u>	<u>Purpose</u>
7/6/67	M. C. Hammond	Biologist-Lower Souris	Bird Census
7/15/67	Ralph Polasky	Farmer - Tappen	Haying
7/17/67	Leonard Kleiter	Farmer - Tappen	Haying
7/18/67	Harold Benson	Wetlands Acq. - RO	Visit
7/21/67	Richard Schmidt	Farmer - Napoleon	Haying
8/14/67	Herb Troester	Ref. Mgr. - Tewaukon	Visit
8/16/67	John Schneider	Farmer - Forbes	Haying
9/13/67	Ed Shuda	Realty Mgmt. - RO	Visit
10/25/67	Messrs. Finck & Zimmerman	Farmers - Napoleon	Grazing
11/3/67	Clair Rollings	Staff Specialist Land Mgmt. - RO	Inspection
12/27/67	Glen White	Farmer - Robinson	Grazing

C. Refuge Participation.

1/27	Mansfield attended sessions of the N. D. Chapter of the Wildlife Society at Bismarck.
2/21	Mansfield, Hansen and Olson attended law enforcement meeting at NPWRC, Jamestown.
3/20	Mansfield presented a slide-talk at the Dawson School to an attendance of 75.
4/15	Mansfield attended the organizational meeting of the N. D. Natural Science Society at Jamestown.
4/17	Mansfield attended the AAO meeting at Jamestown.
4/16-5/20	Hansen attended Basic Refuge Manager's Course at Arden Hills.
5/8	Mansfield attended a workshop on wildlife extension service at NPWRC, Jamestown.
6/19	Hansen attended Wetland Acquisition meeting at Jamestown.

- 8/11, 12 Mansfield attended meeting of N. D. Chapter of Wildlife Society at Medora, N. D.
- 9/18 Mansfield and Hansen attended the AAO meeting at Jamestown.
- 11/20 Mansfield attended the AAO meeting at Jamestown.
- 11/20 Mansfield presented a slide-talk to 49 members of the Hazelton-Moffit PTA at Hazelton, N. D. in the evening.

D. Hunting.

Almost all WPA's were utilized during the experimental teal and regular waterfowl season. The Foell WPA in Emmons County received fairly heavy hunting pressure. Residents from Bismarck-Mandan used the area quite often. Overall, pressure is increasing, but is still light to moderate.

Some upland game bird hunting occurs on a few WPA's. A nine day pheasant season opened statewide after many protests were voiced by would-be game managers.

Deer hunting is generally limited to the larger units which involves six or seven areas.

E. Violations.

None observed.

F. Safety.

See Slade Refuge Narrative Report.

VII. OTHER ITEMS

A. Items of Interest.

See Slade Refuge Narrative Report.

B. Credits.

Ass't. Manager Karl Hansen prepared the report and was edited by Wetland Manager Mansfield. Clerk Olson typed and assembled the report.

HABITAT CONDITIONS - ANNUAL SUMMARY

<u>County</u>	<u>Unit</u>	<u>Acres</u>	<u>Dates Checked</u>	<u>Water Conditions</u>	<u>Upland Habitat Conditions</u>	<u>Waterfowl Observed</u>	<u>Land Use</u>	<u>Management Plan</u>
<u>Burleigh</u>	Hoff	85	4/7/67	Full	Poor	0	Non-use	No
	Hoff	85	6/26/67	Good	Poor	25	Non-use	No
	Leno	60	4/7/67	Full	Fair	0	Non-use	No
	Leno	60	6/26/67	Good	Fair	140	Non-use	No
	Leno	60	7/13/67	Fair	Fair	45	Non-use	No
	Leno	60	8/17/67	Fair	Fair	50d(21)	Non-use	No
	Leno	60	10/11/67	Fair	Good	135	Non-use	No
	Trusty	88	6/26/67	Good	Very Good	135	Non-use	No
	Udhe	152	4/7/67	Full	Very Good	0	Non-use	PP
	Udhe	152	6/7/67	Good	Very Good	222	Non-use	PP
	Udhe	152	7/13/67	Fair	Good	325d(**)	Non-use	PP
	Udhe	152	10/11/67	Fair	Good	285	Hayed*	PP
<u>Emmons</u>	Delzer	68	6/13/67	Full	Good	50	Non-use	No
	Delzer	68	9/13/67	Dry	Fair	105	Hayed*	No
	Delzer	68	10/31/67	Dry	Fair	0	Hayed*	No
	Haak	19	6/13/67	Good	Fair	20	Non-use	No
	Haak	19	9/14/67	Dry	Fair	0	Hayed*	No
	Silvernagel	80	4/10/67	Good	Good	15	Non-use	No
	Silvernagel	80	6/13/67	Good	Good	10	Non-use	No
	Silvernagel	80	9/13/67	Dry	Fair	0	Hayed*	No
	Foell	630	4/10/67	Full	Good	495	Non-use	No
	Foell	630	6/14/67	Good	Good	3,900	Non-use	No
	Foell	630	9/6/67	Fair	Fair	2,500	Hayed*	No

* Drouth emergency haying

** See Table Number 6 in NR

HABITAT CONDITIONS - ANNUAL SUMMARY

<u>County</u>	<u>Unit</u>	<u>Acres</u>	<u>Dates Checked</u>	<u>Water Conditions</u>	<u>Upland Habitat Conditions</u>	<u>Waterfowl Observed</u>	<u>Land Use</u>	<u>Management Plan</u>
<u>Emmons</u>	Sisco	854	4/28/67	Full	Good	155	Grazing	N.C.
	Sisco	854	7/17/67	Good	Good	120d(7)	Grazing	N.C.
	Sisco	854	9/19/67	Fair	Good	1,465	Grazing	N.C.
	Fallgatter	213	4/28/67	Full	Good	400	Grazing	N.C.
	Fallgatter	213	7/17/67	Good	Good	30d(17)	Grazing	N.C.
	Fallgatter	213	9/19/67	Fair	Good	1,410	Grazing	N.C.
	Schiermeister	581	3/3/67	Full	Very Good	0	Non-use	PP
	Schiermeister	581	3/27/67	Good	Very Good	150	Non-use	PP
	Schiermeister	581	4/10/67	Good	Very Good	275	Non-use	PP
	Schiermeister	581	6/9/67	Good	Very Good	65d(8)	Non-use	PP
	Schiermeister	581	8/22/67	Fair	Good	150	Hayed*	PP
	Schiermeister	581	9/13/67	Poor	Good	680	Hayed*	PP
	Schiermeister	581	10/31/67	Poor	Good	110	Hayed*	PP
<u>Logan</u>	Ammon	317	4/5/67	Full	Good	30	Grazing	No
	Ammon	317	6/15/67	Good	Good	120	Grazing	No
	Ammon	317	10/18/67	Dry	Good	0	Grazing	No
	Baltzer	438	4/5/67	Good	Fair	30	Ag.-Prod.	No
	Baltzer	438	6/15/67	Good	Fair	200	& Grazing	No
	Baltzer	438	8/23/67	Dry	Fair	0	**	No
	Baltzer	438	10/18/67	Dry	Fair	0	" "	No
	Brunner	155	9/29/67	Good	Fair	205	Haying	No
	Brunner	155	11/6/67	Good	Fair	0	Haying	No

* Drouth emergency haying

** Emergency grazing

HABITAT CONDITIONS - ANNUAL SUMMARY

<u>County</u>	<u>Unit</u>	<u>Acres</u>	<u>Dates Checked</u>	<u>Water Conditions</u>	<u>Upland Habitat Conditions</u>	<u>Waterfowl Observed</u>	<u>Land Use</u>	<u>Management Plan</u>
<u>Logan</u>	Buchholz (65)	193	4/5/67	Good	Poor	70	Non-use	No
	Buchholz (65)	193	6/15/67	Good	Poor	25	Non-use	No
	Buchholz (65)	193	7/7/67	Good	Poor	130d(5)	Non-use	No
	Buchholz (65)	193	10/18/67	Good	Poor	785	Hayed*	No
	Buchholz (10)	100	6/15/67	Good	Good	50	Grazing	PP
	Buchholz (10)	100	10/18/67	Dry	Fair	0	Grazing	PP
	Fandrich	42	4/5/67	Good	Poor	10	Grazing	No
	Fandrich	42	6/15/67	Good	Poor	15	Grazing	No
	Fandrich	42	7/7/67	Good	Poor	15	Grazing	No
	Fandrich	42	8/1/67	Good	Poor	15d(19)	Non-use	No
	Fandrich	42	9/27/67	Good	Poor	250	Hayed	No
	Hummel	80	7/19/67	Good	Very Good	30	Hayed	PP
	Hummel	80	10/18/67	Poor	Good	70	Hayed	PP
	Ketterling	55	4/5/67	Full	Fair	10	Ag.-Prod.	No
	Ketterling	55	6/15/67	Good	Fair	20	Ag.-Prod.	No
	Ketterling	55	8/24/67	Dry	Poor	0	Ag.-Prod.	No
	Kosanke	142	4/5/67	Full	Fair	15	Non-use	No
	Kosanke	142	6/15/67	Good	Fair	75	Non-use	No
	Kosanke	142	10/3/67	Fair	Fair	15	Hayed*	No
	Larson	636	6/15/67	Good	Good	140	Grazing	PP
	Larson	636	10/18/67	Dry	Good	0	Grazing	PP
	Lepp	31	10/17/67	Good	Fair	90	Non-use	No
	Wentz	20	6/15/67	Full	Very Good	20	Non-use	No
	Wentz	20	7/19/67	Good	Good	15d(7)	Non-use	No
	Wentz	20	8/24/67	Good	Good	60d(18)	Non-use	No
	Wentz	20	10/18/67	Good	Good	695	Non-use	No

* Drouth emergency haying

HABITAT CONDITIONS - ANNUAL SUMMARY

<u>County</u>	<u>Unit</u>	<u>Acres</u>	<u>Dates Checked</u>	<u>Water Conditions</u>	<u>Upland Habitat Conditions</u>	<u>Waterfowl Observed</u>	<u>Land Use</u>	<u>Management Plan</u>
<u>Kidder</u>	Albright	461	4/11/67	Good	Good	440	Ag.-Prod.	No
	Bertsch	160	3/28/67	Full	Good	0	Non-use	PP
	Goldsmith	460	6/26/67	Good	Fair	45	Ag.-Prod.	No
	Goldsmith	460	8/29/67	Good	Fair	30d(11)	Ag.-Prod.	No
	Goldsmith	460	9/30/67	Fair	Fair	30	Ag.-Prod.	No
	Thacker	80	3/28/67	Full	Good	0	Non-use	PP
	Vogel	386	10/20/67	Good	Poor	400	Non-use	No
<u>McIntosh</u>	Geiszler	32	4/28/67	Good	Good	80	Non-use	NC
	Grosz	80	4/21/67	Full	Very Good	835	Non-use	PP
	Heinrich (12)	89	4/26/67	Full	Good	0	Non-use	No
	Kempf	363	4/28/67	Good	Good	110	Non-use	NC
	Nies	70	3/27/67	Fair	Good	75	Non-use	No
	Sackmann (100,a)	140	4/28/67	Good	Good	220	Non-use	No

SIGNATURE PAGE

Submitted by:

Marvin Mansfield
(Signature)

Marvin Mansfield
Refuge Manager

Date: March 4, 1968

Title

Approved, Regional Office:

Date: MAR 5 1968

[Signature]
(Signature)

Regional Refuge Supervisor

Building site -
Sisco WPA - Emmons County

Roll 67-8, Exp. 1 8/1/67

KH

Clean-up at old building site -
Sisco WPA - Emmons County

Roll 67-8, Exp. 2 8/1/67

KH



Repair work on spillway by neighbor
operating his own equipment at
Schiermeister WPA - Emmons County

Roll 67-12, Exp. 1 11/13/67 KH

Pulling Emmons County equipment
out of mire by neighbor
(Schiermeister WPA)

Roll 67-12, Exp. 2 11/13/67 KH



Washout in spillway-dam
at Schiermeister WPA - Emmons County

Roll 67-5, Exp. 1 3/27/67 KH

Above spillway after repairs made

Roll 67-13, Exp. 3 11/15/67 KH



Summer fallow for wildlife plantings
on Schiermeister WPA - Emmons County.

Roll 67-10, Exp. 8 10/31/67 KH

Posting Fandrich WPA - Logan County
Laborer-Maintenance Schauer
and Student Assistant Eyre

Roll 67-10, Exp. 3 7/7/67 KH



Dry marsh at Delzer WPA - Emmons County
A canvasback nested here.

Roll 67-10, Exp. 6 10/31/67 KH

New fence at Haak WPA - Emmons County

Roll 67-10, Exp. 7 10/31/67 KH



Refuge Slade WPA's Year 19~~6~~ 67Botulism NONELead Poisoning or other Disease NONE

Period of outbreak _____

Period of heaviest losses _____

Losses:

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

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

Areas affected (location and approximate acreage) _____

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

Condition of vegetation and invertebrate life _____

Remarks _____

Kind of disease _____

Species affected _____

Number Affected Species	Actual Count	Estimated
_____	_____	_____
_____	_____	_____
_____	_____	_____

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks _____

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

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Slade WPA's County Kidder State North Dakota

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water- fowl Browsing Crops Type and Kind	Total Acreage	
	Acres	Bu./Tons	Harvested		Unharvested					
			Acres	Bu./Tons	Acres	Bu./Tons				
Oats	40						40			
Wheat*	95						95			
Barley	13				4		17			
*Farmed under a land use reservation made at time of purchase.									None	
									Fallow Ag. Land	None

No. of Permittees: Agricultural Operations 2 Haying Operations 7* Grazing Operations 2
*(Drouth Emergency)

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE	
Alfalfa-Brome	25.73	22	77.19	1. Cattle	52	143.51	297.07	380	
				2. Other			30.00))		
				1. Total Refuge Acreage Under Cultivation					152
Hay - Wild	256.21	345	384.32	2. Acreage Cultivated as Service Operation					None

**Forfeited down payment - no grazing.

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

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

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

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

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

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

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

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

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

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

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

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Slade WPA's County Burleigh State North Dakota

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water- fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
									None
								Fallow Ag. Land	None

No. of Permittees: Agricultural Operations 0 Haying Operations 3* Grazing Operations 0

*(Drouth emergency)

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle				
				2. Other				
				1. Total Refuge Acreage Under Cultivation				None
Hay - Wild	66.40	75	96.60**	2. Acreage Cultivated as Service Operation				None

** \$2.00/ton charged for 2 ton - Trusty WPA

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

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

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

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

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

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

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

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

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

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

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

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Slade WPA's County Emmons State North Dakota

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water- fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
									None
								Fallow Ag. Land	

No. of Permittees: Agricultural Operations _____ Haying Operations 6* Grazing Operations 2
*(Drouth emergency)

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle	95	304.04	629.37	580
				2. Other			None	None
				1. Total Refuge Acreage Under Cultivation				3
Hay - Wild	149.47	165	224.21	2. Acreage Cultivated as Service Operation				None

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

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Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Slade WPA's County Logan State North Dakota

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water- fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
Barley	8				2		10		None
								Fallow Ag. Land	None

No. of Permittees: Agricultural Operations 1 Haying Operations 4* Grazing Operations 4

*(Drouth emergency)

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle	181	312.38	646.62	635
				2. Other				
				1. Total Refuge Acreage Under Cultivation				10
Hay - Wild	46.78	50	70.17	2. Acreage Cultivated as Service Operation				None

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CULTIVATED CROPS - HAYING - GRAZING

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

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Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Slade WPA's County McIntosh State North Dakota

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water- fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
Wheat	37.0				3.5		40.5		None
								Fallow Ag. Land	None

No. of Permittees: Agricultural Operations 2 Haying Operations 4* Grazing Operations 0
*(Drouth emergency)

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle				
				2. Other				
				1. Total Refuge Acreage Under Cultivation				40.5
Hay - Wild	78.75	75	118.14	2. Acreage Cultivated as Service Operation				None

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CULTIVATED CROPS - HAYING - GRAZING

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ANNUAL REPORT OF PESTICIDE APPLICATION

Refuge

Slade WPA's

Proposal Number

Reporting Year

1967

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

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
6/27	Canada Thistle	Schneider WPA - McIntosh County	3	Tordon	2½ gal.	1.7 lbs./A.	Water 50 Gal/A	Power Sprayer

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

(a) First Years Results:

- | | |
|--|--|
| 1. Date and amount of first rainfall. | 1. 7/1 .05" |
| 2. Date of first observation. | 2. 8/10 |
| 3. Date first effects noted. | 3. 8/10 |
| 4. Character of symptoms. | 4. Wilted and brown |
| 5. Date of examination and percent of apparent kill. | 5. 8/10 100% |
| 6. Date of follow-up and percent of regrowth. | 6. 8/31 None |
| 7. Date of examination and percent of real kill. | 7. 8/31 100% |
| 8. Cost of chemical, equipment, labor; total and per acre cost | 8. \$80.00; \$6.00; \$5.00 -- Total \$91.00
or \$30.33 per acre |