Slade NWR - Narrative Report - 1970

SLADE NATIONAL WILDLIFE REFUGE
Appert Lake Easement Refuge
Canfield Lake Easement Refuge
Flickertail Easement Refuge
Hutchinson Lake Easement Refuge
Lake George Easement Refuge
Lost Lake Easement Refuge
Springwater Lake Easement Refuge
Sunburst Lake Easement Refuge
FLORENCE LAKE NATIONAL WILDLIFE REFUGE*

NARRATIVE REPORT

1970

PERMANENT PERSONNEL

Marvin Mansfield - Refuge Manager

Robert Wright - Assistant Refuge Manager

Wilmer Brandt - Clerk (Typing)

Theodore Schauer - Laborer

TEMPORARY EMPLOYEES

Alvin Hottman - Laborer (2/16 - 12/31)

Douglas Moffit - Laborer (2/16 - 12/31)

Marvin Hayes - Laborer (4/12 - 10/2)

Henry Barnard - Laborer (5/6 - 8/21)

Ellis Schmidt - Laborer (5/6 - 6/21)

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CONTENTS

NARRATIVE REPORT

SLADE NATIONAL WILDLIFE REFUGE

DAWSON, NORTH DAKOTA

1970

I. GENERAL

A. Weather Conditions.

	Snowfall	Precipitation This Month	Normal*	Temp.	Temp.
Jan.	14.0	.88		37	-34
Feb.	10.0	.44		41	-25
Mar.	21.0	1.19		40	-13
April	28.0	3.51		79	2
May		2.33		90	32
June		1.63		93	43
July		1.65		98	46
Aug.		.12		101	43
Sept.		2.78		96	26
Oct.	T.	.74		87	26
Nov.	16.5	1.16		57	-5
Dec.	8.5	.37		40	-19
Totals	98.0	16.80	17.10	Ext.101	-34

*Based on years 1931-1960.

The above weather data was taken from the records of the official U.S. Weather Bureau Station located eight miles west of the refuge in Steele.

The unofficial records kept at the refuge headquarters show the refuge received less snow and total precipitation than at Steele. Refuge snowfall is estimated at 55" and precipitation at 14.68".

In checking past records we find the snowfall figures for Steele can be taken with a grain of salt. Obviously, if 98" fell, much of the area would be buried because of drifting.

The year started with an estimated 11" of snow on the ground. The years peak depth of 12" was reached on January 3. On March 12 there was still 10" on the ground.

April was very unusual in that the greatest monthly snowfall occurred then. It also had the most precipitation.

The last spring snowfall occurred on April 21, while the first fall snow fell on October 27.

The last frost (32 degrees) was recorded on May 26, while the first killing frost (28 degrees) of the fall came on September 13.

June and August precipitation was much below normal, while it was well above normal in April, September and November. On September 7 a total of 2.5" of rain fell.

The coldest temperature recorded at the refuge was -37 degrees on January 18, while the high was 100 degrees on August 26. At the end of the year snow depth was estimated at 1".

B. Habitat Conditions.

1. Water.

The amount of snow on the ground in March indicated a good to excellent run-off, but it never materialized and can only be rated fair.

Water areas were in good condition in the spring, but by late summer many were poor to fair. All areas were lower at freeze-up than a year earlier, and nearly all small potholes were dry.

2. Food and Cover.

The drought was severe enough to cause small grain production to be very poor. In spite of this there was ample wildlife food because most small grain was not harvested. The corn was 99% utilized by the end of the year.

Cover conditions were fair to good. The early season plants made good growth, while some of the late varieties merely existed. Big bluestem grew well, but it is deep-rooted and usually found in low places in this area.

South Marsh contained the best food and cover for waterfowl. There was a good mixture of submerged aquatics, hardstem bulrush, cattail, phragmites, open water and loafing sites. The east portion received heavy use from divers.

II. WILDLIFE

A. Migratory Birds.

1. Geese and Swans.

Graph No. 1 shows the goose-use trend started in 1969 as a result of the goose project. The total includes only 1,519 use-days which can be attributed to migrant birds. Migrant use was about one half of the 1969 figure. It was expected the refuge flock would pull in more birds, but so far this has not happened.

The first migrant geese (15 white-fronts) were observed on 4/7 in the large goose pen. There were still 18 white-fronted geese present on 5/1. No other geese (except from goose project) used the refuge during the spring.

The first fall migrants to be seen were also white-fronted geese. There were 31 in Upper Harker Lake on 9/13. They were still present on 9/17 but left soon there-after.

Two flocks of small Canada's were observed during the fall. There was one flock of 10 on 10/5, and a flock of 50 on 11/12.

No large Canada's, or snows and blues were seen on the refuge during the year.

Swan use-days increased from 903 in 1969 to 3,647 in 1970. The first observation was 11 birds on 4/10. The spring peak reached 155 on 4/24, compared to a 1969 spring peak of 2.

The fall peak of 25 was exactly the same as last year, while fall use-days were nearly identical for both years. Swans were very numerous in this area in the fall, with an estimated peak of 2,000 in Kidder County.

2. Ducks.

For the second year in a row mallards and pintails were not observed until 4/6. Because of this late arrival date, most other species were here within a few days.

The peak spring population of 2,505 compares with last years peak of 625.

Graph NO. 1

ANNUAL GOOSE and SWAN

USE-DAYS

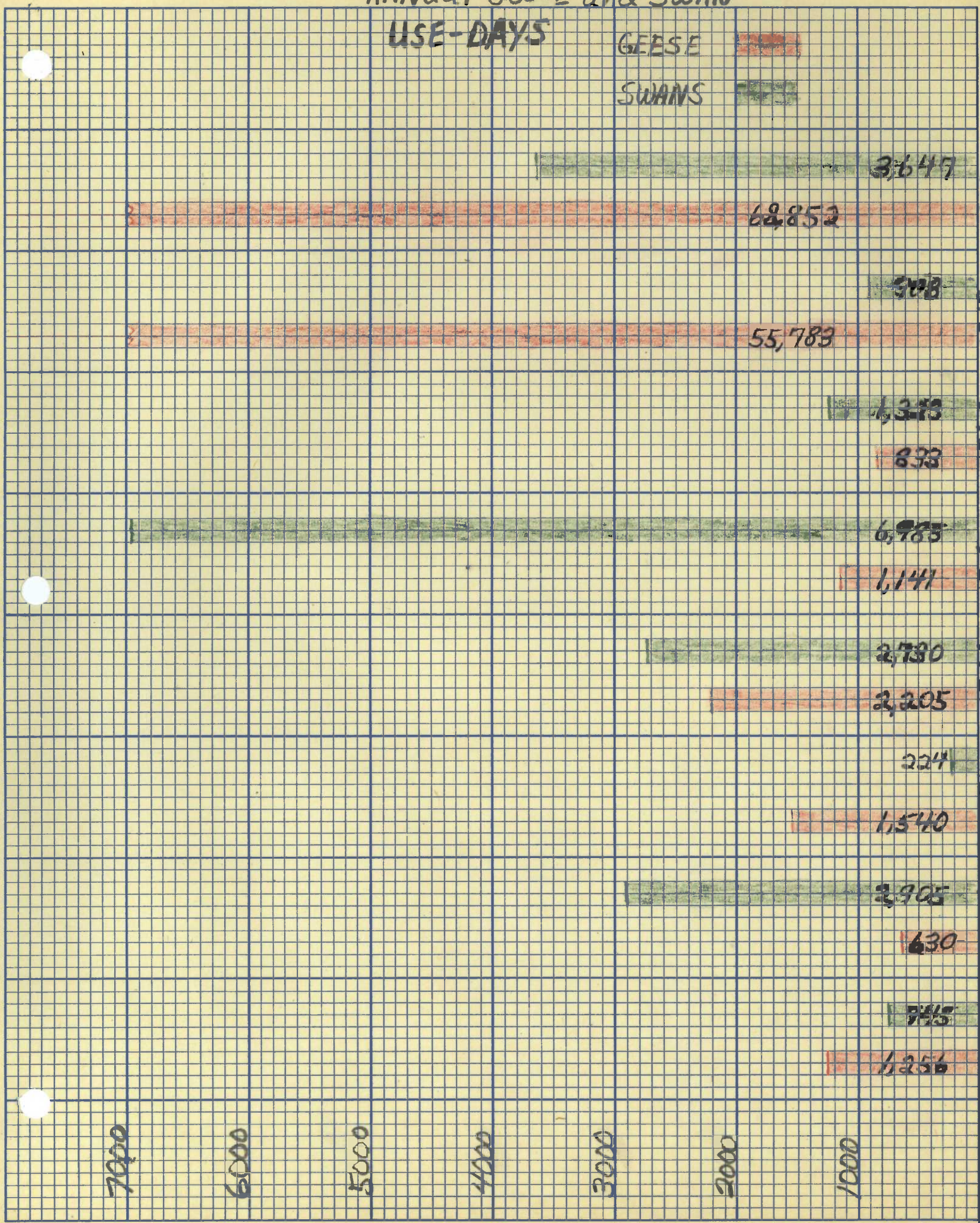


Table Number 1 shows the peak count of common ducks (by species) during the spring period.

Note: This table is not related to the weekly count.

TABLE NUMBER 1

Peak Spring Population of Common Ducks

	1964	1965	1966	1967	1968	1969	1970
Mallard	190	235	370	600	160	95	240
Gadwall	170	70	200	290	65	105	90
A. Widgeon	100	100	150	585	30	30	80
Pintail	70	185	200	320	50	35	180
BW Teal	70	60	210	140	290	170	260
Shoveler	80	20	150	100	50	65	50
Total Dabs.	680	670	1,280	2,035	645	500	900
Redhead	1,420	1,870	325	1,260	3,500	40	670
Ring-necked	10	25	70	60	10	15	40
Canvasback	530	680	365	290	110	30	60
Scaup	1,010	2,040	2,060	1,490	450	380	1,600
Ruddy	80	40	70	120	10	30	10
Total Divs.	3,050	4,655	2,890	3,220	4,080	495	2,380
Total Ducks	3,730	5,325	4,170	5,255	4,725	995	3,280

The fall peak of 4,210 was reached on 10/20 and compares with last years peak of 2,271 on 11/5. Mallards increased from 1,030 in 1969 to 2,320 this year.

The increase in the fall peak of ring-necked ducks is of real significance as can be seen in the following table:

Year	Peak	Year	Peak
1965	5	1968	130
1966	5	1969	135
1967	30	1970	340

One breeding pair count was made starting on 5/26 and ending 6/1. The walk-wade method was used on all water areas that could not be accurately counted from a vehicle. Table Number 2 compares the breeding pair count for the past six years.

GRAPH NO. 2

PEAK FALL POPULATION

TABLE NUMBER 2

Duck Breeding Population

Pairs

	1965	1966	1967	1968	1969	1970
Mallard	18	35	44	32	47	47
Gadwall	17	25	24	32	46	30
A. Widgeon	3	7	0	0	4	1
Pintail	4	12	9	11	17	13
GW Teal	0	0	3	0	4	3
BW Teal	22	55	70	145	86	131
Shoveler	10	15	38	24	33	23
Total Dabs.	74	149	188	244	237	248
Redhead	5	15	12	10	10	10
Ring-necked	0	0	0	0	3	8
Canvasback	6	15	4	4	7	6
Scaup	11	15	5	8	6	3
Ruddy	20	6	1	3	13	4
Total Divs.	42	51	22	25	39	31
Totals	116	200	210	269	276	279

Two brood counts were conducted 7/15 and 8/18. Map Number 1 in the 1967 NR shows the route. Table Number 3 compares observed broods with estimated broods for the past three years.

TABLE NUMBER 3

Duck Broods

	Observed Broods				Estimated Broods			
	1967	1968	1969	1970	1967	1968	1969	1970
Mallard	6	1	6	1	22	10	22	16
Gadwall	8	3	9	6	25	10	24	11
A. Widgeon	0	0	0	0	0	0	2	1
Pintail	1	0	0	0	5	3	8	5
BW Teal	8	8	1	4	22	40	30	35
Shoveler	2	1	3	1	5	7	13	8
Total Dabs.	25	13	19	12	79	70	99	76
Redhead	2	0	5	0	5	4	10	4
Ring-necked	0	0	0	0	0	0	2	2
Canvasback	2	1	1	1	5	2	5	2
Scaup	1	0	1	1	3	3	3	2
Ruddy	1	0	3	0	3	3	10	2
Total Divs.	6	1	10	2	16	12	30	12
Totals	31	14	29	14	95	82	129	88

The estimated total of 88 broods and 279 pairs gives a productivity figure of 32%. This compares with a productivity of 47% in 1969.

Table Number 4 shows estimated production for the past six years.

TABLE NUMBER 4

Estimated Production

	1965	1966	1967	1968	1969	1970
Mallard	75	90	130	60	130	88
Gadwall	105	75	150	60	140	65
A. Widgeon	10	15	0	0	10	5
Pintail	10	20	30	20	50	25
GW Teal	0	0	0	0	10	6
BW Teal	60	120	130	240	180	210
Shoveler	20	25	30	40	80	45
Redhead	5	40	30	25	50	20
Ring-necked	0	0	0	0	10	10
Canvasback	20	40	30	10	25	10
Scaup	30	40	15	15	15	10
Ruddy	50	15	15	15	50	10
Totals	385	480	560	485	750	504

The late spring again held down Jan.-April duck use-days, but nothing like 1969. Sept.-Dec. use-days continued to increase from the low of 1966. See Table Number 5.

TABLE NUMBER 5

Duck Use-days by Season

	1965	1966	1967	1968	1969	1970
Jan-Apr	49,490	54,425	89,670	79,835	10,535	47,425
May-Aug	35,595	86,170	119,945	69,335	97,545	110,376
Sep-Dec	98,252	41,370	74,760	83,300	123,655	162,294
Totals	183,337	181,965	284,375	232,470	231,735	320,495

3. Coots.

Coot use was down considerably, with the biggest drop occurring during the Sept.-Dec. period. The fall peak of 770 compares with the 1969 peak of 930.

The breeding population was estimated at 30 pairs, and production at 90.

TABLE NUMBER 6

Coot Use-days by Season

	1965	1966	1967	1968	1969	1970
Jan-Apr	0	105	490	35	315	210
May-Aug	4,480	6,685	17,850	23,590	17,745	12,530
Sep-Dec	9,030	32,130	45,920	55,860	50,260	27,930
Totals	13,510	38,920	64,260	79,485	68,320	40,670

4. Water and Marsh Birds.

Sandhill cranes reached an estimated fall peak of 12,000 compared to 15,000 in 1969. The heavy use areas are still Horsehead and Kunkle Lakes, but the birds seem to be spreading out more each year. On 10/4 three cranes were feeding in the west cornfield. These were the only cranes observed on the refuge in 1970.

The cormorant peak of 88 was reached on 9/17. Last fall the peak was less than 20. There was a group of 10-12 that spent most of the summer here. No nesting has ever been observed on the refuge.

A flock of 230 white pelicans stopped briefly on 4/28. There were occasional small flocks here during the summer, but as usual, no nesting occurred.

Three great blue herons were present on 8/18, compared to two in 1969.

Pied-billed grebes were numerous again with a peak of 65 recorded on 8/30, slightly higher than last year. Western grebes were down, with a peak of 15 on 7/14. Eared grebe numbers remained low, while no horned or red-necked grebes were recorded.

5. Shorebirds, Gulls, and Terns.

Franklin's gulls peaked at 410 in early September, compared to 900 last year. Ring-billed and herring gulls were present in small numbers.

At least one pair of marbled godwit used the refuge. One willet and six avocets were observed in September.

6. Mourning Doves.

The peak of 110 and production estimate of 55 compares with 70 and 45 respectively in 1969. The headquarters shelterbelt is still the favorite nesting spot.

In January, 1971, the North Dakota Legislature turned down a bill to place doves on the game bird list.

B. Upland Game Birds.

1. Ring-necked Pheasant.

Pheasants increased slightly, with a fall peak of 20, compared to 15 a year earlier. There were at least 6 roosters using South Marsh and Southeast Slough. No broods were observed and production is estimated at 6.

2. Sharp-tailed Grouse.

Grouse numbers in the area are fairly good, but seem to be down slightly from last year. One brood of 8 was observed and total production is estimated at 15.

3. Gray Partridge.

No "Huns" were seen on the refuge until late November when a covey of 16 showed up near headquarters. In late December another covey of 14 was observed near the west boundary. There were about 25 birds using the refuge at the end of the year.

4. Pinnated Grouse.

None observed in this general area.

C. Big Game Animals.

White-tailed deer are the only big game animals using the refuge, although an occassional mule deer is seen in the area.

The refuge deer herd appears to have increased with the peak number of 25 compared to 20 last year. They were very hard on the corn, and it was 99% utilized by the end of the year.

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

1. Fur Animals.

The muskrat population reached an estimated high of 50 in the fall. This compares with 10 a year ago, and is the highest count in recent years. There were 10 houses present. The increase in "rats" could really benefit the goose flock by providing natural nesting sites.

Mink and long-tailed weasel numbers are estimated at 8, the same as last year. One least weasel was seen in the fall near the refuge headquarters.

No local trappers requested permission to trap on the refuge.

2. Predators.

Striped skunk numbers remain high, with the fall peak estimated at 25, the same as last year.

Raccoon are probably not as common as skunk, but they sure did their part to eradicate the corn.

The red fox peak is estimated at 10, the same as a year ago. No gray fox are known to be present in this area.

Predator control work resulted in the removal of 1 red fox, 6 raccoons, and 6 striped skunks.

Badgers are present in low numbers, with a population estimate of five, the same as 1969.

Table Number 7 lists the predators removed by refuge personnel in the last six years.

TABLE NUMBER 7

Predator Control

Calendar Year

	1965	1966	1967	1968	1969	1970
Raccoon	7	14	18	9	3	6
Skunk	7	3	8	10	13	6
Red Fox	3	0	4	0	1	1

3. Rodents and Other Mammals.

Cottontail rabbit numbers remain low (about 10), while while whitetail jack rabbits have increased from an estimated 30 last year to 50 this year.

Thirteen-lined ground squirrels appeared to be down from last year. They are still the most numerous ground squirrel. Franklin's are common (especially at the Rec. Area), and Richardson's are scarce.

E. Hawks, Eagles, Owls, Crows, Ravens, and Magpies.

A golden eagle was sighted in January, April and September, and one bald eagle was seen in January. No eagles nest in this area.

Hawk numbers were low except for marsh and sparrow hawks, and they seemed to be lower than last year.

One snowy owl was observed on 12/19, and at least one great-horned owl was present all year. A short-eared owl was seen on occassion.

Crow numbers were low again with the peak sighting of 90 made on 4/7. The first crow was seen on 2/27. One magpie was observed on 3/2, while no ravens were recorded.

F. Other Birds.

An unusual sighting occurred on 9/30 when an osprey was seen flying low over NW Slough. This is the first osprey recorded here in at least 10 years.

On 10/2 two whooping cranes were observed about 1½ miles north of Dawson on the Mike Wolbaum farm. The next day they moved to the Melvin Dewald farm which is about 5 miles southwest of the refuge. They were last seen in that area on 10/8.

G. Fish.

Fathead minnows and sticklebacks are numerous, but no other fish are present except in Lake Isabel which borders the refuge. The lake winter-killed, and many dead perch and northern pike were observed.

H. Reptiles.

One hog-nosed and two smooth green snakes were observed, while garter snakes were very common. No poisonous snakes occur in this area.

I. Diseases.

None. One striped skunk was shot that appeared to have rabies. The skull was sent to NDSU, and fortunately the rabies test was negative.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development.

The big job this year was the complete renovation of the office. This included installing a new insulated floor, removing the old metal frame windows and replacing them with two Therm-O-Pane windows, lowering the ceiling, and panelling all the walls. The place looks like an office now and should be a great incentive for the new manager.

A small bathroom containing a sink and stool, was built in the residence basement.

A 12'X30' storage loft was built in the new shed, and four new overhead doors were installed on the Service Building.

The rocks bordering the headquarters lawns were replaced with a one foot wide border of concrete. In addition 200' of sidewalk was constructed.

The Recreation Area bath houses were painted, and all three refuge dumps were covered (we now use the Dawson dump) and seeded with grass.

B. Plantings.

1. Aquatic and Marsh Plants.

None.

2. Trees and Shrubs.

A total of 1,200 trees and shrubs were planted in existing shelterbelts to fill in gaps. There were 600 Colorado blue spruce and Black Hills spruce combined, 250 Eastern red cedar, 225 plum, and 125 Russian olive. Survival was good, except for the plum, which appeared to be poor planting stock. The stock all came from the Towner Nursery.

3. Upland Herbaceous Plants.

None.

4. Cultivated Crops.

The drought caused crop yields to be much below normal. The two permittees were able to harvest only a small amount of their crop. They combined 14 acres of wheat which yielded a total of 60 bushels.

The refuge share of the harvested crop amounted to 50 bushels of barley. The refuge also got the entire standing corn crop of 22.9 acres, which yielded an estimated 130 bushels. In addition, all the permittee's unharvested wheat, barley and oats reverted to the refuge.

The refuge planted a grass-legume mix on 18 acres in 4 strips. Millet, which yielded an estimated 4 bushels per acre, was used as a nurse crop.

C. Collections and Receipts.

None.

D. Control of Vegetation.

No spraying was done this year because of the drought.

E. Planned Burning.

None.

F. Fires.

A small wildfire entered the refuge along the west boundary on the north side of the entrance road. No damage was done and it was quickly extinguished after burning about 9 acres.

IV. RESOURCE MANAGEMENT

A. Grazing.

Three grazing permits were issued compared to four in 1969, while AUM's amounted to 315 compared to 347. The AUM rate was $2.98, up from the $2.61 charged last year.

G-3 was grazed (the first time in several years) from mid-May until early July, and then the permittee put the cattle in his regular assigned unit (G-5).

The condition of G-5 warrants an AUM reduction. The permittee was notified that the AUM's will be reduced in 1971 to 110 from 155 for 1970.

G-6 also requires a reduction in AUM's. The reduction is large enough so that it will take place over a period of two years. In 1970 the maximum number of AUM's was 155. The AUM's will be reduced to 120 in 1971, and 90 in 1972.

Tentative plans include the elimination of the present type grazing so that better management tools can be used. The present grazing units are in dire need of rejuvenation. They contain mostly bromegrass, and plans are to plant DNC (dense nesting cover consisting of legumes and tall wheatgrass), interseed with native grasses, and burn to improve the cover type.

B. Haying.

No haying is allowed except on the landing strip and roadsides. No charge is made because of the time of year and the fact that refuge personnel would have to mow the grass anyway.

C. Fur Harvest.

No trapping was done, and as in recent years, no one asked permission to trap.

D. Timber Removal.

None.

E. Commercial Fishing.

None.

F. Other Uses.

The old Slade Lodge was sold by GSA for $502.99. A total of four bids were received.

V. FIELD INVESTIGATION OR APPLIED RESEARCH

A. Giant Canada Goose Restoration Project.

1. General.

The second year of the project was even better than the first. Production was higher, the birds appeared stronger, disease and accident losses were lower, and more geese migrated.

2. Pens.

A gate was installed in the north fence of the summer pen. No other pen modifications took place. Small holes in the fence bottom were filled in with soil.

3. March Banding.

During the end of February a small catch pen was constructed in the southeast corner of the winter pen. It was constructed of cannon net trapping material.

On 3/4 all of the geese present on the refuge were caught in the small pen. Biologist Karl Hansen (NPWRC) and Laborer Hottman went through all the geese to replace missing collars and leg bands, and to get an up-to-date inventory. Some interesting things developed:

a. There were 159 total geese present of which 116 had received neck collars in July. There were still 87 with collars for a retention rate of 75%.

b. Two birds had collars and no leg bands. Seems impossible a goose could get one of those stout bands off, but one was found in the winter pen so it does occur.

c. Three birds had no collars or leg bands. They were leg-banded but neck collars were not put on. Chances are they were part of the refuge flock, but they could have been wild.

d. Of the 43 non-flyers, 24 were pinioned, and 19 were wing clipped.

4. Spring Behavior.

The geese were quite active in the spring, considering this was the first spring they could fly. The very late thaw held down longer flights until late March. In April, reports of our geese came from Kidder and Burleigh Counties.

Goose Sightings

Number of Birds	Date Observed	Collar Number	Location	Observer
1	3/21-4/5	108	2 Mi. from Tuttle	A Farmer
Pair	4/1	?	½ Mi. E. Tappen	Mansfield
Pair	4/13	107 & 18	S. Side Long Lake NWR at Burleigh Co. Line	Preszler Bros.
Pair	4/24	107 & 18	2.4 Mi. W. of Steele Road	Wright
Pair	5/4	?	6 Mi. N. of Dawson	F. Robinson
6	5/5	?	15 Mi. N. of Tappen	H. Nelson

The pair wearing collars numbered 107 and 18 really did some looking around. When sighted on 4/13 they were 20 air miles southwest of the refuge. On 4/24 they were spotted about 14 air miles southwest of the refuge. On 5/4 they were back in the summer pen and the female (107) had laid one egg. She was successful in hatching all five of her eggs.

5. Production.

Total production amounted to 144 goslings compared to 89 last year. The first nest (2eggs) was found on 4/15 indicating the first egg was laid on 4/13-14. The first brood hatched on 5/16, two days earlier than a year ago. The last nest hatched on 6/13-14. This was a female that had deserted her first nest.

The following table shows the dates when known nests hatched:

Hatching Date	No. Nests	Hatching Date	No. Nests	Hatching Date	No. Nests
5/16	1	5/24	1	6/2	1
5/20	1	5/25	2	6/3	1
5/21	4	5/29	1	6/5	2
5/22	2	5/30	1	6/6	2
5/23	2	5/31	1		

There was a grand total of 39 nests with eggs, of which 28 hatched. This means that 5.1 goslings were produced per hatched nest.

Four nests were deserted which leaves 35 nests with complete clutches totaling 198 eggs, or 5.66 eggs per complete clutch.

The next table breaks down the general location of all nests which contained eggs.

Gosling Production by Nest Location

Number Nests	Location	Number Hatched	Goslings Produced	Young/Hatched Nest
29	Summer Pen	22	115	5.23
8	Outside Pens	4	19	4.75
2	Winter Pen	2	10	5.00

The four nests that hatched outside the pens were all on floating platforms (Sand Lake NWR design). Three of the unhatched nests were destroyed (one female was killed), apparently by fox. The other nest contained five sterile eggs, and two eggs with goslings which never hatched.

Summer pen production by nesting sites can be seen in the next table.

Nesting Site	Number Nests	Number Hatched	Goslings Produced	Young/Hatched Nest
Natural	16	13	65	5.00
Straw bales	7	6	31	5.17
Floating platform	3	2	13	6.50
Dill type	2	0	0	0.00
½ barrel	1	1	6	6.00
Totals	29	22	115	

One gosling was found dead at the nest in the summer pen. This was the only known casualty, but it is obvious that other goslings died.

During the July banding only 111 young were banded in the pens. In addition, at least 5 goslings escaped, and none of the goslings were banded outside the pens.

Of the 144 goslings produced, an estimated 125 were raised to flight stage. The birds outside the pens sustained heavy losses. It is doubtful that more than 10 of the 19 goslings were raised. The main loss was caused by the parents (3pairs) bringing the goslings overland to the pens.

6. July Banding.

On 7/30/70 a crew from the NPWRC and Slade Refuge corralled all the birds (except those outside the pens) into the winter pen. A total of 111 goslings were banded with the regular leg band, and an orange plastic collar with black numbers. At least 5 young escaped by flying out of the pen.

Another 21 older birds had new neck collars put on to replace the ones they lost. In addition, 6 yearlings were leg banded and neck collared. They had been wing-clipped the previous summer.

All the band numbers were recorded from older geese that had retained the leg and neck bands. These were checked against existing records to see if any were migrants. None were present.

7. Fall Behavior.

The geese were more active this year, although they did very little field feeding off the refuge. They appeared to be stronger, but there was little increase in wariness.

About 100-150 birds fed regularly in the green rye field and various stubble and unharvested small grain fields on the refuge. Most of the feeding took place in A-4 and just east of the landing strip.

Harker and Upper Harker Lakes were the favorite loafing and resting sites, and at times 200 birds could be counted there.

8. Migration.

Hunting mortality will have to be held to a minimum for the project to succeed. A large area (approximately one township in size) around the refuge has been closed to Canada goose hunting and mortality has not been a factor here.

Getting the birds to a safe wintering ground is the real problem. It was felt that Lacreek NWR would be the ideal place for the geese to winter. Perhaps other North Dakota geese (that had migrated to Lacreek) could be used to lead our birds to the promised land.

Upper Souris NWR geese have been wintering in the vicinity of Lacreek. Ten (at least one had been at Lacreek) of their birds were captured in July, held at the NPWRC, and released (flightless, primaries pulled) into the summer pen on 8/31.

They seemed to get along well with the refuge flock, but after they started flying (about 9/15) they tended to keep to themselves. They departed between 11/19-24 without taking any of our birds along. Eight of the birds (they had yellow neck collars with black numbers) were observed at Lacreek in December, 1970.

The first refuge geese (8) departed between 11/27-12/2, and 39 more left between 12/2-4. On 12/5 the writer observed a flock of 49 depart for a warmer climate. A total of 96 geese migrated, leaving us with a wintering population of 169.

A strange thing occurred on 2/14-15/71 when 48 geese pulled out for parts unknown. There was a warm spell (41 degrees) and they must have thought it was spring. Several reports of geese came in from scattered areas, but it appears 35-40 of these late migrating birds were near Waubay NWR on 2/16.

During the winter months reports of refuge geese came from South Dakota and Nebraska. The first of these came from Lake Andes NWR and involved the shooting of three refuge geese near the refuge. They were shot on 12/4-5. Another of ours was knocked down but got up and flew away. In addition there was another with an orange collar in the flock. There were undoubtedly more Slade birds in the flock since some have lost their collars and would be hard to identify.

The following table lists all observations made through February, 1971:

Date	Neck Collar Number	Location	Observer
12/2/70	20	Lake Andes NWR	Ejner Frandsen Derald Florey
12/5/70	?	Near Lake Andes NWR	A Hunter
12/13/70*	205, 206, 214, 215 255, 262, 273	½ Mi. N. of DeSoto NWR	Ass't. Refuge Mgr.
1/8/71	242, 219, 280, 285 291, 292, 260	Lake Andes NWR	Bill Bair
2/16/71	271 & 1 UNID.	2 Mi. W. Oshkosh, Nebraska	Ross Lock
2/16/71**	4, 9, 13, 19, 30, 47, 92, 134	3 Mi. NW of Pickerel Lk. Day Co., South Dakota	Bob Johnson

*There were 9 birds in this flock and 8 of them were shot on 12/15.
**There were 21 birds in this flock. Believed to be birds that left Slade on 2/14-15/71.

9. Mortality.

a. Hunting.

No refuge geese are known to have been shot in this vicinity. The following table lists all the birds reported shot in other areas in 1970, plus one belated report for 1969:

Date Shot	Band Number	Location	Year Hatch	Sex
12/21/69	588-16135	5 Mi. SW of Lake Andes S. Dak.	1968	F
10/?/70	588-16388	J. Clark Salyer NWR	1969	F
11/5/70	588-16340	" " " "	1969	F
12/4/70	588-16282	SW of Platte, S. Dak.	1970	F
12/5/70	588-16218	9 Mi. S. of Geddes, S. Dak.	1970	F
12/15/70	588-16301	Near DeSoto NWR	1965	M
12/15/70	588-16205	" " "	1970	M
12/15/70	588-16206*	" " "	1970	F
12/15/70	588-16214	" " "	1970	F
12/15/70	588-16215	" " "	1970	M
12/15/70	588-16255	" " "	1970	M
12/15/70	588-16262*	" " "	1970	M
12/15/70	588-16273*	" " "	1970	F
12/16/70	588-16115	8 Mi. SW of Lake Andes S. Dak.	1968	F
12/16/70	588-16263	" " " " " "	1970	M

Based on the above, it is probably safe to assume at least 25 refuge geese were shot in 1970.

*Not positive ident. 8 of 9 geese slaughtered (5 neck collars indicate they were shot at close range).

b. Other.

Only 5 geese died this year from causes other than hunting, compared to 16 in 1969. The losses are listed in the following table:

Date	Band Number	Year Hatch	Sex	Cause	Location
1/5/70	588-16102	1968	F	? Not Shot	Lake Andes NWR
1/5/70	588-16186	1965	M	Exhaustion*	Small Pen
2/2/70	588-16362	1969	M	Stress	Small Pen
2/20/70	588-16371	1969	F	?	Small Pen
Dec. ?, 1970	588-16199	1967	M	?	Large Pen

10. Feed.

The geese were fed whole barley and corn until about 2/15 when they were also given commercial pellets to build them up for egg laying. In addition, alfalfa hay was made available to them at frequent intervals.

*See copy of letter following this page.

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

JAN 31 1970

UNITED STATES GOVERNMENT

Memorandum

TO : Manager, Slade National Wildlife Refuge, Dawson, North Dakota 58428

DATE: January 30, 1970

FROM : Wildlife Disease Specialist, Northern Prairie Wildlife Research Center, Jamestown, North Dakota 58401

SUBJECT: Diagnostic Service - Canada Goose

Gross pathological examination of the adult male Canada goose (Band No. 588-16186) which was submitted January 27, 1970, revealed the bird to be in generally good condition with substantial subcutaneous and visceral fat. The goose was suspected to have died from exhaustion after being pursued by some animal, and no gross lesions were found to indicate another cause of death.

Interestingly, in the ventral abdominal fat adjacent to the abdominal wall was a mass of firmly ground, damp plant material. The material was well walled off and the lining of the wall was necrotic, but there was no evidence of inflammation in the surrounding tissues except for adhesions to the gizzard and abdominal wall. No communication with the exterior or the digestive tract was evident.

After much puzzling, I decided that a possible explanation might have been a penetrating wound into the gizzard which permitted gizzard contents to be forced into the abdomen where they were encapsulated by the inflammatory response. Eventually the wound in the gizzard wall healed leaving the food material stranded in the abdomen. Unfortunately, I was unable to find the healed wound in the gizzard, but I still like the theory.

Gary

Gary L. Pearson

5010-106

The corn was stopped in April and the pellets in August. They had access to wheat and barley until November when they were given a mixture of cracked corn, wheat, and barley. The birds seemed to do much better on the cracked grain, and when checked in early March, 1971 they were in excellent condition.

11. Summary.

The cooperation of the Northern Prairie Wildlife Research Center, and the North Dakota Game and Fish Dept. was excellent.

The refuge crew, especially Alvin Hottman, deserves a pat on the back for making 1970 such a successful year.

B. Duck Banding.

The blue-winged teal quota of 200 was raised to 400 in August. The first blue-wings were banded on 8/14 and the last on 8/29. No other ducks were banded. Baiting was started on 8/10.

The same banding site was used that has been used for the past several years. It is located on the south side of Headquarters Lakes (east).

The total banding cost was $141.05 or $.35 per bird. Labor (36 hours) accounted for $113.40, grain $20.65, and equipment $7.00. There were no material costs as the old trap was used. All banding was done by Clerk Brandt, Laborers Hottman and Barnard, Manager Mansfield, and Doug and Dick Mansfield.

TABLE NUMBER 8

Slade Refuge Banding

Blue-winged teal

	1966	1967	1968	1969	1970
IM. M	180	32	95	185	237
IM. F	206	21	84	130	145
AD. M	2	3	39	10	15
AD. F	5	2	24	8	6
Total	393	58	242	333	403

One blue-wing immature female was banded on 8/18/70 and recaptured on 8/25/70 at J. Clark Salyer NWR.

Table Number 10 lists the returns received during the year from ducks banded here.

TABLE NUMBER 9

Band Returns

Species	Date Banded	Date Recovered	Where Recovered
BWT	8/20/66	11/15/69	5 S. Leeville, La.
GWT	8/27/67	12/12/69	Pecan Island, La.
BST	8/15/68	1/?/70	Santa Ataraszuillo, Mex.
BWT	8/15/68	12/7/69	Loxhatchee WMA, Fla.
BWT	8/19/68	3/?/70	La Habana, Cuba
BWT	8/25/68	9/13/69	High Lake, Iowa
BWT	8/28/68	10/15/69	Paso de Ovejas, GTO, Mex.
BWT	8/11/69	10/4/69	1 N. Hitterdal, Minn.
BWT	8/12/69	9/?/69	4 S. Indial Head, Sask.
BWT	8/13/69	9/22/69	4 One Calgary, Alta.
BWT	8/14/69	2/15/70	Cerca Sabanagrande, Col.
BWT	8/16/69	9/13/69	3 SE Crystal Springs, N.D.
BWT	8/18/69	9/26/70	NR. Trois Rivieres, Que.
BWT	8/20/69	9/20/69	NR. New Orleans, La.
BWT	8/20/69	10/8/69	Echo Bay, Ont.
BWT	8/20/69	9/6/69	2 N. Dawson, N. Dak.
BWT	8/20/69	10/5/69	2 E. Velva, N. D.
BWT	8/25/69	9/27/69	NR Rideau Ferry, Ont.
BWT	8/17/70	9/19/70	NR Ashland, Neb.
BWT	8/17/70	9/12/70	4 W. Cook, Neb.
BWT	8/20/70	10/3/70	S. Amery, Wisc.
BWT	8/23/70	9/20/70	12 W. Woodward, Okla.

VI. PUBLIC RELATIONS

A. Recreational Use.

The Lake Isabel Recreation Area was open from May 15 through September 15 for swimming, picnicing, and boat launching. Actual visits amounted to 7,471 compared to 6,230 in 1969 and 5,590 in 1968 (the last year fees were charged).

B. Refuge Visitors.

The refuge had a grand total of actual visits amounting to 8,065 compared to 7,827 in 1969.

The list of Official Visitors follows:

Official Visitor Log

Name	Organization	Purpose	Date
Lowell Hoffman	RO	Inspection	3/19
Jim Burbank	TVA Waterfowl Biologist	Goose Project	4/29
Leland Key	LaCreek NWR	Visit	4/30
Al Radtke	LaCreek NWR	Visit	4/30
Nels Skaar	Bismarck Engineer	Road Permits	5/13
John Ellis	USFWS - Biologist	Cover Width Study	5/14
Lyle Miller	RO	Safety Inspection	6/16
Bill Miller	RO	Check Electricity	7/6
Hal Doty	NPWRC	Visit	7/7
Jim Smorada	Jamestown Sun	Goose Story	7/30
John Bauman	USFWS - Biologist	S&M Report	7/30
Bill Hendershot	DU - Billings Mont.	Visit	8/12
Herb Troester	Tewaukon NWR	4-H Ecology Talk	8/26
Glen Miller	Tewaukon NWR	4-H Ecology Talk	8/26
John Carlsen	RO	Visit	9/24
Chuck Schroeder	Waterfowl Biologist NDG&F Dept.	Visit	10/8

Frequent Visitors

Name	Organization
Bennie Melland	State Game Warden - NDG&F Dept.
Jim McKensie	Big Game Biologist " "
Mardel Flaten	State Game Warden - " "
Larry Martin	Graduate Student NDSU
William McClure	USFWS - GMA
Karl Hansen	" NPWRC
Forrest Lee	" "
Bill Bair	" Biologist
Dave Lindberg	" Jamestown WO
Art Moore	" " "
Ken Ystesund	" " "
Skip Ciucci	" " "
Del Bridge	" " "
Floyd Engh	N. Dak. State Highway Patrol
Marlin Syverson	SCS - Steele
Phil Park	Kidder Co. Agent
Harry Olson	Wildlife Services
Dr. George Johnson	Amateur Ornithologist

C. Refuge Participation.

1/27 Mansfield presented a slide talk on the goose project to 30 members of the Ashley Lions Club.

2/26-27 Mansfield attended W.O. meeting at Jamestown.

3/17 Mansfield showed the film, "So Little Time" at the Dawson and Steele schools to 515 students and teachers.

3/24 Mansfield met with Messrs. Kruse, Troester, and Hesselbart to make arrangements for Sept. meeting and WPA tour.

3/31 Mansfield attended W.O. meeting at Jamestown.

4/14-15 Mansfield attended burning seminar at Jamestown.

4/17 Mansfield, Brandt, and Hottman - Open House - 36 visitors here to see the geese and hear about the goose project.

4/27-30 Brandt attended Law Enforcement workshop at Jamestown.

5/1 Mansfield took the 7th grade class from Steele on a tour of the refuge (47).

5/24 Mansfield explained the goose project and showed the geese to the Bismarck Audubon Society (25).

5/25 Mansfield attended organizational meeting of the new ecology 4-H Club and showed them the geese (35).

6/5 Mansfield showed the film "Bald Eagle" to 24 members of the Steele Chapter of Eastern Star.

6/10 Mansfield took 38 members of the 4-H Ecology club to locate birds and bird nests on the refuge.

6/15 Mansfield met with Messrs. Troester, Kruse, Miller and Hesselbart re Sept. WPA tour at Jamestown.

6/24 & 7/8 Mansfield took 13 members of the 4-H Ecology Club to locate mammals on the refuge.

7/7 Mansfield attended the monthly meeting of the Kidder County Commissioners re approval for acquisition of 2 WPA's.

8/17 Mansfield attended W.O. meeting at Jamestown.

8/20-21 Mansfield attended the Systems Analysis Workshop at Jamestown.

8/26 Mansfield and Herb Troester gave a course on gun safety and rifle shooting to 20 members of the 4-H Ecology Club.

9/21 Mansfield gave a slide-talk to 50 members of the Robinson PTA.

9/28 Mansfield and Brandt attended Law Enforcement meeting at NPWRC.

10/13 Mansfield took 7 Dawson Cub Scouts on a refuge tour.

11/4-5 Mansfield attended N. Dak. Bureau Conference at Jamestown.

11/18 Mansfield presented a slide-talk on the goose project to 105 members of the Bismarck Rotary Club.

12/10 Mansfield presented a slide-talk on the goose project to 50 members of the Mandan Rotary Club.

D. Hunting.

Deer gun hunting is the only hunting permitted on the refuge. There were 50 hunting visits compared to 43 last year. The season opened at noon on 11/6 and closed at sunset on 11/15.

The known kill was three yearling bucks, one 2½ year old buck, one adult doe (age?), and two female fawns. Only three deer were known to have been taken in 1969.

Local hunting for sharp-tailed grouse and gray partridge was fair to good, while pressure was light to moderate.

The pheasant season was opened again after being closed in 1969. The season was short and few birds were taken in this area because of the low numbers.

Duck hunting pressure seemed to be quite a bit higher than last year, probably due to the liberal bag limit of five mallards. Hunting was good for the first week or so, but after that it was poor until November. Good flights of mallards never did develope, and several hunters asked the writer why the bag limit was five mallards when they were lucky to see one.

Goose hunting was only fair, but the sandhill crane season provided some surprises. It did not open until 11/14, and most people thought the cranes would be long gone. There were about 3,000 cranes in a two-county area, and hunters that worked at it had good shooting.

E. Violations.

See Table Number 12 in the WPA NR.

F. Safety.

Safety meetings were held monthly at Slade and Long Lake. The following topics were presented and discussed.

Motor Vehicle Safety
Death at the Dinner Table
Birds Flew in Our Flue
The Alluring but Alarming Snsowmobile
Safety Policy for the Federal Government
Boating Safety Basics
Positive Boat Floatation
1969 Accidents, Adverse Weather Driving
Vehicle Towing, Perception of Driving Hazards
Safety Belts, Nylon Tow Rope
Games You Can Play While Driving
Plan and Planning for Safe Mowing
Most Hazardous Time for Driving
Accidents Can be Exciting
Law and the Back-Seat Driver
Need Trained Mature Alert Tractor Operators
Is Safety in Your Vacation Horoscope?
Lawn Mower Safety
Safety by the Yard
Family Safety
Mauldin Draws Another War
Safety on Ice
Artificial Respiration
Shock
Frost Bite
Closed Heart Massage
Electrical Shock
Carbon Monoxide Poisoning

The films "Highball Highway" and "Driving Under Special Conditions" were shown. In addition, slides were shown on "Perception of Driving Hazards" and "Adverse Weather Driving".

Safety Accomplishments during the year include:

Installed shields over compressor and grinder belts.
Replaced worn hammer handles, and ground chisel heads.
Installed vent cap on gasoline vent.
Installed large pipes to protect gas pump.
Installed rock guard on tractor.
Filled in all three refuge dumps.
Fastened drill chuck key to cord.
Built railing around shed storage opening.
Filled hole in entrance road.
Removed fluorescent light in shop.
Refastened wires on male plugs.
Raised gate on goose pen to prevent back injury.
Installed light weight doors on garage-shop complex.

Many of these accomplishments were completed after an inspection by Lyle Miller in July.

The Safety record now stands at 10,823 days without a "lost-time" accident.

VII. OTHER ITEMS

A. Items of Interest.

There are several news releases in the envelope which is fastened to the inside back cover.

There were no transfers of permanent personnel and this sure makes for a smoother operation. In spite of the manager, the crew did a bang-up job. They were kept mighty busy taking care of Long Lake NWR, Slade NWR, Florence Lake NWR, 8 easement refuges, and WPA's in 5 counties.

Laborer Bruce Burkett has given us a boost with his skills in photography, wildlife information gathering, law enforcement, and overall ability to get things done.

The old Slade Lodge was sold by bid in September for $502.99. The purchaser decided to tear it down, and he had the job about 3/4 completed when bad weather halted work until next spring.

Clerk Brandt prepared the title and contents pages, VI C, and typed the report. Laborer Burkett did VI F, and wrote all of Florence Lake NWR and the easement refuges. The rest of the report was written by the manager.

EASEMENT REFUGE DISTRICT #1

Appert Lake.

No field inspections were made prior to the hunting seasons.

Because of several reports of hunters illegally hunting deer on the refuge in 1969, USGMA McClure staked out the area on opening day. No violations were noted by McClure.

Because of the dry weather during the summer, all of the wetlands area on the refuge was dry at freeze up.

Canfield Lake.

Not inspected this year.

Flickertail.

Very little water (1-2 acres) remained by May 4. No ducks were present. By July the area was completely dry.

Hutchinson Lake.

No inspections were made during the waterfowl breeding or migration periods. The main part of Hutchinson Lake went dry by August. Waterfowl use prior to that is not known.

Lake George.

The water level of the main lake remained good throughout the year. In the South lake, however, the good water level of the spring fell throughout the summer and fall. At freeze-up it was lower than at freeze-up in 1969.

Waterfowl use was fair during the hunting season with a peak fall population of 800-1200 birds. Hunting pressure was heavy at the onset of the hunting season but fell off after the first week.

State Game Warden, Bennie Melland observed the pass many times during the hunting season for violations.

Lost Lake.

Not inspected this year. The area will be included in the Garrison Diversion Project.

Springwater.

Not visited this year.

Sunburst.

On May 4, very little water was running over the spillway (see photo section). The water level fell throughout the summer and by freeze-up was nearly a foot below the spillway.

On 9/23 there were an estimated 100 ducks on Sunburst Lake. Manager Wright also observed a common loon on the refuge.

A number of ring-necked pheasants inhabited the refuge. Ten were seen in December with an estimated peak wintering population of 20.

A special-use permit was granted to Roy Karvo to fur trap on the refuge. He reported that he was unable to do any trapping on the refuge due to adverse weather conditions.

Sign Posting.

All the easement refuges (except Lost Lake) were checked in September to replace damaged and missing signs.

NARRATIVE REPORT

FLORENCE LAKE NATIONAL WILDLIFE REFUGE

I. GENERAL

Water levels in the spring were good but poorer than in 1969. By June 3, 10 type I's and one type III were dry compared with only one type I on the same date in 1969. Though there was a dry spell during July and August, water levels in most type III's and IV's held good.

Cover conditions were good especially in the DNC. Adequate spring moisture provided good growth for cool season grasses. Native warm season grasses made fair growth considering the lack of moisture.

II. WILDLIFE

A. Waterfowl.

First Arrivals stopped on the refuge in early April. Larger numbers came after breakup which occurred during the third week in April. No accurate peak numbers are know for either the spring or fall migrations.

Although goose use was low in both spring and fall. A number of white-fronts stayed for several days during the hunting season. Manager Wright sighted 50 white-fronts and 18 Canada's on October 7, while several hunters reported that several small flocks of geese utilized the refuge throughout the hunting season.

On June 3, Manager Wright made a waterfowl pair count. The following are the breeding pair counts for the last five years. (See table on following page)

Productivity, which fell from the 1969 rate, was felt to be between 35 and 40%. Estimated duck production was 408 compared with 540 in 1969.

Coot production was similar to 1969 with an estimated 75 raised to flight stage.

Breeding Pair Counts

	1966	1967	1968	1969	1970
Mallard	18	30	25	14	15
Gadwall	31	25	28	18	16
A. Widgeon	0	0	2	0	0
GW Teal	2	2	1	2	1
BW Teal	147	149	111	65	85
Shoveler	16	13	10	17	16
Pintail	19	17	17	11	12
Redhead	9	9	9	5	10
Canvasback	5	4	5	2	1
L. Scaup	5	5	6	6	5
Ruddy	15	10	10	10	8
Total Pairs	267	264	224	150	169
Coot Pairs	71	42	43	8	40

B. Upland Game Birds.

Sharp-tailed grouse and gray partridge are present on the refuge. Peak populations were 40 and 15 respectively. No pheasants were seen during 1970.

C. Other Birds.

Black-crowned nigh herons, great blue herons, and American bitterns were common deep water waders utilizing the refuge. Both bitterns and night herons nested on or near the refuge.

Pied-billed, and eared grebes were present and both nested on the refuge. The pied-billed was the most abundant of the two and several broods were noted.

Both Virginia and sora rails were present and both were suspected to have nested there.

Numerous shorebirds utilized the refuge especially during migration. Nesting species included killdeer, Wilson's phalaropes and upland plovers. Marbled godwits, avocets, long-billed dowitchers, lesser yellowlegs and several species of sandpipers stopped off during migration.

Common and black terns were present and nested on the refuge. Nesting colony was located on pothole 18 and 18.1.

Birds of prey noted included marsh hawks and great horned owls. Usually a resident horned owl can be flushed from the old farmsted.

D. Big Game.

White-tailed deer are the only big game animals on the refuge. On March 10, an aerial survey indicated 39 deer present. Good food and cover provide adequate protection and winter a good portion of the area deer herd. The buildup usually begins during the deer hunting season as they get pushed in from the surrounding areas. On December 2, a minimum of 30 deer was seen on a ground inspection. Seventeen of those were in one herd.

E. Fur Animals and Predators.

Mink and weasels were abundant while muskrats remained low during 1970. Weasel and mink sign was noted along marsh edges and upland fringes. Only five muskrat houses were observed on a check in December.

Red fox were abundant with an estimated peak population of 10. Raccoon and skunk sign was also abundant with an estimated peak population of 15 and 18 respectively.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development.

All refuge fences were checked and repaired where needed in May. Signs and posts were installed to replace those missing or damaged. One junk pile and two old building sites were bulldozed and buried.

A wooden grain storage building was placed on bid on September 18. John Fitzgerald of Wing purchased the building with a bid of $25.75. The old barn was listed on the bid form but no bids were received. It will be burned during the winter.

B. Plantings.

One cooperative farming agreement was issued for Florence Lake. Joseph Bernhardt planted 13.2 acres to corn and 35.2 acres to wheat (5 acres of which was a nurse crop for a sweet clover-alfalfa-grass mixture).

The government's share was the entire 13.2 acres of corn, which was left standing, and 2 acres of wheat, which was cut and made into food stacks.

The corn, a 68 day Trojan variety, was furnished by the government. Substancial yields were obtained. On an inspection in December, abundant corn was still available for deer and upland game.

Approximately 7 acres along the east fence in SW¼ of section 16 was plowed to prepare for a tree planting in 1972.

IV. RESOURCE MANAGEMENT

A. Grazing and Haying.

Two grazing permits were issued encompassing 950 acres. Charles Giedd pastured unit 2 consisting of 400 acres from July 7 to October 3 with 20 yearling cattle. Mr. Giedd used a total of 43.55 AUM's for a collection of $129.78. Harris Crimmins pastured the 550 acre unit 1 from June 5 to September 30 using a total of 147.26 AUM's. Collections from Crimmins totalled $438.83.

No haying was allowed this year.

B. Fur Harvest.

A special use permit was issued to Burnell Paul of Wing to fur trap on Florence Lake NWR. The trapping season lasted from November 16 through December 31.

Mr. Paul caught 4 mink, 4 fox, 4 coons and 1 badger. The refuge share of this catch was 2 mink selling for a gigantic total of $5.00 (very poor quality mink plus low price).

Mr. Paul stated that he caught 3 other female mink but let them go because of their poor quality pelage.

SIGNATURE PAGE

Submitted by:

Marvin Mansfield
(Signature)
Marvin Mansfield

Date: March 13, 1971

Refuge Manager
Title

Approved, Regional Office:

Date: MAR 22 1971

J. M. Carlsen
(Signature)

ASST

Regional Refuge Supervisor

R3-454
(9/68)

3-1750
Form NR-1
(Rev. M[illegible]ch 1953)

W[illegible]ERFOWL

REFUGE Slade

MONTHS OF Jan. TO April, 19 70

(1) Species	Weeks of reporting period (2)									
	1	2 1-10	3 11-17	4 18-24	5 25-31	6 2/1-7	7 8-14	8 15-21	9 22-28	10 3/1-7
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada Largo*		120	120	120	120	120	120	120	120	120
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard										
Black										
Gadwall										
Baldpate										
Pintail										
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										
Coot:										

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

*Refuge flock, flyers only.

3 -1750a

Co. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Slade MONTHS OF January TO April, 1970

(1) Species	(2) Weeks of reporting period: 3/8-14 (11)	15-21 (12)	22-28 (13)	29-4/4 (14)	5-11 (15)	12-18 (16)	19-25 (17)	26-5/2 (18)	(3) Estimated waterfowl days use	(4) Production: Broods seen	Estimat total
Swans:											
Whistling					15	120	155	110	2,800		
Trumpeter											
Geese:											
Canada Large*	120	110	110	100	100	90	90	90	13,230		
Cackling											
Brant											
White-fronted					15	6	18	18	399		
Snow											
Blue											
Other											
Ducks:											
Mallard					80	210	110	100	3,920		
Black											
Gadwall					5	60	50	90	1,435		
Baldpate					5	80	80	70	1,645		
Pintail					10	180	60	60	2,170		
Green-winged teal					10	40	100	90	1,680		
Blue-winged teal						20	30	60	770		
Cinnamon teal											
Shoveler						40	30	40	770		
Wood											
Redhead					15	430	670	300	9,905		
Ring-necked						40	20	20	560		
Canvasback						20	60	50	910		
Scaup					20	570	1,035	1,600	22,575		
Goldeneye					5	5	5	5	140		
Bufflehead						5	5	10	140		
Ruddy							5	10	105		
Other A. Merg.						50	50		700		
Coot:								30	210		

*Refuge flock, flyers only.

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	2,800	155	
Geese	13,629	120*	
Ducks	47,425	2,505	
Coots	210	30	

*Refuge flock, flyers only.

SUMMARY

Principal feeding areas Headquarters Lakes, South Marsh

Principal nesting areas

Reported by Marvin Mansfield

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

3-1750
Form NR-1
(Rev. M h 1953)

WATERFOWL

REFUGE Slade MONTHS OF May TO August, 19 70

(1) Species	(2) Weeks of reporting period 5/3-9 (1)	5/10-16 (2)	5/17-23 (3)	5/24-30 (4)	5/31-6/6 (5)	6/7-13 (6)	6/14-20 (7)	6/21-27 (8)	6/28-7/4 (9)	7/5-11 (10)
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada Large*	110	130	160	190	210	220	230	230	240	250
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	100	100	100	100	110	130	140	150	160	170
Black										
Gadwall	90	70	60	60	70	80	90	95	100	105
Baldpate	50	30	10	5	5	5	5	10	10	10
Pintail	60	50	40	30	30	40	40	40	50	50
Green-winged teal	70	40	20	10	10	10	10	10	10	15
Blue-winged teal	80	110	180	260	270	290	310	340	360	370
Cinnamon teal										
Shoveler	40	40	50	50	50	55	60	65	70	80
Wood										
Redhead	140	50	20	20	20	20	25	30	30	35
Ring-necked	20	20	20	20	20	20	30	30	30	30
Canvasback	40	30	10	10	10	10	10	10	20	20
Scaup	900	120	40	10	10	10	10	10	20	20
Goldeneye										
Bufflehead	10									
Ruddy	10	10	10	10	10	10	10	10	10	20
Other										
*Refuge flock, flyers only (allow 24 Non-flyers)										
Coot:	40	50	60	60	60	60	70	80	100	120

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

3 -1750a

Co NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Slade MONTHS OF May TO August, 1950

(1) Species	(2) Weeks of reporting period: 7/12-18 (11)	7/19-25 (12)	7/26-8/1 (13)	8/2-8 (14)	8/9-15 (15)	8/16-22 (16)	8/23-29 (17)	(18)	(3) Estimated waterfowl days use	(4) Production: Broods seen	Estimat total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada Large*	250	250	250	250	250	250	250		26,040	28	144
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	180	190	210	210	300	350	400		21,700	1	80
Black											
Gadwall	110	115	120	125	130	130	130		11,760	6	65
Baldpate	20	20	20	20	30	50	120		2,940	0	5
Pintail	55	60	60	80	120	210	340		9,485	0	25
Green-winged teal	15	15	15	15	15	15	15		2,170	0	6
Blue-winged teal	300	300	300	300	370	290	230		35,070	4	210
Cinnamon teal											
Shoveler	90	90	90	80	70	60	45		7,595	1	45
Wood							3		21		
Redhead	40	40	30	30	20	20	10		4,060	0	20
Ring-necked	30	30	30	30	20	20	10		2,870	0	10
Canvasback	20	20	20	20	10	10	10		1,960	1	10
Scaup	20	20	20	20	20	30	30		9,170	1	10
Goldeneye											
Bufflehead											
Ruddy	20	20	20	20	10	10	5		1,505	0	10
Other											
Coot:	140	150	160	160	160	160	160		12,530	4	90

*Refuge flock, flyers only (also 24 non-flyers)

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese	26,040	250	144
Ducks	110,376	1,340	504
Coots	12,530	160	90

SUMMARY

Principal feeding areas Headquarters Lakes, South Marsh, Harbor Lake

Principal nesting areas Headquarters Lakes, South Marsh, Goose Pen

Reported by Marvin Mansfield

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

3-1750
Form NR-1
(Rev. M[illegible]h 1953)

WATERFOWL

REFUGE Slade MONTHS OF September TO Dec., 19 70

(1) Species	Weeks of reporting period (2) 8/30-9/5 (1)	9/6-12 (2)	9/13-19 (3)	9/20-26 (4)	9/27-10/3 (5)	10/4-10 (6)	10/11-17 (7)	10/18-24 (8)	10/25-31 (9)	11/1-7
Swans:										
Whistling							25	25	25	25
Trumpeter										
Geese:										
Canada Large*	250	250	250	250	250	250	250	250	250	250
Cackling										50
Brant										
White-fronted		30	30							
Snow										
Blue										
Other										
Ducks:										
Mallard	400	380	350	470	600	680	2,140	2,320	1,780	1,140
Black										
Gadwall	130	110	60	130	180	200	220	240	120	
Baldpate	120	130	140	190	270	330	250	120	40	20
Pintail	340	270	30	30	40	40	50	70	20	20
Green-winged teal	20	30	30	40	30	10	60	80	10	
Blue-winged teal	130	70	20	20	30	30	20	20		
Cinnamon teal										
Shoveler	50	40	20	70	130	170	170	160	40	50
Wood	5	5	10							
Redhead	10	10	10	140	220	250	260	270	160	70
Ring-necked	10	50	70	140	180	190	210	230	340	160
Canvasback	10	10	10	30	50	60	70	90	110	50
Scaup	30	30	30	70	180	210	360	490	640	550
Goldeneye										
Bufflehead							40	70	60	50
Ruddy	5	10	10	10	20	20	30	50	60	40
Other										
*Refuge Flock, Flyers Only										
Coot:	160	290	360	450	510	600	690	770	80	50

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

3 -1750a
Co[illegible] NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Slade MONTHS OF Sept. TO Dec., 19 70

(1) Species	(2) Weeks of reporting period: 11 (11/8-14)	12 (11/15-21)	13 (11/22-28)	14 (11/29-12/5)	15 (12/6-12)	16 (12/13-19)	17 (12/20-26)	18 (12/27-1/2)	(3) Estimated waterfowl days use	(4) Production: Broods seen	(4) Production: Estimated total
Swans:											
Whistling	21								847		
Trumpeter											
Geese:											
Canada Large*	250	250	240	193	144	144	144	144	18,063		
Cackling	50								700		
Brant											
White-fronted									420		
Snow											
Blue											
Other											
Ducks:											
Mallard	370	60							74,830		
Black											
Gadwall									9,730		
Baldpate	10								11,340		
Pintail	10								6,440		
Green-winged teal									2,170		
Blue-winged teal									2,380		
Cinnamon teal											
Shoveler	50								6,650		
Wood									140		
Redhead	10								9,870		
Ring-necked	30								11,270		
Canvasback									3,430		
Scaup	330	40							20,720		
Goldeneye											
Bufflehead	40								1,820		
Ruddy	10								1,855		
Other C. Merg.	7								49		
Coot:	30								27,930		

*Refuge Flock, Flyers Only

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	847	25	
Geese	29,183	300	
Ducks	162,694	4,210	
Coots	27,930	770	

SUMMARY

Principal feeding areas A-5, Northwest Slough, and South Marsh

Principal nesting areas

Reported by Marvin Mansfield

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-
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Slade Months of January to April 1970

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
White Pelican	40	4/12	230	4/28	230	4/28				300
Double-crested Cormorant	35	4/29	35	4/29	3	4/30				40
Black-crowned Night Heron	2	4/17	2	4/17	Present					5
Great Blue Heron	1	4/24	1	4/24	Present					2
Sandhill Crane	17*	4/7	Many*	4/24						5,000*
*Migrating										
II. Shorebirds, Gulls and Terns:										
Herring Gull	1	4/7	12	4/17	Present					50
Ring-billed Gull	33	4/7	33	4/7	Present					150
Franklin's Gull	4	4/14	70	4/30	Present					250
Killdeer	1	4/7	2	4/17	Present					10
Marbled Godwit	1	4/21	2	4/30	Present					10

(over)

(1)	(2)		(3)		(4)		(5)	(6)
III. Doves and Pigeons:								
Mourning dove	1	4/8	20	4/30	Present			40
White-winged dove								
IV. Predaceous Birds:								
Golden eagle	1	1/20, 4/7	Same		1	4/7		2
Duck hawk								
Horned owl	1-3	Present throughout period,						3
Magpie	1	3/2	Same		Same			1
Raven								
Crow	1	2/27	90	4/7	4	4/30		400
Bald Eagle	1	1/30	1	1/30	1	1/30		2
Marsh Hawk	1	3/16	4	4/17	Present			10
Snowy Owl	1	1/14	1	1/14	1	1/14		1
Rough-legged Hawk	1	1/8	2	4/7	1	4/24		4
Red-tailed Hawk	1	4/5	1	4/5	1	4/5		2
Sparrow Hawk	1	4/15	4	4/30	Present			10

Reported by Marvin Mansfield

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C.

59317

3-1751
Form NR-1
(Nov. 1940)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Slade Months of MAY to AUGUST 1970

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Eared Grebe	5	5/2	20	5/12	3	8/18				40
Pied-billed Grebe	2	5/10	65	8/30	Present				45	90
Western Grebe	1	5/8	15	7/14	Present					30
White Pelican			23	7/15	Present					50
Double-crested Cormorant			12	8/18	Present					35
Great Blue Heron			3	8/18	Present					5
B. C. Night Heron			3	7/15	1	8/27				10
Green Heron*	1	6/1	1	6/1	1	6/1				1
American Bittern	1	5/10	2	5/21	1	7/16				6
Common Egret	1	5/15	1	5/15	1	5/21				1
II. Shorebirds. Gulls and Terns:										
Herring Gull			25	5/21	Present					35
Ring-billed Gull			35	6/19	Present					60
Franklin's Gull			400	8/31	Present					600
Marbled Godwit	1	5/10	3	6/19	1	8/18				6
Killdeer			10	8/20	Present					25
Avocet	1	5/21	8	8/31	Present					20
Greater Yellowlegs	2	8/18	6	8/31	Present					15
Lesser Yellowlegs	1	8/18	5	8/31	Present					10
Common Tern	1	5/6	20	8/18	Present					50
Black Tern	2	5/15	15	8/18	2	8/30				40

*Extremely Rare Here

(over)

(1)	(2)		(3)		(4)		(5)		(6)
III. Doves and Pigeons:									
Mourning dove			110	8/31	Present			55	175
White-winged dove									
IV. Predaceous Birds:									
Golden eagle									
Duck hawk									
Horned owl		1-2	Present throughout period						
Magpie									
Raven									
Crow									
Marsh Hawk		3-5	Present throughout period					3	10
Red-tailed Hawk			1	5/1	1	8/30			4
Sparrow Hawk			3	8/30	3	8/30			8
Short-eared Owl	1	6/7	1	6/7	1	8/30			2

Reported by Marvin Mansfield

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C.

59317

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge Slade Months of Sept. to Dec. 195 x 70

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Pied-billed Grebe	Present		49	9/17	47	10/20				125
Western Grebe	"		7	9/17	7	9/17				25
White Pelican	"		6	9/4	1	9/17				10
D.C. Cormorant	"		88	9/17	12	10/5				110
B.C. Night Heron	"		1	10/20	1	10/20				5
A. Bittern	"		1	10/20	1	10/20				3
Great Blue Heron	"		2	9/17	2	9/17				5
Sandhill Crane*	110	9/2	12,000	10/7	80	11/12				23,000
II. Shorebirds, Gulls and Terns:										
Ring-billed Gull	Present		31	10/5	1	11/10				75
Franklin's Gull	"		410	9/4	70	9/17				800
Killdeer	"		9	9/19	9	9/19				20
Avocet	"		6	9/4	6	9/17				20
Greater Yellowlegs	"		6	9/4	6	9/4				10
Lesser Yellowlegs	"		4	9/4	4	9/4				8
Willet	1	9/17	1	9/17	1	9/17				3

*North of Dawson

(over)

(1)	(2)		(3)		(4)		(5)	(6)
III. Doves and Pigeons:								
Mourning dove								
White-winged dove	Present		90	9/2	15	9/17		125
IV. Predaceous Birds:								
Golden eagle	1	9/15	1	9/15	1	9/15		1
Duck hawk								
Horned owl	1	Present throughout period.						
Magpie								
Raven								
Crow								
Marsh Hawk	Present		2	9/4	1	12/4		6
Red-tailed Hawk	1	9/13	1	9/13	1	11/28		4
Rough-legged Hawk	1	11/28	1	11/28	1	11/28		2
Snowy Owl	1	12/19	1	12/19	1	12/19		1
Northern Shrike	1	11/21	1	11/21	1	11/21		1

Reported by Marvin Mansfield

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 Gruiiforme
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

3-1750b
Form NR-1B
(Rev. Nov. 1957)

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge Hlade — For 12-month period ending August 31, 1970

Reported by Marvin Mansfield — Title Refuge Manager

(1) Area or Unit Designation	(2) Habitat Type	Habitat Acreage		(3) Use-days	(4) Breeding Population	(5) Production
I	Crops	70	Ducks	36,393	100	90
	Upland	435	Geese	105		
	Marsh	15	Swans			
	Water	80	Coots	38,437	16	24
	Total	600	Total	74,935	116	114
II	Crops	10	Ducks	82,614	110	98
	Upland	410	Geese	38,290	74	139
	Marsh	10	Swans	2,170		
	Water	70	Coots	721	14	20
	Total	500	Total	123,795	198	257
III	Crops	100	Ducks	90,923	152	137
	Upland	660	Geese	30,121	6	5
	Marsh	110	Swans	1,505		
	Water	365	Coots	4,347	14	20
	Total	1,235	Total	126,896	172	162
IV	Crops	135	Ducks	71,526	196	179
	Upland	315	Geese	140		
	Marsh	130	Swans			
	Water	85	Coots	19,495	18	26
	Total	665	Total	91,161	214	205
TOTALS	Crops	315	Ducks	281,456	558	504
	Upland	1,820	Geese	68,656	80	144
	Marsh	265	Swans	3,675		
	Water	600	Coots	63,000	62	90
	Total	3,000	Total	416787	700	738
See 1965 NR-1B for Description of Above Units	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			

(over)

INSTRUCTIONS

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

(1) Area or Unit: A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.

(2) Habitat: Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.

(3) Use-days: Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form MR-1.

(4) Breeding Population: An estimate of the total breeding population of each category of birds for each area or unit.

(5) Production: Estimated total number of young raised to flight age.

Interior Duplicating Section, Washington, D. C. 27580

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Slade Months of January to April, 19 70

(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 observed	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked Pheasant	Crop - 300 Ac., Grass & Marsh - 2,100 Ac.	210			50:50				10	
Sharp-tailed Grouse	"	48			50:50				50	
Gray Partridge	"	120			50:50				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.

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Slade Months of May to August, 19 70

(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 observed	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked Pheasant	Crop - 300 Acres Grass & Marsh - 2,100 Acres	160	0	6	50:50				15	
Sharp-tailed Grouse	" " " "	69	1	15	50:50				35	
Gray Partridge	" " " "	120	0	15	50:50				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.

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Slade Months of Sept. to Dec., 19 70

(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 observed	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked Pheasant	Crop - 300 Acres, Grass and Marsh 2,100 acres	120			50:50				20	
Sharp-tailed Grouse	" " "	48			50:50				50	
Gray Partridge	" " "	96			50:50				25	

INSTR IONS

Form NR-2 - UPLAND GAME BIRDS*

(1) SPECIES: Use correct common name.

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

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

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

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

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

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

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

3-1753
Form [illegible]-3
(June 1945)

BIG GAME

Refuge Slade Calendar Year 1970

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re-stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
White-tailed Deer	Crop - 300 Acres, Grass & Marsh - 2,100 Acres Trees & Brush 50 Acres	10	8									25	15	1:2

Remarks:

Reported by Marvin Mansfield

INSTRUCTIONS

Form NR-3 - BIG GAME

(1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.

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

(3) YOUNG PRODUCED: Estimated total number of young produced on refuge.

(4) REMOVALS: Indicate total number in each category removed during the year.

(5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.

(6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

(7) TOTAL REFUGE POPULATION: Give the estimated population of <u>each species</u> on the refuge at period of its greatest abundance and also as of Dec. 31.

(8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

116008

3-1754
Form NR-4
(June 1945)

SMALL MAMMALS

Refuge Slade Year ending April 30, 1970

(1) * Species	(2) Density		(3) Removals					(4) Disposition of Furs						(5)
								Share Trapping						
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re-stocking	For Re-search	Permit Number	Trappers Share	Refuge share	Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	Total Population
Mink				1*						1				6
Weasel (long-tailed)				None										6
Muskrat				None										10
Raccoon					1									10
Striped Skunk					10									15
Red Fox					1									6
Badger					0									5

* List removals by Predator Animal Hunter

REMARKS: *Accidentally trapped during predator control work.

Reported by Marvin Mansfield

INSTRUCTIONS

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

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

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

(3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headingslisted.

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

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

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

116007

3-1755
Form NR-5
6070

DISEASE

Refuge Slade Year 19 70

Botulism

Period of outbreak NONE

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 _____

Lead Poisoning or other Disease

Kind of disease NONE

Species affected _____

Number Affected Species	Actual Count	Estimated

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks _____

(1)

3-1757
Form NR-
(Rev. June 1960)

NONAGRICULTURAL COLLECTIONS, RECEIPTS, AND PLANTINGS

Refuge Slade Year 19 70

Species	Collections and Receipts (Seeds, rootstocks, trees, shrubs) Amount (Lbs., bus., etc.)	(2) C or R	Date	Method or Source	Cost	(3) Total Amount on Hand	Plantings (Marsh - Aquatic - Upland) Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount and Nature of Propagules	Date	Survival	Cause of Loss
Spruce	600	R	5/8	Purchase	30.00	0	Both Shelterbelts	1 Ac.	1 Ac.	2-2	5/11	85%	
Cedar	250	R	5/8	"	10.00	0	NW Slough Shelterbelt		0.4 Ac.	"	5/11	70%	
Plum	225	R	5/8	"	9.00	0	" "		0.4 Ac.	Seedlings	5/12	25%	drought
Olive	125	R	5/8	"	3.75	0	Both Shelterbelts		0.2 Ac.	"	5/12	90%	

(1) Report agronomic farm crops on Form NR-8
(2) C = Collections and R = Receipts
(3) Use "S" to denote surplus

Total acreage planted:
Marsh and aquatic _____
Hedgerows, cover patches 2 Acres
Food strips, food patches _____
Forest plantings _____

Remarks: All trees were used to fill in gaps in existing shelterbelts

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

Fish and Wil fe Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge **Slade** 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
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
Wheat	14	60 Bu.*					139.0	**Sweet clover**	48.5
Barley	5	35 Bu.*	8	50 Bu.*			63.6	**Rye**	10.0
Oats	9	65 Bu.*					34.9		
Corn					22.9	130*	22.9		
								Fallow Ag. Land.	3

No. of Permittees: Agricultural Operations 2 Haying Operations 0 Grazing Operations 3

***All crop yields were reduced by a drought, and most of the crop was too poor to harvest.**

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle	118	315.4	$939.95	585
				2. Other				
				1. Total Refuge Acreage Under Cultivation				330
Hay - Wild				2. Acreage Cultivated as Service Operation				18

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 thenumber 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 Unharvesed 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
Fo NR-8
(Rev. Jan. 1956)

Fish and Wil fe Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge **Florence Lake** 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
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
Wheat	33.2	415 bu.			2	25 bu.	35.2	**Sweet clover**	14
Corn					13.2	330 bu.	13.2		
								Fallow Ag. Land.	13.2

No. of Permittees: Agricultural Operations **1** Haying Operations **0** Grazing Operations **2**

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle	80	190.8	$568.61	960
				2. Other				
				1. Total Refuge Acreage Under Cultivation				75.6
Hay - Wild				2. Acreage Cultivated as Service Operation				

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 thenumber 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 Unharvesed 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.

3-1570
NR-8a

REFUGE GRAIN REPORT

Refuge Slade Months of Jan. thru Dec. 1970

(1) VARIETY	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED USE		
				TRANS-FERRED	SEEDED	FED	TOTAL		SEED	FEED	SURP.
Millet	5	0	5			1		4		4	
Shelled Corn	152	0	152	Ground up for goose feed				0			
Barley	616	190	806			666	666	140	Mixed	396	
Barley & Wheat	0	450	450			194	194	256			
Barley & Wheat	0	250	250	Ground up for goose feed							
Ground Goose Feed (corn, barley & wheat)	0	307	307			84	84	223		223	

(8) Indicate shipping or collection points

(9) Grain is stored at Slade Refuge Headquarters

(10) Remarks

NR–8a REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lbs., Corn (ear)—70 lbs., Wheat—60 lbs., Barley—50 lbs., Rye—55 lbs., Oats—30 lbs., Soy Beans—60 lbs., Millet—50 lbs., Cowpeas—60 lbs., and Mixed—50 lbs. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

(1) List each type of grain separately: Corn, wheat, proso millet, etc. Include only domestic grains; aquatic and other seeds will be listed on NR–9.

(3) Report all grain received during period from all sources, such as transfer, share-cropping, or harvest from food patches.

(4) A total of Columns 2 and 3.

(6) Column 4 less Column 5.

(7) This is a proposed breakdown by varieties of grain listed in Column 6.

(8) Nearest railroad station for shipping and receiving.

(9) Where stored on refuge: "Headquarters grainary", etc.

(10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

3-1979 (NR-12)
(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PESTICIDE APPLICATION

Refuge	
Slade	
Proposal Number	Reporting Year
	1970

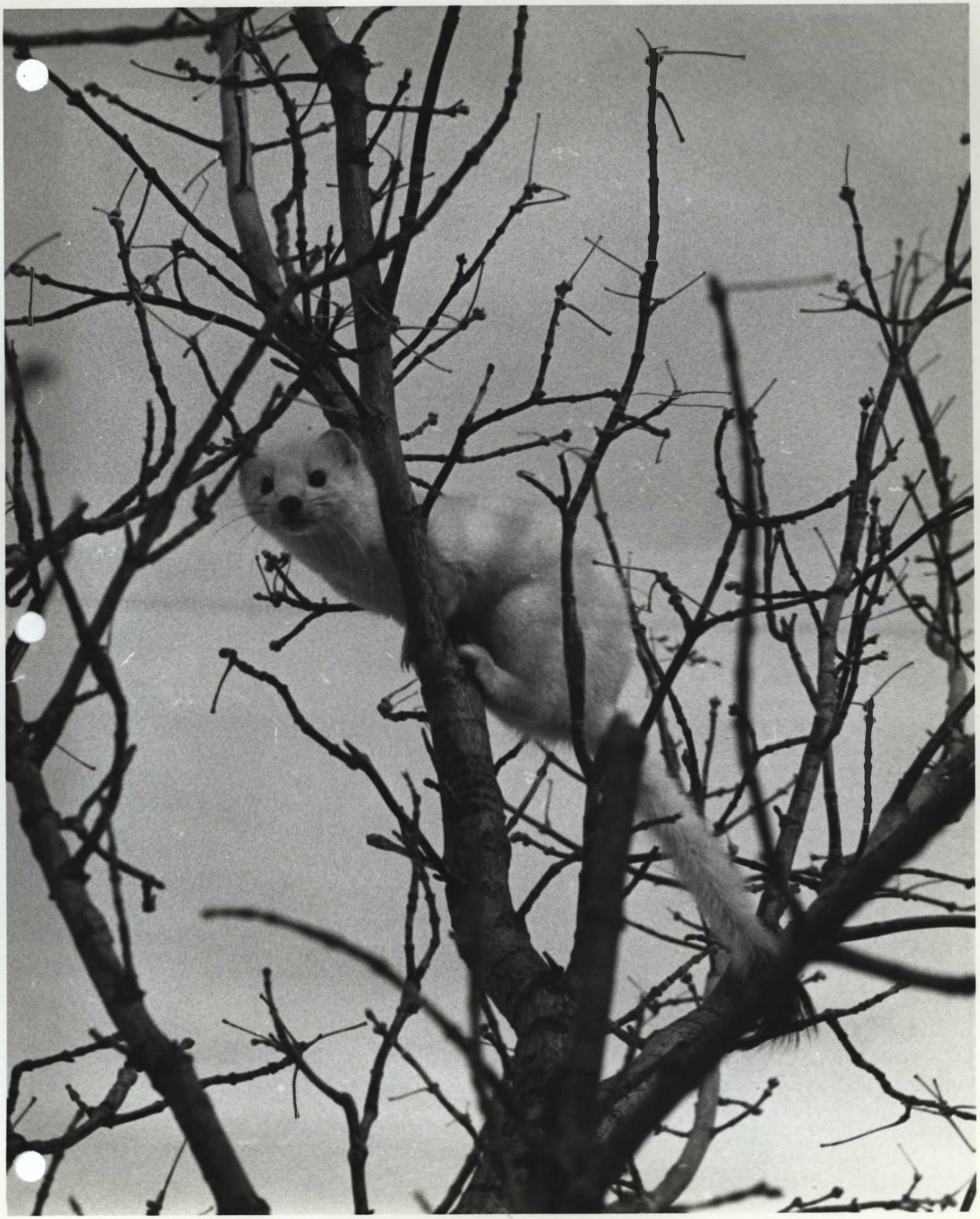
INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

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)
No spraying done because of drought.								

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

3550

This long tailed weasel was surprised in a tree at Slade Headquarters.
SL 7-70-2 12/16/70 Burkett



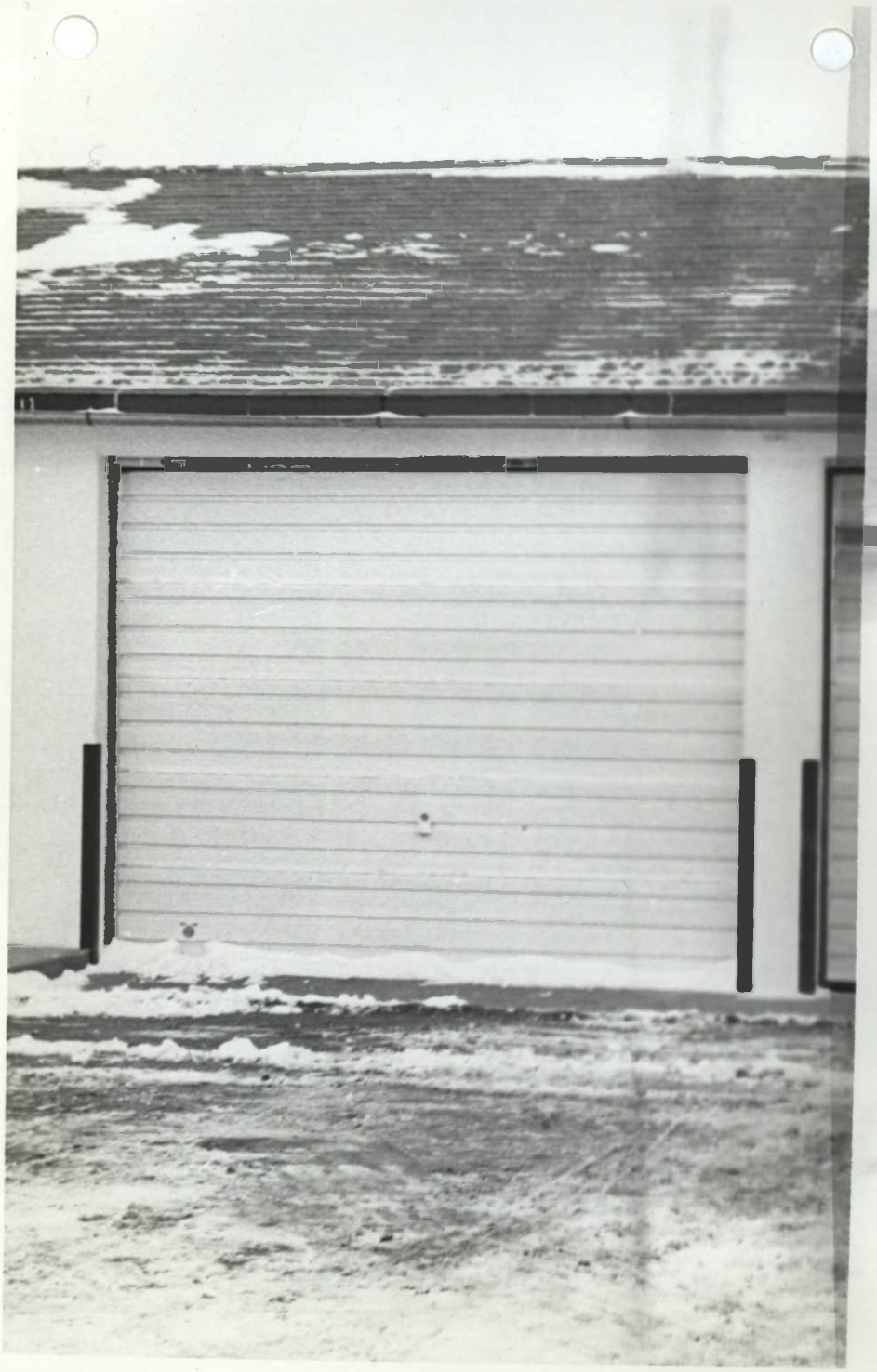
The "group" at the December Safety meeting. (delayed action photo)
SL 7-70-8 12/16/70 Burkett

Most of the photography work has been delegated to Bruce Burkett. Here Burkett (left) is caught taking a photo of Hottman (right).
SL 7-70-19 12/18/70 Schauer

SL 1-70-15 10/20/70 Mansfield

For Safety, the heavy, old wooden doors (upper photo) were replaced by the new light wieght fiberglass doors (lower photo) on the 4 stall garage and shop complex.

SL 10-70-11 12/20/70 Burkett



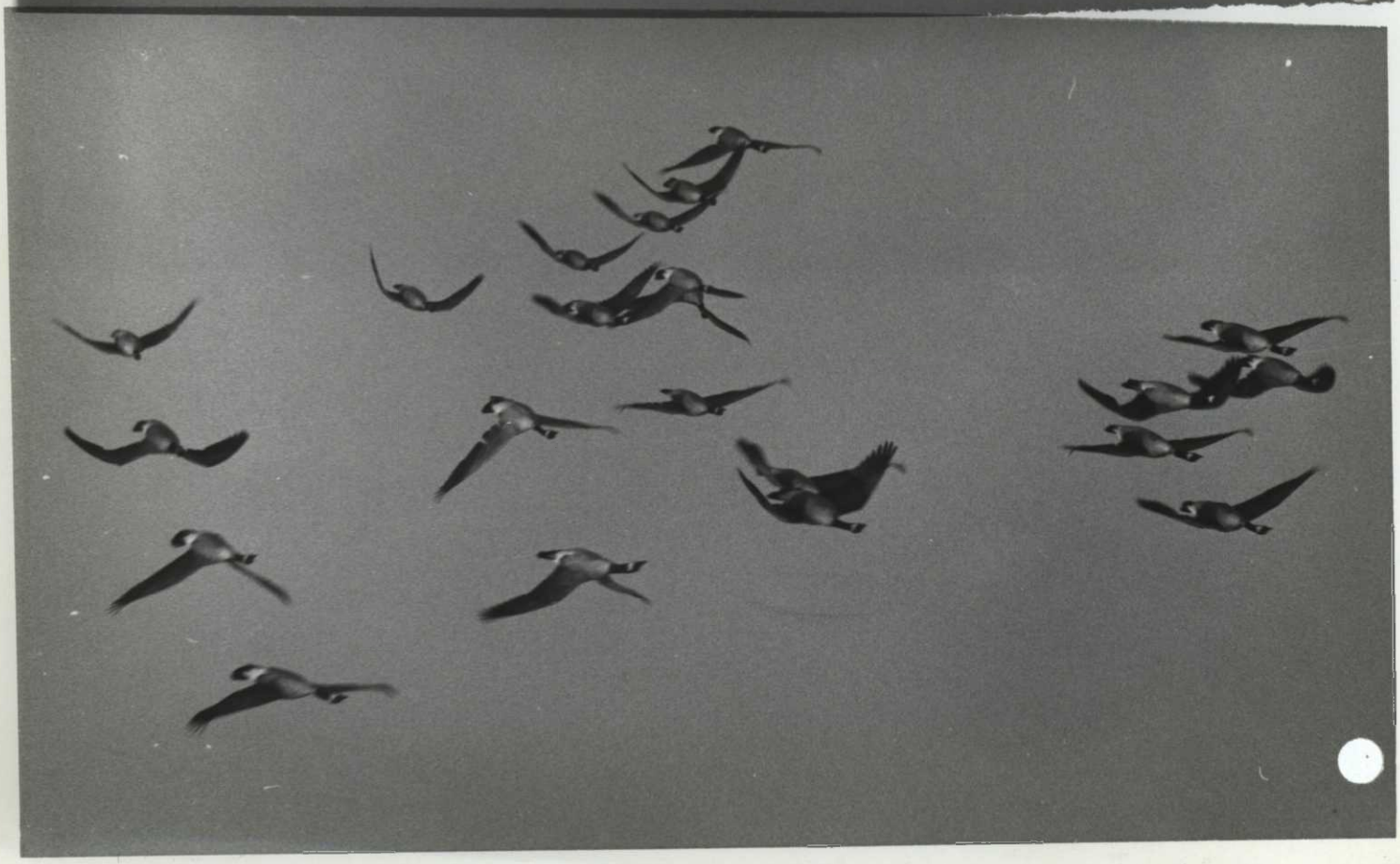
Branta Canadensis Maxima standing at rest. He is one of 169 giant Canada's that stayed to winter at Slade
SL 4-70-9 11/26/70 Burkett

Seven Canada's loafing on the northwest shore of Harker Lake.
SL 2-70-15 11/9/70 Burkett

SL 4-70-10 11/16/70 Burkett

Slade Canada geese in flight. Note that a number of birds have lost their neck collar.

SL 4-70-11 11/16/70 Burkett



Ted Schauer has the responsibility of keeping our vehicles in running order. Here he is replacing the old muffler with the new.
SL 6-70-3 12/8/70 Burkett

Alvin Hottman was responsible for the care of the goose flock. Hottman checks the automatic water tank to keep a fresh supply of drinking water for the geese.
SL 4-70-15 11/16/70 Burkett

FLEETLINE

Refuge Manager Mansfield releasing a young giant Canada raised at Slade.
July, 1970 R. Madsen (NPWRC)


6

A new Safety screen was installed on the back of the tractor to protect the operator when using the rotary mower. Laborer Hottman is seated on the tractor.
SL 1-70-20 10/20/70 Mansfield

This view shows one of the three corn food patches planted on the refuge. Narrow strips are used to prevent the sandy soil from eroding.
SL 1-70-16 10/20/70 Mansfield

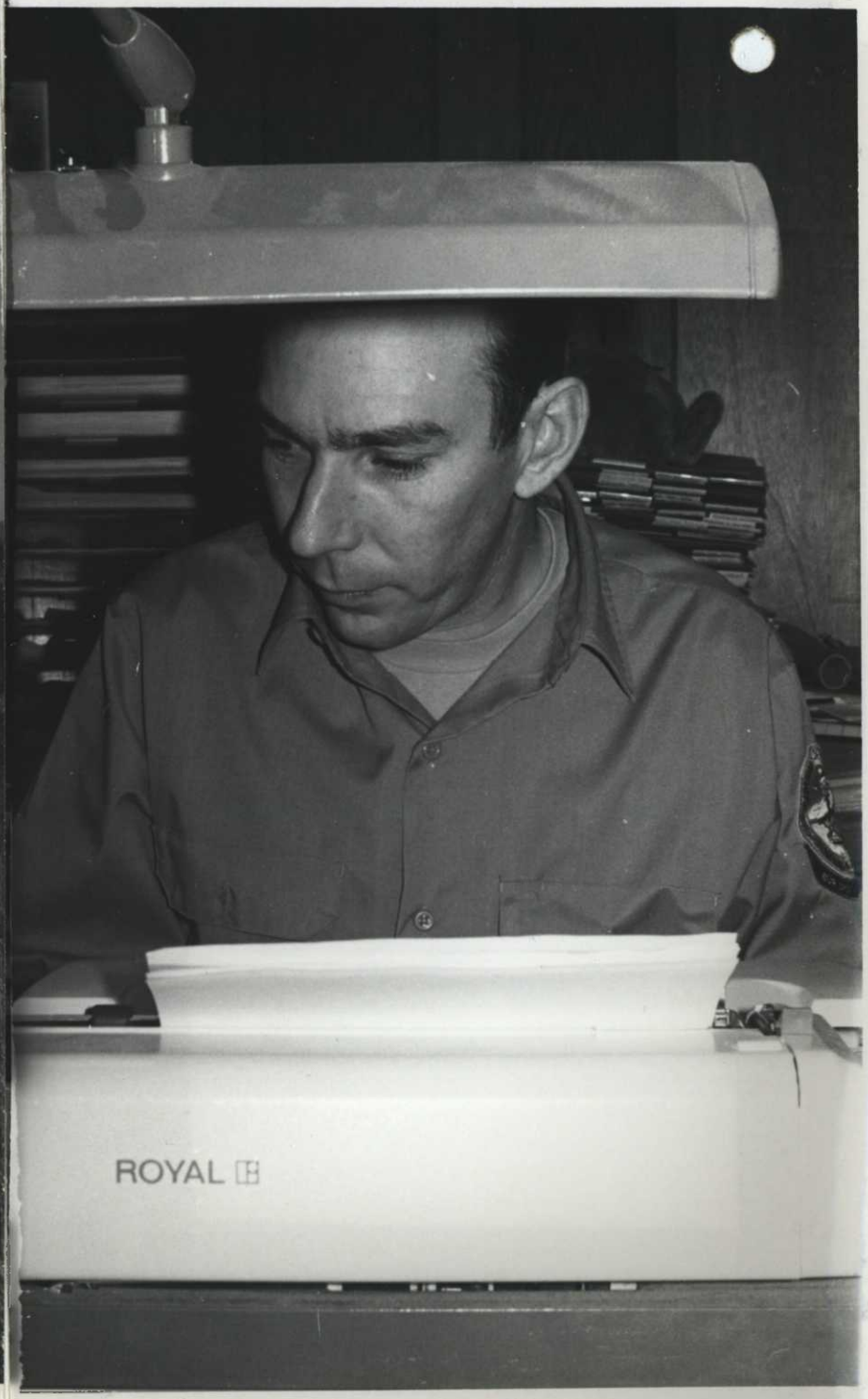

INTERNATIC
2000

The old Slade Lodge being razed by the successful bidder John Berreth. The lodge was sold for $502.99.
SL 2-70-3 11/9/70 Burkett

A wildfire that burned 6 acres on the refuge in late May caused this stand of big bluestem.
SL 2-70-5 11/9/70 Burkett

Clerk Brandt hard at work typing out another one of "them there" reports. (Note: dust on lamp due to remodeling of office).
SL 10-70-8 12/70 Burkett

Manager Mansfield (right) assisting NDSU graduate student Larry Martin set one of several deer traps on the refuge.
SL 7-70-6 12/15/70 Burkett


ROYAL

The deer tagging project was a joint venture by the N. Dak. Game and Fish Dept. and NDSU. Here Big Game Biologist Jim McKensie (left) struggles with a fawn doe prior to placing a blind fold on her. Graduate student Martin right.
SL 8-70-10 12/29/70 Burkett

After the deer had been blind folded, hog tied, weighed, ear tagged, collared, freeze branded , and had a few other minor measurements taken, she was released.
SL 8-70-19 12/29/70 Burkett

The corn food patch on Florence Lake NWR provided winter food for over 30 deer.
SL 5-70-14 12/1/70 Burkett

The corn, a 68 day Trojan variety, produced good yields even with the limited moisture. This picture shows evidence of the heavy deer use.
SL 5-70-13 12/1/70 Burkett

Permit trapper Burnell Paul making a fox set.
SL 5-70-4 12/1/70 Burkett

Mr. Paul proudly displays his first two weeks catch;
2 mink, 2 coons, 3 foxes, and 1 badger
SL 5-70-10 12/1/70 Burkett

Sunburst Easement Refuge.
Upper photo taken on March 28, 1946 photographer unknown.
Lower photo taken by Manager Wright on May 4, 1970.

Flickertail Easement Refuge. Upper photo taken on March 28, 1946 photographer unknown, and the lower photo was taken by Manager Wright on May 4, 1970.

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

WATERFOWL

REFUGE Slade MONTHS OF September TO Dec., 19 70

(1) Species	(2) Weeks of reporting period									
	8/30-9/5 (1)	9/6-12 (2)	9/13-19 (3)	9/20-26 (4)	9/27-10/3 (5)	10/4-10 (6)	10/11-17 (7)	10/18-24 (8)	10/25-31 (9)	11/1-7 (10)
Swans:										
Whistling							25	25	25	25
Trumpeter										
Geese:										
Canada Large*	250	250	250	250	250	250	250	250	250	250
Cackling										50
Brant										
White-fronted		30	30							
Snow										
Blue										
Other										
Ducks:										
Mallard	400	380	350	470	600	680	2,140	2,320	1,780	1,140
Black										
Gadwall	130	110	60	130	180	200	220	240	120	
Baldpate	120	130	140	190	270	330	250	120	40	20
Pintail	340	270	30	30	40	40	50	70	20	20
Green-winged teal	20	30	30	40	30	10	60	80	10	
Blue-winged teal	130	70	20	20	30	30	20	20		
Cinnamon teal										
Shoveler	50	40	20	70	130	170	170	160	40	50
Wood	5	5	10							
Redhead	10	10	10	140	220	250	260	270	160	70
Ring-necked	10	50	70	140	180	190	210	230	340	160
Canvasback	10	10	10	30	50	60	70	90	110	50
Scaup	30	30	30	70	180	210	360	490	640	550
Goldeneye										
Bufflehead							40	70	60	50
Ruddy	5	10	10	10	20	20	30	50	60	40
Other										
*Refuge Flock, Flyers Only										
Coot:	160	290	360	450	510	600	690	770	80	50

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

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

WATERFOWL
(Continuation Sheet)

REFUGE Slade MONTHS OF Sept. TO Dec., 1970

(1) Species	(2) Weeks of reporting period: 11/ 8-14: 11	11/15-21: 12	11/22-28: 13	11/29-12/5: 14	12/6-12: 15	12/13-19: 16	12/20-26: 17	12/27-1/2: 18	(3) Estimated waterfowl days use	(4) Production: Broods seen	Estimated total
Swans:											
Whistling	21								847		
Trumpeter											
Geese:											
Canada Large*	250	250	240	193	144	144	144	144	18,063		
Cackling	50								700		
Brant											
White-fronted									420		
Snow											
Blue											
Other											
Ducks:											
Mallard	370	60							74,830		
Black											
Gadwall									9,730		
Baldpate	10								11,340		
Pintail	10								6,440		
Green-winged teal									2,170		
Blue-winged teal									2,380		
Cinnamon teal											
Shoveler	50								6,650		
Wood									140		
Redhead	10								9,870		
Ring-necked	30								11,270		
Canvasback									3,430		
Scaup	330	40							20,720		
Goldeneye											
Bufflehead	40								1,820		
Ruddy	10								1,855		
Other C. Merg.	7								49		
Coot:	30								27,930		

*Refuge Flock, Flyers Only

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	847	25	
Geese	29,183	300	
Ducks	162,694	4,210	
Coots	27,930	770	

SUMMARY

Principal feeding areas A-5, Northwest Slough, and South Marsh

Principal nesting areas

Reported by Marvin Mansfield

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

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

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

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge Slade Months of Sept. to Dec. 1970

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Pied-billed Grebe	Present		49	9/17	47	10/20				125
Western Grebe	"		7	9/17	7	9/17				25
White Pelican	"		6	9/4	1	9/17				10
D.C. Cormorant	"		88	9/17	12	10/5				110
B.C. Night Heron	"		1	10/20	1	10/20				5
A. Bittern	"		1	10/20	1	10/20				3
Great Blue Heron	"		2	9/17	2	9/17				5
Sandhill Crane*	110	9/2	12,000	10/7	80	11/12				23,000
II. Shorebirds, Gulls and Terns:										
Ring-billed Gull	Present		31	10/5	1	11/10				75
Franklin's Gull	"		410	9/4	70	9/17				800
Killdeer	"		9	9/19	9	9/19				20
Avocet	"		6	9/4	6	9/17				20
Greater Yellowlegs	"		6	9/4	6	9/4				10
Lesser Yellowlegs	"		4	9/4	4	9/4				8
Willet	1	9/17	1	9/17	1	9/17				3

*North of Dawson

(over)

(1)	(2)		(3)		(4)		(5)	(6)
III. Doves and Pigeons:								
Mourning dove	Present		90	9/2	15	9/17		125
White-winged dove								
IV. Predaceous Birds:								
Golden eagle	1	9/15	1	9/15	1	9/15		1
Duck hawk								
Horned owl	1	Present	throughout	period.				
Magpie								
Raven								
Crow								
Marsh Hawk	Present		2	9/4	1	12/4		6
Red-tailed Hawk	1	9/13	1	9/13	1	11/28		4
Rough-legged Hawk	1	11/28	1	11/28	1	11/28		2
Snowy Owl	1	12/19	1	12/19	1	12/19		1
Northern Shrike	1	11/21	1	11/21	1	11/21		1

Reported by Marvin Mansfield

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C.

59317

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Slade Months of Sept. to Dec., 19 70

(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 observed	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked Pheasant	Crop - 300 Acres, Grass and Marsh 2,100 acres	120			50:50				20	
Sharp-tailed Grouse	" " "	48			50:50				50	
Gray Partridge	" " "	96			50:50				25	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS*

(1) SPECIES: Use correct common name.

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

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

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

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

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

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

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

3-1753
Form NR-3
(June 1945)

BIG GAME

Refuge Slade Calendar Year 1970

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re-stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
White-tailed Deer	Crop - 300 Acres, Grass & Marsh - 2,100 Acres Trees & Brush 50 Acres	10	8									25	15	1:2

Remarks:

Reported by Marvin Mansfield

INSTRUCTIONS

Form NR-3 - BIG GAME

(1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.

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

(3) YOUNG PRODUCED: Estimated total number of young produced on refuge.

(4) REMOVALS: Indicate total number in each category removed during the year.

(5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.

(6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

(7) TOTAL REFUGE POPULATION: Give the estimated population of <u>each species</u> on the refuge at period of its greatest abundance and also as of Dec. 31.

(8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

116000

3-1755
Form NR-5
60701

DISEASE

Refuge Slade Year 19 70

Botulism

* Period of outbreak NONE

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 _____

Lead Poisoning or other Disease

Kind of disease NONE

Species affected _____

Number Affected Species	Actual Count	Estimated

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks _____

3-1757
Form NR-7
(Rev. June 1960)

(1)

NONAGRICULTURAL COLLECTIONS, RECEIPTS, AND PLANTINGS

Refuge Slade Year 19 70

Species	Collections and Receipts (Seeds, rootstocks, trees, shrubs) Amount (Lbs., bus., etc.)	(2) C or R	Date	Method or Source	Cost	(3) Total Amount on Hand	Plantings (Marsh - Aquatic - Upland) Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount and Nature of Propagules	Date	Survival	Cause of Loss
Spruce	600	R	5/8	Purchase	30.00	0	Both Shelter-belts	1 Ac.	1 Ac.	2-2	5/11	85%	
Cedar	250	R	5/8	"	10.00	0	NW Slough Shelterbelt		0.4 Ac.	"	5/11	70%	
Plum	225	R	5/8	"	9.00	0	" "		0.4 Ac.	Seedlings	5/12	25%	drought
Olive	125	R	5/8	"	3.75	0	Both Shelter-belts		0.2 Ac.	"	5/12	90%	

(1) Report agronomic farm crops on Form NR-8
(2) C = Collections and R = Receipts
(3) Use "S" to denote surplus

Total acreage planted:
Marsh and aquatic
Hedgerows, cover patches 2 Acres
Food strips, food patches
Forest plantings

Remarks: All trees were used to fill in gaps in existing shelterbelts

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

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Slade County Kidder State North Dakota

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Waterfowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
Wheat	14	60 Bu.*					139.0	Sweet clover	48.5
Barley	5	35 Bu.*	8	50 Bu.*			63.6	Rye	10.0
Oats	9	65 Bu.*					34.9		
Corn					22.9	130*	22.9		
								Fallow Ag. Land.	3

No. of Permittees: Agricultural Operations 2 Haying Operations 0 Grazing Operations 3

*All crop yields were reduced by a drought, and most of the crop was too poor to harvest.

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle	118	315.4	$939.95	585
				2. Other				
				1. Total Refuge Acreage Under Cultivation				330
Hay - Wild				2. Acreage Cultivated as Service Operation				18

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 thenumber 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 Unharvesed 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 Florence Lake County Burleigh State North Dakota

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Waterfowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
Wheat	33.2	415 bu.			2	25 bu.	35.2	Sweet clover	14
Corn					13.2	330 bu.	13.2		
								Fallow Ag. Land.	13.2

No. of Permittees: Agricultural Operations 1 Haying Operations 0 Grazing Operations 2

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle	80	190.8	$568.61	960
				2. Other				
				1. Total Refuge Acreage Under Cultivation				75.6
Hay - Wild				2. Acreage Cultivated as Service Operation				

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 thenumber 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 Unharvesed 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.

3-1570
NR-8a

REFUGE GRAIN REPORT

Refuge Slade Months of Jan. thru Dec. 1970

(1) VARIETY	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED USE		
				TRANS-FERRED	SEEDED	FED	TOTAL		SEED	FEED	SURP.
Millet	5	0	5			1		4		4	
Shelled Corn	152	0	152	Ground up for goose feed				0			
Barley	616	190	806			666	666	140			
Barley & Wheat	0	450	450			194	194	256	Mixed	396	
Barley & Wheat	0	250	250	Ground up for goose feed							
Ground Goose Feed (corn, barley & wheat)	0	307	307			84	84	223		223	

(8) Indicate shipping or collection points

(9) Grain is stored at Slade Refuge Headquarters

(10) Remarks

NR-8a REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lbs., Corn (ear)—70 lbs., Wheat—60 lbs., Barley—50 lbs., Rye—55 lbs., Oats—30 lbs., Soy Beans—60 lbs., Millet—50 lbs., Cowpeas—60 lbs., and Mixed—50 lbs. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

(1) List each type of grain separately: Corn, wheat, proso millet, etc. Include only domestic grains; aquatic and other seeds will be listed on NR-9.

(3) Report all grain received during period from all sources, such as transfer, share-cropping, or harvest from food patches.

(4) A total of Columns 2 and 3.

(6) Column 4 less Column 5.

(7) This is a proposed breakdown by varieties of grain listed in Column 6.

(8) Nearest railroad station for shipping and receiving.

(9) Where stored on refuge: "Headquarters grainary", etc.

(10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

3-1979 (NR-12)
(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PESTICIDE APPLICATION

Refuge: Slade

Proposal Number:

Reporting Year: 1970

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)
No spraying done because of drought.								

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

3550

Mansfield: 327-6295

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service Regional Information

BUREAU OF SPORT FISHERIES AND WILDLIFE

Slade National Wildlife Refuge
Dawson, North Dakota

COUNTIES RECEIVE MONEY FOR FEDERAL LANDS

DAWSON -- Checks were recently distributed to the five counties which have Federal lands administered from Slade National Wildlife Refuge at Dawson. These lands consist of Waterfowl Production Areas and National Wildlife Refuges.

Refuge Manager Marvin Mansfield reports three of the five counties received an increase over 1969. This resulted from an increase in land acquired for wildlife purposes.

The County check amounted to . Mr. Mansfield said the funds must be used solely for the benefit of public schools and roads.

Counties	Sent to	Date
Burleigh - $2,348.14	Bismarck Tribune, Bismarck, N. Dak.	11/5/70
Emmons - 716.55	Emmons County Record, Linton, N. Dak.	"
Kidder - 2,114.52	Steele Ozone, Steele, N. Dak.	"
Logan - 1,045.46	Napoleon Homestead, Napoleon, N. Dak.	"
McIntosh - 2,153.25	Ashley Tribune, Ashley, N. Dak.	"
	Wishek Star, Wishek, N. Dak.	"

BISMARCK TRIBUNE
NOV. 20, '70

The Giant Canada Goose

Man hasn't always been careful of his environment and may frequently have been destructive of nature's bounties, but sometimes he has given nature a boost, too.

Thus it is with a project being carried forward at the federal Bureau of Sports Fisheries and Wildlife Slade Refuge, near Dawson, described to the Bismarck Rotary Club this week.

Under the direction of Marvin Mansfield, the refuge manager, the Giant Canada goose is being restored as a North Dakota-nesting bird after a half-century of absence from this state.

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Started in 1969, the Slade Refuge goose project has now gone through two nesting seasons, with what is regarded as outstanding success.

A year ago, 97 young geese hatched there were raised to the young-adult stage. This year, 144 goslings were hatched and perhaps 130 were brought to the flight stage. Next year there will be a further increase, and as the number of birds hatched and raised at or near the refuge grows so will the number of those returning there to nest. The young, says Mansfield, like to do their nesting in the area in which they originated.

The Giant Canada is one of the most magnificent of wild birds, individuals of some species reaching more than 21 pounds in size. The hunter who gets one of these achieves a tremendous thrill. Of course, now it's hoped that none of those raised at the Slade Refuge fall victim to the hunter's gun, because the more that survive the more there will be to breed and nest and increase the Canada Goose population there. A broad orange band about the neck makes it easy to identify Slade Refuge Giant Canadas, and hunters should watch for this. Also, shooting is prohibited in areas adjacent to the refuge.

Some day, perhaps, a large area near the Slade Refuge will be used as nesting grounds by the Giant Canada goose, and his numbers will multiply. A bird once thought extinct may again become numerous, thanks to the vision and purpose and dedication of men like Marvin Mansfield and those others involved in the project. Thoughtlessly destructive though he often may be, man can also — when inspired — be eminently helpful to nature in preserving and restoring her depleted bounties.

Buckley

FARGO FORUM
12-6-70

Deer in Dawson Area To Sport New Gear

By JOHN LOHMAN
Staff Writer

Deer wintering in the area south of Dawson, N. D., soon will be sporting fancy color-coded neck collars and ear tags.

Tagging operations are expected to get under way almost immediately, with the goal of the project being to evaluate the movement of the deer into key wintering areas.

"We know an area is a key wintering area, but we don't know for how big an area," said Jim McKenzie, big game biologist with the state Game and Fish Department.

Activity will be centered around the department's Dawson Game Management area six miles south of Dawson and nearby Slade National Wildlife Refuge in typical coteau hills country.

Doing the major share of the work will be Larry Martin of Gatesburg, N. D., a wildlife management student at North Dakota State University working on his master's degree. He will headquarter in the Dawson vicinity.

McKenzie said the Dawson Game Management area was selected because it normally winters upwards of 150 whitetails. "We don't know if they are just residents of a two-township size area or a larger area or just management area deer."

McKenzie said that "we would like to tag 40 to 50 head of deer, but realistically if we get 30 head we will do a good year's work."

Plans are to have 15 individual walk-in type traps in operation. Two types of tranquilizer guns also will be used to help in the capture of deer for tagging.

The leather collars will be coded with reflectorized red, gold, silver and green tapes, with the ear tags also to be color coded. Each deer will get a collar and a tag on each ear.

McKenzie says that previous studies have shown that such marking of deer doesn't affect the animals.

For student Martin, the project is going to involve a lot of night work because a good share of the trapping will be done at night when deer normally are on the move. Also Martin will be running specially-designated routes to check movement of tagged deer.

McKenzie expects that initially trapping operations will be slow as the crew evaluates trapping techniques and sets up routes. The trapping will continue possibly into March, depending on trapping results and weather conditions.

The project initially is set up to run three years, and possibly could be moved to other areas of the state depending on what we learn," McKenzie said.

The coteau hills was selected for the study because it is one of the most important deer ranges in the state, the big game biologist said. The coteau hills management unit comprises 24,710 square miles.

The Dawson Game Management area is just one of many known key wintering areas in the coteau hills, some on state and federal lands and many on private land.

Part of the idea of the study is to help preserve these key wintering areas. McKenzie said a lot of the key areas on private land are being lost due to clearing and modern farm practices. However, he said possibly a lot of landowners would preserve the habitat in these areas if they knew how important they are and how big an area the winter deer from.

During the winter, deer concentrate in certain areas, moving out again in the spring to have their fawns and live until weather again forces them into their wintering areas.

This is not the first such study in the state using collars and ear tags. McKenzie said a similar study was run in the Badlands in the early 1960s to determine movement of both whitetail and mule deer in and out of Theodore Roosevelt Memorial Park.

That study "pretty much proved park animals stayed in the park and non-park animals stayed out," McKenzie said. Both mule and whitetail does in the Badlands study showed a movement of about a half mile, whitetail buck's about a mile and mule deer bucks about one and a half miles from the release sites. The furthest movement recorded was 12 miles, with many observations made at the original release sites.

Hunters, landowners and others will play a major role in the new study. They will be asked by the Game Department to report on sighting of the tagged deer, especially after they leave the wintering area.

Because the color-coded neck collars and ear tags will serve to identify each deer individually, it will be necessary when reporting sightings of tagged deer to get an accurate report on the colors of the tags.

Since the deer are expected to generally stay close to their wintering area, it will be observations reported during the spring, summer and fall that will be of major importance in the study.

—oOo—

Long Lake & Slade Open for Deer

STEELE
OZONE

Long Lake and Slade National Wildlife Refuges will again be open to deer gun hunting during the regular season. As in the past, the area will be closed to all private vehicles. In addition, vehicles may not be used to haul out deers.

Refuge Manager Marvin Mansfield reports a small area (about 300 acres) in the northeast part of Long Lake Refuge will be closed to hunting. The regular closed area around refuge headquarters will remain. Both areas will be posted with 'Closed Area' signs.

Long Lake Refuge extends from east of Moffit to southwest of Steele, and contains a fair to good deer herd. Slade Refuge is located southeast of Dawson and has a fair deer population.

11-4-70

—oOo—

BIS. TRIB. 4-16-70

Wildlife Refuge Sets Day for Open House

The Slade National Wildlife Refuge two miles south and two miles east of Dawson will hold open house Friday.

Visitors to the refuge between 8 a.m. and 6 p.m. will be able to observe the courtship and nesting behavior of Canada geese.

The Slade Refuge open house is one of a series of programs sponsored by the Bureau of Sport Fisheries and Wildlife this week.

Open House

STEELE
OZONE
4-15-70

SLADE REFUGE
FRIDAY, APRIL 17

Seen any wildlife lately? Well you can, at a national wildlife refuge.

The Interior Department's Bureau of Sport Fisheries and Wildlife will hold open houses at many national wildlife refuges across the country during the week of April 13-19 to stress the role of refuges in preserving the environment.

Slade National Wildlife Refuge will hold an open house on Friday, April 17 reports Refuge Manager Marvin Mansfield. The refuge is located two miles south and two miles east of Dawson.

The giant Canada goose project will be of special interest Visitors will be able to get a close look at these birds as they go through their courtship and nesting behavior.

Hours for the open house will be from 8:00 A. M. to 6:00 P. M Everyone is welcome to visit the refuge and view the wildlife.

John Lohman

Canada Geese Frustrate Manager of Slade Refuge

Marvin Mansfield must be the most frustrated manager in North Dakota.

His problem: How to get 265 large Canada geese to migrate.

Mansfield is manager of Slade National Wildlife Refuge near Dawson, N.D., and an attempt to establish a nesting flock of giant Canada geese has been under way at the refuge for two years.

Last year at this time Mansfield was in the same predicament. And he ended up wintering most of the geese, although it was believed 30 to 40 migrated during the winter from the open pen at the refuge. It is known that at least three went as far as Lake Andes in South Dakota, where two were live trapped and one was taken by a hunter.

In an effort to spur migration of the geese this year, Slade Refuge obtained 10 large Canadas from the flock at J. Clark Salyer Refuge near Upham, N.D.

It was hoped that the 10 Salyer geese would take most of the free-flying Slade geese with them when they migrated this fall.

Pilot Geese Pull Out

They didn't. Manfield said the Salyer geese apparently pulled out in late November but failed to take any Slade geese with them. A count on Nov. 30 showed 265 still at the refuge.

The Salyer geese had wintered at LaCreek Refuge in South Dakota previously, and it was hoped that the Slade survival would be greater than at Lake Andes.

Refuge waters are frozen and have been iced for some time, Mansfield said. The large geese, all of which are free flyers except 30, move about the refuge a lot on warm days but seldom fly out of the closed protection zone surrounding the refuge.

The geese are in open pens and they are taxing feed supplies available at the refuge. Mansfield says he "still thinks some will go," but expects now to end up winter at least 200.

The giant Canadas were brought to the refuge initially in February 1969 from a flock at the Northern Prairie Wildlife Research Center at Jamestown. Goal of the project is to reintroduce a flock of large Canadas in the Kidder County area, where they were once native.

Everything is going pretty well, but the problem of getting the geese to go south to winter is a major hangup.

Originally the refuge started with a flock of 142, ending up with about 171 in December 1969. Seven of the large birds froze in and died of starvation in November 1969 after refuge personnel quit feeding the birds in an effort to get them to migrate. After the freezing incident, feeding operations were resumed and continued through the winter.

This spring a few of the birds that migrated returned to Slade. Gosling production was good at the refuge this year with well over 100 being hatched.

John Lohman

100 Canada Geese Finally Migrate from Slade Refuge

Nearly 100 large Canada geese have finally migrated south from Slade National Wildlife Refuge near Dawson, N. D.

If you recall, earlier this month I had pointed out how the geese were frustrating refuge manager Marvin Mansfield. At the end of November, the refuge was holding 265 large Canadas, even though the refuge waters were frozen.

The geese are being raised at the refuge in attempt to re-establish a flock of nesting large Canada geese in the Dawson area. This is the second year for the project, which, is everything works out, will result in the geese going south to winter, returning to the Dawson area in the spring to nest.

A year ago between 30 and 40 of the birds migrated, but Mansfield still ended up wintering most of the geese. At the end of November there were 265 still on the refuge, but the geese started to move out the first part of December.

First eight left, then the next count a few days later showed 39 more had pulled out and then to the cheers of Mansfield a day later another 49 picked up and headed south. That left him with 169 geese, all but 30 being free flyers. He is still hopeful some of these may go.

At least seven of the Slade geese had reached DeSoto Refuge near the Iowa-Nebraska border by Dec. 13. A flock of nine Canada geese were sighted on the refuge that day, and the numbers on neck collars on seven of the birds identified them as being Slade geese. All were raised at the refuge this year.

Three Slade geese also were shot Dec. 4-5 near Lake Andes, S. D., and the report from there indicated possibly a fourth one was severely crippled.

There also was a report of two being shot in the Platte, S. D., area.

Mansfield is hopeful that most of the geese that left have reached the safety of other refuges and will not be hit too hard by hunters. To make the project a success, he said, it is important that most of these geese survive to return next year.

BISMARCK TRIBUNE
NOV. 20, '70

The Giant Canada Goose

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Under the direction of Marvin Mansfield, the refuge manager, the Giant Canada goose is being restored as a North Dakota-nesting bird after a half-century of absence from this state.

Not long ago, Mansfield said, the Giant Canada goose — there are several sub-species — was thought to be extinct. But back around the turn of the century the Lake Isabel area of Kidder County was included among his nesting places. It's getting to be that way again.

Started in 1969, the Slade Refuge goose project has now gone through two nesting seasons, with what is regarded as outstanding success.

A year ago, 97 young geese hatched there were raised to the young-adult stage. This year, 144 goslings were hatched and perhaps 130 were brought to the flight stage. Next year there will be a further increase, and as the number of birds hatched and raised at or near the refuge grows so will the number of those returning there to nest. The young, says Mansfield, like to do their nesting in the area in which they originated.

The Giant Canada is one of the most magnificent of wild birds, individuals of some species reaching more than 21 pounds in size. The hunter who gets one of these achieves a tremendous thrill. Of course, now it's hoped that none of those raised at the Slade Refuge fall victim to the hunter's gun, because the more that survive the more there will be to breed and nest and increase the Canada Goose population there. A broad orange band about the neck makes it easy to identify Slade Refuge Giant Canadas, and hunters should watch for this. Also, shooting is prohibited in areas adjacent to the refuge.

Some day, perhaps, a large area near the Slade Refuge will be used as nesting grounds by the Giant Canada goose, and his numbers will multiply. A bird once thought extinct may again become numerous, thanks to the vision and purpose and dedication of men like Marvin Mansfield and those others involved in the project. Thoughtlessly destructive though he often may be, man can also — when inspired — be eminently helpful to nature in preserving and restoring her depleted bounties.

Buckley

Bismarck Tribune 11/7/70

Annual Payment

National Wildlife Funds Will Go to N.D. Counties

North Dakota counties will receive checks totaling $107,975.75 from the national wildlife refuge system, according to the U.S. Department of the Interior.

Included among the 42 counties receiving checks from the Bureau of Sport Fisheries and Wildlife is Burleigh County, with the check amounting to $2,348.14.

Burleigh County is one of five counties having federal lands utilized for waterfowl production areas and national wildlife refuges administered from Slade National Wildlife Refuge at Dawson.

Marvin Mansfield, refuge manager, said that three of the five counties received increased funds over 1969. This resulted from an increase in land acquired for wildlife purposes, Mansfield said.

The funds represent 25 per cent of the net receipts of national wildlife refuge and waterfowl production area lands in the counties or three-fourths of one per cent of the adjusted cost of these lands, whichever is highest. Land valuations are adjusted every five years.

The payments are made annually and the money received must be used solely for the benefit of public schools or roads.

Of the 42 counties scheduled to receive checks, the top five in amounts scheduled included McHenry, $14,702.77; Renville, $14,323.39; Stutsman, $11,599.13; Bottineau, $9,497.18, and Burke, $7,167.50.

Napoleon Homestead 11/11/70

Logan Receives $1,045 For Federal Lands

DAWSON — Checks were recently distributed to the five counties which have Federal lands administered from Slade National Wildlife Refuge at Dawson. These lands consist of Waterfowl Production Areas and National Wildlife Refuges.

Refuge Manager Marvin Mansfield reports three of the five counties received an increase over 1969. This resulted from an increase in land acquired for wildlife purposes.

The Logan County check was for $1,045.46. Mr. Mansfield said the funds must be used solely for the benefit of public schools and roads.

■

Steele Ozone Press 11/25/70

HELP ASKED OF KIDDER CO. TRAPPERS

Slade National Wildlife Refuge Manager Marvin Mansfield of Dawson has asked for help from the Kidder County trappers. He says that the trappers have a chance to assist the refuge goose project by NOT trapping muskrats as their houses may be used by nesting geese.

If there are a lot of muskrats in a marsh the removable of some should not harm the project. Where trapping is done, the large houses should be left for the geese.

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Napoleon Homestead 11/4/70

NATIONAL WILDLIFE REFUGES OPEN TO DEER HUNTING

DAWSON — Long Lake and Slade National Wildlife Refuges will again be open to deer gun hunting during the regular season. As in the past, the areas will be closed to all private vehicles. In addition, vehicles may not be used to haul out deer.

Refuge Manager Marvin Mansfield reports a small area (about 300 acres) in the northeast part of Long Lake Refuge will be closed to hunting. The regular closed area around refuge headquarters will remain. Both areas will be posted with CLOSED AREA signs.

Long Lake Refuge extends from east of Moffit to southwest of Steele, and contains a fair to good deer herd. Slade Refuge is located southeast of Dawson and has a fair deer population.

The Bismarck Tribune 11/20/70

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THRIVING FLOCK of large Canada geese was established last year at Slade National Wildlife Refuge near Dawson. (Photo by Ed Bry).

Giant Geese Doing Well At Refuge

The flock of large Canada geese established last year at Slade National Wildlife Refuge near Dawson is having a productive year. Production of goslings totalled 144 this year. Refuge manager Marvin Mansfield reports this is better than expected.

A flock of 142 adult geese were released at Slade Refuge in the spring of 1969 in an effort to establish a flock of giant Canada geese in Kidder County where such birds once nested. The geese came from the captive flock at the Northern Prairie Wildlife Research Center at Jamestown.

In the initial year at the refuge, 97 goslings were produced. It was hoped last fall that all but about 40 adult geese with pinioned wings would migrate south, but it didn't work out that way.

Refuge personnel quit feeding the birds and harrassed them in an attempt to get them to migrate, but to no avail. Then came a snow storm on November 13 and seven of the large birds froze in and died, apparently of starvation.

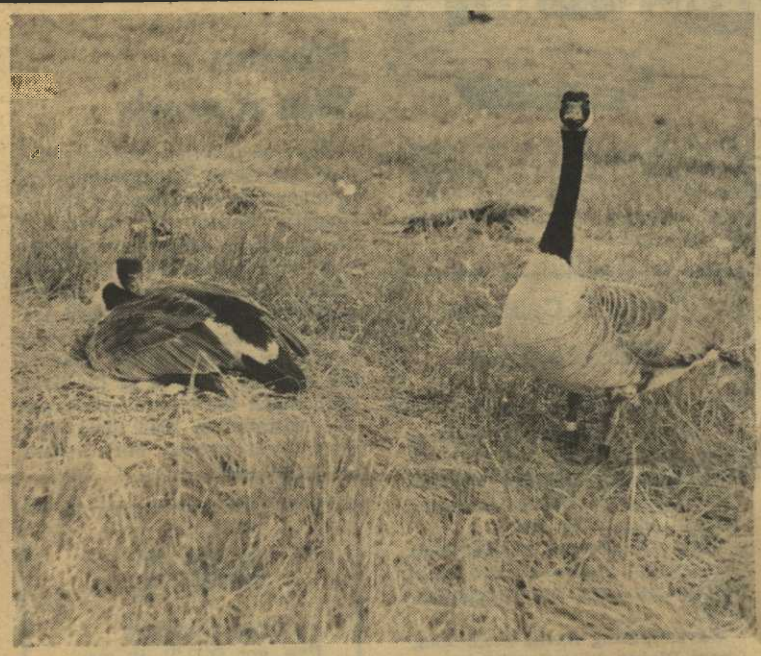
Feeding was then resumed. A few of the geese did migrate, but the refuge ended up wintering most of them. A total of 159 geese came through the winter at Slade Refuge.

Refuge clerk Wilmer Brandt said that somewhere between 30 and 40 geese either migrated or were taken by hunger last fall. It is known, he said, that at least three of the geese migrated to the Lake Ande area, where two were live-trapped at a refuge and a third was taken by a hunter.

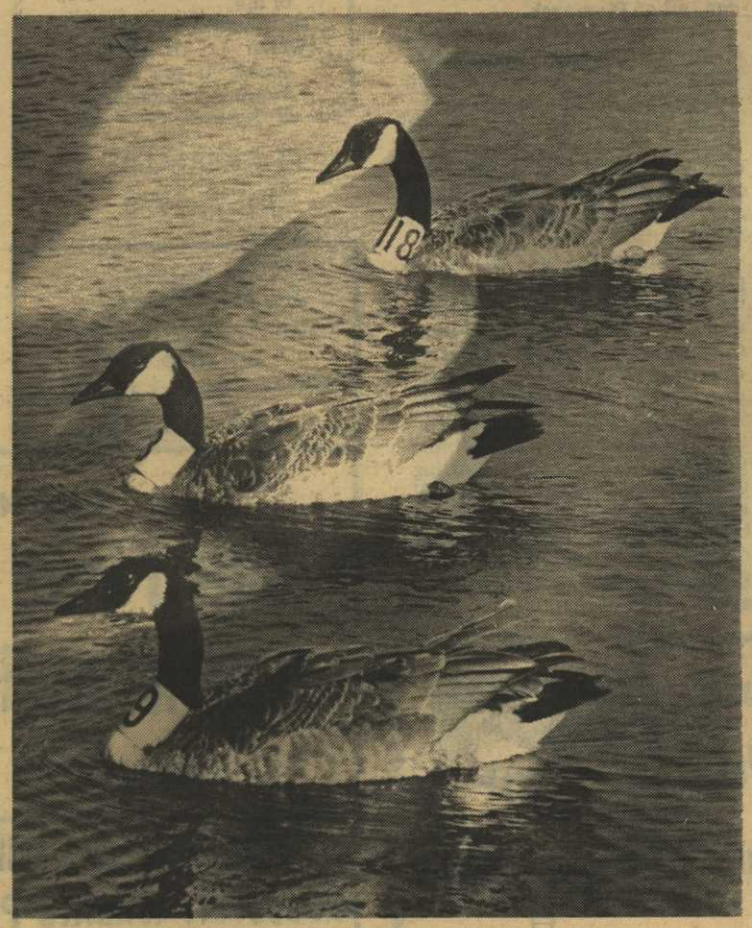
Brandt said it is unknown whether the others were shot, went elsewhere or have returned to the refuge. With the number of geese moving about on the refuge, it is difficult to determine if any that left last fall have returned.

Most of the geese nested in the area of the refuge pens again this year, but a few nested at other refuge locations. Brandt said four geese nested on platforms erected on the refuge and three others nested on the ground. Two of the three ground nests were destroyed by predators.

Each nesting goose laid between three and eight eggs this spring, the average being six.



NESTING GEESE averaged six eggs each this spring. A total of 144 goslings hatched compared with 97 in the spring of 1969. (Photo by Marvin Mansfield).



SAILING ALONG are three of the 159 large Canada geese that came through the winter at Slade Refuge. The flock was started from the captive flock at the Northern Prairie Wildlife Research Center at Jamestown. (Photo by Ed Bry).

a good year

The flock of large Canada geese established last year at Slade National Wildlife Refuge near Dawson, N. D., is having a productive year.

A count late last week showed 110 goslings had been hatched out, with about eight nests still being incubated.

A flock of 142 adult geese were released at Slade Refuge in the spring of 1969 in an effort to establish a flock of large Canada geese in Kidder County where such birds once nested. The geese came from the captive flock at the Northern Prairie Wildlife Research Center at Jamestown, N. D.

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Most of the geese nested in the area of the refuge pens again this year, but a few nested at other refuge locations. Brandt said four geese nested on platforms erected on the refuge, and three others nested on the ground. Two of the three ground nests were destroyed by predators.

The geese earlier this spring had been moving about in the Dawson area and landing on other potholes and lakes. However, it is not known if any of the geese nested outside the refuge area, Brandt said.

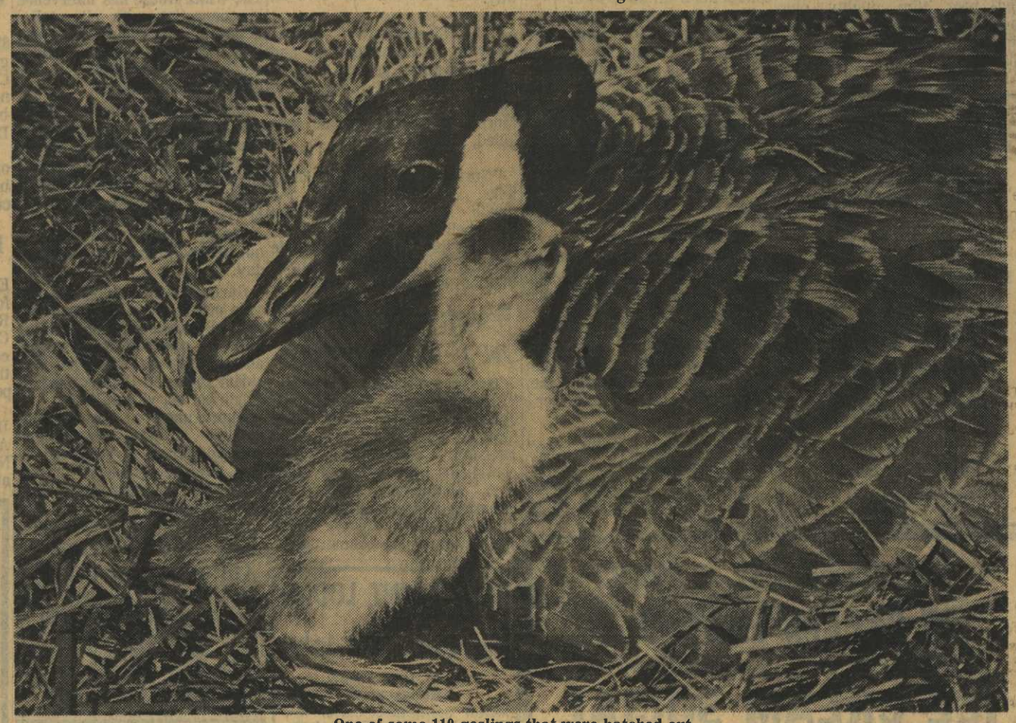
Each nesting goose laid between three and eight eggs this spring, the average being six.

All the Slade geese are leg banded and the free-flyers wear bright yellow plastic neck collars with numbers on them to aid in identifying them.

This will be a critical year for the project at Slade Refuge. If a large number of the free-flyers do not pack up and migrate this fall, the project will be in for a serious review, since the establishment of a wild flock in the area is dependent on the geese moving south during the winter months.

Adult bird swims alone on water in Slade National Wildlife Refuge.

Pair of geese guard their hatching eggs.



One of some 110 goslings that were hatched out.

Open House

STEELE ZONE 4-15-70

SLADE REFUGE
FRIDAY, APRIL 17

Seen any wildlife lately? Well you can, at a national wildlife refuge.

The Interior Department's Bureau of Sport Fisheries and Wildlife will hold open houses at many national wildlife refuges across the country during the week of April 13-19 to stress the role of refuges in preserving the environment.

Slade National Wildlife Refuge will hold an open house on Friday, April 17 reports Refuge Manager Marvin Mansfield. The refuge is located two miles south and two miles east of Dawson.

The giant Canada goose project will be of special interest Visitors will be able to get a close look at these birds as they go through their courtship and nesting behavior.

Hours for the open house will be from 8:00 A. M. to 6:00 P. M Everyone is welcome to visit the refuge and view the wildlife.

NAPOLEON HOMESTEAD 4-15-70

Open House At Slade National Wildlife Refuge

Have you seen wildlife lately? Well you can, at a National Wildlife Refuge.

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The giant Canadian goose project will be of special interest. Visitors will be able to get a close look at these birds as they go through their courtship and nest behavior periods.

Hours for open house will be from 8 a.m. to 6 p.m. Everyone is welcome to visit and view the refuge and wildlife.

JAMESTOWN SUN
August 1, 1970

The Giant Canada

(Photo by Carl Strutz)

Judge Rules Against Minnesota Prep League

MINNEAPOLIS (AP) — The first successful court challenge of Minnesota State High School League rules may have far-reaching effects.

Hennepin County District Court Judge Crane Winton ruled Friday that the league—whose regulations govern all 486 public high school sports in the state — may not prevent a 16-year-old youth from playing high school hockey because he participated in a hockey clinic this summer.

Harry Brown, a Minneapolis teacher who is also a parttime scout for the Boston Bruins of the National Hockey League, brought the lawsuit on behalf of his son, James.

The youth took part in a summer clinic, and under league rules was faced with being ineligible for high school hockey this coming year.

Judge Winon said participation in high school sports is a constitutional right of youngsters and cannot be restricted by the league under bylaws not uniform for all sports.

The jurist suggested that the league adopt uniform regulations for all its prep sports. The regulation concerning hockey is "invalid and unenforcible," he ruled.

League officials had no comment on the ruling.

Although the judge's decision affected only hockey, it appeared to open the way for high school youngsters to attend clinics in other sports.

There was also speculation that the annual prep All-Star football game, sponsored by the Minnesota American Legion, would be revived. The game was dropped several years ago because the league neither sanctioned nor ruled against it. High school seniors who played in the game did not know if it would jeopardize their college eligibility.

Judge Winston noted that any questions concerning other sports could be considerably only in another lawsuit.

"It is, of course, true," he said, "that the football and basketball rules present apparently identical problems. Perhaps in view of the court's ruling here, the league will wish to consider amendments to those rules."

The court noted that regulations concerning basketball, football and hockey are restrictive, while they are not in such sports as swimming, golf and baseball.

Baseball players may play in summer leagues, but football or basketball players may not attend campus or clinics.

"Necessity for rules seems obvious," the judge said. "But the rules must be fair and uniform in application and above all they must further a purpose directly related to the welfare of the athletes and of the schools for which the league acts."

He emphasized that his ruling "in no way suggests or implies a challenge to the validity of any other league-legislated athletic bylaws and rules."

Judge Winton ordered the league to pay Brown's legal fees in the week-long trial before the court took the matter under advisement.

The decision was the first successful test against league by-laws since it was organized in 1916, although it has come under scrutiny in the legislature many times.

Canada Goose Making Comeback

At Slade Lake Refuge

By JAMES SMORADA
Sun Staff Writer

It was the old men, the hunters, who talked about the big geese. But the geese are gone now, they would say. They talked about their size; nearly 20 pounds with upwards to six feet of wing and their sons would listen.

In 1893, a circuit preacher the Rev. R. E. Strutz traveling the prairie wetlands northwest of Streeter, found a goose nest abandoned by the parent bird. He collected the eggs. It was a week before the clutch could be incubated but when the eggs were placed under a hen they hatched.

In 1926, the flock of large geese from the original hatch was transferred to Jamestown. It grew slowly. It wasn't until the mid-sixties that the flock, collected in 1893, was identified.

What had been thought to be extinct (what was thought by some to have never existed) was alive and flourishing on Rev. Strutz's farm, now owned by his son Carl of Jamestown.

Nearly as large as a swan, the largest goose of the species, the giant Canada, had been preserved, in this case, by one man's uncommon concern for the things that fly.

The Northern Prairie Wildlife Research Center acquired some of the Strutz birds. Under a project suggested by Forrest Lee, a researcher at the station who initially isolated the species from a flock in Rochester, Minn., the center began raising birds for release in the state.

Carl Hanson, another researcher here, and personnel at Slade Wildlife Refuge, near Dawson are already two years into the project.

Aside from its size and nesting characteristics, the bird travelled a very small range which made it easy prey for hunters. While there were few men on the prairie, the flocks flourished. When the railroad cut through their prime Kidder County nesting area, numbers were decimated by the mid-20's, Hanson said.

Birds which originally came from the Jamestown flock are now beginning to nest in a protected area on the refuge. Last year 89 goslings were hatched. This year 144. Some of them hatched in sloughs near the refuge.

Able to fly after 65 days, the giant geese mature quickly but do not mate until their second or third year. Marv Mansfield, refuge manager, said "barring any unforeseen catastrophe, I expect farmers to see these birds nesting in the next few years on private land."

"The reaction of Kidder County people is great, just great," Mansfield said. "I had one farmer who came here and asked for a pair for his slough. Everybody here is really excited about these big ones."

Mansfield admits that the birds can bear some hunting pressure already. "It wouldn't matter much if say 10 to 15 were taken. But any more than that and we'd be hurting," he continued.

Any more than that and the project could go up in smoke.

The giant Canadas are recognizable, aside from size because of certain outstanding characteristics. Their bodies are longer, an oval shape and more streamlined than other geese. The necks are longer, heavier; the bill is thicker. There is a white band (mark) on the forehead of some of the geese, and the breast is a lighter white than other similarly marked geese of the species.

And on the geese at Slade, a flame-orange plastic collar designed by Dr. Glen Sherwood singles out the speciman from others.

The average size for the Slade geese is 12 pounds for the male, 14 pounds for the male but it is not uncommon to find the birds weighing as much as 20 pounds.

There was a great deal of controversy concerning this bird, Strutz points out. Ornothologists and other specialists were not willing to accept the existence of the bird. They have changed their minds. The giant Canada is alive and well—and may be nesting here in numbers again.

Chiefs Rap Disappointing Stars 24-3 In Hot, Humid Weather

CHICAGO AP — In keeping with the fuzzy current picture of pro football and its labor strife, it took an unheralded walk-on to give the All-Star collegians their only points in a 24-3 pasting by the world champion Kansas City Chiefs Friday night.

While such arms as Mike Phipps of Purdue and Dennis Shaw of San Diego State were fluttering for seven completions in 29 throws for 46 yards, husky Mike Delaney of American International, Springfield, Mass., booted a 29-yard field goal late in the last quarter to avert a shutout.

It brought a murmur from the throng of 69,940, dripping in the humid 80-degree heat and light rain at Soldier Field.

Most of their cheers had to go to the Chiefs. With only one week of organized practices-a special dispensation while other veterans remained out of training camps in the contract dispute with owners — the Chiefs looked in the pink.

Maybe, they looked good because the All-Stars looked so bad in losing their seventh straight of the series with the pros.

The Super Bowl champions, who now will blow their camp until some settlement is reached in negotiations, piled up all their points in the first half.

In the first 7½ minutes of the game, 35-year-old Len Dawson hurled a 36-yard scoring pass to Frank Pitts to end a 76-yard frolic in six plays.

Later in the same quarter, Jan Stenerud booted a 43-yard field goal.

The second period was less than three minutes old when Willie Lanier stole Shaw pass and returned it 14 yards to the All-Star 20 to set up a touchdown. Warren McVea on the fourth play slanted across end and went into the corner from the three.

Then, seven seconds before halftime, Jim Kearney, picked off a Phipps' pitch and streaked unmolested 65 yards down the sideline to score.

Phipps, chattel of the Cleveland Browns, received a minor bruised shoulder midway in the third and Shaw Buffalo Bills returned to finish the game.

Dawson, hitting on 17 of 21 passes for 153 yards, finally called it quits in the middle of the fourth quarter and Mike Livingston mopped up.

Delaney, who doesn't belong to anybody but his mother, got his heroic field goal chance at the nine-minute mark of the third quarter. Randy Montgomery punt and Ted Koy of Texas (Oakland Raiders) plopped on it on the Chiefs' nine.

The Stars got to the two-yard line on last down and then Shaw shoveled off to John Isenbarger of Indiana (49ers) who passed incomplete into the end zone trying to spear Ken Burroughs of Texas Southern (New Orleans Saints).

Delaney tried his field goal prowess with the Pittsburgh Steelers this spring, "But it wasn't a very good tryout and I decided to go to the Coast Guard Academy to see if Otto Graham thought I had a chance with the pros."

Graham is head All-Star coach as well as director of athletics at the academy where he returned after a spin as Washington Redskin skipper.

"I had never seen him until he walked in," said Graham. "He showed me he could kick. That happened just a week before the start of All-Star camp. I invited him to join us."

Delaney is about the only bright thing Graham can remember from this game.

"We played a lousy game Graham said. "Kansas City didn't force us into mistakes. We made them. We didn't get in out scrimmage against the pros that we usually do while in camp because of the player strike. A scrimmage with the pros is worth two or three touchdowns.

"The Chiefs may have been in camp only a week, but they have been working out for months," continued Graham. "In fact, they were in better condition than any other pro team I've seen in this game in the last 10 years."

Because of the knee injury Dawson suffered last season, some Chief followers were surprised Coach Hank Stram used him so much when he had four other quarterbacks on hand.

"I had no determined plan about how long Len would play," said Stram, asserting his team played like the proud champions they are. "I just played it by ear. We ran a lot in the last half and what we were doing seemed like a safe approach as far as Dawson was concerned.

"I was satisfied with the way we played," Stram added. "It was like driving a Rolls Royce. We just wanted to keep it on the road."

Lorenzen Aims For Dixie Win

ATLANTA (AP) — There is a newspaper clipping posted in the garage area at Atlanta International Raceway. It reads: "Fred Lorenzen used to own this speedway. On Aug. 2 he is coming back to reclaim it."

Lorenzen, now 36 and a bit stockier than when he was the scourge of Southern racing ovals in the early 1960s, came out of comfortable retirement two months ago to drive again in his familiar No. 28 racer.

On Friday, Lorenzen breezed around the 1.522-mile Atlanta track at 157.624 miles per hour to win the pole position for Sunday's $103,000 Dixie 500 stock car racing classic.

Lorenzen, now driving a Dodge instead of the team Ford he occupied for six years before retiring in an elaborate ceremony in May, 1967, was easily the favorite of some 7,000 who watched time trials that put 28 drivers into Sunday's 40-car line-up.

"He's right where he was when he quit the circuit," said speedster Buddy Baker. "Before he left three years ago, Lorenzen almost always was the rabbit in the briar patch and the rest of us drivers were the hounds chasing him."

Baker, long one of Lorenzen's strongest admirers, put his Dodge into the front row beside the curly-haired blond from Elmhurst, Ill., with a speed of 157.611 m.p.h. Bobby Isaac, current leader in the NASCAR Grand National championship battle, was third best at 157.064 m.p.h.

Lorenzen, whose 12 superspeedway victories is still a NASCAR record, won almost $425,000 before tearfully quitting following the spring race here three years ago. He said then that his nerves were shot, his stomach continually upset and high speeds of racing.

But he apparently was unhappy away from the tracks. He bought a car to run in the World 600 at Charlotte May 24 and despite obvious shortcomings in engine preparation he led the race for a time.

At Daytona on July 4, he was in position to win late in the race when mechanical troubles again knocked him out.

Twelve additional spots for the 500 line-up were to be filled today, with Dodge's Bobby Allison, winner of the spring race here, as the top candidate for one of them. Allison blew the engine in his car during a practice session Friday morning and couldn't make repairs in time to qualify.

Sunday's race starts at 1 p.m. and track officials expect 50,000 to watch it. The winner gets $19,500.

Two More To Join Vikings

MANKATO, Minn. (AP)—The 28 rookies in the Minnesota Vikings training camp were expected to be joined today by two more rookies who played with the collegiate All-Stars Friday night in Chicago.

Offensive guard John Ward of Oklahoma State, the Vikings No. 1 draft choice, saw action for only eight plays in the All-Stars 24-3 loss to the Kansas City Chiefs. Middle linebacker Chuck Burgoon, No. 3 draft choice, played about six minutes.

Vikings officials say they will use the rookies in their exhibition opener next Saturday against the New Orleans Saints at Canton, Ohio, if the strike of veteran players continues.

It has been reported that Hall of Fame officials at Canton are trying to get the National Football League Players Association to allow Viking veterans to play in the game. NFL officials also were to be contacted on the matters.

Receipts from the game help finance pro football's Hall of Fame.

The NFLPA gave the Chiefs permission to play in the All-Star contest.

Meanwhile, about 30 Vikings veterans continue to practice in the Twin Cities without supervision and equipment.