NARRATIVE REPORT ROUTING SLIP

REFUGE SLADE and Easement Dist. No. 1 PERIOD May - August 1962

CHIEF'S OFFICE: Mr. Gillett _____ Mr. ~~Ackerknecht~~ _____

Mr. ~~Fennaricn~~ _____ Mr. Goldman _____

WILDLIFE MANAGEMENT: Mr. Banko _____ Mr. Stiles _____

RESOURCE MANAGEMENT: Dr. Morley _____ Mr. Stollberg _____ Mr. Lamb _____

OPERATIONS: Mr. Hickok _____ Mr. Regan _____

PUBLIC USE: Mr. DuMont _____ Mr. Monson _____

ADMINISTRATIVE SERVICES: Miss Baum _____

SLADE NATIONAL WILDLIFE REFUGE
DAWSON, NORTH DAKOTA

NARRATIVE REPORT

May 1 to August 31, 1962

Permanent Personnel

Robert H. Timmerman ..... Refuge Manager

Part-time Personnel

Theodore Schauer ..... Maintenanceman, WAE
Clifford Nunn ..... Laborer, WAE
Sam M. Pendill ..... Laborer, WAE
Frank S. Mahin ..... Laborer, WAE
Adam Spitzer ..... Laborer, WAE
William Edgar Magee ..... Laborer, WAE

C O N T E N T S

I. GENERAL

A. Weather Conditions.

	Precipitation This Month	Precipitation Normal		Max. Temp.	Min. Temp.
May	5.53	2.26		81	32
June	2.56	3.88		86	39
July	4.37	2.51		84	43
August	1.03	2.04		94	41
Total:	13.99	10.69	Extremes	94	32

The information contained in the above table was obtained from the records of the official U. S. Weather Bureau Station located eight miles west of the refuge in Steele, North Dakota.

This has been a fairly wet, cool period. We received 3.30 inches of precipitation more than normal during the period. As the period ends we have received 2.54 inches over normal for the completed portion of the calendar year. During this four month period last year we received only 5.10 inches of moisture.

B. Habitat Conditions:

1. Water:

Water conditions were very poor at the beginning of the period. Heavy rains during May improved all water levels and above average precipitation again during July helped to keep water levels up. This was a relatively cool summer and evaporation was not as great as normal.

The following table shows comparative levels for the major water areas on the refuge at the end of the period over the past five years. The figures (in feet and tenths of feet) are for comparison from year to year only and do not represent lake depths or elevations.

Comparative Water Levels at the end of the Period

Water Area	1958	1959	1960	1961	1962
Harker Lake	7.4	6.5	7.3	4.6	5.9
South Marsh	10.1	9.5	10.3	10.0	10.4
Headquarters Lakes	10.5	9.0	8.9	7.1	7.4
Northwest Slough	7.1	6.7	7.2	6.2	7.4

2. Food and Cover:

A good crop of aquatic food plants was produced this year. Beds of sago and curly leafed pondweed are to be found in almost all water units. Northwest and Southeast Sloughs have an exceptionally heavy growth of bladderwort, coontail, and water milfoil.

This was a bumper cultivated crop year in this area. Many farmers claim it is the best crop they have ever raised. Reports of 100 bushel to the acre oats, 80 bushel barley, 60 bushel wheat, and 30 bushel flax have been received. Our refuge crops were not that good. We averaged about 22 bushel to the acre wheat, 55 bushel oats, and 45 bushel barley. We have about 30 acres of Falcher corn which looks good but it is hard to estimate the yield. Abundant food will be available for field feeding birds.

Cover is overly abundant. The bromegrass went wild with the above normal precipitation we received this year. Even in the grazing units the cattle were unable to keep up with the tremendous growth. In some grazing units if the cattle are lying down it is almost impossible to find them.

LI WILDLIFE

A. Migratory Birds:

1. Waterfowl:

a. Geese: No goose or swan use was recorded during the period.

b. Ducks: The pair counts indicated a slight decrease from last year although almost doubled the number for 1960. The following table shows the breeding pair populations over the past six years.

Breeding Pairs

Species	1957	1958	1959	1960	1961	1962
Mallard	51	31	42	11	21	20
Blue-winged teal	31	86	79	25	35	29
Gadwall	9	11	21	9	26	14
Pintail	4	8	5	8	15	12
American widgeon	--	--	6	3	4	2
Shoveller	4	11	18	2	9	7
Lesser scaup	--	6	5	6	8	6
Redhead	5	6	10	--	10	7
Ruddy	2	3	1	--	2	2
Green-winged teal	--	--	1	--	1	2
Canvasback	--	--	--	2	2	3
Totals	104	162	188	66	133	104

What happened to the early nesting mallards and pintails? We have asked ourselves this question but can not come up with a suitable answer. Certainly all of these birds didn't nest low enough to be flooded out by May rains. Another remote possibility is that the nesting depressions filled with water spoiling the eggs. Whatever the reason, we do know that the early nests were almost a total loss.

Two brood counts were taken along with several spot checks. Production figures are based on broods actually observed and no correction factor is applied to account for broods missed. This method has been used for several years and should give good comparative data as it is accumulated from year to year. The following tables show the number of broods and young produced, by species over the past six nesting seasons.

Broods Produced

Species	1957	1958	1959	1960	1961	1962
Mallard	27	19	16	8	4	7
Blue-winged teal	17	38	11	10	5	18
Gadwall	5	8	2	13	7	15
Pintail	2	6	1	7	3	3
Shoveller	2	8	1	3		3
Redhead	3	3			1	3
Ruddy	2	6				2
American widgeon						1
Totals	58	88	31	41	20	52

Estimated Production

Species	1957	1958	1959	1960	1961	1962
Mallard	176.04	123.88	104.32	52.16	26.08	45.64
Blue-winged teal	115.60	258.40	74.80	68.00	34.00	122.40
Gadwall	35.45	56.72	14.18	102.70	49.63	118.50
Pintail	12.20	36.60	6.30	44.10	18.90	18.90
Shoveller	12.66	50.64	6.33	18.99		18.99
Redhead	18.93	18.93			6.31	18.93
Ruddy	10.68	32.04				10.68
American widgeon						8.00
Totals	381	577	206	286	135	362

As can be noted from the above tables, this has been our best duck production year since 1958. Early nesting success was extremely low and the bulk of the young birds resulted from late nestings, probably second or third attempts. At the close of the period class 1A broods of blue-wings and gadwall were still being seen regularly. These extremely late broods are not included in our production figures as it is very doubtfull if any of them will make it to the flying stage.

c. Coot: Coot were present throughout the period in small numbers. At least three broods were produced. A very slight build-up was occurring at the end of the period.

2. Other Waterbirds:

White pelicans used the refuge on a part-time basis in about the usual numbers. One dead bird was found. Double-crested cormorants were regular visitors, but were not present in as large numbers as they have been for the past several years. Limited numbers of black-crowned night herons again nested on the refuge.

The first 12 sandhill cranes were observed near Florence Lake Refuge on August 9th. This is one day earlier than the first birds were seen last year. No census was taken at the close of the period.

3. Shorebirds:

No unusual concentrations or sightings during the period.

4. Doves:

The usual nesting population of between 100 and 150 mourning doves was present. Many pairs were observed far from trees indicating possibly that ground nesting is increasing. Some flocking was taking place in late August.

B. Upland Game Birds:

Very few broods of ring-necked pheasants, sharp-tailed grouse or gray partridge were seen. Cover was overly abundant and the only time broods were seen was during early morning when they moved out to roads and trails to get dry. The populations are estimated to be about the same as last year, 300, 40, and 40 respectively.

C. Big-Game Animals:

White-tailed deer are the only big game animals found on the refuge. Very few were sighted during the first three months of the period. A few were seen regularly during August and tracks were common in the refuge corn fields and the manager's garden. The population probably did not exceed ten at the close of the period.

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

1. Fur Animals:

The muskrat population remains very low and probably not more than 20 are to be found on the refuge. The few survivors are found in Northwest Slough and South Marsh.

Mink and weasel are estimated to number about 20 each. An attempt will be made to harvest part of these animals during the trapping season.

2. Predators:

The red fox population is estimated at ten for the close of the period. Probably about 25 each of striped skunks and raccoons are present. We have not been seeing as many skunks as during this same period last year, however, we underestimated our population at that time so will stick by a higher figure this year. About 10 badgers are estimated to be in residence.

3. Rodents and Other Mammals:

No change has been noted in this category. The small rodent population is high and the rabbit population fairly low.

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

Nothing unusual to report. More crows than normal were seen throughout the general area this summer. One eagle was reported on the refuge, however we were unable to varify this report.

F. Other Birds:

No significant sightings.

G. Fish:

Fathead minnows are found in all the deeper lakes, but no game fish are known to be present on the refuge. Lake Isabell continues to provide fair northern pike and yellow perch fishing. Several northerns in the 6 to 8 pound class were taken. The water level of Lake Isabel raised about four feet as the result of summer rains, so it should be able to support fish over the winter if it freezes up clear and doesn't become covered with too much snow.

H. Reptiles:

Garter and hognose snakes were present in the usual abundance. Green garter snakes were more numerous than we had noted in the past.

I. Disease:

None noted.

III REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development:

Listed below are only the activities that took place on Slade Refuge. Work on Florence Lake Refuge and Waterfowl Production Areas (WPAs) will be shown elsewhere.

A mile and a half of boundary fence at the southeast corner of the refuge was completely rebuilt after Russian thistles took down sections of it last winter.

About two miles of interior fence was constructed to enclose a portion of newly approved G-5.

The roofs of the oil shed and seed shed were restained.

The exteriors of the residence and seed shed were repainted.

Tree plantings were cultivated five times and the smaller trees weeded by hand once.

B. Plantings:

1. Aquatic and Marsh Plants:

None.

2. Trees and Shrubs:

None.

3. Upland Herbaceous Plants:

None.

4. Cultivated Crops:

Approximately 235 acres were farmed by cooperators. This has been the best crop year experienced in this area for many years. Available grain should be more than adequate for wildlife food.

C. Collections and Receipts:

Bluegrass seed was harvested under a cooperative agreement. The refuge share of the bluegrass seed was traded for native grass seed to be used on WPAs. Both crested wheatgrass and alfalfa will be harvested next period if possible.

D. Control of Vegetation:

Noxious weed control will be included in the December report. Experimental herbicidal vegetation control will be reported later.

E. Planned Burnings:

None.

F. Fires:

None.

IV RESOURCE MANAGEMENT

A. Grazing:

One new grazing unit was approved and about 370 acres of it fenced and grazed this season. This unit, when fencing is completed, will include about 680 acres. Our aim is to open up dense stands of

monotype bromegrass and thin out shoreline vegetation. The area is designated as one unit so it may be divided and redivided when necessary to hold cattle where we need them without ammendments to the land use plan.

All grazing units are in good condition. An over abundance instead of a shortage of vegetation is the problem in most units. Our grazing season, at present, begins on June 1st. It probably will be extended to begin on May 15th next year.

B. Haying:

No haying is ordinarily allowed on this refuge.

C. Fur Harvest:

None during this period.

D. Timber Removal:

None on this refuge.

E. Commercial Fishing:

None on this refuge.

F. Other Uses:

One permit was issued to the H & W Honey Co. of Steele, N. D. for the keeping of 40 hives of bees on the refuge at $.10 per hive.

V FIELD INVESTIGATION OR APPLIED RESEARCH

A. Progress Report:

We are continuing to experiment with herbicides provided by the Dow Chemical Company. No attempt will be made to give a complete report here. It appears that radapon applied at the rate of three pounds per acre in three applications at about a two day interval gives good results on phragmites and cattail, excellent results on bromegrass, but poor control on bulrush. We are finding now that on this soil full of brome seed there is considerable seedling growth of bromegrass the year following application. We are now trying radapon at 20 pounds per acre in one application on bromegrass. We seem to have attained a 100% kill, however, we won't know for sure until next spring.

VI PUBLIC RELATIONS

A. Recreational Use:

The Lake Isabel Recreation Area did not received as many recreational days use this year as it did in 1961. Most week-ends were cool, and many damp, which kept public use down. The few good week-ends we did have resulted in mobs like we have never seen before. On one particular Sunday there were two church picnics and the Medina Wildlife Club outing plus the usual crowd. Some of the picnickers had to leave their cars way out by the boat unloading docks and walk to the picnic area. The area recorded an estimated 34,000 days use in 1961 as compared to only 27,000 in 1962.

The 4 H Camp was used by seven counties for three day camping sessions this year. About 500 boys and girls attended these sessions. The North Dakota Game and Fish Department again used the lodge during the second week in August for the week long warden's seminar. One church group held a recreational program and the County Farm Bureau held their annual meeting there. Total use amounted to about 2,300 days.

B. Refuge Visitors:

Name	Affiliation	Purpose of Visit	Date
H.Jensen	G.M.A.Jamestown	pick up exploder	5/8
E.Crozier	W.H.B.Jamestown	W.P.A.management	5/8
D.McGlauchlin	Manager,Snake Creek	deliver surplus material	5/18
Dietrich	ASCplant technician	set up grass plots	5/22
C.Rollings	Biologist R.O.	WPA management	5/24-5/25
W.Johnston	M.D. Bismarck	grass identification	6/24
J.Monnie	Manager,Tewaukon	visit enroute Bismarck	7/24-7/25
B.Johnson	Br.of Realty,Jamestown	refuge addition	8/2
R.Lysne	Clerk,Arrowwood	exchange trucks	8/3
B.Stollberg	Central office	WPA problems	8/5-8/6
C.Rollings	Biologist,R.O.	WPA problems	8/5-8/6
V.Blazevic	G.M.A.Devils Lake	visit	8/10
H.Woon,et al	Manager,FT.Niobrara	visit	8/12
R.Gullixson	Personnel,R.O.	position audits	8/14
C.Odin	Jamestown,Acquisition Office	refuge additions	8/30
E.V.Pierce	Manager, Long Lake	mutual problems	several

C. Refuge Participation:

Regular meetings of Dawson Town and Country Club were attended.

Assisted County Agents in work day at Slade Lodge May 22nd.

Attended Grassland Day at the Northern Great Plains Experiment Station, Mandan, June 13th.

W.H.B. Troester put on programs for all groups at the Slade 4 H Camp and took one group on a nature tour.

The manager took three groups of campers at the 4 H lodge on nature tours.

On July 25th all refuge managers in North Dakota met with State personnel at Bismarck to discuss hunting on refuges and WPAs.

The Troesters and Timmermans attended the North Dakota refuge picnic at Arrowwood on August 18th.

D. Hunting:

None during this period.

E. Violations:

No apprehensions or prosecutions during the period.

F. Safety:

Several meetings were held with WAE personnel to discuss safety and the hazzards encountered on the job. To date there has never been a lost time accident at this station for a record of 7,665 days.

VII OTHER ITEMS

A. Items of Interest:

Lake Isabel is rapidly being developed for summer cottages. All of the lake shore west of the refuge on the north side of the lake has been divided into lots and sold. The developers did leave space for a public boat launching ramp and concession stand. There is even some talk of building a small night club.

Credit for typing this report again goes to the Manager's wife.

B. Photographs:

Again we have come to the end of the period and find that we have no pictures suitable for the narrative. W.H.B. Troester has come to our aid and kindly consented to put some of his together at least for the circulating copy.

FLORENCE LAKE NATIONAL WILDLIFE REFUGE

I GENERAL

Water conditions were fair at the start of the period. The main lake was full. All of the type IV and V potholes and most of the I and III potholes held water. Rain during May improved water conditions. As the period ended all but the temporary water areas contained good water.

II WILDLIFE

Duck use was light during spring migration probably due to the ice going out of the main lake late and a lack of food in the general area. One hundred thirty three pairs were recorded during breeding pair counts, of which about one third were mallards. We were unable to get good pair counts due to the abundant vegetation in most potholes plus the lack of time and personnel. The best we can do is estimate production. If we assume that half of the pairs successfully bring off broods with an average number of seven we arrive at a production figure of 462. This surpasses the duck production on Slade Refuge by about 100. We have felt all along that this new refuge had as great, or greater, potential than Slade.

Sharp-tailed grouse are the only upland game birds that have been seen on the area. A dancing ground was located just a half mile east of the refuge boundary on the Glanville land.

White-tailed deer are common and are seen on almost every visit. The population at the end of the period was about ten. This population is expected to build up considerably during deer season as the refuge will be closed to deer hunting.

III REFUGE DEVELOPMENT AND MAINTENANCE

The Fitzgerald farm site looked like a junk yard at the beginning of the period. He has been persuaded to remove most of the material that he (John Fitzgerald) wants and we made a very meager start at cleaning up. At the end of the period the site was a jungle of weeds with giant ragweeds higher than a man's head. It should provide a good grouse wintering area.

Two miles of existing fence required extensive repairs to allow grazing unit I to be used this year. Salvage materials from other existing fences were used. This fence will need to be replaced as soon as funds are available.

Mr. Crimmins, grazing permittee on G-1, provided a new head and wheel plus a stock tank for watering his cattle.

About 100 acres of cropland was seeded to grass. This land was steep, rocky, poor quality land that should never have been farmed.

About three miles of boundary fence were completed. We had hoped to complete the entire nine miles of boundary fencing this fall. A lack of materials will hold us up now for about a month so it is doubtful if we can finish it.

IV RESOURCE MANAGEMENT

Grazing unit I was the only one grazed this year. Cattle were taken out about the middle of August because of hoof rot so they could be treated in the home corrals. Only about one half the authorized A.U.M.s were utilized.

About 200 acres were cropped this year on the part over which we have agricultural use rights. Our sixty acres share of barley was left in the field. Forty-five acres of this land was stubble seeded to grass during August and permanently retired. Sixty acres was farmed on a tract with an ag. use reservation through 1962. We provided the seed and he seeded the entire acreage to grass for us.

No haying was allowed.

WATERFOWL PRODUCTION AREAS

We are still temporarily in charge of all WPAs in McIntosh, Logan, Emmons, Kidder, and Burleigh counties. At the time of this writing 20 tracts on 16 areas totaling 4,455 acres have been purchased, one tract including 9.6 acres attained by gift, one easement, one lease-purchase, and 8 tracts containing 492 acres withdrawn from the Public Domain.

All the areas contained at least some water for at least part of the summer. Very little pair or brood counting was done. However, on the areas that we did find time to count and general observations indicated fair duck production. The Uhde (10) Burleigh tract when pair counted had 28 pairs of ducks on 38 acres of water. The Thacker (10) Kidder tract containing 80 acres of land with about 35 acres of water had nine broods when counted. We will try to obtain better records next year.

We managed to get all of the cropland seeded back to grass that we wanted to retire from crop production on the areas over which we had agricultural use control during the past season. We will gain control over much more cropland next year.

All of the areas have been posted with one exception, where we own only part of a marsh and our holdings are out in the water, where it would not be practical to put in posts.

Only the Thacker (10) Kidder tract has been fenced. Here we had a bad livestock trespass problem, both cattle and sheep. The tract had to be fenced on three sides with woven wire. If this individuals sheep get around and bother on the fourth side then he will have to provide the woven wire and attach it to our posts. It would be very desireable to get several other areas fenced this fall, but lack of fencing materials has us temporarily stopped.

The Schiermeister (10) Emmons tract, part of the Sunburst Easement Refuge, is the only tract we have that will be closed to hunting. The set of buildings was sold on sealed bids and all acquired by Jake Schiermeister to be torn down. We plan to continue some crop production on this area. Seventy-nine acres were farmed under cooperative agreement this year.

EASEMENT REFUGE DISTRICT #1, NORTH DAKOTA

These areas have been slightly neglected this period because of time spent on Florence Lake Refuge and Waterfowl Production Areas. However, all were visited at least once with the exception of Lost Lake. Water conditions varied from very poor on Hutchinson, which was almost dry, to good on Sunburst, Springwater, and Flickertail. Duck production was fair. Canfield had 77 pairs at the time of the breeding pair counts. No brood counts were taken. Following instructions from the Regional Office, Flickertail was reposted after many years with no signs. Some hunting had been done on the area when there were no signs to prohibit it and may present a small problem this fall.

SIGNATURE PAGE

Submitted by:

Robert H. Timmerman
(Signature)

Date: 9/19/62

Refuge Manager
Title

Approved, Regional Office:

Date: 9-25-62

(Signature)

Regional Refuge Supervisor

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

WATERFOWL

REFUGE Slade MONTHS OF May TO August, 1962

(1) Week / Species ended	(2) Weeks of reporting period: 5/5 (1)	5/12 (2)	5/19 (3)	5/26 (4)	6/2 (5)	6/9 (6)	6/16 (7)	6/23 (8)	6/30 (9)	7/7 (10)
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	80	60	40	40	40	40	40	40	40	80
Black										
Gadwall	20	50	100	40	40	40	40	40	40	40
Baldpate	10	10	10	10	10	10	10	10	10	10
Pintail	30	30	30	30	30	30	30	30	30	30
Green-winged teal	20	20	10	10	10	10	10	10	10	10
Blue-winged teal	40	100	120	110	60	60	60	60	60	80
Cinnamon teal										
Shoveler	10	30	30	30	30	30	30	30	30	40
Wood										
Redhead	20	20	20	20	20	20	20	20	20	20
Ring-necked										
Canvasback	30	20	10	10	10			10	10	10
Scaup	100	80	20	20	10					10
Goldeneye										
Bufflehead										
Ruddy	10	10	10	10	10	10	20	20	20	20
Other										
Total ducks	320	430	400	330	270	250	260	270	270	350
Coot:	200	160	140	40	20	20	20	20	20	20

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

WATERFOWL
(Continuation Sheet)

REFUGE Slade MONTHS OF May TO August, 19 62

(1) Species	(2) Weeks of reporting period: Week ended	7/14	7/21	7/28	8/4	8/11	8/18	8/25	9/1	(3) Estimated waterfowl days use	(4) Production: Broods seen	(4) Production: Estimated total
		11	12	13	14	15	16	17	18			
Swans:												
Whistling												
Trumpeter												
Geese:												
Canada												
Cackling												
Brant												
White-fronted												
Snow												
Blue												
Other												
Ducks:												
Mallard		100	100	80	80	80	90	90	90	8,470	7	46
Black												
Gadwall		60	60	60	100	120	160	300	400	11,970	15	118
Baldpate		10	10	10	20	20	30	50	50	2,100	1	8
Pintail		30	40	50	50	60	60	50	60	4,900	3	19
Green-winged teal						10	20	20	20	970		
Blue-winged teal		80	90	90	100	120	170	200	200	12,600	18	122
Cinnamon teal												
Shoveler		40	40	40	50	50	50	80	40	4,760	3	19
Wood												
Redhead		30	40	40	40	40	40	20	10	3,220	3	19
Ring-necked												
Canvasback		10	10	10	10	10	10	10	10	970		
Scaup		10	10	10	10	10	20	20	40	2,590		
Goldeneye												
Bufflehead												
Ruddy		20	20	20	50	30	30	10	10	2,170	2	11
Other												
Total ducks		390	420	410	490	550	680	850	930	54,720		
Coot:		20	20	20	30	30	30	40	60	2,770	3	10

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese			
Ducks	54,720	930	362
Coots	2,770	200	10

SUMMARY

Principal feeding areas Shallow potholes that were dry last year.

Principal nesting areas Units I and II

Reported by Robert H. Timmerman, Refuge Manager

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 May to August 194 X 62

(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			20	June						
White pelican			200	June						
Great-blue heron			5	August						
Black-crowned night heron			15	August						
Double-crested cormorant			30	June						
Sandhill cranes	12	August 9	(near Florence Lake)							
II. Shorebirds, Gulls and Terns:										
Avocet			30	May						
Marbled godwit			40	May						
Killdeer			60	resident						
Ring-billed gull			200	August						
Franklin's gull			1,500	August						

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove		100 resident			
White-winged dove					
IV. Predaceous Birds:					
Golden eagle					
Duck hawk					
Horned owl		1 resident			
Magpie					
Raven					
Crow		5 resident			

Reported by Robert H. Timmerman, Refuge Manager

INSTRUCTIONS

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

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

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

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

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

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

3-1750b
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 Slade — For 12-month period ending August 31, 19 62

Reported by Robert H. Timmerman — Title Refuge Manager

(1) Area or Unit Designation	(2) Habitat Type	(2) Habitat Acreage	(3)	(3) Use-days	(4) Breeding Population	(5) Production
	Crops	60	Ducks	55,080	36	75
	Upland	445	Geese			
	Marsh	15	Swans			
	Water	80	Coots	2,040		
I	Total	600	Total	57,070	36	75
	Crops	20	Ducks	27,660	86	156
	Upland	400	Geese			
	Marsh	10	Swans			
	Water	70	Coots	260		
II	Total	500	Total	27,920	86	156
	Crops	110	Ducks	70,830	64	96
	Upland	750	Geese			
	Marsh	100	Swans	511		
	Water	350	Coots	680		
III	Total	1,310	Total	72,071	64	96
	Crops	100	Ducks	59,070	22	35
	Upland	290	Geese			
	Marsh	120	Swans			
	Water	80	Coots	2,170	10	10
IV	Total	590	Total	61,240	32	45
	Crops	290	Ducks	212,640	208	362
	Upland	1,885	Geese			
	Marsh	245	Swans	511		
	Water	580	Coots	5,150	10	10
TOTALS	Total	5,000	Total	218,301	218	372
	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

1613

Refuge Slade Months of May to August, 1962

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked pheasant	Cropland 300 acres, grassland and marsh 2,100 acres	18	6	100					300	
Sharp-tailed grouse	"	60	1	20					40	
Gray partridge	"	60	2	30					40	
Pinnated grouse	"	(none observed since 1958)								

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.