DES LACS (including Lake Ilo and Easements Dist. #4)NARRATIVE REPORTS JANUARY-DECEMBER 1947

ROUTING SLIP — DIVISION OF WILDLIFE REFUGES — DATE: _____ 194__

_____ MR. SALYER _____

_____ ~~MR. KRUSE~~ WK 6/21

___✓___ MR. DUMONT PAD 3-15

_____ MISS BAUM _____

SECTION OF HABITAT IMPROVEMENT:

~~Mr. Griffith~~ PCG 5-18

~~Dr. Bourn~~ WSB 2-17

~~Miss Cook~~ DWC 2-10

___ SECTION OF OPERATIONS:

~~Mr. Ball~~ _____

✓ ~~Mr. Regan~~ _____

_____ _____

___SECTION OF LAND MANAGEMENT:

✓ ~~Mr. Kent~~ JK 3/16

~~Mr. Ackerknecht~~ _____

_____

___ SECTION OF STRUCTURES:

Mr. Taylor _____

_____ _____

___ STENOGRAPHERS:

_____ _____

_____ _____

REMARKS:

DES LACS NARRATIVE REPORT — LAKE IO
and N. D. Easements District #4
SEPTEMBER-DECEMBER 1947

Return to: _____

NARRATIVE REPORT

SEPTEMBER, OCTOBER, NOVEMBER, DECEMBER, 1947

DES LACS NATIONAL WILDLIFE REFUGE

&

EASEMENT REFUGES - DISTRICT IV

Forrest A. Carpenter
Refuge Manager

Roy W. Carlson
Maintenance Man, General

Malvin E. Jensen
Mechanic-Patrolman

Chesley M. Dinkins
Laborer-Patrolman

William J. Schmitz
Refuge Clerk
(Clerk-Typist)

January 16, 1948

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I. GENERAL

A. Weather Conditions.

The weather this period has been generally characterized by below average precipitation and somewhat less fluctuation between temperature extremes. Minimum temperatures were generally higher (10 days, only, of minimum temperatures of zero or below) but maximum temperatures were generally lower (November and December had 20 days, only, of maximum temperatures above freezing). The first general snow occurred on November 10 but, contrary to the fall of 1946, the snow fell on dry, unfrozen soil and has not subsequently thawed. It is likely, therefore, that much of the spring run-off will be absorbed by the ground. Strong winds have not been too prevalent and the early snow did not drift to any appreciable extent. Consequently, all areas are covered by a thin mantle of ice and crusted snow. Following is a tabulation of weather conditions for this period and for the corresponding periods of 1945 and 1946, as compiled from the records of the Kenmare Weather Station:

			Temperatures	
1947	Snowfall	Precipitation	Max.	Min.
September	None	.94	91	22
October	Trace	.19	82	27
November	11"	1.06	60	-4
December	9"	.69	42	-20
Total	20"	2.88 Extremes	91	-20
1946				
September	None	.87	96	30
October	12"	2.48	83	17
November	3"	.76	61	-12
December	3"	.64	48	-27
Total	18"	4.75 Extremes	96	-27
1945				
September	None	1.13	99	24
October	None	.80	84	14
November	4"	1.23	54	-9
December	7"	.73	45	-26
Total	11"	3.89 Extremes	99	-26

Of interest is the fact that calendar year 1947, with a total precipitation of 21.76 inches, is the second "wettest" year on record (dating from 1894) for this locality, exceeded only by the 22.96 inches of 1943.

B. Water Conditions.

The water remained open in all units until November 4th at which time successive days of sub-freezing temperatures froze the entire area solidly. Several hundred mallards kept a hole open in the Upper Lake until November 19 and no waterfowl have been present since that date.

As might be expected, none of our pool areas are deficient of water and the Upper Lake (Unit No. 1) is at a record winter height. While pools No. 2 to 8 are slightly below their respective spillway crests, the margin in every case is so small that a very nominal spring run-off will fill them to overflowing. To hold the rise in Unit 1 to a minimum next spring it is our plan to halt any diversion of the overflow of Units 3 and 4 into Unit 1 by passing this surplus water south and out of the refuge. The following tabulation shows the ice levels prevailing this winter and during the previous four winters:

Pool No.	1947	1946	1945	1944	1943
1	13.64	10.74	10.64	10.80	10.60
2	8.42	7.72	7.40	7.60	8.70
3	8.98	8.56	8.20	9.12	9.60
4	9.03	8.02	7.68	9.30	9.60
5	7.36	7.16	7.25	7.50	7.50
6	5.96	5.58	5.70	6.20	6.60
7	4.96	3.34	3.82	6.10	6.34
8	5.84	5.30	5.14	6.10	6.50

C. Fires.

It has been a banner year from the standpoint of refuge fires!. No fires occurred this period and we had only two fires, totalling less than 3 acres, during the entire year. Because of the dense forage growth conditions were very hazardous during September and October and "lady luck" surely had us by the hand during this time. The carry over of dense stands of dead vegetation is likely to present a similiar hazard next spring prior to the time that the new growth becomes dominant.

II. WILDLIFE

A. Migratory Birds.

1. Population and Behavior. Extremely favorable weather during September and October, combined with an over abundance of good waterfowl food, made the Des Lacs Refuge a favored rendezvous for the southbound migrants this fall. They came early and remained for a longer period than usual, several species choosing to remain far beyond their usual departure date.

Peak concentrations, which occurred during late October and early November were 48% greater than those of 1946. We question whether this is a true index of population increases in the flyway, however, since the conditions mentioned above combined to hold for a longer period the birds which would have normally moved on through. In other words, the difference between "peak concentrations" and "total for period" has been smaller than usual this fall.

At the beginning of the period we had a population of approximately 10,000 waterfowl on the refuge, consisting primarily (in order of abundance) of mallards, pintails, coots, blue-winged teal and gadwalls. An

airplane census on September 15 revealed a population of 8275 waterfowl proportioned as follows: 25% mallards, 20% pintails, 15% blue-winged teal, 15% coots, 10% ruddy ducks, 15% others (including canvasbacks, redheads, gadwall, baldpates, green-winged teal and shovellers). This would indicate that between September 1 and September 15 we had an exodus of many of the resident species, particularly of gadwalls, coots, blue-winged teal and shovellers, and an appearance on the scene of increased numbers of ruddy ducks, canvasbacks, redheads and green-winged teal.

Another airplane census on November 5, shortly after the peak migration was reached, showed a population of 63,000 waterfowl on the refuge. Of this total, at least 60,000 were mallards, 600 were lesser scaup and the balance were pintails, green-winged teal and canvasbacks.

As mentioned previously, several duck species remained on the refuge beyond their usual departure date. Notable in this respect was the blue-winged teal, several of which were still present as late as October 29. A few of the other normally early-departing species, such as the gadwall, baldpate and shoveller, were here until mid-October. Practically all waterfowl departed with the freezing of the water areas on November 6th. Some 3000 mallards, including 30 hunting cripples, made an heroic effort to maintain an open water hole in the Upper Lake but heavy snows which covered the neighboring stubble fields convinced the 100 remaining "die-hards" of the futility of remaining here longer and all that could fly departed on November 19.

The goose flight through this area was extremely poor and did not favorably compare with the poor flight of last fall. Our only observation of white-fronted geese was on September 24, when a flock of about 40 birds was observed. A few small, scattered flocks of Canada geese were observed from time to time until early November.

Rather peculiarly, not a single whistling swan was seen or reported as being seen in this locality this fall. The sandhill crane flight through the Des Lacs Valley was insignificient. A single flock was observed passing over the refuge on September 20 for our only sight record.

A large portion of the eared grebe population remained until after October 1st and two individuals of this species remained until November 19 in a water hole kept open by a concentration of mallards. These appeared to be healthy, adult birds but for some reason were reluctant to leave. The Western grebes also remained later than usual, with a large population still present on October 1. Twenty-four individuals were observed on October 19 and two were last seen on the refuge on October 29. Very few white pelicans were present here this fall but two individuals, either ailing or merely being individualistic, chose to remain with us until ice conditions drove them out or resulted in their destruction. They were last observed on November 3 and 4 in the middle of a large raft of mallards.

The shorebird migration this fall was not spectacular in any

respect and no unusual observations were made. Greater and lesser yellow-legs, long-billed dowitchers and Wilson's phaloropes were present during early September but not in numbers comparable to previous years. Franklin's gulls were very abundant in this locality during the first half of September, an estimated 15,000 being present on the refuge on September 8.

On September 24 a new refuge record for the Townsend's solitaire (Myadestes townsendi) was established. This bird remained in the vicinity for two days and was positively identified by three reputable observers.

The annual Christmas bird count was made on December 21 in cooperation with Dr. and Mrs. R. T. Gammell of Kenmare. A total of approximimately 642 individuals, represented by 13 species, were seen. The weather was ideal for a winter bird count but deep, crusted snow made travel almost impossible except on well-travelled roads. We were therefore unable to reach some of the better areas or to observe some of the species which we knew were present.

2. Food and Cover. Food and cover conditions on the refuge have been excellent in every respect. Large beds of sago pondweed, smartweed, and other aquatics and the residue from better than average agricultural crops have been extensively utilized. While most of the refuge crop lands were harvested this season for depredation feeding on other refuges, the Service's share of the crops in agricultural units No. 15, 16, 17, 19, 20 and 22 comprising approximately 407 bu. of wheat, 740 bu. of barley and 50 bu. of durum were swathed and left in the fields for wildlife food. In some instances this grain was not utilized to any appreciable extent.

While it did not appear at the beginning of this period that duck depredations would present any problem this season, there were a few complaints of damage during early September. In every instance the damage appeared to be a direct result of too long a delay between the time the grain was swathed and the time it was picked up with the combines, a delay not occasioned so much by adverse weather as by the understandable desire of the farmers to take advantage of good weather and high prices and till every possible acre of land regardless of whether they had the facilities for harvesting the crops within a reasonable time. In spite of the good weather prevailing during September and October many farmers in this locality were still threshing and combining flax when the November snows arrived.

3. Botulism. For the first time in several years there was no evidence of botulism any where on the Des Lacs Refuge this season.

4. Lead Poisoning and Other Diseases. There was no evidence of loss from lead poisoning or other diseases among waterfowl this period. Our observations lead us to believe, however, that the crippling loss during the hunting season was greater than normal.

B. Upland Game Birds.

1. Populations and Behavior. As has been indicated in previous reports the present status of the ring-necked pheasant in this locality is not favorable. Early season nesting conditions were not good but there was evidence this fall of a fairly successful late hatch among the small nucleus pheasants which survived the winter of 1946-47. Weather conditions in the early fall were ideal and this factor, together with a closed hunting season in this part of the state, enabled the late-hatched birds to mature. In spite of the protection afforded the pheasant this season our fall population of this bird is not more than 50% of what it was a year ago. Another disasterous winter, and the prospects at this writing are not encouraging, will eliminate the pheasant as a legitimate game bird in this locality for several years to come. Indications are that the European partridge is holding its own, with no definite population trend either way. On the other hand, the sharp-tailed grouse population in this locality appears to be continuing to increase and we estimate that the refuge is contributing this winter to the support of approximately 500 of this species. Prairie chickens continue to border on extinction with a single observation considered as a rarity.

2. Food and Cover. Until the advent of snows in early November the food and cover conditions for upland game birds in this locality were extremely good. Agricultural crops were good and the seasonal growth of native shrubs and seed-bearing plants has been excellent. Unfortunately, however, the 20 inches of snow received this period has not drifted to any appreciable extent but has largely lain where it fell, thereby covering the stubble and scattered grain in the agricultural fields. The snow has packed and crusted and there is little liklihood that the fields will again be bared until the spring thaws. Some feed for the pheasants is available in scattered straw stacks but prospects are that the pheasant mortality will be extremely high again this winter. It is not expected that our grouse will encounter any difficulty in surviving the winter since they are not as dependent on ground feeding as is the pheasant. Rose hips and other winter buds are bountiful.

3. Disease. There has been no evidence of disease among the upland game bird species. There was no open hunting season this fall on any of these species in this section of the state.

C. Big Game Animals.

1. Populations and Behavior. This refuge was not opened to deer hunting this fall. All areas surrounding the refuge were opened, however, and the refuge deer population, which ranges in and out at will, was consequently reduced to some extent. The area outside the refuge in Ward County was opened to the taking of one deer of either sex while the area in Burke County was restricted to bucks. The hunting pressure here was comparatively light because of the good hunting offered by the

Souris refuge and as near as we can determine about 50 deer consisting of one-half bucks and one-half does were removed from this area. This reduction just about offsets the season's increment and we would judge that our wintering population is approximately the same as that of a year ago. This estimate will be verified or corrected by an aerial census sometime in January.

2. Food and Cover. Ample browse is available in the wooded coulees for the resident deer population and we do not expect that there will be any food deficiencies for these animals this winter.

3. Disease. There has been no indication of disease among any of the deer and the animals taken during the hunting season were fat and in good condition. The crippling loss resulting from the hunting season has been negligible. We have a report of only one crippled deer and after a careful post-season examination of most of the favored concentration areas we have failed to observe a single crippled or dead animal.

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

Our population of fur-bearing animals this winter is not large. As indicated in previous reports, our refuge muskrat population is at a very low point as a result of freeze-outs during the 1946-47 winter. A total of six muskrat houses was counted in our aerial census of November 5 and these were at scattered locations in the Upper Lake. Mink signs are occasionally seen and we are undoubtedly supporting about the usual number of these animals. Weasels seem to be almost absent from the area and skunk and raccoon signs this period have not reflected as large a population of these animals as our spring and summer estimates have shown to be present. A few beaver are present at scattered points on the refuge and badgers are common in the upland areas. We have not observed a single fox or coyote on the refuge and it is only occasionally that any signs are encountered. Without doubt the increasingly-popular practice of hunting these animals from airplanes has resulted in a marked reduction in their numbers in these prairie regions and as long as this type of hunting continues the populations of these predators should not again reach serious proportions in this locality.

Rabbits continue on an upward cyclic trend with the snowshoe showing probably the greatest percentage of increase. The numbers of these rodents, however, still are far below the peak which they attained a few years ago. Porcupines are common to abundant and some control of these rodents should be carried out.

E. Predacious Birds, including Crows and Magpies.

The southward migration of crows was much reduced from that of last year with approximately 1,000 passing through in early September. With the advent of winter snows increased numbers of magpies have been

seen in the protected coulees and we have probably 200 of these birds wintering here. The previously-reported "hawk depression" appears to have abated somewhat since we had fairly satisfactory migrations of red-tailed and Swainson's hawks in September. A few American rough-legged hawks have been present this fall and an occasional golden eagle was observed during the early winter. A few great horned owls are present without any perceptible change in their numbers from year to year. A snowy owl was observed adjacent to the refuge on December 2 and two additional individuals were observed on December 21.

F. Fish.

No revised data is available on refuge fish life. Some bullheads are reported to be present in the Middle Des Lacs Lake but we have not seen so much as a single individual. The fish life in the Upper Lake is still an unknown quantity, although we are of the opinion that it is supporting some desirable game fish species.

III. REFUGE DEVELOPMENT - MAINTENANCE

A. Physical Developments.

No new construction projects were undertaken on the Des Lacs Refuge this period. Following is a list of the principal maintenance projects which were completed:

1. Transported wheat and barley from fields to granary at Welch place.
2. Loaded grain trucks from Lower Souris Refuge with 485 bu. of Des Lacs wheat and several bushels of grain from Lostwood and assisted Refuge Manager Carter in hauling barley from Upper Souris, Lostwood and Des Lacs Refuges and loading it in boxcar at Kenaston for shipment to Bosque del Apache Refuge.
3. Measured hay cut on Des Lacs and Theodore Roosevelt Refuges.
4. Mowed weeds from refuge service trails and dikes for second time during the season.
5. Cleaned burning torches and burned firebreak around Helle buildings.
6. Supervised insulation of Welch residence by contractor and painted kitchen, dining room, living room, entryway to kitchen and stairway of this residence.
7. Moved and reinstalled section of refuge boundary fence south of Helle place to inclose new acquisition .
8. Replaced damaged and obsolete boundary markers in northern area of refuge and installed additional markers along unfenced portion of refuge.
9. Assisted contractor in cleaning furnaces and flues in Qtrs. No. 1 and 3 and in office building, installed new filters in furnaces of Qtrs. No. 1 and office, and installed new stovepipes in pumphouse.

10. Remodelled, papered and painted interior of Qtrs. No. 8 and repaired storm windows for this residence.
11. Installed new hot water coils in furnace of Qtrs. No. 1.
12. With motor patrol repaired service trail along west side of Upper Lake in places where improper drainage and erosion had caused damage.
13. Installed another concrete culvert in service trail north of Welch place.
14. Repaired Government-owned water meter on City line at Welch place.
15. Checked condition of electrical wiring with electrician, installed weather stripping around doors and remodelled coal bin of Welch residence.
16. Cut emergent growth from upstream side of No. 8 spillway, raised flashboards on No. 3 spillway and dropped them on No. 4 spillway.
17. Cleaned and installed storm windows at headquarters and at repair shop.
18. Transported coal from local mine to refuge buildings at least once each week since October 23rd.
19. Loaded and shipped several barrels of copper sulphate to Fisheries Stations in the south.
20. Constructed and installed auxiliary gasoline tank on Ford Stake truck, Tag #I-16948.
21. Constructed new grain box for Ford Stake Truck, Tag No. I-16948.
22. Maintained, serviced and made some extensive repairs to refuge automotive and other equipment units to keep them in satisfactory operating condition.
23. Installed new hot water heater and insulation jacket for tank in Qtrs. No. 8 and installed insulation jacket on tank in Qtrs. No. 3.
24. Expended 390 man-hours of maintenance and repair labor on equipment being used on Job 5070 at the Upper Souris Refuge.
25. Expended 102 man-hours of clerical labor on Job 5070 at Upper Souris Refuge.
26. Two and one-half man-days spent at Lostwood Refuge with motor patrol leveling back slopes and tops of unfinished service trails and dam.
27. Assisted manager at Lostwood Refuge in replacement of dome in furnace of headquarters residence.
28. Bladed snow from road into refuge headquarters.

B. Plantings.

1. Aquatics and Marsh Plants. None.

2. Trees and Shrubs. None.

3. Upland Herbaceous Plants. None.

4. Cultivated Crops. None by refuge personnel. A total of 1613.4 acres of refuge agricultural land were leased this season under cooperative agreements. Of this total, 1157.9 acres were planted to crop and 455.5 acres (approximately 28%) were summer fallowed.

The following tabulation presents some comparative data on production and yields for this year and for 1946:

Crop	1946 Acreage	1947 Acreage	1946 Bu. per Acre	1947 Bu. per Acre
Hard Wheat	667.3	453.4	5.6	12.5
Barley	357.6	334.1	7.1	18.0
Durum	--	56.6	--	10.9
Oats	22.7	124.4	17.6	23.5
Flax	158.8	189.4	6.0	5.4
Oats-Millet	7.6	--	--	--
Summer Fallow	263.5	455.5		
Totals:	1477.5	1613.4		

It will be noted from the above that our average yields for 1947 of hard wheat and barley were 123% and 154% respectively, over those of the 1946 season. The average oat yield was 34% better and the flax was slightly under that of 1946.

As a possible means of improving the quality of our agricultural lands our share-cropping permits have all been issued for 5-year terms with stipulations to provide for crop rotations and for the summer fallowing of at least one-third of the total acreage each season. In line with this, it will be noted that our summer fallow acreage this season was almost double that of 1946.

On a monetary basis, and using average market prices of $2.77 for wheat, $1.98 for barley, $2.70 for durum, $1.03 for oats, and $6.50 for flax, we have secured some rather interesting data on the refuge crop production this season:

Crop	Value Permittee's Share	Value Gov't Share Harvested	Value Gov't Share Unharvested	Total Value	Gross Returns Per Acre
Hard Wheat	$10,456.75	$4099.60	$1127.39	$15,683.74	$34.59
Barley	7,286.40	3134.34	1465.20	11,885.94	35.58
Durum	1,526.20	--	135.00	1,661.20	29.35
Oats	3,011.72	--	--	3,011.72	24.21
Flax	6,708.00	--	--	6,708.00	35.42
Totals:	$28,989.07	$7233.94	$2727.59	$38,950.60	

During the 1947 season 1200 bu. of wheat and 470 bu. of barley, valued at $4,250, were transferred to the Lower Souris Refuge for depredation feeding and 1239 bu. of wheat and 1026 bu. of barley, valued at $5460, were transferred to the Tennessee and Bosque del Apache Refuges.

C. Collections.

1. Seed or other Propagules. None.

2. Specimens. None

D. Receipts of Seed and Nursery Stock. None.

IV. ECONOMIC USE OF REFUGE.

A. Grazing.

While the pasture utilization on the Des Lacs Refuge was considerably greater this season than last, it was still far below the carrying capacities established for the refuge. All grazing units with the exception of GU-8 were leased this season but in almost every instance the units were not stocked to the approved capacity. There has been a tendency in recent years by the farmers in this locality to reduce their livestock herds and concentrate their efforts on the production of soil crops. All areas had a luxuriant forage growth and there were no instances where of over-utilization.

B. Haying.

There was a brisk demand for hay from the better haying units on the Des Lacs Refuge this season and the forage growth was heavy. We have consequently had a much larger cutting of hay on the refuge this year than for the past few years.

As a public relations gesture and to reduce the fire hazard potentialities we have this season issued hay cutting permits on the Theodore Roosevelt Refuge to those ranchers in the locality who demonstrated a need for additional hay. A total of 138.7 tons were removed from the North Unit and 310.1 tons from the South Unit, bringing incomes of $84.41 and $155.05 respectively.

C. Fur Harvest.

As an added inducement to trappers to offset the discouragingly low price of most furs, our fur harvest program was liberalized to some extent this season. The program was set up to permit the unrestricted take of all species authorized for removal (which include mink, weasel, skunk, raccoon, badger, fox and coyote) and to allow the trappers to retain the pelts of all animals taken with the exception of mink and weasel. The latter were to be shared as usual on a 50-50 basis. Because of the excessively low populations no muskrats or beaver were authorized for removal. As expected, the response to our local appeal for trappers has been negligible. A local farmer has agreed to trap during his spare time and a permit has been issued to him but he has not had any success as yet. It was thought that refuge personnel might be assigned this fall to the removal of some of the more abundant predator species but the excessive demand of other high-priority activities has made it impossible to devote any time to this activity.

V. FIELD INVESTIGATION OR APPLIED RESEARCH

A. Progress Report.

No projects of this type were under way this period.

VI. PUBLIC RELATIONS.

A. Recreational Uses.

The Tasker's Coulee Recreational Area was heavily used by the local public as long as good weather prevailed. Little other use has been made of the refuge this period since fishing in the Middle Lake has not been attempted and the ice has not been satisfactory for skating.

B. Refuge Visitors.

Date	Name	Title-Dep't	Purpose
9/1	Jesse Thompson	Reg. Supvr., Law Enf.	Grain transfers
	Roy Ferguson	Pilot	Trans. Thompson
9/2	F. C. Gillett	Reg. Refuge Supvr.	Refuge Inspection
	Dr. Cottam	Asst. Director	Refuge Inspection
	Dr. Swanson	Chief, Research Div.	" "
	H. S. Peters	Flyway Biologist	" "
	C. E. Addy	Biologist	" "
	D. H. Janzen	Regional Director	" "
9/8	John Steenis	Biologist	Look over refuge
	Seth H. Low	Refuge Mgr-Salt Plains	" " "
9/9	C. L. Horner	Game Mgt. Agent	Duck Depredations
9/27	Harry A. Jensen	Game Mgt. Agent	Grain transfers
10/1-2	Mr.&Mrs.Dick Bird	Canadian Photographers	Visit
10/7	Harry A. Jensen	Game Mgt. Agent	Enforcement Patrol
	E. S. Brynjolfson	State Warden	" "
	F. S. Dart	Mgr-Upper Souris	Secure truck
	Clarence Buer	Patrolman "	" "
10/8	Harry A. Jensen	Game Mgt. Agent	Enforcement Patrol
	E. S. Brynjolfson	State Warden	" "
	Mr. Feldner	N.D. State Hy. Dept.	Hy. repairs
10/10	Harry A. Jensen	Game Mgt. Agent	Enforcement Patrol
	E. S. Brynjolfson	State Warden	" "
	W. J. Schmitz	Clerk-Upper Souris	Visit
10/20-21	Irwin Torkildson	Sullys Hill	Secure materials
10/22	Ira Stanley	Reclamation Service	Irrigation plans
10/23	A. G. Huey	Regional Engr.	Plans Upper Souris Proj.
10/27	Wm. J. Schmitz	Clerk-Upper Souris	E.O.D. Des Lacs
	F. S. Dart	Manager " "	Deliver trucks
	J. L. Stillings	Mechanic " "	Deliver trucks
	Clarence Buer	Patrolman "	" "
10/28	Fred Ege	Const. Foreman	Deliver truck
10/29	E. S. Brynjolfson	State Warden	Enforcement patrol

Date	Name	Title-Dep't	Purpose
11/3	M.C. Hammond	Biologist	Banding data
11/4	Wm. V. Taylor	Engineer	Inspect structures
	A. G. Huey	Reg. Engineer	" "
11/5	Ed. Wellein	Pilot-Biologist	Wildlife census
11/6	Wm. V. Taylor	Engineer	With members of
	A. G. Huey	Reg. Engineer	Joint Water Commission
	Fred Ege	Const. Foreman	Look over lumber
11/17	Willis Bandy	Bu. Land Mgt.	Return keys
11/19	E. S. Brynjolfson	State Warden	Roosevelt Patrol
11/20	Johnny Pickar	Mech-Lacreek	Lumber for Upper Souris
11/25	Babe Kendall	Mech-Long Lake	Service Pickup
12/9	Ira Stanley	Reclamation Service	Minot Convention
	E. J. Purcell	" "	" "
12/12	J. U. Fitzgerald	Mont-Dakota Utilities	Power line right-of-way
12/13	Morris Wright	" " "	" " " " "
12/21	Johnny Pickar	Mech-Lacreek	Load stove & wire
12/31	Fred Ege	Const. Foreman	Upper Souris plans
12/31	Mr. Moberg	Dragline Operator	" " "

C. Refuge Participation.

The manager attended the Research Conference at Bottineau, North Dakota on September 4, 5, and 6, at which time much was learned concerning the over-all waterfowl picture and the difficulties encountered in establishing the annual waterfowl regulations.

The motion picture "Fighting Large Brush and Grass Fires" was presented, in collaboration with the Lostwood Refuge, to the Kenmare Public Schools on October 3. It was viewed by 250 students and teachers and was very well received.

D. Fishing.

The fishing season closed on September 15 in the Middle Lake. No fishing was done on the refuge this period.

E. Hunting.

By the closing date of the waterfowl hunting season a total of 376 duck stamps had been sold by the Kenmare post office. This would mean that nearly one person out of every five in the town hunted migratory waterfowl this fall. Because of the "bluebird" weather, reduced bag limits, and primarily the restriction on shooting hours the individual duck kill was not large. The best hunters did not average more than three birds per trip and a large number made many hunting forays without success. It is our opinion that crippling losses this fall were higher than normal--a result of the clear, bright weather and mid-day shooting which tended to make the birds fly high and to induce the hunters to attempt kills at too great a distance.

The deer hunting in this locality was highly successful this fall and a majority of the large number of hunters who went into the field had no difficulty in bagging an animal. The Souris refuges with their controlled hunting and large deer populations were favored by most of the hunters. Consequently, the pressure was not great in the open territory surrounding this refuge. As near as we can determine, approximately 50 deer were removed from this locality. This will about equal the season's increment.

F. Violations.

While as much enforcement patrol was undertaken as refuge operations would permit, no violations were apprehended by Des Lacs Refuge personnel during this period. Patrol assistance was furnished by Game Agent Harry A. Jensen and State Warden E. S. Brynjolfson during the first four days of the season and Mr. Brynjolfson furnished some splendid cooperation during the balance of the waterfowl season and during the subsequent open deer season.

VII OTHER ITEMS.

A. Items of Interest.

Mr. William J. Schmitz entered on duty on October 27, 1947, as refuge clerk (clerk-typist) by transfer from the Upper Souris Refuge. We have been without clerical assistance since the transfer of Mr. Harrison to the Lower Souris Refuge last January and Mr. Schmitz, with his background of experience, is a very welcome addition to our family.

B. Photographs. None.

Prepared and submitted by:

Forrest A. Carpenter

Forrest A. Carpenter
Refuge Manager

January 16, 1948

Approved: _____

Acting Regional Director

Date: JAN 23 1948

WATERFOWL

Refuge Des Lacs Refuge Months of September to December 194 7

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. Swans:									
Whistling swan									None
II. Geese:									
Canada goose			50	10/15-30					100
Cackling goose									
Brant									
White-fronted goose	40	9/24	40	9/24					80
Snow goose									None
Blue goose									None
III. Ducks:									
Mallard			60,000	10/25-11/15	100	11/19			62,000
Black duck									None
Gadwall			1 1000	9/1-20	Few	10/15			1500
Baldpate			500	9/10-20	Few	10/15			500
Pintail			2000	9/10-10/15	Several	11/7			3500
Green-winged teal			200	9/20-10/5	Few	11/7			500
Blue-winged teal			1500	9/1-20	Several	10/29			2000
Cinnamon teal									None
Shoveller			200	9/10-20	Few	10/15			500
Wood duck									None
Redhead			200	9/15-21	Few	10/15			500
Ring-necked duck									None
Canvas-back			400	9/10-10/5	Few	11/7			700
Scaup			600	10/25-11/5	Few	11/7			600
Golden-eye	None observed								None
Buffle-head	None observed								None
Ruddy duck			700	9/10-20	Few	10/25			750
Am. Merganser	2	11/19							10
IV. Coot:			2500	9/1-5	1	11/15			2500

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 75,140

Peak waterfowl numbers 69,690

-Areas used by concentrations No obvious preference--governed largely by location of grain field when they were feeding.

-Principal nesting areas this season _____

- _____

Reported by Forrest A. Carpenter, Refuge Mgr.

INSTRUCTIONS

(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) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.

(3) Peak Concentration: 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 in the reporting period.

(5) Young Produced: 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.

(6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

2338

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge Des Lacs Refuge Months of September to December 1947

(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			100	9/1-20	2	11/19				100
Western Grebe			500	9/1-20	2	10/29				500
Pied-billed Grebe										100
White Pelican					2	11/4				100
Double-Crested Cormorant			300	9/1-20						300
Great Blue Heron					1	10/29				20
Black-crowned Night Heron			100	9/1-20	Few	10/11				100
American Bittern			20	9/1-20						20
*Sandhill crane	Several	9/20		9/20-21						100

*No sandhill cranes actually used refuge; observations were of those passing through on migration.

II. Shorebirds, Gulls and Terns:										
Greater Yellow-legs			50	9/1-10						100
Lesser Yellow-legs			200	9/1-10						300
Long-billed Dowitcher			500	9/1-15						500
Wilson's Phalarope			Several	9/15						100
Franklin's gull			15,000	9/1-10	Few	11/3				17,500

(over)

(1)	(2)		(3)		(4)		(5)	(6)
III. Doves and Pigeons:								
Mourning dove								
White-winged dove								
IV. Predaceous Birds:								
Golden eagle	3	10/13			Still here			10
Duck hawk					1	9/10		5
Horned owl			10	Resident				10
Magpie			200	11/1-12/31	Still here			200
Raven								
Crow			1000	9/1-20	Few	11/3		1000
Red-tailed Hawk	7	9/7						20
Swainson's Hawk			100	9/20-26				200
Am. rough-legged hawk	1	11/8			Still here			10
Sparrow Hawk			50	9/23-25				100
Snowy Owl	1	12/7			Still here			5
Short-eared Owl	1	10/24			4	11/17		10

Reported by Refuge Personnel, with assistance of observation records supplied by Dr. & Mrs. R. T. Gammell.

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.

Form NR-2 UPLAND GAME BIRDS 1613

Refuge Des Lacs Refuge, Kenmare, N. Dak. Months of September to December, 1947

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked Pheasant	2,000 acres agric. land, 8,000 acres grass, 3,000 acres brush; 13,000 acre total of upland game bird habitat	32				---None---			400	There was no open hunting season in this locality this year on any of the upland game bird species.
Europ. Partridge		87				---None---			150	
Sharp-tail Grouse		26				---None---			500	
Prairie Chicken		1300				---None---			10	

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 Des Lacs Refuge, Kenmare, N. Dak. Calendar Year 1947

(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 (Est.)	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	2,000 agricultural land 8,000 grass 3,000 brush 13,000 acres	50	* 50	-	-	--	-	-	--	--	----	200	100	M-2 to F-3

* The refuge was not opened to hunting. Removals shown are of refuge deer taken outside the boundaries.

Remarks:

Reported by _____

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</u> <u>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

Form NR-5 DISEASE 1616

Refuge DES LACS NATIONAL WILDLIFE REFUGE Year 194 7

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 _____

8/

Form NR-6

FISH

1617

Refuge Des Lacs National Wildlife Refuge Year 194_7

Species	Relative Abundance	Sport Fishing		Commercial Fishing		Restocking		Number removed for Restocking
		Man days Fishing	Number Taken	No. of Permits	Pounds Taken	Number Stocked	Area Stocked	
Bullhead	Few	10	Few					
Perch	No evidence		None					
Crappies	No evidence		None					

The above information applies to Middle Lake, the only portion of refuge open to public fishing. No sampling was made of Upper Lake but there are undoubtedly some of the above species present in that area.

REMARKS:

61

3-1757
Form NR-7
(April 1946)

PLANTINGS
(Marsh - Aquatic - Upland)

Refuge Des Lacs National Wildlife Refuge Year 1947

Species	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount & Nature of Propagules	Date of Planting	Survival	Cause of Loss	Remarks
No plantings made this period.								

TOTAL ACREAGE PLANTED:

Marsh and aquatic.....
Hedgerows, cover patches.....
Food strips, food patches.....
Forest plantings.....

20

Form NR-8
(Revised)

CULTIVATED CROPS

Refuge: Des Lacs Refuge Year 194 7

42675

Permittee (If farmed by refuge personnel, so indicate)	Permit No.	Unit or Location	Crops Grown	Ave. Yield per Acre	Permittee's Share		Government's Share or Return				Compensatory Services, or Cash Revenue
							Harvested		Unharvested		
					Acres	Bu. Harvested	Acres	Bu.	Acres	Bu.	
Alvin Stroklund	17349	AU-1	S. fallow	—	—	—	—	—	—	—	12.0 acres fallow
Orin Ankenbauer	17345	AU-2	S. fallow	—	—	—	—	—	—	—	18.0 acres fallow
		AU-19	Wheat	10.0	—	—	—	—	27.5	275	
		AU-20	Wheat	8.9	54.3	485	—	—	—	—	
			Barley	12.0	29.0	350	—	—	20.6	247	
			S. fallow	—	—	—	—	—	—	—	32.0 acres fallow
		AU-21	Wheat	8.9	61.2	548	—	—	—	—	
Maurice Thompson	17344	AU-3	Wheat	15.6	85.4	1336	28.5	449	—	—	
Alfred Nelson	17344	AU-4	Wheat	13.6	21.0	300	7.0	82	—	—	
			S. fallow	—	—	—	—	—	—	—	11.5 acres fallow
Bolvin Jansen	17365	AU-5	Barley	19.2	25.5	448	7.9	156	—	—	
			S. fallow	—	—	—	—	—	—	—	11.8 acres fallow
Johannes E. Nielsen	17343	AU-6	Durum	11.2	41.6	466	—	—	—	—	
			Barley	15.2	40.7	646	27.4	387*	—	—	
			S. fallow	—	—	—	—	—	—	—	32.0 acres fallow
Percy Wade, Jr.	17347	AU-7	S. fallow	—	—	—	—	—	—	—	73.3 acres fallow

* (Includes 30 bu. eaten by deer)

Summary of Crops Grown:

Crop	Acreage	Permittee's Share		Government's Share				Total Revenue
		Acres	Bushels	Harvested Acres	Harvested Bu.	Unharvested Acres	Unharvested Bu.	$
(SEE FOLLOWING SHEET FOR SUMMARY)								

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DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS

Cultivated Crops Report Form NR-8 should be prepared on a calendar-year basis for all crops harvested or utilized during the calendar year and submitted with the December 31 refuge report.

Permittee - List each permittee separately. If lands of the refuge are farmed by refuge personnel or hired labor, this should be indicated in the Permittee column.

Permit No. - List the number of the Special Use Permit issued to the individual.

Use or Location - The Unit No. or name specified in the Economic Use Plan should be listed in this column.

Crops Grown - A separate line of the form should be used for each crop grown by each permittee or by refuge personnel. This is important, since if each crop grown by each operator is not specifically enumerated, the report will be of no value for statistical purposes.

Average Yield per Acre - It is important that the average yield per acre of each crop grown by each operator should be shown.

Permittee's Share - Only the number of acres harvested or 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. It is requested that all crops harvested be reduced to bushels wherever possible, or, as in the case with the harvesting of seed such as that of sweet clover, alfalfa, bromegrass, etc., the total harvested crop in pounds may be shown. Timothy, alfalfa, or other hay harvested by the permittee should be shown on Form NR-10 and should not be shown in the Permittee's Share column.

Government's Share or Return - Harvested - Show the number of bushels harvested for the Government and the acreage from which this share is harvested, both for grain raised by refuge personnel and by permittees. Unharvested - show the exact number of acres of crops allowed to remain unharvested as food and cover for wildlife. An estimate of the number of bushels of grain that is available for the wildlife in such unharvested crops should be shown in the Bushels column.

Compensatory Services, or Cash Revenue - Show other services received by the Government in cooperative farming activities, the number of acres of food strips planted for wildlife, the amount of wildlife crops not otherwise reported that are planted by cooperators for the Service, or the cultivation of wildlife plantations. If the permit is on a fee basis, the total cash revenue received by the Service.

Form NR-8
(Revised)

CULTIVATED CROPS

Refuge Des Lacs Refuge Year 1947

42675

Permittee (If farmed by refuge personnel, so indicate)	Permit No.	Unit or Location	Crops Grown	Ave. Yield per Acre	Permittee's Share		Government's Share or Return				
							Harvested		Unharvested		Compensatory Services, or Cash Revenue
					Acres	Bu. Harvested	Acres	Bu.	Acres	Bu.	
Julius Hansen	18245	AU-8	Barley	33.8	41.1	1390	--	--	--	--	
			S. fallow	--	--	--	--	--	--	--	46.8 acres fallow
		AU-9	Barley	20.0	--	--	20.0	404	--	--	
			Flax	8.0	32.1	256	--	--	--	--	
		AU-11	Wheat	16.2	6.7	108	31.7	512	--	--	
			Flax	7.9	48.6	384	--	--	--	--	
		AU-12	Wheat	15.2	26.6	404	--	--	--	--	
Billie Mortensen	17339	AU-10	Wheat	10.3	15.5	130	39.8	457	--	--	
			Oats	21.2	103.9	2200	--	--	--	--	
			S. fallow	--	--	--	--	--	--	--	38.4 acres fallow
Roelf Aufforth	17350	AU-14	Barley	9.7	13.1	65	37.9	450	--	--	
			Flax	3.5	100.5	350	--	--	--	--	
			S. fallow	--	--	--	--	--	--	--	79.8 acres fallow
Floyd Bryan	17340	AU-15	Wheat	10.6	18.9	200	--	--	--	--	
			Barley	25.0	8.0	180	--	--	10.8	260	
		AU-16	Durum	10.0	10.0	100	--	--	5.0	50	
			S. fallow	--	--	--	--	--	--	--	23.7 acres fallow

Summary of Crops Grown:

Crop	Acreage	Permittee's Share		Government's Share				Total Revenue
		Acres	Bushels	Harvested Acres	Harvested Bu.	Unharvested Acres	Unharvested Bu.	$
	(SEE FOLLOWING SHEET FOR SUMMARY)							

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DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS

Cultivated Crops Report Form NR-8 should be prepared on a calendar-year basis for all crops harvested or utilized during the calendar year and submitted with the December 31 refuge report.

Permittee - List each permittee separately. If lands of the refuge are farmed by refuge personnel or hired labor, this should be indicated in the Permittee column.

Permit No. - List the number of the Special Use Permit issued to the individual.

Use or Location - The Unit No. or name specified in the Economic Use Plan should be listed in this column.

Crops Grown - A separate line of the form should be used for each crop grown by each permittee or by refuge personnel. This is important, since if each crop grown by each operator is not specifically enumerated, the report will be of no value for statistical purposes.

Average Yield per Acre - It is important that the average yield per acre of each crop grown by each operator should be shown.

Permittee's Share - Only the number of acres harvested or 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. It is requested that all crops harvested be reduced to bushels wherever possible, or, as in the case with the harvesting of seed such as that of sweet clover, alfalfa, bromegrass, etc., the total harvested crop in pounds may be shown. Timothy, alfalfa, or other hay harvested by the permittee should be shown on Form NR-10 and should not be shown in the Permittee's Share column.

Government's Share or Return - Harvested - Show the number of bushels harvested for the Government and the acreage from which this share is harvested, both for grain raised by refuge personnel and by permittees. Unharvested - show the exact number of acres of crops allowed to remain unharvested as food and cover for wildlife. An estimate of the number of bushels of grain that is available for the wildlife in such unharvested crops should be shown in the Bushels column.

Compensatory Services, or Cash Revenue - Show other services received by the Government in cooperative farming activities, the number of acres of food strips planted for wildlife, the amount of wildlife crops not otherwise reported that are planted by cooperators for the Service, or the cultivation of wildlife plantations. If the permit is on a fee basis, the total cash revenue received by the Service.

Form NR-8
(Revised)

CULTIVATED CROPS

Refuge Des Lacs Refuge Year 1947

42675

Permittee (If farmed by refuge personnel, so indicate)	Permit No.	Unit or Location	Crops Grown	Ave. Yield per Acre	Permittee's Share		Government's Share or Return				
							Harvested		Unharvested		Compensatory Services, or Cash Revenue
					Acres	Bu. Harvested	Acres	Bu.	Acres	Bu.	
Richard Hansen	17346	AU-17	Wheat	13.5	19.5	264	--	--	9.8	132	
			Barley	19.7	19.5	385	--	--	9.8	193	
			S. fallow	--	--	--	--	--	--	--	19.7 acres fallow
Myrl V. Kleinsmith	17342	AU-17a	Barley	20.9	10.3	218	10.4	216	--	--	
		AU-18	Oats	35.3	20.5	724	--	--	--	--	
			S. fallow	--	--	--	--	--	--	--	20.4 acres fallow
Joe Ankenbauer	17341	AU-22	Barley	9.8	--	--	--	--	4.1	40	
			Flax	5.1	6.2	42	--	--	--	--	
			S. fallow	--	--	--	--	--	--	--	6.1 acres fallow

Summary of Crops Grown:

Avg. Yield per Acre

Wheat	12.5 bu.
Barley	18.0 bu.
Durum	10.9 bu.
Oats	25.5 bu.
Flax	5.4 bu.

Crop	Acreage	Permittee's Share		Government's Share				Total Revenue
		Acres	Bushels	Harvested		Unharvested		
				Acres	Bu.	Acres	Bu.	
Wheat	453.4	309.1	3775	107.0	1480	37.3	407	$ None
Barley	334.1	185.2	3680	103.6	1585	45.3	740	
Durum	56.6	51.6	566	0	0	5.0	50	
Oats	124.4	124.4	2924	0	0	0	0	
Flax	189.4	189.4	1032	0	0	0	0	
Summer fallow	455.5	--	--	--	--	--	--	

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DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS

Cultivated Crops Report Form NR-8 should be prepared on a calendar-year basis for all crops harvested or utilized during the calendar year and submitted with the December 31 refuge report.

Permittee - List each permittee separately. If lands of the refuge are farmed by refuge personnel or hired labor, this should be indicated in the Permittee column.

Permit No. - List the number of the Special Use Permit issued to the individual.

Use or Location - The Unit No. or name specified in the Economic Use Plan should be listed in this column.

Crops Grown - A separate line of the form should be used for each crop grown by each permittee or by refuge personnel. This is important, since if each crop grown by each operator is not specifically enumerated, the report will be of no value for statistical purposes.

Average Yield per Acre - It is important that the average yield per acre of each crop grown by each operator should be shown.

Permittee's Share - Only the number of acres harvested or 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. It is requested that all crops harvested be reduced to bushels wherever possible, or, as in the case with the harvesting of seed such as that of sweet clover, alfalfa, bromegrass, etc., the total harvested crop in pounds may be shown. Timothy, alfalfa, or other hay harvested by the permittee should be shown on Form NR-10 and should not be shown in the Permittee's Share column.

Government's Share or Return - Harvested - Show the number of bushels harvested for the Government and the acreage from which this share is harvested, both for grain raised by refuge personnel and by permittees. Unharvested - show the exact number of acres of crops allowed to remain unharvested as food and cover for wildlife. An estimate of the number of bushels of grain that is available for the wildlife in such unharvested crops should be shown in the Bushels column.

Compensatory Services, or Cash Revenue - Show other services received by the Government in cooperative farming activities, the number of acres of food strips planted for wildlife, the amount of wildlife crops not otherwise reported that are planted by cooperators for the Service, or the cultivation of wildlife plantations. If the permit is on a fee basis, the total cash revenue received by the Service.

Form NR-9

COLLECTIONS AND RECEIPTS OF PLANTING STOCK
(Seeds, rootstocks, trees, shrubs)

1620

Refuge Des Lacs National Wildlife Refuge Year 194 7

Species	Collections				Receipts		Total Amounts on Hand	Amount Surplus
	Amount	Date or Period or Collection	Method	Unit Cost	Amount	Source		
None								

24

3-1570
NR-8a

REFUGE GRAIN REPORT

Refuge Des Lacs Refuge, Kenmare, N. Dak. Months of Sept. thru Dec. 1947.

(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.
Corn	20	-	20	-	-	-	-	20	-	20	0
Wheat	845	531	1376	485	-	-	485	891	-	91	800
Barley	535	603	1138	702	-	* 30	732	404	-	54	350
Screenings	75	-	75	-	-	-	-	75	-	-	75
Spelts **	191	-	191	-	-	*	-	191	-	191	0

(8) Indicate shipping or collection points Kenmare, North Dakota

(9) Grain is stored at **Lake Ilo Des Lacs grain stored in Welch and Powderhouse granaries.

(10) Remarks * Eaten by deer while stock piled in field. 485 bu wheat transferred to Lower Souris and 702 bu. barley transferred to Bosque del Apache Refuge this period.

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.

3-1760
Form NR-10
(April 1946)

HAYING AND GRAZING

Refuge Des Lacs Refuge, Kenmare, North Dakota Year 1947

Permittee	Permit No.	Unit or Location	Actual Acreage Utilized	Animal Use Months	~~Tons of Hay Harvested~~	Period of Use From - To	Rate	Total Income	Remarks
E. Ankenbauer	17526	GU-11	385	178.00		7/1-11/15/47	.50	89.00	Cattle
" "				36.81			1.00	36.81	Horses
John Aufforth	17523	GU-4	185	59.74		" "	.50	29.87	Cattle
Floyd Bryan	17530	GU-9b	220	96.22		6/1-11/15/47	.50	48.11	Cattle
Levi Emmel	17529	GU-1a	180	104.74		7/1-11/15/47	.50	52.37	Cattle
Clarence Gissel	17528	GU-10	205	54.52		" "	.50	27.26	Cattle
Frans Gissel	18255	GU-1	195 *	87.5		7/1-10/15/47	.50	43.75	Cattle
Clarence Hillestad	15619	GU-7	1415 **	44.61		9/3-11/15/47	1.00	44.61	Horses
Guy H. Johnson	18254	GU-1	*	38.		7/1-10/15/47	.50	19.00	Cattle
F. G. Kaufer	17524	GU-2	115	74.20		7/1-11/15/47	.50	37.10	Cattle
Lawrence Mott	15614	GU-9	228	152.62		7/20-11/15/47	.50	76.31	Cattle
J. E. Nielson	17525	GU-5, 6	320	95.24		7/1-11/15/47	.50	47.62	Cattle
Paul Overton	18045	GU-7	**	42.58		" "	.50	21.29	Cattle
J. B. Schou	18064	GU-8	285	139.38		7/1-10/31/47	.50	69.69	Cattle
Percy Wade Jr.	17527	GU-7a	390	121.38		7/1-11/15/47	.50	60.69	Cattle
" "				6.60			1.00	6.60	Horses

Totals:

Acreage grazed 4125 Animal use months 1332.14 Total income Grazing $710.08

~~Acreage cut for hay~~ ~~Tons of hay cut~~ ~~Total income Haying~~

3-1760
Form NR-10
(April 1946)

HAYING AND GRAZING

Refuge Des Lacs Refuge, Kenmare, N. Dak. Year 1947

Permittee	Permit No.	Unit or Location	Actual Acreage Utilized	~~Animal Use Months~~	Tons of Hay Harvested	Period of Use From - To	Rate	Total Income	Remarks
E. Ankenbauer	17501	HU-4a,5,5a	120		18.54	7/1-11/15/47	1.00	18.54	
O. Ankenbauer	17506	HU-1, 7	121		41.86	" "	1.00	41.86	
John Aufforth	15618	HU-10	35		9.42	8/4-11/15/47	.50	4.71	
Floyd Bryan	17504	HU-4c	15		4.81	7/1-11/15/47	1.00	5.00	Down payment exceeded total paym. required.
Gunnar Gagnum	17505	HU-8	50		22.94	" "	1.50	11.47	
Richard Hansen	17521	HU-4b	22		11.67	" "	1.00	11.67	
Myrl Kleinsmith	17502	HU-6	20		10.00	" "	1.00	10.00	
Alfred Nelson	17505	HU-1B	5		2.22	" "	1.00	2.22	

Totals:

Acreage cut for hay 388 Tons of hay cut 121.46 Total income Haying $105.47

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Form NR-11

TIMBER REMOVAL

Refuge Des Lacs National Wildlife Refuge Year 1947

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B.F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
None								

Total acreage cut over _____ Total income _____

No. of units removed B. F. _____ Method of slash disposal _____

Cords _____

Ties _____

_____

82

1622

LAKE ILO REFUGE.

I. GENERAL.

A. Weather Conditions.

Precipitation was below normal at the Lake Ilo Refuge during the September-December period. Temperatures were above normal and the small amount of snow received during the period had almost disappeared by the end of the period. Following are data on maximum and minimum temperatures and precipitation for the period.

Month	Precipitation	Snowfall	Max.Temp.	Min.Temp.
September	.66		89	25
October	.35	2.0"	84	24
November	.52	4.2"	59	- 2
December	.33	4.7"	47	-10
	1.86	10.9" Extremes	89	-10

B. Water Conditions.

The lake level was 6" below spillway crest at the beginning of the period and 9" below spillway on November 1. The lake froze over on November 9 with the exception of a small hole near the center which has been kept open by the ducks. The ice level at the close of the period was 9" below spillway crest and a measurement on December 31 revealed that it was 15" thick.

C. Fires. None.

II. WILDLIFE.

A. Migratory Birds.

Approximately 6,000 ducks were using the refuge at the beginning of the period. By October 1 this number had increased to 15,000 and a peak concentration of approximately 40,000 was reached during late October and early November. We estimate a total waterfowl usage of 69,200 for the report period. Approximately 6000 Canada and white-fronted geese used the refuge during migration. None of the migrating goose flocks were large and none remained on the refuge for any great length of time. Five lesser scaups and approximately 8,000 mallards were present on December 31 on the open water of the lake. An albino shoveller was present on the area the latter part of October.

Between 3,000 and 4,000 shorebirds used the refuge this period. Ninety white pelicans were present at the beginning of the period and remained until the latter part of October. Forty great blue herons were present on the area on September 1 and remained until early October.

B. Upland Game Birds.

Nesting conditions for upland game birds were not satisfactory this season due to the late spring and heavy June rains. The broods were small and a number of nests did not hatch. Approximately 150 pheasants were present on the refuge prior to the hunting season and this number had increased to approximately 200 by the close of the season. There was less hunting in this vicinity than for the past several years and the hunting around the refuge was much lighter than usual. The refuge populations of sharp-tailed grouse and European partridge appear to have decreased approximately 50%. Probably 50% of the local farm lands were posted this season and this, together with the decreased number of birds, prompted a large number of prospective hunters to seek their quarry elsewhere. Most of the local citizens felt that an error was made in opening Dunn County to upland game bird hunting this fall.

The farm crops in this locality were excellent this season and winter food for upland game birds is abundant. With favorable weather prevailing thus far the prospects are that the upland game birds will survive the winter without excessive mortalities.

C. Big Game Animals.

No big game animals were seen on the refuge this period.

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

The muskrat population, while still not large, appears to have increased considerably over that of last year. Several houses are in evidence in the southwest portion of the refuge and we would estimate that a present population of 100 of these fur bearers. Probably 20 to 30 mink are using the refuge. Four have been caught to date by the share-trapper. The water level is higher than usual this winter and the mink seem to stay in their dens or do their travelling under the ice. The skunk population is not large. Three have been caught to date by the share-trapper. No coyotes have been observed on the refuge this period but there appears to be a few present as tracks have been observed several times. Rabbits appear to be on the increase again as more have been observed than last year. Two beaver were present on the refuge this period. They cut 74 cottonwood trees and numerous willows in the recreational area and, to prevent further destruction, were removed in live traps by members of the State Game and Fish Department on October 18.

E. Predacious Birds, including Crows, Ravens, Magpies.

Four golden eagles, three prairie falcons, a duck hawk, and a few great horned owls were present on the refuge during the latter part of the period. The hawks have been catching ducks from the wintering flock and the eagles were observed taking the captured birds away from them on several instances.

F. Fish.

The catch of fish from Lake Ilo this season appears to be about equal to 1946. Fish populations have undoubtedly increased since water conditions were very good this year. Approximately 15,000 wall-eyed pike were planted in the lake during October by the State Game and Fish Department. Approximately 300 man-days of fishing occurred this period up until September 15 when the season closed. The September catch was principally perch, bullheads and bluegills. As reported on Form NR-6, the total estimated catch during the three-month fishing season was: bass, 500; bluegills, 4,000; crappies, 8,000; perch, 4000; catfish, 200; bullheads, 4,000; and suckers, 800.

III. REFUGE DEVELOPMENT-MAINTENANCE.

A. Physical Development.

Mr. Dinkins was on annual leave during the greater portion of the month of September, spent most of October on the dike repair project at Pretty Rock, and devoted a large portion of the month of November to easement refuge inspections and deer hunting patrol at the North Roosevelt Refuge. The following maintenance projects were undertaken, however, at Lake Ilo during the period:

1. Moved storage building from below dam to a site near headquarters. Installed new sills and wind braces and placed building on temporary foundation. This project has not been completed.
2. Cleaned out creek channel below spillway to lower water impounded on apron and in bowl of spillway. The channel was lowered approximately 18" for a distance of 200 yards.
3. Serviced and performed minor repairs on Ford dump truck I-16956, Chevrolet Pickup #I-16946 and the Delco electric generating unit.
4. Mowed and removed weeds from refuge roads.
5. Hauled two loads of scoria and repaired surface of road.

B. Plantings.

72 acres of wheat, barley and millet were planted this season under cooperative agreement. The refuge share was left unharvested but was either swathed or dragged to permit better utilization by wildlife. The crops this season were above average.

IV. ECONOMIC USE.

A. Grazing.

A grazing permit was issued to Mr. Fred Larsen of Killdeer, North Dakota, for 30 head of cattle for the July 15-November 15 season.

B. Haying.

Three hay harvesting permits were issued this season, under which 69 tons of hay were cut. Due to the good quality of the prairie hay there has been considerable demand for refuge hay harvesting privileges.

C. Fur Harvest.

A trapping permit has been issued to Mr. A. B. Rosendahl of Dunn Center, North Dakota, to authorize the taking of mink, weasel, skunk, fox and coyote from the refuge. The mink and weasel pelts are to be shared on a 50-50 basis and the trapper is allowed to retain the pelts of the other animals taken. As has been indicated above, his catch as of December 31 consisted of 4 mink, 1 weasel and 3 skunks. Mr. Rosendahl has sold his share of the mink for $37.50 each.

VI. PUBLIC RELATIONS.

A. Recreational Uses.

The recreational area which is maintained by Dunn County under cooperative agreement was not kept up to its usual standards this season due to the impossibility of securing adequate help. The area was kept clean and the trees were cultivated but the grass was not cut. Since freeze-up several skating parties have been held in the area. It is believed that the public use of this area has been equal to previous years.

B. Fishing.

The fishing was good this season and the fish were much better eating than usual because of the improved water conditions. Crappies were the principal fish taken during the early part of the season but these were replaced by perch, bluegills and bullheads during the closing days of the season.

CHARLES LAKE

I. GENERAL.

The snowfall and precipitation was below average in the vicinity of the Charles Lake Refuge this period. The crops in this locality were good. This area was not visited by refuge personnel during the period. The beaver have thus far been successful in maintaining their dam across the outlet and the water level has remained higher than in the past.

II. WILDLIFE.

Waterfowl unquestionably used this refuge to some extent during the fall migration and we are estimating a population comparable to previous years. Ring-necked pheasants continue to be numerous in this locality. The hunting pressure was extremely heavy here, however, and the refuge undoubtedly furnished a sanctuary for record numbers of these birds.

III. PHYSICAL DEVELOPMENTS.

To our knowledge the Mott Sportsmen's Association has not made any attempt to repair the damaged spillway on this area.

HIDDENWOOD

I. GENERAL.

Precipitation and snowfall in this area were below average for the period. The water level was 1½ feet below the high spring level when visited on November 5. The bulrush growth is much sparser than it has been in the past.

II. WILDLIFE.

We estimate a total waterfowl usage of 9880 for this area during the period with a peak population of 7260 birds during late October. Very few upland game birds were present on the area this period but there are probably as many as last season.

The muskrat population is probably 1/6 of what it was last season but mink appear to be more numerous. Trapping permits have been issued to local parties to remove mink, weasel and fox from the refuge.

III. PHYSICAL DEVELOPMENT.

No repair work was done on this area during the period.

LAKE OLIVER

I. GENERAL.

This area was not visited during the report period. It is believed that the water level remained satisfactory. It was one foot below spillway crest on August 29 and has probably not receded a great deal from this level. Precipitation and snowfall were below normal for the period. Crops were good in this locality.

II. WILDLIFE.

We are estimating a fall waterfowl usage comparable to last year for this area. This includes a peak waterfowl population of 2,780 and a total usage of approximately 3,800 birds. A few ring-necked pheasants and European partridges are present on this refuge and we believe that a few mink can be found here.

III. PHYSICAL DEVELOPMENT. None.

LAKE PATRICIA

I. GENERAL.

Very little water remained in Lake Patricia when it was visited on October 24. Farm crops in this vicinity were fair, only, and precipitation for the period was below normal.

II. WILDLIFE.

It is estimated that 1,440 waterfowl used this refuge during the period and that peak waterfowl numbers were about 1,170. There has been a marked decrease in the attractiveness of this area for waterfowl this season as a result of the extremely low water supply.

Ring-necked pheasants are abundant in this vicinity and it is estimated that 800 were using the area when visited on October 24. Rather peculiarly, however, the only pheasants observed in this vicinity were on the refuge. Local farmers reported that the hunting pressure was extremely heavy in this locality and they feel that too large a percentage of the birds were killed. Sharp-tailed grouse and European partridge populations appear to remain about the same.

Mink are reported to be numerous and trapping permits have been issued to two landowners for removal of these fur bearers from the refuge.

III. PHYSICAL DEVELOPMENT.

The weeds were cleaned out of the diversion ditch and the boundary markers were checked and repaired.

LEGION LAKE

I. GENERAL.

The water level on this area was just a few inches below spillway crest at the beginning of the period and was six inches below crest on November 5. Precipitation and snowfall in this area have been below average for the period.

II. WILDLIFE.

It is estimated that 23,150 waterfowl used this refuge during the period and that the peak concentration reached 16,500 in late October. A local farmer has reported the use of this area by 450 Canada and white-fronted geese this fall. Ring-necked pheasants, sharp-tailed grouse and European partridges make some use of this refuge but their numbers are not large.

A landowner has been issued a permit to trap fur bearers from the refuge during the open State season. A few muskrats are using the area and a number of mink should be caught as signs are common. A few beaver are still to be found on the refuge.

III. PHYSICAL DEVELOPMENT.

None. The structures and posting are in good condition on this area.

MCLEAN

I. GENERAL.

Precipitation and snowfall were below normal in this area. The water level was 18 inches below spillway crest when visited on November 5.

II. WILDLIFE.

The waterfowl use of this refuge this fall presents quite a contrast to its usage last year. Stabilized water conditions have restored the attractiveness of this area and approximately 8,100 waterfowl used it during the period. Peak waterfowl numbers were about 5,200. A few sharp-tailed grouse and European partridges used the refuge during the period.

III. PHYSICAL DEVELOPMENT.

A total of 12½ cu yds of rock were hauled from a distance of 3½ miles and placed on the spillway slope. This work completes the spillway reconstruction project on this area.

PRETTY ROCK

I. GENERAL.

Precipitation and snowfall have been below average for the period in this locality. The water level was 6" below spillway at the beginning of the period and one foot below spillway on October 23. Farm crops were very good in the vicinity of the refuge.

II. WILDLIFE.

Approximately 39,000 waterfowl used the refuge during the period and peak waterfowl numbers were 30,600 in late October and early November. Approximately 450 Canada and white-fronted geese used the refuge during migration.

Ring-necked pheasants are abundant in this locality and it is estimated that 200 found sanctuary in the refuge during the hunting season. Hunting pressure was extremely heavy in this vicinity this fall. A few sharp-tailed grouse and European partridges were observed on the refuge at various times during the period.

A permit has been issued to a landowner to trap muskrats, minks and skunk during the open State season.

III. PHYSICAL DEVELOPMENT.

1. 114 cu yds of rock were hauled from a distance of 6 miles and placed on the dike at points where erosion had occurred during the previous period as a result of high water levels.
2. 25 cu yds of fill were loaded and placed on dike to repair upstream face and muskrat runs.
3. Boundary markers were checked and repaired.

STEWART LAKE

I. GENERAL.

Precipitation and snowfall were below normal in this vicinity during the period. The water level was 8" below spillway crest at the beginning of the period and 20" below crest on November 3. Very good crops were harvested in this vicinity.

II. WILDLIFE.

Approximately 10,000 mallards were present on this refuge when visited on November 3. Present also were 50 lesser scaup, 300 shovellers, 43 white-fronted geese and one golden eagle. On December 28, 2,000 mallards were still present on this area. Total waterfowl usage for the period was approximately 25,000 and peak waterfowl numbers were about 18,300.

A few ring-necked pheasants, sharp-tailed grouse and European partridges used this area during the period. The season was closed in this county on upland game birds.

A trapping permit has been issued to a landowner to remove muskrats, minks, skunks and weasels from the refuge.

III. PHYSICAL DEVELOPMENT. None.

WHITE LAKE

I. GENERAL.

Precipitation and snowfall in this area were below normal for the report period. Very good crops were grown on the refuge and in the vicinity. Some hail damage occurred in this locality and the damaged grain furnished some excellent feed for the ducks. The water level was 16" below spillway crest at the beginning of the period and had receded to about 2½ feet below crest on November 3. It is believed that the lake froze over at approximately this level.

II. WILDLIFE.

Approximately 6,000 mallards, 800 shovellers, 300 lesser scaup, 30 coots and 92 white-fronted geese were observed on this refuge when visited on November 3. The total waterfowl usage is estimated at 18,675 during the period with peak waterfowl numbers of 14,450.

A few muskrats are present and mink signs are common. A few skunk are also believed to be using the refuge. A permit has been issued to a landowner to trap on this area. A few ring-necked pheasants, sharp-tailed grouse and European partridges used the refuge during the report period.

III. PHYSICAL DEVELOPMENT.

1. The concrete mixer used on the spillway construction project during the previous period was returned to Des Lacs.
2. Structures and boundary markers were checked and found to be in acceptable condition.

----- * -----

NOTE: The report this period for Lake Ilo and the District IV Easement Refuges is based entirely on data supplied by Mr. Chesley M. Dinkins, Laborer-Patrolman.

WATERFOWL

Refuge Lake Ilo Months of September to December 1947

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. Swans:									
Whistling swan	None seen								
II. Geese:									
Canada goose	65	10/18	100	10/18-30	100	10/28			200
Cackling goose									
Brant									
White-fronted goose	8	9/27	200	10/1-20	100	10/28			600
Snow goose	None Seen								
Blue goose									
III. Ducks:									
Mallard			30,000	10/20-31	8,000	(Present 12/31)			50,000
Black duck	None Seen								
Gadwall			300	9/25-10/10	30	10/28			600
Baldpate			300	9/25-10/10	60	10/28			600
Pintail			6,000	9/30-10/20	62	11/8			9,000
Green-winged teal			150	9/30-10/15	30	10/31			300
Blue-winged teal			800	9/20-10/10	18	10/31			1000
Cinnamon teal	None Seen								
Shoveller			2,000	10/20-11/3	150	11/7			5,000
Wood duck	None Seen								
Redhead	120	10/27	300	10/28-31					
Ring-necked duck	None Seen								
Canvas-back	150	10/27	400	10/27-31	30	10/31			600
Scaup	80	10/27	300	10/20-11/3	5	(Present 12/31)			500
Golden-eye	None Seen								
Buffle-head	None Seen								
Ruddy duck	None Seen								
IV. Coot:			600	9/20-10/20	30	10/31			800

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 69,200

Peak waterfowl numbers 41,450

Areas used by concentrations _____

Entire water area.

Principal nesting areas this season _____

Reported by Chesley M. Dinkins
Laborer-Patrolman

INSTRUCTIONS

(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) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.

(3) Peak Concentration: 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 in the reporting period.

(5) Young Produced: 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.

(6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

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WATERFOWL

Refuge Charles Lake Months of September to December 194 7

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. Swans:									
Whistling swan									
II. Geese:									
Canada goose	No geese observed or reported as using this refuge during the period.								
Cackling goose									
Brant									
White-fronted goose									
Snow goose									
Blue goose									
III. Ducks:									
Mallard			2,000	10/20-31					2,500
Black duck									
Gadwall									
Baldpate									
Pintail			400	10/21-31					500
Green-winged teal									
Blue-winged teal			50	10/1-20					100
Cinnamon teal									
Shoveller			100	10/20-31					200
Wood duck									
Redhead									
Ring-necked duck									
Canvas-back									
Scaup									
Golden-eye									
Buffle-head									
Ruddy duck									
IV. Coot:									

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 3500

Peak waterfowl numbers 2560

Areas used by concentrations _____

Entire water area.

Principal nesting areas this season _____

Reported by Cheeley M. Dinkins
Laborer-Patrolman

INSTRUCTIONS

(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) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.

(3) Peak Concentration: 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 in the reporting period.

(5) Young Produced: 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.

(6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

2338

WATERFOWL

Refuge [redacted]wood Months of September to December 1947

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. Swans:									
Whistling swan									
II. Geese:									
Canada goose	No geese observed or reported as using this refuge during the period.								
Cackling goose									
Brant									
White-fronted goose									
Snow goose									
Blue goose									
III. Ducks:									
Mallard			6,000	10/28-11/5					8,000
Black duck									
Gadwall			50	10/20-31					75
Baldpate			50	10/20-31					75
Pintail			300	10/20-31					500
Green-winged teal			20	9/30-10/15					30
Blue-winged teal			60	9/30-10/15					
Cinnamon teal									
Shoveller			50	10/15-10/30					100
Wood duck									
Redhead			50	10/15-25					100
Ring-necked duck									
Canvas-back			50	10/1					100
Scaup			400	10/28-11/5					500
Golden-eye									
Buffle-head									
Ruddy duck			30	10/1-20					
IV. Coot:			200	9/20-10/5					300

40

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 9,880

Peak waterfowl numbers 7,260

Areas used by concentrations _____

Entire water area.

Principal nesting areas this season _____

Reported by Chesley M. Dinkins
Laborer-Patrolman

INSTRUCTIONS

(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) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.

(3) Peak Concentration: 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 in the reporting period.

(5) Young Produced: 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.

(6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

WATERFOWL

Refuge Lake Oliver Months of September to December 1947

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. Swans:									
Whistling swan									
II. Geese:									
Canada goose			No geese observed this period.						
Cackling goose									
Brant									
White-fronted goose									
Snow goose									
Blue goose									
III. Ducks:									
Mallard			2,000	10/20-31					3,000
Black duck									
Gadwall			50	9/25-10/10					50
Baldpate			50	9/25-10/10					50
Pintail			400	10/10-31					500
Green-winged teal			50	9/20-10/5					50
Blue-winged teal			100	9/30-10/15					150
Cinnamon teal									
Shoveller			150	10/20-11/5					
Wood duck									
Redhead									50
Ring-necked duck									
Canvas-back									50
Scaup									50
Golden-eye									
Buffle-head									
Ruddy duck									
IV. Coot:									100

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 4,050

Peak waterfowl numbers 2,780

Areas used by concentrations _____

Entire water area.

Principal nesting areas this season _____

Reported by Chesley M. Dinkins
Laborer-Patrolman

INSTRUCTIONS

(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) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.

(3) Peak Concentration: 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 in the reporting period.

(5) Young Produced: 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.

(6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

2338

WATERFOWL

Refuge Lake Malheur Months of September to December 194 7

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. Swans:									
Whistling swan	This area had very little water during the period.								
II. Geese:									
Canada goose	No geese were observed during the period.								
Cackling goose									
Brant									
White-fronted goose									
Snow goose									
Blue goose									
III. Ducks:									
Mallard			500	10/20-31					500
Black duck									
Gadwall			100	9/30-10/20					200
Baldpate			50						100
Pintail			200	10/10-30					250
Green-winged teal			20	9/10-10/5					40
Blue-winged teal			100	9/30-10/15					150
Cinnamon teal									
Shoveller			100	10/20-31					100
Wood duck									
Redhead									
Ring-necked duck									
Canvas-back									
Scaup									
Golden-eye									
Buffle-head									
Ruddy duck									
IV. Coot:			100	9/30-10/20					100

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 1,440

Peak waterfowl numbers 1,170

Areas used by concentrations _____

Entire water area.

Principal nesting areas this season _____

Reported by Chesley M. Dinkins
Laborer-Patrolman

INSTRUCTIONS

(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) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.

(3) Peak Concentration: 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 in the reporting period.

(5) Young Produced: 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.

(6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

2330

WATERFOWL

Refuge Lake Sunie (McLean) Months of September to December 1947

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. Swans:									
Whistling swan									
II. Geese:									
Canada goose	No geese observed during this period.								
Cackling goose									
Brant									
White-fronted goose									
Snow goose									
Blue goose									
III. Ducks:									
Mallard			4,000	10/20-31	35	11/7			6,000
Black duck									
Gadwall			50	9/25-10/10					
Baldpate			80	9/25-10/10					
Pintail			600	10/20-31					1,200
Green-winged teal			20	9/20-10/10					40
Blue-winged teal			120	9/30-10/10					200
Cinnamon teal									
Shoveller			125	10/20-31					250
Wood duck									
Redhead									
Ring-necked duck									
Canvas-back									
Scaup			100	10/20-11/5					200
Golden-eye									
Buffle-head									
Ruddy duck									
IV. Coot:			100	9/20-10/10					200

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 8,090

Peak waterfowl numbers 5,165

Areas used by concentrations _____

Entire water area.

Principal nesting areas this season _____

Reported by Chesley M. Dinkins
Laborer-Patrolman

INSTRUCTIONS

(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) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.

(3) Peak Concentration: 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 in the reporting period.

(5) Young Produced: 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.

(6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

2338

WATERFOWL

Refuge Legion Lake Months of September to December 194 7

(1) Species		(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
	Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I.	Swans:									
	Whistling swan									
II.	Geese:									
	Canada goose			75	10/10-31	(Reported by Farmer)				150
	Cackling goose									
	Brant									
	White-fronted goose			150	10/10-31	(Reported by Farmer)				300
	Snow goose									
	Blue goose									
III.	Ducks:									
	Mallard			15,000	10/10-31					20,000
	Black duck									
	Gadwall			50	9/25-10/10					100
	Baldpate			50	9/25-10/10					100
	Pintail			400	9/30-10/10					1,000
	Green-winged teal			25	9/30-10/10					50
	Blue-winged teal			40	9/30-10/31					150
	Cinnamon teal									
	Shoveller			400	10/20-31					800
	Wood duck									
	Redhead									
	Ring-necked duck									
	Canvas-back			30	10/5-30					100
	Scaup			200	10/20-31					400
	Golden-eye									
	Buffle-head									
	Ruddy duck									
IV.	Coot:			100	9/25-10/10					200

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 23,150

Peak waterfowl numbers 16,520

Areas used by concentrations

Entire water area.

Principal nesting areas this season _____

Reported by Chesley M. Dinkins
Laborer-Patrolman

INSTRUCTIONS

(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) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.

(3) Peak Concentration: 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 in the reporting period.

(5) Young Produced: 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.

(6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

2338

WATERFOWL

Refuge Pretty Rock Months of September to December 194 7

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. Swans:									
Whistling swan									
II. Geese:									
Canada goose	25	10/25	75	10/20-31					150
Cackling goose									
Brant									
White-fronted goose	24	10/7	150	10/18-31					300
Snow goose									
Blue goose									
III. Ducks:									
Mallard			25,000						30,000
Black duck									
Gadwall			200	9/25-10/10					400
Baldpate			200	9/25-10/10					400
Pintail			2,000	9/30-10/20					3,000
Green-winged teal			50	9/30-10/20					100
Blue-winged teal			200	9/30-10/20					400
Cinnamon teal									
Shoveller			1,200	10/20-31					1,800
Wood duck									
Redhead			50	10/5-31					100
Ring-necked duck									
Canvas-back			50	10/5-31					100
Scaup			400	10/20-31					700
Golden-eye									
Buffle-head									
Ruddy duck			25	9/30-10/20					50
IV. Coot:			1,000	9/30-10/20					1,200

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 38,750

Peak waterfowl numbers 30,000

Areas used by concentrations

Entire water area.

Principal nesting areas this season _____

Reported by Chesley M. Dinkins
Laborer-Patrolman

INSTRUCTIONS

(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) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.

(3) Peak Concentration: 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 in the reporting period.

(5) Young Produced: 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.

(6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

2338

WATERFOWL

Refuge [redacted] Months of September to December 1947

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. Swans:									
Whistling swan									
II. Geese:									
Canada goose			50	10/20-31	(Reported by Farmer)				50
Cackling goose									
Brant									
White-fronted goose	45	11/3/47	180	10/20-11/3	45	11/3			300
Snow goose									
Blue goose									
III. Ducks:									
Mallard			15,000	10/20-11/5	2,000	(Present 12/31)			20,000
Black duck									
Gadwall			200	9/30-10/20					300
Baldpate			200	9/30-10/20					300
Pintail			800	9/30-10/20					1,200
Green-winged teal			50	9/30-10/20					100
Blue-winged teal			200	9/30-10/20					300
Cinnamon teal									
Shoveller			1,000	10/20-31					1,500
Wood duck									
Redhead			50	10/20-31					75
Ring-necked duck									
Canvas-back			50	10/21-31					75
Scaup			300	10/20-11/15					500
Golden-eye									
Buffle-head									
Ruddy duck									
IV. Coot:			200	9/30-10/20					200

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 24,900

Peak waterfowl numbers 18,290

Areas used by concentrations

Entire water area.

Principal nesting areas this season _____

Reported by Chesley M. Dinkins
Laborer-Patrolman

INSTRUCTIONS

(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) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.

(3) Peak Concentration: 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 in the reporting period.

(5) Young Produced: 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.

(6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

2338

WATERFOWL

Refuge White Lake Months of September to December 1947

(1) Species		(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
	Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I.	Swans:									
	Whistling swan									
II.	Geese:									
	Canada goose			50	10/20-31	(Reported by Farmer)				100
	Cackling goose									
	Brant									
	White-fronted goose	12	9/27	150	10/20-31	92	11/3			300
	Snow goose									
	Blue goose									
III.	Ducks:									
	Mallard			12,000	10/20-31	6,000	11/3			15,000
	Black duck									
	Gadwall			100	9/30-10/20					100
	Baldpate			100	9/30-10/20					100
	Pintail			600	9/30-10/20					1,000
	Green-winged teal			50	9/30-10/20					75
	Blue-winged teal			200	9/30-10/20					300
	Cinnamon teal									
	Shoveller			800	10/20-11/15	800	11/3			1,000
	Wood duck									
	Redhead									
	Ring-necked duck									
	Canvas-back									
	Scaup			300	10/20-11/5	300	11/3			500
	Golden-eye									
	Buffle-head									
	Ruddy duck									
IV.	Coot:			100	10/5-30	30	11/3			200

3-1750
(July 1946)

(over)

Form NR-1

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 18,675

Peak waterfowl numbers 14,450

Areas used by concentrations

Entire water area.

Principal nesting areas this season _____

Reported by Chesley M. Dinkins
Laborer-Patrolman

INSTRUCTIONS

(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) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.

(3) Peak Concentration: 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 in the reporting period.

(5) Young Produced: 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.

(6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge Lake Ilo Months of September to December 1947

(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:										
Common Loon			5	9/15-25						5
Western Grebe			50	9/10-20						50
White Pelican			90	9/1-10/20	58	10/20				300
Double-crested Cormorant			12	9/10-30						15
Great Blue Heron			90	9/11-30	3	10/26				40
American Bittern			12	9/10-30	1	10/30				15
Sandhill Crane	2000	10/11	2000	10/12-20	500	10/28				4000
Eared Grebe			50	9/1-30						50
II. Shorebirds, Gulls and Terns:										
Killdeer			100	9/10-30						100
Wilson's Snipe			50	9/20-10/10						50
Greater Yellow-Legs			300	9/5-30						300
Lesser Yellow-Legs			800	9/5-30						700
Sandpipers (sp?)			250	9/10-30						250
Dowitcher			50	9/10-30						50
Avocet			100	9/10-30						100
Gulls (sp?)			500	9/10-30						1000
Marbled Godwit			20	9/10-30						20
Wilson's Phalarope			200	9/10-30						200
Willet			50	9/10-30						50

(over)

(1)	(2)		(3)		(4)		(5)	(6)
III. Doves and Pigeons:								
Mourning dove			10	9/1-20				50
White-winged dove								
IV. Predaceous Birds:								
Golden eagle	2	10/25	5	11/1-20	2	(Present 12/31)		5
Duck hawk	1	9/26	3	10/20-31				4
Horned owl	2	11/20	6	12/1-31				8
Magpie	2	12/10	5	12/10-30				5
Raven								
Crow			400	9/10-30				600
Snowy owl	1	12/12	1	12/1-31				1
Swainson's Hawk			10	9/10-30				30
Am. Rough-legged Hawk			3	9/10-30				10
Marsh Hawk			30	9/10-30				30
Sparrow Hawk			20	9/1-30				20

Reported by Charley M. Dinkins

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.

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge Charles Lake Months of September to December 194 7

(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:										
Great Blue Heron			6	9/10-30						6
II. Shorebirds, Gulls and Terns:										
Killdeer			10	9/10/30						10
Lesser Yellow-Legs			20	9/10-30						20

(over)

(1)	(2)	(3)		(4)	(5)	(6)
III. Doves and Pigeons:						
Mourning dove						
White-winged dove						
IV. Predaceous Birds:						
Golden eagle						
Duck hawk						
Horned owl						
Magpie						
Raven						
Crow		100	9/10-30			200
Marsh Hawk		8	8/10-30			8

Reported by Chesley M. Dinkins

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.

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge Middenwood Months of September to December 1947

(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:										
Great Blue Heron			10	9/10-30						10
Western Grebe			20	9/10-30						40
American Bittern			10	9/10-30						10
II. Shorebirds, Gulls and Terns:										
Killdeer			50	9/10-30						50
Wilson's Snipe			10	9/10-30						10
Lesser Yellow-Legs			50	9/10-30						50
Marbled Godwit			20	9/10-30						20
Avocet			20	9/10-30						20
Willet			50	9/1-30						50
Wilson's Phalarope			50	9/1-30						50

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove					
White-winged dove					
IV. Predaceous Birds:					
Golden eagle					
Duck hawk					
Horned owl		4 (Resident)			4
Magpie		50 11/1-12/31			50
Raven					
Crow		200 9/10-30			400
Am. Rough-Legged Hawk		4 11/1-12/31			4
Marsh Hawk		10 9/1-30			10

Reported by Chesley M. Dinkins

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.

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge Lake Oliver Months of September to December 194 7

(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:										
Great Blue Heron			6	9/10-30						6
II. Shorebirds, Gulls and Terns:										
Killdeer			50	9/10-30						50
Lesser Yellow-Legs			20	9/10-30						20
Willet			10	9/10-30						10
Marbled Godwit			10	9/10-30						10
Wilson's Phalarope			50	9/10-30						100

(over)

(1)	(2)	(3)		(4)	(5)	(6)
III. Doves and Pigeons:						
Mourning dove						
White-winged dove						
IV. Predaceous Birds:						
Golden eagle						
Duck hawk						
Horned owl						
Magpie						
Raven						
Crow						
Marsh Hawk		10	9/1-30			10

Reported by Chesley M. Dinkins

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.

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge Lake Patricia Months of September to December 1947

(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:										
Great Blue Heron			10	9/1-30						20
II. Shorebirds, Gulls and Terns:										
Killdeer			50	9/1-30						50
Lesser Yellow-Legs			100	9/1-30						200
Avocet			30	9/1-30						30
Marbled Godwit			10	9/1-30						20
Willet			20	9/1-30						20
Gulls (sp?)			100	9/1-30						200

(over)

(1)	(2)		(3)		(4)	(5)	(6)
III. Doves and Pigeons:							
Mourning dove							
White-winged dove							
IV. Predaceous Birds:							
Golden eagle	2	10/24	4	10/24-12/21			4
Duck hawk							
Horned owl							
Magpie							
Raven							
Crow							
Marsh Hawk			20	9/1-30			20

Reported by Cooley K. Dinkins

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.

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge **Lake Susie (McLean)** Months of **September** to **December** 194**7**

(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:										
Great Blue Heron			**6**	**9/1-30**						**6**
Western Grebe			**10**	**9/1-30**						**20**
American Bittern			**10**	**9/1-30**						**10**
II. Shorebirds, Gulls and Terns:										
Killdeer			**50**	**9/1-30**						**50**
Lesser Yellow-Legs			**60**	**9/1-30**						**60**
Willet			**30**	**9/1-30**						**30**
Avocet			**30**	**9/1-30**						**30**
Wilson's Phalarope			**50**	**9/1-30**						**50**

(over)

(1)	(2)	(3)		(4)	(5)	(6)
III. Doves and Pigeons:						
Mourning dove						
White-winged dove						
IV. Predaceous Birds:						
Golden eagle						
Duck hawk						
Horned owl						
Magpie						
Raven						
Crow						
Marsh Hawk		10	9/1-30			20

Reported by Chesley M. Dinkins

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.

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge Legion Lake Months of September to December 1947

(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:										
Great Blue Heron			20	9/1-20	20					20
[illegible]				9/1-20	[illegible]					
[illegible]				9/1-20	20					
II. Shorebirds, Gulls and Terns:										
Killdeer			100	9/1-20						100
Willet			10	9/1-10						10
Greater Yellow-Legs			50	9/1-20						50
Lesser Yellow-Legs			100	9/1-20						100
Sandpipers (sp?)			100	9/1-20						100
Long-Billed Dowitcher			200	9/1-30						200
Godwit			10	9/1-10						10
Avocet			50	9/1-10						50
Wilson's Phalarope			300	9/1-20						300
Gulls (sp?)			500	9/1-20						500

(over)

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

Reported by.....

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.

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge Pratty Rock Months of September to December 1947

(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:										
Great Blue Heron			20	9/1-30	1	10/25				20
American Bittern			10	9/1-30	1	10/25				10
II. Shorebirds, Gulls and Terns:										
Killdeer			100	9/1-30	5	10/25				100
Lesser Yellow-Legs			150	9/1-30						150
Willet			30	9/1-30						30
Marbled Godwit			20	9/1-30						20
Avocet			50	9/1-30	2	10/10				50
Wilson's Phalarope			100	9/1-30						150
Gulls (sp?)			300	9/1-30						300

(over)

(1)	(2)		(3)		(4)	(5)	(6)
III. Doves and Pigeons:							
Mourning dove							
White-winged dove							
IV. Predaceous Birds:							
Golden eagle	2	10/18	4	10/30-12/31			4
Duck hawk							
Horned owl							
Magpie	1	11/20	1	11/20-12/31			5
Raven							
Crow							
Marsh Hawk			15	9/1-30			20

Reported by Chesley M. Dinkins

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.

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge Stewart Lake Months of September to December 1947

(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:										
Great Blue Heron			6	9/1-30						6
Eared Grebes			30	9/1-30						30
American Bittern			5	9/1-30						5
II. Shorebirds, Gulls and Terns:										
Killdeer			50	9/1-30						50
Lesser Yellow-Legs			50	9/1-30						50
Avocet			20	9/1-30						20
Wilson's Phalarope			50	9/1-30						100

(over)

(1)	(2)		(3)		(4)	(5)	(6)
III. Doves and Pigeons:							
Mourning dove							
White-winged dove							
IV. Predaceous Birds:							
Golden eagle	1	11/3	8	11/1-12/31			8
Duck hawk							
Horned owl							
Magpie							
Raven							
Crow			50	9/10-30			50
Marsh Hawk			6	9/1-30			6

Reported by Chesley M. Dinkins

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.

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge White Lake Months of September to December 1947

(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:										
Great Blue Heron			10	9/1-30						10
II. Shorebirds, Gulls and Terns:										
Killdeer			50	9/1-30						50
Willet			20	9/1-30						20
Lesser Yellow-Legs			100	9/1-30						100
Avocet			20	9/1-30						20
Wilson's Phalerope			100	9/1-30						100
Gulls (sp?)			200	9/1-30						200

(over)

(1)	(2)	(3)		(4)	(5)	(6)
III. Doves and Pigeons:						
Mourning dove						
White-winged dove						
IV. Predaceous Birds:						
Golden eagle		2	11/1-12/31			3
Duck hawk						
Horned owl						
Magpie						
Raven						
Crow						
Marsh Hawk		10	9/1-30			10

Reported by Chesley M. Dinkins

INSTRUCTIONS

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

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

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

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

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

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

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

1613

Refuge Lake Ilo & District IV Easement Refuges. Months of September to December, 1947

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
LAKE ILO										
Pheasant					2-M; 4-F				200	Hunting pressure light around refuge.
Sharp-tailed Grouse									20	
Hung. Partridge									20	
CHARLES LAKE										
Pheasant									200	Hunting pressure heavy around refuge.
Sharp-tailed Grouse									10H	
Hung. Partridge									25	
HIDDENWOOD										
Pheasant									30	
Sharp-tailed Grouse									12	
Hung. Partridge									25	
LAKE OLIVER										
Pheasant									20	
Sharp-tailed grouse									0	
Hung. Partridge									15	
LAKE PATRICIA										
Pheasant									800	Hunting pressure very heavy in this vicinity.
Sharp-tailed Grouse									20	
Hung. Partridge									50	

2

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

1613

Refuge Lake Ilo & District IV Easement Refuges. Months of September to December, 1947

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
LAKE SUSIE										
Pheasant									0	
Sharp-tailed Grouse									10	
Hung. Partridge									20	
LEGION LAKE										
Pheasant									30	
Sharp-tailed Grouse									20	
Hung. Partridge									40	
PRETTY ROCK										
Pheasant									200	Hunting pressure very heavy during season. Estimated 60% of pheasants in this locality killed during hunting season.
Sharp-tailed Grouse									20	
Hung. Partridge									30	
STEWART LAKE										
Pheasant									10	
Sharp-tailed Grouse									20	
Hung. Partridge									20	
WHITE LAKE										
Pheasant									20	
Sharp-tailed Grouse									15	
Hung. Partridge									20	

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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 Lake Ilo & District IV Easement Refuges. Calendar Year 1947

(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	
	No big game animals were observed or reported as being on Lake Ilo or any of the District IV easement refuges during calendar year 1947. It is possible that a few antelope may have used the Steward Lake and White Lake Refuges.													

Remarks:

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Reported by Chesley M. Dinkins.

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</u> <u>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

Form NR-6 FISH 1617

Refuge Lake Ilo & District IV Basement Refuges. Year 1947

Species	Relative Abundance	Sport Fishing: Man days Fishing	Sport Fishing: Number Taken	Commercial Fishing: No. of Permits	Commercial Fishing: Pounds Taken	Restocking: Number Stocked	Restocking: Area Stocked	Number removed for Restocking
LAKE ILO		1,800		None				
Large-Mouth Bass	Common		500					
Blue Gills	Common		4,000					
Crappies	Abundant		8,000					200 adult 7"
Perch	Abundant		4,000					200 adult 8"
Catfish	Common		200					
Bullheads	Abundant		4,000					
Suckers	Abundant		800					
Wall-eyed Pike						15,000	Entire Lake	
CHARLES LAKE		200		None		None		None
Large-Mouth Bass	Common		100					
Crappies	Common		600					
Perch	Common		400					
Bullheads	Abundant		2,000					
Suckers	Abundant		500					
Carp	Abundant		500					
HIDDENWOOD		None		None		None		None
LAKE OLIVER		None		None		None		None
LAKE PATRICIA		None		None		None		None
LAKE SUSIE		None		None		None		None

REMARKS: At Lake Ilo very few suckers or bass were taken as the fishermen preferred the other species for eating.

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Form NR-6 FISH 1617

Refuge Lake Ilo & District IV Basement Refuges. Year 1947

Species	Relative Abundance	Sport Fishing		Commercial Fishing		Restocking		Number removed for Restocking
		Man days Fishing	Number Taken	No. of Permits	Pounds Taken	Number Stocked	Area Stocked	
LEGION LAKE		None		None		None		None
Bullheads	Common		None					
Suckers	Common		None					
PRETTY ROCK		None		None		None		None
Bullheads	Common		None					
Carp	Abundant		None					
STEWART LAKE		100		None		None		None
Catfish	Common		200					
Bullheads	Abundant		600					
Suckers	Abundant		400					
WHITE LAKE		200		None		None		None
Bullheads	Abundant		2,000					
Suckers	Abundant		1,000					

REMARKS:

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3-1758
Form NR-8
(April 1946)

CULTIVATED CROPS

Refuge Lake Ilo Refuge Year 1947

Permittee (If farmed by refuge personnel, so indicate)	Permit No.	Unit or Location	Crops Grown	Avg. Yield per Acre	Permittee's Share		Government's Share or Return				
							Harvested		Unharvested		Compensatory Services, or Cash Revenue
					Acres	Bu. Harvested	Acres	Bu.	Acres	Bu.	
Fred Larson	17363	AU-1 & 2	Barley	30	17.5	525	--	--	12.5	375	
			Millet	15	Cut for hay		--	--	--	--	
Charles V. Schollmeyer	11944	AU-4 & 5	Wheat	26	19.25	500	--	--	--	--	
			Barley	45	--	--	--	--	8.25	370	27.5 acres fallow

Summary of Crops Grown:

Crop	Acreage	Permittee's Share		Government's Share				Total Revenue
		Acres	Bushels	Harvested Acres	Harvested Bu.	Unharvested Acres	Unharvested Bu.	
Barley	38.25	17.50	525	--	--	20.75	745	$ None
Wheat	19.25	19.25	500	00	--	--	--	
Millet	15.0	Cut for Hay.		--	--	--	--	

8

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS

Cultivated Crops Report Form NR-8 should be prepared on a calendar-year basis for all crops harvested or utilized during the calendar year and submitted with the December 31 refuge report.

Permittee - List each permittee separately. If lands of the refuge are farmed by refuge personnel or hired labor, this should be indicated in the Permittee column.

Permit No. - List the number of the Special Use Permit issued to the individual.

Use or Location - The Unit No. or name specified in the Economic Use Plan should be listed in this column.

Crops Grown - A separate line of the form should be used for each crop grown by each permittee or by refuge personnel. This is important, since if each crop grown by each operator is not specifically enumerated, the report will be of no value for statistical purposes.

Average Yield per Acre - It is important that the average yield per acre of each crop grown by each operator should be shown.

Permittee's Share - Only the number of acres harvested or 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. It is requested that all crops harvested be reduced to bushels wherever possible, or, as in the case with the harvesting of seed such as that of sweet clover, alfalfa, bromegrass, etc., the total harvested crop in pounds may be shown. Timothy, alfalfa, or other hay harvested by the permittee should be shown on Form NR-10 and should not be shown in the Permittee's Share column.

Government's Share or Return - Harvested - Show the number of bushels harvested for the Government and the acreage from which this share is harvested, both for grain raised by refuge personnel and by permittees. Unharvested - show the exact number of acres of crops allowed to remain unharvested as food and cover for wildlife. An estimate of the number of bushels of grain that is available for the wildlife in such unharvested crops should be shown in the Bushels column.

Compensatory Services, or Cash Revenue - Show other services received by the Government in cooperative farming activities, the number of acres of food strips planted for wildlife, the amount of wildlife crops not otherwise reported that are planted by cooperators for the Service, or the cultivation of wildlife plantations. If the permit is on a fee basis, the total cash revenue received by the Service.

3-1760
Form NR-10
(April 1946)

HAYING AND GRAZING

Refuge Lake Ilo & Easement Refuges, District IV Year 1947

Permittee	Permit No.	Unit or Location	Actual Acreage Utilized	Animal Use Months	Tons of Hay Harvested	Period of Use From - To	Rate	Total Income	Remarks
Fred Larsen	15615	GU-2	120	75		7/15-11/15/47	.50	37.50	
Fred Larsen	15617	HU-1 & 2	20		16	7/15-11/15/47	.50 1.00	4.00 8.00	
Charles Schollmeyer	15616	HU-4	20		16	7/16-11/15/47	1.00	16.00	
Gage W. Searles	15611	HU-5	50		37	7/16-11/15/47	1.00	37.00	

Totals:

Acreage grazed 120 Animal use months 75 Total income Grazing 37.50

Acreage cut for hay 70 Tons of hay cut 69 Total income Haying 65.00

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3-1760
Form NR-10
(April 1946)

HAYING AND GRAZING

Refuge Theodore Roosevelt Refuge Year 1947

Permittee	Permit No.	Unit or Location	Actual Acreage Utilized	[illegible]	Tons of Hay Harvested	Period of Use From - To	Rate	Total Income	Remarks
Ben Baye	18316		128 Est.		63.82	7/15-12/31/47	.50	31.91	
Andrew Hill	18613				0	8/4-12/31/47	.50	1.50	No hay cut-paym.forf.
Fred Johnson	18317		73 Est.		36.4	7/15-12/31/47	.50	18.20	
Verne King	18326		115 Est.		57.2	" "	.50	28.60	
Norstog & Dahl	18332		79 Est.		39.5	" "	.50	19.75	
Wm. O'Connell	18324		151 Est.		75.5	" "	.50	37.65	
Wm. J. Ray	18318		246 Est.		123.2	" "	.50	61.60	
James Stevens	18323		36 Est.		18.0	" "	.50	9.00	
Loyd Stevens	18315		45 Est.		22.46	" "	.50	12.50	Down paym. exceeds tons harvested.
Thomas Tarnavsky	18331		24 Est.		12.92	" "	.50	18.75	Down paym. exceeds tons harvested.

Totals: [illegible] [illegible] [illegible]

Acreage cut for hay 897 Est. Tons of hay cut 448.80 Total income Haying $239.46

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