

ROUTING SLIP

BRANCH OF WILDLIFE REFUGES

DATE: 9/19 1949

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NARRATIVE REPORT

REFUGE: BOWDOIN

PERIOD: MAY - AUGUST 1949

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BOWDOIN NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

May 1, to August 31, 1949

Personnel ---

Leon C. Snyder  
Donald Tjaden

Refuge Manager  
Maintenance Man

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## I GENERAL

A. Weather Conditions:

In one respect weather conditions during this period was a repetition of the preceding eight months, that is, the entire period was almost entirely devoid of any precipitation. Daytime temperatures ran extremely high day after day and hot dry winds were very numerous. During July and up to August 20 electrical storms were very frequent. In almost every instance of these electrical storms it would look like the clouds were going to bust loose and give us a good drenching, however, all we would get was a lot of intense hot dry lightning and any where from a 35 to 60 mile wind. Considerable wind damage was done to power lines, trees, haystacks and buildings during several of these storms and lightning fires throughout Phillips County were numerous.

Total precipitation for the period was only 4.95 inches as compared with 7.54 inches last year. Only 1.04 of this amount fell during June which is most always the wettest month of the year. Precipitation from September 1, 1948 to August 31, 1949 amounted to 6.52 inches which is less than one-half of normal for the twelve month period. Weather data is obtained from the United States Weather Bureau in Malta maintained by the Reclamation Service. Many showers that hit in Malta passed either to one side or to the other of the refuge, thus we feel quite sure that the actual precipitation on the refuge was considerably less than that recorded in Malta.

The following table gives comparative weather data for 1948 and 1949.

Month.	Precip.	Max. Temp.	Min. Temp.
1949			
May	2.03	87	32
June	1.04	95	37
July	1.03	99	42
August	.85	105	41
Total	4.95		
1948			
May	.77	91	32
June	3.45	91	36
July	2.74	100	44
August	.58	97	47
Total	7.54		

### B. Water Conditions:

Generally speaking water levels throughout this entire area are way down. Many of the numerous small reservoirs and ponds in the range areas to the north and south of the refuge have dried up completely. Many stockmen were forced to move their stock around considerably because of watering conditions and some were forced to sell early. Because of the drying up of these small ponds and reservoirs there has been quite a noticeable increase of waterfowl in the irrigated valley during the latter part of the period.

At the begining of the period Bowdoin reservoir was at the 2205.85 foot level. Desired elevation for this time of the year is 2206.00. Water loss during this period from evaporation and transpiration was 1.65 feet which leaves the present level standing at 2204.25. We were unable to put any water on Bowdoin this period because of the continuously heavy irrigations in the valley above the refuge. The Reclamation's Nelson Reservoir storage area below Bowdoin is the lowest ever noted. We do not feel too bad however, about the steadily declining water level of Bowdoin throughout the summer months if we can get enough water to again fill the area again this fall. We feel that these declining water levels have aided considerably to abate a threatened botulism situation.

The Dry Lake unit has continued to be dry throughout the period, however, heavy irrigation in the area immediately south of Dry Lake has caused a continuous flow of water through the canal on the back side of dike C.

By May 1 the Lake Side Marsh unit was down to the 2221.5 foot level, 1.5 feet below spill level. During July 3 stop boards were removed from the structure in the Nelson Canal and water was allowed to run into Lake Side during the balance of the period when ever water in the canal was high enough to spill over. This allowed the Lake Side unit to fill up to 2222.70 by the end of July and remain fairly constant during August. Lake Side Marsh Extension, however, dried up completely during August.

1949			
Bowdoin	Lake Side		Dry Lake
End Of			
May -----	2205.60	2221.50	Dry
June -----	2205.20	2222.70	Dry
July -----	2204.70	2222.70	Dry
August -----	2204.25	2222.50	Dry
1948			
May -----	2206.00	2223.00	Near Dry
June 29 -----	2205.90	2222.80	Dry
July -----	2205.60	2222.60	Dry
August -----	2205.10	2223.00	Dry



### C. Fires:

The danger of fires both on and off the refuge was very high during the latter part of June and all of July and August. Range areas did not green up at all this year. Hot dry lightning storms were frequent and as many as 20 fires were started during one 24 hour period. During one storm there were three very hard strikes in the headquarters area but fortunately during this storm there was also a very heavy downpour of rain in the headquarters area which prevented fires from starting on the refuge.

On June 4, a combustion caused fire at the Refuge dump burned over approximately 20 acres of marsh and upland grass area. The fire started in old straw and manure that had been dumped during February. With the help of a few neighbors and three men from the Bureau of Land Management in Malta the fire was brought under control and confined to refuge lands. No damage resulted except the burning of some old grass.

Refuge personnel were called out on several occasions to assist with the suppression of grass fires in nearby outside areas. After the acquiring of our Jeep Pickup this vehicle was maintained equipped with hand suppression fire equipment consisting of a water supply, rubber swatters and 5 gallon back pack pumps. Water barrels were kept filled and buckets, swatters and back pack pumps were maintained at 4 fire tool caches on the refuge. Full sand barrels and water barrels were also maintained at the headquarters site. In addition to this all fire extinguishers were checked periodically and personnel and refuge visitors were asked to be careful at all times.

## II WILDLIFE

### A. Migratory Birds

#### 1. Population and Behavior:

##### a. Waterfowl:

mm Total refuge usage by waterfowl was about 70% greater this year than last and peak concentrations about 60% greater. Likewise the number of young ducks was about 60% greater. Peak concentrations of shoal water ducks was noted towards the close of the period when ducks from the numerous outside ponds and reservoirs started coming into the refuge. Due to the severe drouth conditions many of these outside ponds and reservoirs dried up during August.

Approximately 175 broods of Canada Geese were observed on the refuge waters and we believe about 1400 goslings were reared.

A large number of geese nested in the tule and bulrush areas of the south and southeast bay areas. Approximately 40 nesting pairs were noted in the drain canal along the back side of Dike C of the Dry Lake Area and 8 broods observed here May 23. On May 23, 18 broods were also counted on Lake Side Marsh, and 21 broods along the northwest shore of Bowdoin. Hatching success was very good except on Woody and Long Islands. On these two islands 14 abandoned nests were located. Examination of eggs in almost every case showed nearly fully developed goslings. The heavy concentrations of gulls, terns, pelicans, cormorants and herons on these islands is believed to be the reason for the abandonment of these goose nests.

24 Canada goose eggs were collected from nearby Nelson Reservoir where nests were endangered from molestation and the eggs hatched under domestic hens at the refuge headquarters. From these 17 goslings were reared and moved by plane to the Crescent Lake Refuge to augment the flock received from Bowdoin last year. These were pinioned prior to their flight to Crescent Lake.

There was a very good goose hatch on ponds and reservoirs throughout the southern portions of Phillips County. During August these numerous small flocks started congregating on Bowdoin and Nelson Reservoirs and our refuge goose population increased considerable over what it was even during the spring migration. State Game officials, and local sportsmen and farmers claim this is the best goose year they have ever seen here.

An increase of approximately 150% was noted in the refuge Mallard population over last year. A great many of these came into the refuge during August. About a 10% decrease was noted in Gadwall and Pintails remained about the same. Refuge usage of Blue-winged Teal increased from 2000 last year to approximately 10000 this year, and Canvas-backs 500 to 1500. The 4000 Scaup remaining on the refuge at the beginning of the period was also a very large increase over last year. These 4000 dwindled down to about 100 by July 1.

First young ducks were noted May 30 when 3 broods of Pintails were seen in the drain canal back of Dike C. New broods were seen on every trip around the refuge from that date on but they were not noted much on the open waters of the refuge, for quite some time. They kept pretty close to heavy cover along shorelines probably to keep out of sight of predaceous gulls which we believe are the worst enemy the young birds here at Bowdoin have. Predation on young ducks by gulls was reported to be very heavy in newly mowed alfalfa fields outside the refuge. Mowing of alfalfa was from 10 days to two weeks early this season and caught many ducks right in the hatching stage. Farmers reported that gulls followed the mower around and picked up all young ducks as soon as the protecting cover was knocked down.



Brood counts of ducks were made June 7, 12, 19, 23, July 14 and 30. No counts were made during August. During August I found that many of the duck broods were ganged up and out on the open waters of Bowdoin feeding in the Sage Pond Weed beds. These are too far out from shore for anyone to identify species and classify the ducklings with the old wornout field glasses we have at Bowdoin. Also we have not been able so far to replace the outboard motor we lost in our service building fire last winter, thus it has not been possible to get out on to the lake much by boat unless a row boat was used. Sufficient time or personnel was not available for brood counting under these conditions during August.

Results of the counts made showed the following:

Class 1 Ducklings				
Date	Species	No. Broods	Total	Average
June 7	Mallard	1	8	8
	Pintail	7	49	7
June 12	Mallard	8	52	6.5
	Pintail	12	79	6.6
	Gadwall	6	44	7.3
	Shoveller	7	61	8.7
June 19	Mallard	22	146	6.5
	Pintail	13	91	7
	Gadwall	12	83	6.9
June 25	Mallard	3	19	6.3
	Pintail	5	32	6.4
	Gadwall	4	28	7
	G.W. Teal	9	61	6.8
	Baldpate	1	8	8
July 14	Mallard	2	13	6.5
	Pintail	2	17	8.5
	Gadwall	7	53	7.5
	G.W. Teal	2	15	7.5
	B.W. Teal	11	90	8.2
	Baldpate	22	165	7.5
	Shoveller	6	48	8.0
	Redhead	17	118	6.4
	Canvas-back	8	57	7.1
	Ruddy	11	81	7.4
July 30	G.W. Teal	1	5	5
Total	(all broods)	202	1451	7.13
"	Mallards	36	238	6.61
"	Pintails	39	268	6.87
"	Gadwall	29	210	7.24
"	Baldpate	23	173	7.48
"	G. W. Teal	12	81	6.75
"	B. W. Teal	14	118	8.43
"	Shoveller	13	109	8.61
"	Redhead	17	118	6.9
"	Canvas-back	8	59	7.62
"	Ruddy	14	105	7.57

## Class III Ducklings

Date	Species	No. Broods	Total	Average
July 14	Mallard	6	34	5.7
	Pintail	7	42	6.0
July 30	Mallard	69	382	5.5
	Pintail	42	250	5.7
	Gadwall	50	287	5.7
	Baldpate	32	191	6.0
	G. W. Teal	21	111	5.3
	B. W. Teal	37	226	6.1
	Shoveller	29	181	6.2
	Redhead	20	119	6.0
	Canvas-back	13	80	6.2
	Ruddy	12	72	6.0
Total		338	1975	5.84

The above brood count data indicates that there was about a loss of 1.29 ducklings per brood on all broods noted from the class one stage up to the class three stage. The Shoveller loss, 2.41, was the highest followed by B. W. Teal 2.31, Ruddy 1.57, Gadwall 1.54, Baldpate 1.48, G. W. Teal 1.45, Pintail 1.17, Mallard 1.11 and Redhead .90.

## b. Marsh &amp; Water Birds:

There was a very concentrated population of White Pelican, Double Crested Cormorant, Great Blue Heron and Gulls on Woody and Pelican Islands of Bowdoin. Nest counts were made on these islands on May 23 by the refuge manager and two State employed waterfowl biologists, results of which are shown on NR - 1A. Eared Grebe were very numerous on Bowdoin as well as on the Lake Side Marsh units. Old birds with young on their backs were noted on numerous occasions. Western and Pied-billed Grebes and American Bittern were noted in about the same numbers as reported last year and young of all three species were noted. One Snowy Egret spent the week of June 19 to 25 around the patrol road crossing of the Bowdoin inlet canal.

Three White Pelican, one Blue Heron and one Ringed-bill Gull were collected August 16 for exhibit purposes for the Valley County Fair at Glasgow August 19-20-21.

## c. Shorebirds, Gulls and Terns:

Gradually receding water levels of Bowdoin Lake made conditions excellent for very large concentrations of shorebirds. Wilson's Phalarope, Avocet, Western Willets and Marbled Godwit were very numerous throughout the report period. Western Dowitcher and both Lesser and Great Yellow Legs were numerous throughout most of August but did not nest on the refuge. Killdeer and Spotted Sandpipers and some unidentified species of sandpipers were noted here and there all along the shorelines.



Long-billed Curlew were very common in the Dry Lake Area and on Big Island. 13 nests were observed on Big Island. California and Ring-billed gulls were the most numerous of all nesting birds on the refuge. Nests counts of June 23 showed about 2150 nests on refuge islands and the total number of young birds produced is estimated at about 7000. I am very much inclined to believe that predation on other young birds by gulls was very heavy where the young birds did not have sufficient protective cover. A large colony of nesting common terns were noted on Long Island and another colony on one of the smaller islands in the northern portion of Bowdoin. Black Terns nested throughout the tale areas of South and Southeast bay areas.

## 2. Food and Cover:

In spite of drouth conditions, food and cover on Bowdoin were excellent for all species of waterfowl, marsh and shore birds. Although not much new grass grew on the upland areas this summer, old grass cover was ample for nesting. Sage Pondweed again was spread over much of the area of Bowdoin and fruited heavily. Luxuriant growths of Duck Potato, Sagittaria cuneata were found almost the full length of the drain canal on the back side of dike C. The Lake Side Marsh unit produced an exceptionally dense coverage of Coontail, Ceratophyllum demersum, as can be noted in the photo at the rear of the report. Shallow water areas and soft bare shore lines produced an abundance of insect and other foods for shorebirds. Carp seem to be making a good comeback in Lake Bowdoin as Pelicans seemed to do considerable fishing on the refuge waters. Young Pelican were seen regurgitating numerous carp up to 14 inches in length. Cereal crops throughout the dry land areas of this general vicinity were very poor, infact so poor that in most instances harvesting of the crops were abandoned. These abandoned crops even though not good enough for harvesting are making excellent feeding areas now for ducks and geese and will carry them through in good shape until they go on to warmer climates.

## 3. Diseases:

### a. Botulism;

Starting about July 25 it looked like we were going to be in for another bad outbreak of botulism again at Bowdoin. The outbreak was first noted in the southeast bay area along what is known as Painters Point. The highest number of sick and dead birds were picked up during the period July 28 to August 6, however, this number was very small compared with last years losses. Immediately after the outbreak was noted the infected area was patrolled and the birds scared off several times during the early a.m. late p.m. hours. This together with favorable receding water levels is believed to have held

outbreak to a minimum. Cooler weather during the latter part of August may also have helped. A total of 127 dead birds were picked up around the infected areas and 57 sick birds were taken in for treatment. Of the 57 birds treated, 17 died bringing the total known loss up to 144.

## B. Upland Birds:

### 1. Population and Behavior:

Conditions were excellent for a good hatch this season. Clutches averaged considerably larger and generally speaking there were much fewer late hatchings than usual. A Chinese Pheasant nest containing 23 eggs was located near the residence the fore part of May and hatching took place May 20. The hen left with 11 young birds May 21. Seven pheasant nests were noted in the immediate headquarters area. Two broods of Sage Grouse and five of Hungarian Partridges were observed in the general headquarters area. Hungarian broods ranged from 11 to 19 birds. As high as 112 Sage Grouse have been counted in one trip through the Dry Lake area. Observations on Sage Grouse and Huns represents quite a large increase over last year.

### 2. Food and Cover:

Food and cover has been ample throughout the report period. Refuge food patches were utilized extensively, especially after harvesting. Russian Olive and Caragana shrubs have fruited heavily and will furnish an abundance of food for grouse during the coming winter.

## C. Big Game Animals:

Our Antelope herd remained scattered over the refuge throughout all of the period thus an accurate census was not obtained. It was evident that quite a few does left the refuge previous to or during the ~~xxxx~~ fawning season as quite a few does with fawns were noted in immediate adjacent areas. First fawns were noted May 30 when a set of twins were photographed north of the headquarters. Twins were very much in evidence and one set of triplets were noted again this year. Most of the fawns were dropped along the north shore of Bowdoin and in the Lake Side Marsh area. One group of 17 fawns ranging with their mothers along U. S. Highway No. 2 furnished much attraction for interested tourists. The total fawn crop this year is again believed to be somewhere close to 50 head.

Two Mule Deer were observed on several occasions in the Dry Lake area and in that portion of the refuge south of the Great Northern tracks.



Forage for antelope probably was not as good as last year due to severe drouth conditions. Hills did not green up at any time during the spring or summer months. Antelope fed or grazed the low areas where the grass did green up much more than they did the higher areas. Considerable foraging was done in refuge grain food patches during the fore part of the period and during August antelope confined their grazing pretty much to the semi marsh areas south and east of the headquarters. Although grass conditions were below normal the antelope picked up in flesh during the period and are sleek and fat at the present time.

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

Muskrats still appear to be quite numerous. Receding waterlevels have forced many of the rats to seek new houses and abandon old ones along some of the dikes. On August 31 the refuge manager observed one female rat moving a litter of young from one den to another. This was in the barrow canal on the back side of the dike in the southeast bay area. She was in the process of moving them when first observed and while under observation moved six young a distance of about 75 yards. We have not as yet attempted to make an estimate of the refuge population but believe it to be sufficient to warrant the removal of at least the same number as were taken last winter and believe that these should again be taken during December and January.

Skunks have shown an increase both on the refuge and in the adjacent areas. 27 were observed during the period on the refuge and 11 of these were shot during the nesting period. It is believed that continued control practices will be needed and we will attempt to trap a few of these predators after furs become prime.

No Coyotes were observed during this report period. Predatory hunters killed one coyote north of the refuge and so far as is known that is the only one seen in this entire area this summer. Only one weasel and just a very few gophers were observed. Jack Rabbits have probably increased a little this period but their numbers in this general area are still small compared to what they were some years ago. Cotton Tail Rabbits are very numerous around the refuge headquarters and the tree groves in the western portion of the refuge and are commonly seen all over the refuge now. If they keep on increasing at the rate they have this summer it may be necessary to carry on a control campaign or extensive damage may result to refuge shrubs and small trees during the winter months.

#### E. Pradaceous Birds:

Birds of this type noted during the period were Horned Owl, Marsh Hawks, Duck Hawks, Swainson's Hawk, Coopers Hawk, Sharp-shinned Hawk, Crows and Magpies. Marsh and Duck Hawks were probably the most numerous but predation on young birds by all of the above mentioned species is believed to be far smaller than the predation noted by Gulls. Crows and magpies started nesting in the refuge tree groves but every time a nest was located it was destroyed. 9 crow nests and 4 magpie nests, a few of these having young birds, were destroyed. Crows and magpies were very rarely seen on the refuge during August. Several Marsh Hawks with botulism were noted in the southeast bay during August.

#### F. Fish

Carp seem to be making a good comeback in Lake Bowdoin since the heavy winter kill of a few years ago. These fish weighing up to 3 and 4 pounds were very numerous in holes of the Bowdoin inlet canal.

Approximately 300,000 Wall-eyed Pike were again put into the refuge irrigation reservoir by the State Fish and Game Department. The reservoir is being used as a rearing pond and the small pike will be removed sometime in the near future and used for restocking purposes in various parts of the state. Considerable work was done on this reservoir during the fore part of the period to facilitate the removal of the pike.

### III REFUGE DEVELOPMENT & MAINTENANCE

#### A. Physical Development:

The new 500 foot sewer ditch and drain field was completed during early May. The work consisted of Completing the digging of the ditch, laying a 1 to two foot gravel bed in the bottom of the ditch, laying of perforated tile and backfill of the ditch. Approximately 30 yards of rock were also dumped into the old cess pool. About 30 yards more rock is needed to fill this hole.

A new drain was cut into our irrigation reservoir and a concrete flashboard structure-fish trap constructed to help and facilitate the removal of young pike from this reservoir. Work on this project as well as the sewer project mentioned above was done cooperatively by State and Refuge personnel.



## B. Maintenance

Approximately 15 miles of refuge fire guard were maintained twice during the period. The first operation in early June consisted of complete plowing with the fire lane plow. During August we went over the guards again with the 10 foot grader.

The headquarters road from the main highway to the refuge buildings was maintained 4 times during the period and patrol roads mowed when and where needed.

Approximately 100 acres of Canada and Sow Thistle were sprayed with 2-4D. Equipment and 5 days labor of 3 men for this operation was furnished and donated by the Phillips County Weed Commissioner.

Approximately 10 to 12 acres of food patch land was summer fallowed and then weeded twice during the period. Also approximately 15 acres of food patches planted to wheat last spring was mowed and raked the latter part of July and later stacked to be used for winter feeding of pheasants on the refuge.

Roofs on all refuge buildings were given a coat of red shingle stain.

During August Maintenance Man Tjaden worked 7 days with the T-D-40 tractor, dozer and 2 yard carryall scraper on cooperative work for the State Fish and Game Department putting in a dirt fill around the McNeal Fish Hatchery buildings and dozing out a road from the hatchery to the fish pond to be used as an access road for taking out ice. The State has agreed to repay with work at the refuge during the coming quarter.

Considerable time was worked on maintenance jobs that were more or less routine such as mowing of grass and weeds around the headquarters, mowing lawns, irrigating lawns, shrubs tree groves and refuge grain food patches, keeping irrigation ditches clean, rearing canada goose goslings, installation of 5 new window screens on residence and office, brood counts and waterfowl observations, banding ducks, picking up botulism ducks and scaring birds off infected areas and many other jobs which come up from time to time.

310 bushels of wheat and barley were hauled from Medicine Lake Refuge to Bowdoin by truck for winter feeding needs. The refuge manager put in two days on the road and 3 days working with Mr. Kenneth B. Jolley acquainting him with the Pishkun Willow Creek and Benton Lake refuge areas. Having no clerk to keep up the office work or make out the numerous reports now required the refuge manager put in a lot of overtime hours on Saturdays and Sundays as well as evenings trying to keep up to date.

Maintenance to equipment this period consisted only of the regular and routine lubrications, inspections and minor repairs.

The period August 19 to 29, the refuge manager spent in going to and from and attending the joint Regional Conference of Refuge Managers, Biologists and Game Agents held in Portland, Oregon. The refuge manager believes he gained a lot of valuable information from this conference which will help considerably in doing a better job in the future.

C. Seed Collections: (None)

D. Cultivated Crops:

Harvesting of cultivated wheat feed patches consisted only of cutting and raking the wheat and later stacking, this to be fed to pheasants as needed during winter months. Antelope grazed in these small patches quite heavily during the earlier part of the growing season which resulted in a spotty stand and while the wheat was in the soft dough stage from 500 to 1000 yellow-headed blackbirds concentrated their feeding habits on one of the patches. In spite of all this we believe that our yield was about 15 bushels per acre which is as good as much of the irrigated grain in the surrounding irrigated valley. The 10 acres of barley planted south of the railroad tracks was left uncut and to be harvested by the waterfowl. We estimate this field would also yield 15 to 20 bushels per acre if harvested. To date the birds have not found the area which is probably a good thing as the food will be available during the hunting season.

#### IV Economic Uses.

A. Grazing:

Two grazing permits for the grazing of cattle on Lake Side Marsh units were granted by the Reclamation Service. 90 head of cattle were turned into these units July 15. The permits will expire October 14 or sooner depending on range conditions.

#### V PUBLIC RELATIONS

A. Recreational Uses:

Recreational uses on Bowdoin are confined to climbing the tower and wildlife observations. The number of tourists who stopped at the refuge headquarters to ask questions about the refuge and to view the antelope was very high this period.



A check on the number of tourist cars that stopped at the refuge headquarters during a two week period indicated that on the average of 5 cars and 15 people stopped here each day. Taking the period as a whole this would amount to about 1800 tourist that refuge personnel had to talk to during this report period. This cut deeply into the time the manager was trying to work in the office.

#### B. Refuge Visitors:

Date	Name	Title	Agency	Purpose
5/7	Gordon W. Watson	Wildlife Biol.	F.W.S. Billings	Gen. Visit
23	Gerold Salinas	Waterfowl Biol.	State F. & G.	" "
23	George Sturts	Asst. to Biol.	" "	" "
25	W. J. Endersbee	Asst. Director	A.L.U. Wash. D.C.	S & M Con.
25	G. W. Hilden	Asst. Dir. S.M.C	Bur. Indian Aff.	" "
26	Wyn. Freeman	Waterfowl Biol.	State F.&G.	Fly area.
26	Don Brown	Pilot	" "	" "
6/13	Ben Hazeltine	Refuge Mgr.	Fort Peck	Casual visit
13	Cliff Wolf	" "	" "	" "
13	Leo D. Ellingson	" Clerk	" "	" "
13	Norman Stringer	Maintenance Man	" "	" "
13	Wm. Bergeson	Fieldman	State F&G	" "
13	Wm. Green	"	" "	" "
18-19	V. L. Marsh	Ornithologist	Vensuela So. A.	Bird Observations
21	Ben Hazeltine	Refuge Mgr.	Fort Peck	Casual visit
21	Leo D. Ellingson	" Clerk	" "	" "
21	Joseph Arnold	Weed Com.	Phillips Co.	Weed Control
24-25	M.C. Hammond	Wildlife M. Biol.	Lower Souris	Transport Goslings
25	Elizabeth Lunn	Prof. of Biol.	Lake Forest Ill.	Bird Observations
6/30	Dr. & Mrs MacFulich	Wing Commander	RCAF, Aero Eng.	Bird Observations
7/8	J. Van Benthuylen	Ornithologist	Webster Grove Mo.	" "
12	Harrell Mosbaugh	Supervisor	FWS Mis. Basin St.	Visit Dry Lake
12	Joe M. Hatterman	Biologist	" "	" "
12	Wildfred D Crabb	Leader Billings	O. " "	" "
12	Al Henry	Biologist	Park Service	" "
12	Edwin C. Wilson	Engineer	B. R. Billings O.	" "
12	Delbert C. Thurber	"	" Gt.Falls O.	" "
12	Bruce Carlinghouse	Proj. Supt.	B. R. Malta	" "
12	Herb Friede	Game Warden Sup.	Sate F.&G.	" "
12	Cleveland Grant	Photographer	Beloit, Wis.	Courtesy Visit
12	Albert H. Shunk	Land Economist	Bur. Land Mgt.	Investigation
13	Herbert J. Miller	Game Biol.	Mich. Dept. of Con.	Observations
16	Ben Hazeltine	Refuge Mgr.	Fort Peck	Visit
16	Tom Garrett	" "	" "	" "
25	Kenneth Roahen	Game Agent	F.W.S.	Law Enforcement
8/20	Henry E. Childs	Ornithologist	Prov. R. I.	Observations
31	Fred Hartkorn	Biologist	State F. & G.	Pheasant studies
31	Ben Miles	Asst.	" "	" "

C. Refuge Participation:

Attended all meetings of the Phillips County Sportsmen's Association.

Attended meeting of North Dakota Wildlife Federation held in Williston North Dakota June 11.

Took annual leave and attended as delegate from Malta, the annual convention of the Montana Department American Legion held in Butte, Montana July 24 through 27.

VI VIOLATIONS

No game law violations on or near the refuge were observed during the period.

Submitted 9/6/49

  
Leon C. Snyder  
Refuge Manager

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Regional Director



"SUPPLEMENTARY REPORT OF LAKE THIBEDEAU, CREEDMAN COULEE, BLACK COULEE AND HEWITT LAKE EASEMENT REFUGES".

Three trips were made to the above easement refuges during the reporting period, one around the latter part of May, one around the second week of June and one the forepart of July. The first two trips were for the purpose of obtaining waterfowl breeding ground information and the latter one for making brood counts.

No detailed weather data is obtainable for these easement refuges however, excessive drouth conditions prevailed on all the areas the same as reported for Bowdoin.

Hewitt Lake and Black Coulee refuges were completely dry throughout the report period and no waterfowl were present. A few antelope with fawns were noted on both areas and several Sage Grouse seen on the Black Coulee area.

Creedman Coulee Waterlevels at this refuge were comparable with last year. As a whole breeding population was up considerably. Mallards increased between the May and June observations there being approximately 125 noted June 13. Two broods of 7 and 8 were noted June 13. About one hundred per cent increase in young ducks was expected over last year. Pintail breeding population was about the same as last year. 1 brood of 6 was noted. 30 pairs Gadwall were still present June 13 which was about a 100 percent increase over last year. Baldpates are about the same as a year ago. 20 pairs Shovellers were noted May 26 but only 3 pair were present June 13. None were reported for the 1948 nesting season. 2 pair and 2 single male Blue-wing Teal were all that was noted June 13. Last year 9 broods were reported, thus the population of this specie is down considerably on this area. Divers, consisting of Ruddies, Redheads and Scaups had almost completely left the area since May 26. No Canada Geese were observed. Last year 4 broods were reared here. July 8 the following broods were observed: Mallards 6, Pintail 5, Baldpate 3, Blue-wing Teal 1 Gadwall 2, Shoveller 1, Scaup 3, Redhead 1, and Eared Grebe 3. On July 8 ducks on the reservoir were predominantly Baldpates. One flock of approximately 250 were noted. Other species of ducks were common and Eared Grebe were quite numerous. On June 13, one flock of 16 Sage Grouse were observed and on July 8 seven antelope, 2 bucks, 2 does and 3 fawns were noted.

Thibedeau Lake Refuge Waterlevels here were also comparable with last year. The only water on the refuge was in the Diversion Lake. On June 13 5 pairs of mallards 2 with broods were noted. Six single males were also observed. No nesting counts were reported for this refuge last year thus no comparisons can be made. With the exception of canvas-backs which were not noted here June 13, the duck population and species noted were substantially the same as when the area was visited May 26. May 26 populations consisted of: Mallards 1 pr. and 9 single males or a potential of 10 pairs, Gadwall 5 pr., Pintail 2 pr. and 11 males or possibly 13 pair, Baldpates 7 pr., Shoveller, 14 pr., Canvas-back 2 pr and 3 single males, Redhead 2 pr., Blue-winged Teal 8 pr. and Ruddy Duck 8 pr.

Brood counts on Diversion Lake of the Thibedean Easement Refuge July 8 were as follows: Mallard 3, Pintail 3, Gadwall 1, Baldpate 1, Blue-wing Teal 2, Shoveller 2 and Scaup 1 for a total of 13 broods. The only other ducks noted here July 8 was 12 male Ruddies. In addition 35 Eared Grebe were counted. Killdeer and Willets were very common and young of both species were noted. Two broods of Sage Grouse and 3 antelope with one fawn were also observed.

Submitted Sept. 6, 1949

Leon C. Snyder  
Leon C. Snyder  
Refuge Manager

Richard H. Hays  
Regional Office

*WNA*



## WATERFOWL

Refuge BowdoinMonths of May 1to August 31 1949

(1) Species  Common Name	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u> Whistling swan									
II. <u>Geese:</u> Canada goose Cackling goose Brant White-fronted goose Snow goose Blue goose			3000	8/31			175	1400	3000
III. <u>Ducks:</u> Mallard Black duck Gadwall Baldpate Pintail Green-winged teal Blue-winged teal Cinnamon teal Shoveller Wood duck Redhead Ring-necked duck Canvas-back Scaup Golden-eye Buffle-head Ruddy duck			30000 6000 5000 15000 2000 9000 12 3200 900 800 4000 1000	8/31 8/31 8/31 8/31 8/31 8/31 5/1 5/23 5/1 5/7 5/1 5/1			75 51 37 49 21 37 35 24 26 1 8 12	1800 800 800 1300 400 700 850 300 300 5 25 12	30000 8000 6000 20000 2000 10000 12 4200 1200 1500 4000 25 12 1500
IV. <u>Coots:</u>			2500	8/31			25	400	2500

## SUMMARIES

### Total Production:

Geese 1400

Ducks 8005

Coots 400

Total waterfowl usage during period 94000

Peak waterfowl numbers 82412

Areas used by concentrations Sage beds, Rush areas & Islands and entire shorelines.

Principal nesting areas this season Islands, rush areas, marshes and off shore upland areas.

Reported by Leon C. Snyder  
**Leon C. Snyder**

## 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~~ **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 BowdoinMonths of May 1 to August 31 1949

(1) Species  Common Name	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
<u>I. Water and Marsh Birds:</u>										
Western Grebe			100	6/25					est. 50	100
Eared Grebe			2500	6/25					est. 1000	2500
Pied-billed Grebe			50	6/25					est. 30	50
White Pelican			6500	6/25			3	1800	3000	6500
Double Crested Cormorant			1200				3	167	850	1200
Great Blue Heron			400				2	67	275	400
Snowy Egret	1	6/19			1	6/24				1
American Bittern			9	6/25				Unknown		35
<u>II. Shorebirds, Gulls and</u>										
<u>Terns:</u>										
Killdeer									Est. 150	250
Spotted Sandpiper									75	125
Yellow-Legs Greater & Lesser			500	8/30						800
Western Dowitcher			700	8/30						1000
Wilson's Phalarope									2000	3000
Avocet								23	1000	1500
Western Willet									900	1500
Marbled Godwit									250	500
Long-billed Curlew								13	100	170
Gulls, Ringed-billed & Calif.							4	2150	7000	12000
Black Terns									200	500
Common Terns							2	125	400	700

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove				3	25
White-winged dove				6	
IV. <u>Predaceous Birds:</u>					
Golden eagle					9
Duck hawk					3
Horned owl					8
Magpie					
Raven					
Crow					10
Marsh Hawk				4	50
Swainsons Hawk				25	4
Reported by				Leon C. Snyder	

#### INSTRUCTIONS

Leon C. Snyder

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)  
 II. Shorebirds, Gulls and Terns (Charadriiformes)  
 III. Doves and Pigeons (Columbiformes)  
 IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.



3-1752  
Form NR-2  
(April 1946)

UPLAND GAME BIRDS

1613

Refuge Bowdoin Months of May 1 to August 31, 1949

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Sage Grouse	Upland grass & Sage areas 2400a	16	2	80	50-50				150	100% increase over last year
Chinese Pheasant	Cloverpatches Cultivated food patches, tree groves, grass 500 acres	2	50	500	50-50				1000	No change over last year
Hungarian Partridge	Same as above 500 acres	3.3	9	130	50-50				150	

## 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.



## REFUGE GRAIN REPORT

Refuge Bowdoin

Months of May thru August 1948

(1)	(2)	(3)	(4)	(5)				(6)	(7)		
	ON HAND	RECEIVED		GRAIN DISPOSED OF				ON HAND	PROPOSED USE		
VARIETY	BEGINNING	DURING	TOTAL	TRANS-	SEEDED	FED	TOTAL	END OF	SEED	FEED	SURP.
	OF PERIOD	PERIOD		FERRED				PERIOD			
Wheat	15	210	225	None	None	20	20	205	20	185	None
Barley	18	100	118	None	None	None	None	118	15	103	None

- (8) Indicate shipping or collection points..... Malta, Montana
- (9) Grain is stored at..... Headquarters Granary
- (10) Remarks Grain fed was used as bait during banding operations on the refuge.

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.



REFUGE Creedman Coulee

## WATERFOWL

MONTHS OF Mo. 1 to August 31, 1949

(1) Species  Common Name	(2) First Migrants Seen		(3) Peak Concentration		(4) Last Migrants Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
1. <u>Swans:</u> Whistling swan							<i>Only Actual Observations Listed</i>		
2. <u>Geese:</u> Canada goose Cackling goose Brant White-fronted goose Snow goose Blue goose									
3. <u>Ducks:</u> Mallard			125	6/13			6	34	200
Black Duck									
Gadwall			60	6/13			2	15	100
Baldpate			250	7/8			3	30	250
Pintail			100	6/13			5	35	150
Green-winged teal									
Blue-winged teal			10	5/26			1	8	50
Cinnamon teal									
Shoveller			40	5/26			1	8	100
Wood duck									
Redhead			20	5/26			1	5	25
Ring-necked duck									
Canvas-back									
Scaup			100	5/26			3	28	128
Golden-eye									
Buffle-head									
Ruddy duck			80	5/26					80
4. <u>Coot:</u>									

3-1750  
(June 1949)

(over)

Form NR-1

# SUMMARIES

## Total Production:

Geese \_\_\_\_\_

Ducks 163

Coots \_\_\_\_\_

Total waterfowl usage during period 1983

Peak waterfowl numbers 780

Areas used by concentrations All water areas.

Principal nesting areas this season \_\_\_\_\_

Shorelines

Reported by Leon C. Snyder

Leon C. Snyder

## INSTRUCTIONS

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- (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 the data are necessarily based on an analysis of the rest of the form.



REFUGE Thibodeau

## WATERFOWL

MONTHS OF Ma. to Aug. 31, 19 49

(1) Species  Common Name	(2) First Migrants Seen		(3) Peak Concentration		(4) Last Migrants Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
1. <u>Swans:</u> Whistling swan							Only actual observations listed.		
2. <u>Geese:</u> Canada goose Cackling goose Brant White-fronted goose Snow goose Blue goose									
3. <u>Ducks:</u> Mallard	20	5/26					3	19	40
Black Duck									
Gadwall	10	5/26					1	7	17
Baldpate	14	5/26					1	10	24
Pintail	15	5/26					3	16	31
Green-winged teal									
Blue-winged teal	16	5/26					2	20	36
Cinnamon teal									
Shoveller	28	5/26					2	18	46
Wood duck									
Redhead	4	5/26							4
Ring-necked duck									
Canvas-back	7	5/26							7
Scaup							1	6	9
Golden-eye									
Buffle-head									
Ruddy duck	21								21
4. <u>Coot:</u>									

3-1750  
(June 1949)

(over)

Form NR-1

# SUMMARIES

## Total Production:

Geese \_\_\_\_\_

Ducks 96

Coots \_\_\_\_\_

Total waterfowl usage during period 215

Peak waterfowl numbers 135

Areas used by concentrations Diversion Reservoir

Principal nesting areas this season Shorelines

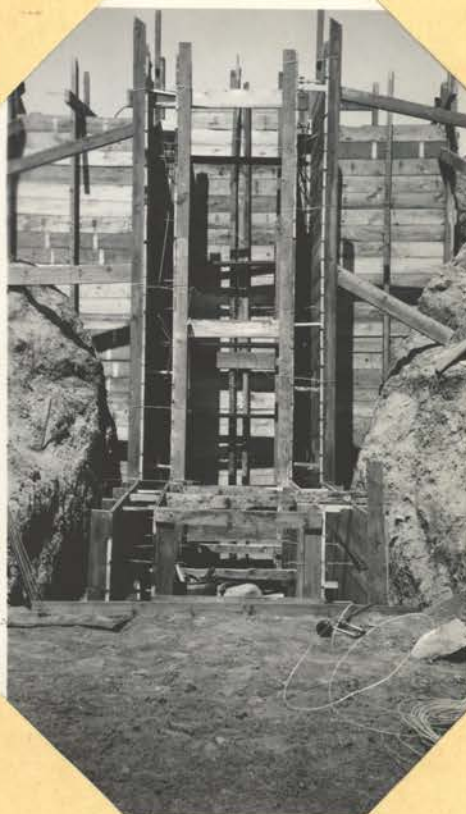
Reported by Leon E. Snyder

## 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.
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- (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.

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Upper R32 E-1 Apr. 30 Starting excavation on the new 500 ft. sewer line at hdq. Dragline is one that State Fish & Game had here for work on fish pond. Gravel on right is for the drain field. Lower R32 E 2&3 Apr. 4 & 5. Cut, Culvert and nearly completed forms on the new fish trap and spillway in the hdq irrigation reservoir. The reservoir is used cooperatively by the State Fish & Game Dept. as a rearing pond for Pike.



R32 E-4 May 21. One of the many youth groups that visited the refuge and observed wildlife just previous to the close of school. The above group is the Brownie Scouts from Malta.



R32 E-5 May 22. Pelican nests on Woody Island of Lake Bowdoin. 1800 of these nests were estimated on Woody and Pelican Islands.





R32 E 6-7-8 May 30; Mother Antelope is keeping a sharp watch while the refuge manager takes these two shots of her new family. Note how the young fellow in the lower photo blends in with the surrounding area.



The Bowdoin Antelope herds in the vicinity of the refuge headquarters was one of the attractions that brought a very large number of tourists into the headquarters site during June, July and August. Photos by courtesy of Elizabeth T. Lunn, Biology Dept., Lake Forest College, Lake Forest, Illinois.





Two Upper: R33 E-7-8 June 23. Spraying Canada Thistle with 2-4D along roadsides and ditch banks. Lower: Spraying Sow Thistle on about a 30 acre infested area. Equipment and laborers donated by Phillips County.



Upper two: R33 E-6 & R34 E-5 June 23 and July 21. Before and after shots of Canada Thistle that were sprayed with 2-4-D. Lower: R34 E-7 August 1; "Coontail" almost entirely covers the Lake Side Marsh unit.





R33 E2-3-4 June 19. Young and old pelicans and cormorants on Woody Island. This island is a very dirty and smelly place at this time of the year. Total of adult and young birds on this island is estimated at 6500 pelicans, 300 cormorants and 7000 gulls.



R33 E-5 June 19. Young Blue Herons on Pelican Islands show their resentment of the intrusion on their rearing grounds.



R34 E-1 June 23. This four foot plus Rattler was killed on the patrol road near Lakeside Marsh. The young Avocet in the picture was just about to be its next meal.





R34 E-2 June 24. 17 young hand reared canada geese and their foster mothers. Note how check patches are beginning to appear on some of the goslings.



R34 E-4 June 25. Wildlife Management Biologist M. C. Hammond and Fish and Wildlife Service plane take the above goslings on their first and only flight they will likely ever make. The goslings were pinioned at Bowdoin and their new home will be the Crescent Lake Refuge in Nebraska.