ROUTING SLIP DIVISION OF WILDLIFE REFUGES DATE: 5/17 1945

____ MR. SALYER _____ ____ SECTION OF HABITAT IMPROVEMENT:

____ MR. ELMER _____ ~~Mr. Griffith~~ REG 5-19

_____ _____ ~~Dr. Bourn~~ WSB 6/12

_____ _____ ~~Miss Cook~~ JWC 5-31

____ SECTION OF OPERATIONS: ____ SECTION OF LAND MANAGEMENT:

~~Mr. Krummes~~ WK 6/3 Mr. Earnshaw _____

~~Mr. Regan~~ JRR 6/15 ~~Mr. DuMont~~ PAD 5/2

Miss Baum _____ _____ _____

____ SECTION OF STRUCTURES: ____ STENOGRAPHERS:

~~Mr. Taylor~~ RWW 6/2 _____ _____

_____ _____ _____ _____

REMARKS: Bowdoin and Eggemoggin Refuges. (Summary FY 1945)

Jan-April 1945

Narrative Report

Return to: _____

8825

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Bowdoin National Wildlife Refuge
Narrative Report
January 1 to April 30, 1945

I General

A. Weather Conditions

For the most part we experienced a very mild winter and a cold backward spring. The first day of January, the maximum temperature was one below and the minimum temperature 27 below. From the 10th to the 28th the minimum temperature ranged from 2 degrees below zero on the 21st and 24 above on the 16th. The mercury dropped to 25 below on the 30th. The weather warmed up the second week in February and we recorded a maximum temperature on the 8th of 48 degrees. The weather turned cold again the first week of March and on the 5th the mercury dropped to 31 below, the coldest recorded thus far for 1945. The change in temperature was preceeded by a light snow which brought .15 inches of precipitation. The last three weeks of the month were spring-like with a maximum temperature of 70 degrees recorded on the 22nd. April was a cold backward month. The temperature ranged from 13 degrees on the 2nd to 75 degrees on the 20th. We received spring rains on the 24-25th which recorded .37 inches of precipitation. The 28th we were blanketed with a three inch layer of wet snow which registered 1.33 inches of precipitation. The last killing frost was on April 29th.

	Precipitation		Max. Temp.	Min. Temp.
January	.71		48	-27
February	.27		48	-19
March	1.21		70	-31
April	1.91		75	13
Total Precip.	4.10	Ext.	75	-31

B. Water Conditions

The main lake at Bowdoin during the winter months had a water elevation of 2205.20. Between March 10th and 13th we experienced a warm period and we received a small amount of run-off water from the area to the west of the refuge. This brought the lake level up to the 2205.30 mark. The Bureau of Reclamation turned water in their Dodson Canal on April 7th. This was flood water from the Milk River. I requested water from them at that time and on April 9th they turned us in a full head of water. This water continued to flow into Lake Bowdoin until the morning of the 23rd. We received 1,500

acre feet of water during that period which brought the lake level up to the 2205.80 elevation where it now stands. This is a favorable level for this time of the year and is in accordance with the water plan.

Lakeside Marsh has been filled to within eight inches of spillway crest during April and is now in good condition to produce a food and cover crop. We have kept a close check this spring on Beaver Creek and at no time has it over-flowed its banks, and unless we obtain some late snow storms or heavy rains we will be unable to impound any flood water from Beaver Creek in Dry Lake. At the present time Dry Lake is completely without water.

No damage was done to dikes or control structures by floods this spring.

C. Fires

High winds and lack of surface moisture the first three weeks of April made prairie fires a range menace in Phillips County. An attempt to burn off stubble fields resulted in a fire which was not extinguished for eight hours in the Bennett Lake Community and a fire north of Dodson burned several sections. No fires occurred on the refuge during the period, despite the heavy stand of old grass that was left on portions of the refuge.

II Wildlife

A. Migratory Birds

1. Population and Behavior

We experienced a cold backward spring in this area and the migration was somewhat later than usual. Inasmuch as the main lake did not open up until March 12th we observed no ducks until that date. On the 12th South Bay become free of ice and 1500 mallards and 500 pintails put in an appearance. The following day the ice could be seen melting all over the lake very rapidly and the open holes in the ice were well supplied with ducks. I also observed 50 Canada geese. The 27th I observed one pair of G/W teal, four redheads, and two canvas-backs. The white pelicans put in an appearance on the 30th when I observed eight on the west end of the lake adjacent to the boat house. From then on until the 20th of April it was the same old story; ducks and geese arriving in ever increasing numbers. We figured the migratory birds at their peak on the 20th of April when we estimated the population at 25,000.

2. Food and Cover

Cultivated food patches consisting of wheat and corn which were left standing on the west end of the refuge did not prove too atractive to the ducks and geese this spring as the ringnecked pheasants had almost cleaned these fields during the winter months. The early migrants, the mallards and pintails seemed to prefer the large stands of prairie bullrush in South Bay and Paynter's Point where there was an enormous supply available for them. The diving ducks could be seen feeding in the main portion of the Lake.

Winter feeding of ducks was done on a small scale in the open spring

holes adjacent to Nelson Reservoir six or seven miles northwest of Bowdoin. These warm spring holes attracted the mallards and they remained with us all winter, making it necessary for us to feed them during extreme cold periods. Sixty bushels of wheat was fed to this flock of ten thousand mallards.

3. Botulism

No botulism or any other disease was observed during the period covered by this report.

B. Upland Game Birds

1. Population and Behavior

The ringnecked pheasants, hungarian partridge, and sage hens are the only upland game birds which inhabit the refuge. The hungarian partridge are very scarce on this area as we have a population of only approximately thirty birds. The small flock of sage hens which inhabit the sage brush and grease wood flats south of the Great Northern Railroad tracks have increased in numbers slightly this past year. Last year at this time the flock numbered only two dozen birds. On several occasions this winter we have counted 50-60 birds in this flock. The ringnecked pheasant continues to predominate among the upland game birds. During the late fall and early winter months the pheasant population numbered 2000 birds. This is by far too large a population for this small area, so a permit was issued the State Fish and Game Commission for the removing of approximately 500 of these birds for re-stocking purposes. They removed 507 birds during January and February of which 410 were hens and 97 were cocks. No feeding of upland game was undertaken during the winter as the grain fields, Russian olive groves, and weed patches afforded them splendid food and cover.

C. Big Game Animals

1. Population and Behavior

A year ago the antelope population on Bowdoin numbered 62 head. This winter on several occasions while the antelope were all bunched in one herd on Big Island we counted 84 head, an increase of 22 over last year. These game animals seem to prefer the cactus and buffalo grass for food of which there is an abundance for them on the area.

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

The muskrat trapping operations under special use permit were brought to a close on December 31st. The co-operative trapper caught 395 muskrats on a 50-50 share basis. These fur were divided and the Government's share was shipped to the Seattle Fur Exchange to be sold at auction. The larger portion of these muskrats were taken in the neighborhood of the dikes and control structures. I have spent a considerable amount of time this spring to determine the rat population and it is my opinion that we still have approximately six hundred rats. Skunk, weasel, and mink do not seem to be too plentiful, however, the last few weeks I have observed a considerable amount

of mink activity and it might be that we should take a limited number of these fur bearers another year. This past quarter we have observed only a limited number of coyotes using the area. While patrolling the refuge during the winter months we took six coyotes. Their pelts were shipped to the Seattle Fur Exchange to be sold at auction.

The rodent problem is of little importance here at Bowdoin. We have observed no Richardson ground squirrels, or prairie dogs which are prevalent in certain sections of eastern Montana. Field mice and gophers are not found in any great numbers and cause no concern.

E. Predaceous Birds

A limited number of magpies inhabit the refuge, but do not nest here. It is felt that control measures are un-necessary. A few crows were observed during April but only in migration.

F. Fish

Carp seining operations were undertaken on Lake Bowdoin during January, February, and March under special use permit by the McNeil Brothers. These men were very successful in this undertaking as they caught 105,000 pounds of these fish. Ninety thousand pounds were sold by the McNeil Brothers F. O. B. Bowdoin to an eastern fish dealer who shipped them to the New York market. One car of 18,000 lbs was shipped in a live car and the balance was boxed and iced and shipped in that order. It cost the fish dealers $5.35 per hundred weight to ship these fish first class express from Bowdoin to New York City. The McNeil Brothers sold 15,000 pounds of their catch locally. I have been advised by the McNeil Brothers that they realized five cents per pound from the sale of all fish caught last winter.

The State Fish and Game Commission are desirous of constructing another warm water fish rearing pond on the area. A site had previously been selected for this pond one mile northeast of headquarters. The Commission has earmarked funds for this construction work, and as soon as they sign the ammendment to the original agreement which we mailed to them last November, and obtain an agreement from the Bureau of Reclamation for the supplying of the necessary water for the pool, we will be in a position to authorize them to start the construction work. It is my understanding that the State Fish and Game Commission intend to rear young walleyed pike in this new pool when it is completed for re-stocking Nelson Reservoir.

III Refuge Development and Maintenance

A. Maintenance

A large portion of our time during the first three months of the quarter was spent overhauling and maintenance of equipment. The 22 H. P. Caterpillar tractor was completely overhauled. This work consisted of a bearing and ring job, valve grind, and placing new pins in the tracks. It was also given a paint job. The hydraulic brake system on the Dodge pickup was overhauled, new carbureter installed on the Chevrolet 1½ ton dump truck and other repairs were made to the other trucks. Oil barrels and grease containers

were placed in order in the oil house and a oil drain pan constructed. The old Rangely round bottom boat which was in a sad state of repair was overhauled, calked and given a coat of paint. Farming and other machinery was placed in order. A considerable amount of time was spent in the office reorganizing the filing system and general clean-up. All correspondence was kept current and accounts were kept up-to-date and reconciled. A large portion of our time during April was spent with farming operations. Patrol trails and fences gone over after the spring run-off.

B. Plantings

1. Aquatic and Marsh Plants

No aquatic planting were undertaken during the period.

2. Trees and Shrubs

No trees or shrubs were planted with the exception of the four dozen 3-4 foot red cedars which we secured on Rock Creek northeast of Hinsdale. These red cedars were planted in the vicinity of refuge headquarters.

3. Cultivated Crops

Thirty acres have been planted to barley during April, fifteen acres will be planted to corn on or about May 15th., and another fifteen acres will be planted to winter rye south of the railroad tracks in July or the first part of August to supply the geese with green goose pasture.

IV Economic Use of Refuge

A. Grazing

A total of 33 A. U. M's of grazing was permitted on the area during January, February, and March. These were all horses and were grazed at the rate of 50¢ per A. U. M. The rates being set and fees collected by the Bureau of Reclamation. Additional grass was still available, but we had no other requests for such grazing.

B. Haying

None this period

C. Fur Harvest

Reported previously in this report.

V. Field Investigations

No scientific investigations were undertaken during the period.

Vl Public Relations

On several occasions during the winter a large number of people from Malta spent Sundays skating on the Lake. At different times during February, and

March we observed twenty to twenty five people at a time viewing the carp seining operations which were conducted on the Lake by the McNeil Brothers of Saco, Montana.

B. Refuge Visitors

Mr. Ken Roahen, U. S. Game Agent with headquarters at Billings, visited headquarters during April. He was the only Service official that called on us during the period. Mr. Elmer Johnson, Chairman of the State Game Commission and several of the deputy Game Wardens visited us at different times during the period.

C. Refuge Participation

Refuge personnel attendad sportsmens meetings of the local club at Malta on several occasions during the period. On March 31st I attended the Hill County annual wildlife banquet at Havre. I was a guest of the Club. Other guests included four State Game Department Officials from Helena and Mr. Tom Horn of the Fort Peck Game Range.

D. Hunting

Nothing to report this period.

E. Fishing

The carp seining operations carried on by the McNeil Brothers is the only activity in this line to report.

F. Violations

Most of our patrol activities during the period consisted of frequent visits to Nelson Reservoir, Hewitt Lake, and of course, Bowdoin and adjacent areas. We found no illegal hunting or any other game law violations.

Submitted 5-5-45

Gene H. Crawford
GENE H. CRAWFORD
REFUGE MANAGER

Regional Director

March we observed twenty to twenty five people at a time viewing the carp seining operations which were conducted on the lake by the McNeil Brothers of Saco, Montana.

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Mr. Ken Hosken, U. S. Game Agent with headquarters at Billings, visited headquarters during April. He was the only Service official that called on us during the period. Mr. Elmer Johnson, Chairman of the State Game Commission and several of the deputy Game Wardens visited us at different times during the period.

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Refuge personnel attended sportsmens meetings of the local club at Malta on several occasions during the period. On March 31st I attended the Hill County annual wildlife banquet at Havre. I was a guest of the Club. Other guests included four State Game Department officials from Helena and Mr. Tom Horn of the Fort Peck Game Range.

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Submitted 5-5-45

GENE H. CRAWFORD
REFUGE MANAGER

Regional Director

Supplementary Report on Lake Thibedeau, Creedman Coulee,
Black Coulee and Hewitt Lake Easement Refuges

A trip was made to Creedman Coulee, Thibedeau, and Black Coulee during March and another trip was made to these three areas the latter part of April. Hewitt Lake was visited on several occasions during the period by Patrolman Dyrdahl and my self.

Of the four easement refuges supervised from Bowdoin, Black Coulee is in far better condition than the others. This area was visited on April 23rd and at that time we observed the lake to be within six inches of over-flowing through the spillway. This area is well fenced and the lake contains a good supply of aquatic growth. On our inspection of this area on April 23rd we observed approximately 2000 ducks consisting of shovellers, canvas-backs, L. scaup, buffleheads, golden-eyes, mallards, pintails, G/W teal, gadwall, and eared grebe. Large numbers of bullheads were caught from this lake last summer and no doubt will attract fishermen again this year.

The spring run-off was light at both Creedman Coulee and Hewitt Lake. Consequently no great amount of water was impounded. At both of these refuges the water level is twelve inches lower than for the same period a year ago. On my trip to the Creedman Coulee area on April 24th which was apparently at the peak of the migration I observed 1800 ducks and 5 Canada geese using the area. Hewitt Lake was visited by Patrolman Dyrdahl on April 27th and he reported 200 Lessor Scaup and 20 pintails using the area. Hewitt Lake is so near Nelson Reservoir that at times all the ducks are at Nelson while at other times the place is black with ducks.

Thibedeau was visited at the same time we visited Creedman Coulee on April 24th. This area is completely without water with the exception of the Diversion Dam Reservoir. This Reservoir is almost full. But there is no water at all in the lakes below. We observed two dozen mallards on the Reservoir and other than that no ducks were to be seen.

Dams and spillways have been inspected and have been found in good condition on all easements. All are well posted with boundary markers. Fences on Black Coulee have been checked and repaired.

A trapping permit was issued for the removing of 150 muskrats on the Creedman Coulee Refuge on a 50-50 share basis. This trapper was somewhat reluctant to sign the application for a permit on a percentage basis, as he had previously trapped on a trapper-take-all basis. To make things worse this trapper took sick during the trapping season, and consequently he caught only 16 muskrats. These muskrats fur were divided equally between the trapper and the Government. The eight hides due the Government were shipped to the Seattle Fur Exchange to be sold at auction.

Summary of Activities at Bowdoin Refuge for year
May 1, 1944 to April 30, 1945

There was a change in Refuge Managers during the year. Mr. Hazletine moved from the Medicine Lake Refuge to the Lower Souris Refuge in North Dakota. Mr. Ekedahl transferred from Bowdoin to the Medicine Lake Refuge to become the manager at that point. I moved from the Crescent Lake Refuge in Nebraska on July 18th to take charge of this area. I was very well pleased when I arrived at Bowdoin to find that Mr. Ekedahl had left all property records, office files, and reports up to date. All correspondence had been kept current and accounts were kept up-to-date and reconciled. This was certainly a help to me, as it gave me more time to become acquainted with the new area.

The development work during the year consisted mainly of constructing dike C in the Dry Lake area in order to impound flood water from Beaver Creek. We completed the casting of the dirt for the dike (17,100 cu. yds.) and widened the borrow pit on the back side of the dike to the east boundary of the refuge, moving 5,850 cu. yds. of dirt in this operation. We started the dirt casting on September 8th with the dragline and finished up on this job the 30th of October. The dirt casting and widening of the borrow pit is now completed. All that remains to be done is the sloping of the dike and this is ten percent completed.

We had high hopes of being able to impound flood water from Beaver Creek in Dry Lake this spring, but Beaver did not over-flow its banks, and we will be unable to bring this unit into production this year. Until we are able to construct the dam and diversion ditch in Beaver Creek we will not be assured of a perminant water supply for Dry Lake.

A large portion of our time was spent with farming operations, mowing weeds, irrigating tree plantings, grading patrol trails and fire guards, and maintaining boundary fences. Refuge equipment was overhauled during the winter.

The public shooting area did not seem to be too attractive to duck and goose hunters during the hunting season. Some complained about the low water in Bowdoin, while others mentioned that the majority of the birds inhabited the protected bays and isolated pot holes on the closed areas. A total of 75 man days of hunting were recorded with a bag of 187 ducks and 3 geese for the season.

We were unable to persuade the Bureau of Reclamation to furnish Lake Bowdoin with a sufficient amount of water during the fall to bring the water elevation up to the 2206.00 mark. They furnished us 1300 acre feet of water in September which brought the lake elevation up to the 2205.20 mark, thus we went through the winter with a low water level. Between March 10th and 13th we experienced a warm period and we received a small amount of run-off water from the area to the west of the refuge. This brought the lake level up to the 2205.30 mark. Reclamation turned water in their Dodson Canal on April 7

and we again requested water from them. Between April 9th and 23rd we received 1500 acre feet of water from them. This brought the lake up to the 2205.80 mark. We asked the Reclamation ditch walker to turn the water off on April 23rd rather than bring the water elevation up to the even 2206.00 mark as it was getting so late in the season that we thought it might interfere with duck nesting.

Other high lights of the year consisted of the carp seining operations which were undertaken by the McNeil Brothers during the winter under special use permit. These men caught 105,000 pounds of these fish of which 90,000 pounds were sold on the New York market and 15,000 pounds were sold locally. I have been informed by the McNeil Brothers that they realized 5¢ per pound FOB Bowdoin from the sale of all carp taken from the lake last winter.

The spring migration was at its peak on April 20th when we observed 25,000 migratory birds using the refuge.

Patrolman Dyrdahl with two coyotes caught during January R-3-1 No. 781 1-6-45

Feeding ducks in the spring holes adjacent to Nelson Reservoir six or seven miles northeast of Bowdoin R-3-2 No. 782 1-10-45

R-3-3 No. 783 3-6-45

Two photographs showing a portion of the flocks of 10,000 mallards which remained with us all winter on the spring holes adjacent to Nelson Reservoir. R-3-4 No. 784 3-6-45

R-3-5 No. 785 1-27-45

The two above pictures show carp seining operations which were carried on here at Bowdoin by the McNeil Brothers
R-3-6 No. 786 1-27-45

This picture shows the McNeil Brothers and their crew pulling the carp sein from under the ice. The ice was 24 inches thick when this picture was taken. Notice the spectators who had come to refuge to view this operation. R-3-7 No. 787 1-27-45

Form NR-1

MIGRATORY BIRDS

Refuge BOWDOIN Months of January 1 to April 30, 1945

1612

(1) Species	(2) First Observed		(3) Became Common	(4) Peak Concentration		(5) Last Observed		(6) Young Produced			(7) Total
Common Name	Number	Date	Date	Number	Date	Number	Date	No. Broods Obsvd.	Avg. Size	Esti-mated Total	Number Using Refuge
Common Loon	1	4-28	4-30	7	4-30						7
Eared Grebe	2	4-25	4-29	200	4-30						400
White Pelican	8	3-30	4-7	2000	4-20						2000
Double Crested Cormorant	1	4-25	4-29	28	4-29						50
Great Blue Heron	1	3-22	4-20	300	4-25						400
Common Canada Goose	50	3-15	3-22	500	4-10						800
L. Snow Goose	250	4-13	4-13	500	4-20						500
Common Mallard	1500	3-12	3-12	5000	4-1						10000
Gadwall	200	3-22	3-22	1000	4-1						2000
Baldpate	50	3-22	3-30	1200	4-1						3000
Pintail	500	3-12	3-12	6000	4-1						12000
G/W teal	2	3-27	4-10	500	4-10						800
B/W teal	2	4-28	4-30	100	4-30						100
Cinnamon teal	2	4-30	The only ones observed								2
Shoveller	9	4-7	4-13	4000	4-20						6000
Redhead	4	3-27	3-30	500	4-4						1500
Canvas-back	2	3-27	3-30	800	4-4						2000
L. Scaup	13	4-4	4-7	1000	4-10						2000
Am. Golden-eye	25	4-1	4-7	300	4-10						800
Buffle-head	1	4-1	4-2	35	4-10						100
Am. Merganser	2	4-15	4-20	250	4-20						500

REMARKS: (Pertinent information not specifically requested)

A close observation was made during the migration and I was somewhat surprised in not being able to see a ruddy duck.

INSTRUCTIONS

Form NR-1 - MIGRATORY BIRDS (Include species in families Gaviidae through Strigidae; also doves and woodcocks)*

In case a resident form occurs, such as mottled duck on the Gulf Coast, use only the columns that apply.

(1) SPECIES: Use correct common names as found in the A.O.U. Check List, 1931 Edition, and list in A.O.U. order. General terms are to be avoided, such as "scaup", "teal", etc.; use "green-winged teal" or "lesser scaup".

(2) FIRST OBSERVED: The first refuge record for the species during spring migration, fall migration, wintering, or summering, and the number observed. In the case of resident species this column may be disregarded.

(3) BECAME COMMON: The date the species became common on the refuge.

(4) PEAK CONCENTRATION: The greatest number of the species present on any one date or limited interval of time.

(5) LAST OBSERVED: The last refuge record for the species during the spring or fall migration, wintering, or summering, and the numbers observed exclusive of obvious cripples or non-migrants.

(6) YOUNG PRODUCED: Estimated number of young produced based upon 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 are to be omitted.

(7) 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 manner in which birds come through; i.e., in waves or all at once. On refuges representing the terminus of the flight lane, the figures would probably be the same in many cases.

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

Form NR-1

MIGRATORY BIRDS

Refuge BOWDOIN Months of January 1 to April 30, 1945

1612

(1) Species	(2) First Observed		(3) Became Common	(4) Peak Concentration		(5) Last Observed		(6) Young Produced			(7) Total
Common Name	Number	Date	Date	Number	Date	Number	Date	No. Broods Obsvd.	Avg. Size	Esti-mated Total	Number Using Refuge
Cooper's Hawk	1	4-20	4-29	8	4-29						20
Am. Rough-legged Hawk	Here all winter										20
Golden Eagle	Here all winter										10
Am. Bald Eagle	Here all winter										4
Marsh Hawk	Here all winter										100
Am. Coot	1	4-25	4-27	1000	4-30						1500
Killdeer	1	4-15	4-20	500	4-25						500
Long-billed Curlew	1	4-20	4-30	100	4-30						200
Western Willet	2	4-20	4-30	50	4-30						100
Marbled Godwit	2	4-25	only ones observed								2
Avocet	1	4-25	4-30	17	4-30						17
Ring-billed Gull	4	3-22	4-1	3000	4-30						6000
Great Horned Owl	Winter resident										4
Short-eared Owl	Winter resident										50

REMARKS: (Pertinent information not specifically requested)

No Western Grebe, Sandpipers, Phalaropes, or Terns had put an appearance by the end of the quarter.

INSTRUCTIONS

Form NR-1 - MIGRATORY BIRDS (Include species in families Gaviidae through Strigidae; also doves and woodcocks)*

In case a resident form occurs, such as mottled duck on the Gulf Coast, use only the columns that apply.

(1) SPECIES: Use correct common names as found in the A.O.U. Check List, 1931 Edition, and list in A.O.U. order. General terms are to be avoided, such as "scaup", "teal", etc.; use "green-winged teal" or "lesser scaup".

(2) FIRST OBSERVED: The first refuge record for the species during spring migration, fall migration, wintering, or summering, and the number observed. In the case of resident species this column may be disregarded.

(3) BECAME COMMON: The date the species became common on the refuge.

(4) PEAK CONCENTRATION: The greatest number of the species present on any one date or limited interval of time.

(5) LAST OBSERVED: The last refuge record for the species during the spring or fall migration, wintering, or summering, and the numbers observed exclusive of obvious cripples or non-migrants.

(6) YOUNG PRODUCED: Estimated number of young produced based upon 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 are to be omitted.

(7) 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 manner in which birds come through; i.e., in waves or all at once. On refuges representing the terminus of the flight lane, the figures would probably be the same in many cases.

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

Form NR-2 UPLAND GAME BIRDS 1613

Refuge BOWDOIN Months of January 1 to April 30, 1945

(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.
Sage Hen	Grass, sage, & Grease wood 1500 acres	30							50-60	These birds have established them selves on the area south of the Great Northern Railroad tracks.
Hungarian Part.	Grass, weeds, clover, & Grain fields.								30	
Ring-necked Pheasant	Grass, weeds, clover, & Grain fields.						507		2000	The Montana State Game Commission removed 507 birds from the refuge during the winter under permit for re-stocking purposes. 97 cocks & 410 hens.

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.

Form NR-2 UPLAND GAME BIRDS 1613

Refuge BOWDOIN Months of January 1 to April 30, 1945

(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.
Sage Hen	Grass, sage, & Grease wood 1500 acres	30							50-60	These birds have established them selves on the area south of the Great Northern Railroad tracks.
Hungarian Part.	Grass, weeds, clover, & Grain fields.								30	
Ring-necked Pheasant	Grass, weeds, clover, & Grain fields.						507		2000	The Montana State Game Commission removed 507 birds from the refuge during the winter under permit for re-stocking purposes. 97 cocks & 410 hens.

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.

Form NR-4

SMALL MAMMALS

Refuge BONDOIN April 30, 1945

(1) Species	(2) Density		(3) Removals					(4) Disposition of Fur							(5)
								Share Trapping							
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control	For Re-stocking	For Research	Permit Number	Trappers' Share	Refuge Share	Total Refuge Furs Shipped	Refuge Income	Furs Donated	Furs Destroyed	Total Population
Muskrat	Marsh, bullrush 1000 acres	1		395				T3134	½	½	197	*		1	1000
Coyote					6							*			20
Skunk, narrow stripe															50
Weasel															30
Mink															20
Badger															6
Rabbit, cottontail															200
Rabbit, Jack, W/tail															150

REMARKS: Muskrat and coyote skins were shipped to the Seattle Fur Exchange
To-date we havn't been advised as to the price rec'd from the sale of these fur.

1615

INSTRUCTIONS

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

(1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan. "List of North American Recent Mammals" by G. S. Miller, Jr., a very good reference, is now out of print, although a revision is scheduled for publication in the near future.)

(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, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year. Also show any removals not falling under heading listed.

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

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

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

Form NR-6 FISH 1617

Qtr. ending April 30, 1945

Refuge Bowdoin Year 194__

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	
Carp	Very abundant			12919	105,000			

REMARKS: Carp seining Permit was issued the McNeil Brothers of Saco, Montana for seining and selling of carp on the commercial market. There is no sport fishing here at Bowdoin as the lake is so alkali that no game fish can live in the water.

Form NR-1

MIGRATORY BIRDS

Refuge Hewitt Lake Easement Refuge Months of January 1 to April 30, 1945

1612

(1) Species	(2) First Observed		(3) Became Common	(4) Peak Concentration		(5) Last Observed		(6) Young Produced			(7) Total
Common Name	Number	Date	Date	Number	Date	Number	Date	No. Broods Obsvd.	Avg. Size	Esti-mated Total	Number Using Refuge
Pintail				20	4-27						
Lesser Scaup				200	4-27						

REMARKS: (Pertinent information not specifically requested)
The above list of birds were observed by Patrolman Dyrdahl while visiting the area on April 27th.

INSTRUCTIONS

Form NR-1 - MIGRATORY BIRDS (Include species in families Gaviidae through Strigidae; also doves and woodcocks)*

In case a resident form occurs, such as mottled duck on the Gulf Coast, use only the columns that apply.

(1) SPECIES: Use correct common names as found in the A.O.U. Check List, 1931 Edition, and list in A.O.U. order. General terms are to be avoided, such as "scaup", "teal", etc.; use "green-winged teal" or "lesser scaup".

(2) FIRST OBSERVED: The first refuge record for the species during spring migration, fall migration, wintering, or summering, and the number observed. In the case of resident species this column may be disregarded.

(3) BECAME COMMON: The date the species became common on the refuge.

(4) PEAK CONCENTRATION: The greatest number of the species present on any one date or limited interval of time.

(5) LAST OBSERVED: The last refuge record for the species during the spring or fall migration, wintering, or summering, and the numbers observed exclusive of obvious cripples or non-migrants.

(6) YOUNG PRODUCED: Estimated number of young produced based upon 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 are to be omitted.

(7) 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 manner in which birds come through; i.e., in waves or all at once. On refuges representing the terminus of the flight lane, the figures would probably be the same in many cases.

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

Form NR-1

MIGRATORY BIRDS

Refuge Thibedeau Months of January 1 to April 30, 1945

1612

(1) Species	(2) First Observed		(3) Became Common	(4) Peak Concentration		(5) Last Observed		(6) Young Produced			(7) Total
Common Name	Number	Date	Date	Number	Date	Number	Date	No. Broods Obsvd.	Avg. Size	Esti-mated Total	Number Using Refuge
Common Mallard				24	4-24						

REMARKS: (Pertinent information not specifically requested)

Twenty four mallards were observed on the Diversion Dam Reservoir on April 24th when we inspected the area.

INSTRUCTIONS

Form NR-1 - MIGRATORY BIRDS (Include species in families Gaviidae through Strigidae; also doves and woodcocks)*

In case a resident form occurs, such as mottled duck on the Gulf Coast, use only the columns that apply.

(1) SPECIES: Use correct common names as found in the A.O.U. Check List, 1931 Edition, and list in A.O.U. order. General terms are to be avoided, such as "scaup", "teal", etc.; use "green-winged teal" or "lesser scaup".

(2) FIRST OBSERVED: The first refuge record for the species during spring migration, fall migration, wintering, or summering, and the number observed. In the case of resident species this column may be disregarded.

(3) BECAME COMMON: The date the species became common on the refuge.

(4) PEAK CONCENTRATION: The greatest number of the species present on any one date or limited interval of time.

(5) LAST OBSERVED: The last refuge record for the species during the spring or fall migration, wintering, or summering, and the numbers observed exclusive of obvious cripples or non-migrants.

(6) YOUNG PRODUCED: Estimated number of young produced based upon 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 are to be omitted.

(7) 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 manner in which birds come through; i.e., in waves or all at once. On refuges representing the terminus of the flight lane, the figures would probably be the same in many cases.

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

Form NR-1

MIGRATORY BIRDS

Refuge Creedman Coulee Basement Refuge Months of January 1 to April 30, 1945

1612

(1) Species	(2) First Observed		(3) Became Common	(4) Peak Concentration		(5) Last Observed		(6) Young Produced			(7) Total
Common Name	Number	Date	Date	Number	Date	Number	Date	No. Broods Obsvd.	Avg. Size	Esti-mated Total	Number Using Refuge
Common Canada Goose				5	4-24						
Mallard				500	4-24						
Baldpate				50	4-24						
G/W teal				30	4-24						
Shovelers				200	4-24						
Pintail				100	4-24						
L. Scaup				500	4-24						
Am. Goldeneyes				500	4-24						

REMARKS: (Pertinent information not specifically requested)

The above list of birds were made of the birds on the area when we visited it on April 24th

INSTRUCTIONS

Form NR-1 - MIGRATORY BIRDS (Include species in families Gaviidae through Strigidae; also doves and woodcocks)*

In case a resident form occurs, such as mottled duck on the Gulf Coast, use only the columns that apply.

(1) SPECIES: Use correct common names as found in the A.O.U. Check List, 1931 Edition, and list in A.O.U. order. General terms are to be avoided, such as "scaup", "teal", etc.; use "green-winged teal" or "lesser scaup".

(2) FIRST OBSERVED: The first refuge record for the species during spring migration, fall migration, wintering, or summering, and the number observed. In the case of resident species this column may be disregarded.

(3) BECAME COMMON: The date the species became common on the refuge.

(4) PEAK CONCENTRATION: The greatest number of the species present on any one date or limited interval of time.

(5) LAST OBSERVED: The last refuge record for the species during the spring or fall migration, wintering, or summering, and the numbers observed exclusive of obvious cripples or non-migrants.

(6) YOUNG PRODUCED: Estimated number of young produced based upon 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 are to be omitted.

(7) 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 manner in which birds come through; i.e., in waves or all at once. On refuges representing the terminus of the flight lane, the figures would probably be the same in many cases.

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

Form NR-4

SMALL MAMMALS

Narr. Rep.

Refuge Creedman Coulee Easement Refuge April 30, 1945

(1) Species	(2) Density		(3) Removals					(4) Disposition of Fur							(5) Total Population
								Share Trapping							
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control	For Re-stocking	For Research	Permit Number	Trappers' Share	Refuge Share	Total Refuge Furs Shipped	Refuge Income	Furs Donated	Furs Destroyed	
Muskrat	Marsh, bullrush 200 acres	~~800~~ 1		16				T-3227	1/2	1/2	8	x			200

REMARKS: Muskrat skins 'Gov't. share' were shipped to the Seattle Fur Exchange to be sold at auction To-date we havn't been advised as to the price rec'd from the sale of these fur.

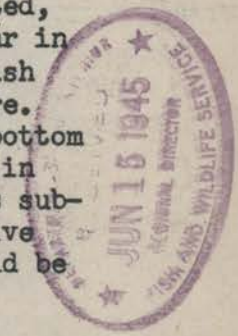
1615

INSTRUCTIONS

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

(1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan. "List of North American Recent Mammals" by G. S. Miller, Jr., a very good reference, is now out of print, although a revision is scheduled for publication in the near future.)

(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, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.



(3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year. Also show any removals not falling under heading listed.

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

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

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

Form NR-1

MIGRATORY BIRDS

Refuge Black Coulee Basement Refuge Months of January 1 to April 30, 1945

1612

(1) Species	(2) First Observed		(3) Became Common	(4) Peak Concentration		(5) Last Observed		(6) Young Produced			(7) Total
Common Name	Number	Date	Date	Number	Date	Number	Date	No. Broods Obsvd.	Avg. Size	Esti-mated Total	Number Using Refuge
Eared Grebe				10	4-24						
Common Mallard				500	4-24						
Gadwall				50	4-24						
Pintail				50	4-24						
G/W teal				50	4-24						
Shoveller				500	4-24						
Canvasback				50	4-24						
L. Scaup				500	4-24						
Am. Golden-eyes				20	4-24						
Bufflehead				6	4-24						

REMARKS: (Pertinent information not specifically requested)

No record was made of the number of birds using the area during the quarter as this refuge is located too far from Bowdoin. The above list of birds were using the area on April 24th when we visited the area.

INSTRUCTIONS

Form NR-1 - MIGRATORY BIRDS (Include species in families Gaviidae through Strigidae; also doves and woodcocks)*

In case a resident form occurs, such as mottled duck on the Gulf Coast, use only the columns that apply.

(1) SPECIES: Use correct common names as found in the A.O.U. Check List, 1931 Edition, and list in A.O.U. order. General terms are to be avoided, such as "scaup", "teal", etc.; use "green-winged teal" or "lesser scaup".

(2) FIRST OBSERVED: The first refuge record for the species during spring migration, fall migration, wintering, or summering, and the number observed. In the case of resident species this column may be disregarded.

(3) BECAME COMMON: The date the species became common on the refuge.

(4) PEAK CONCENTRATION: The greatest number of the species present on any one date or limited interval of time.

(5) LAST OBSERVED: The last refuge record for the species during the spring or fall migration, wintering, or summering, and the numbers observed exclusive of obvious cripples or non-migrants.

(6) YOUNG PRODUCED: Estimated number of young produced based upon 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 are to be omitted.

(7) 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 manner in which birds come through; i.e., in waves or all at once. On refuges representing the terminus of the flight lane, the figures would probably be the same in many cases.

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

Form NR-6 FISH 1617

Refuge BLACK COULEE BASEMENT REFUGE Year 1944-45

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	
Bullheads	abundant	*	*					

REMARKS: Black Coulee is open to sport fishing during the regular fishing season. I have observed several splendid catches of bullheads from this lake last summer, however, I have no record of man days of fishing or number taken.

Species	Relative Abundance	Sport Fishing		Commercial Fishing		Restocking		Explain re-moval for Restocking
		Man days Fishing	Number Taken	No. of Female Taken	Pounds Taken	Number Stocked	Area Stocked	