

BRANCH OF WILDLIFE REFUGES

NAIGATIVE REPORT

ROUTING SLIP

DATE May 19, 1954

~~Mr. Salyer~~ \_\_\_\_\_

Mr. DuMont PA

~~Mr. Krummes~~ \_\_\_\_\_

~~Miss Baum~~ \_\_\_\_\_

Section of Operations:

~~Mr. Ball~~ \_\_\_\_\_

Dr. Morley \_\_\_\_\_

~~Mr. Hogan~~ WJR

Section of Habitat Improvement:

Mr. Griffith \_\_\_\_\_

Mr. Kubichek \_\_\_\_\_

~~Mr. Bourn~~ WSB

Mr. Stiles WSB

Section of Land Management:

~~Mr. Ackerknecht~~ WA

~~Mr. Davis~~ \_\_\_\_\_

Stenographers:

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REFUGE BOWDOIN & EASEMENTS: CREEDMAN COULEE, LAKE THIBADEAU  
BLACK COULEE, HEWITT LAKE

PERIOD January-April, 1954

NARRATIVE REPORT

BOWDOIN NATIONAL WILDLIFE REFUGE

&

CREEDMAN COULEE

LAKE THIBADEAU

BLACK COULEE

HEWITT LAKE

JANUARY 1 TO APRIL 30, 1954

PERSONNEL - - - - - REGULAR

Leon C. Snyder

Refuge Manager

Norman S. Haugness

Maintenance Man

James D. Davenport

Clerk-Typist

PERSONNEL - - - - - TEMPORARY

John B. Klotz

Laborer 3/15-4/9/54

Lawrence E. Voorheis

Carpenter E.O.D. 4/14/54

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## NARRATIVE REPORT

## BOWDOIN NATIONAL WILDLIFE REFUGE

January 1 to April 30, 1954

## I GENERAL

A. Weather Conditions

Records of quite long standing both in severity of conditions as well as mildness were broken this period. While the Indian summer-like weather of December continued into January it did not last for long. January brought 13 inches of snow containing .74 inches of precipitation and temperatures dropped to -53 degrees at Bowdoin (-51 degrees by official weather thermometer in Malta). The mean temperature for the month was 2.7 degrees which was the coldest January since 1950 when a mean of -14 degrees was recorded. Not too far distant a low of -71 degrees was officially recorded setting a new record for the United States. All January snowfall lay unmelted throughout the month.

February was ushered in like a lamb and went out the same way. Only 2.5 inches of snow was received and 1 degree above zero was the coldest temperature recording. The 34.18 degrees mean temperature for the month was way above the normal of data dating back to 1909, the average mean since 1909 being 14.9 degrees. The 19.28 degrees above average set an all-time record for February. All of the January snow melted within a two to three day period during the forepart of February creating considerable local runoff.

About the end of the first week in March winter weather returned to establish more new records. Snow fell on practically every day of the month after March 10 and while the temperature dip was not as low in 1950 through 1952 the mean for March was 5.12 inches below normal. A 13 inch wet, heavy snowfall in a 6 hour period fell on March 11. Another 5 inches fell on March 12. A total of 25.5 inches was received throughout March. At times temperatures did warm up sufficiently to settle the snow but very little actual melting took place. Moisture content of March snow amounted to 1.88 inches.

On April 1st and 2nd another 5 inches of snow came down. On the 3rd skies cleared and it began warming up. Also on the 3rd large flights of several species of waterfowl started showing up. Snow melted very rapidly on the 4th, 5th, and 6th. Runoff throughout the entire local area was extremely heavy, almost comparable to that of 1952. Had the deep snow conditions been general throughout the Milk River drainage flood conditions would have paralleled that of 1952. Night-time temperatures, dropping as low as 5 to 10 degrees during this melting period, also helped to retard runoff this year. After the initial April thaw the ground again became snow-covered on

numerous occasions. Mostly it was by only light skiffs, however, on the morning of April 28 we awoke to find about 5 inches, and light snow continued falling during the remaining three days. Total measureable snowfall during April was thus 12.5 inches. Rain and moisture content of this snow amounted to 1.25 inches.

Total snowfall during this four-month period amounted to 52 inches. In 1950, which was the next deepest snow year, 37.3 inches was recorded for January through April. Total precipitation amounted to 4.26 inches which is considerably more than for many years past except for 1953 when precipitation amounted to 4.84 inches due principally to unusually heavy April rains. As a whole, except during February, the period was very harassing to outside work.

#### B. Water Conditions

All refuge water units remained frozen up to April 15. However, February runoff did pile up some open water on top of the ice and the heavy runoff during the forepart of April created considerable open shore lines and newly flooded areas. By April 16 all winter ice had broken up much of which remained piled against eastern shore lines for a few days.

As stated previously local runoff during February was quite heavy. In one day during this runoff period flows coming into the north side of Dry Lake were much too large in many instances to pass through our road culverts causing considerable flooding over the road grades. However, because of ground frost and the short duration of the high runoff, damage to roads was only minor. About a .20 foot raise in refuge water units was detectable during the February runoff period, however, the manager does not feel that represents a true picture of the total amount of water received due to the fact that the runoff water that piled up on top the ice did not have a chance to become evenly distributed before it again froze up. There was no variation in gauge readings during March. During April Bowdoin raised from 2206.99 to 2207.56 and closed the month out at 2207.50. Water elevation rise in Dry Lake during April was from 2207.00 to 2207.56 and on April 30 was 2207.30.

Runoff on April 4 through 6 was extremely heavy into all units of the refuge and as said previously, runoff from the more distant drainage areas would have paralleled or exceeded that of 1952 had it not been for the extremely cold nights. Beaver Creek did reach flood proportions and backed into the refuge Dry Lake area sufficiently high enough to overflow into Dry Lake over the 2207.5 elevation but because of the cold nights the flow was very much retarded. Runoff from the immediate adjacent areas was much heavier than normal. During the heaviest flow period of the month, April 5 and 6, existing road culverts in the refuge in many instances could not begin to handle incoming water. Five sections of refuge roads were damaged, but not to a degree considered serious.



Milk River in the Malta area was very high but did not overflow its banks. Flood conditions did occur, however, in Harlem, Montana, 40 miles west of Malta, and in the lower Milk River valley. All potholes and depressions of the general area surrounding Bowdoin filled to elevations comparable to high water elevations of 1952.

On page 5 is a table of gauge readings which gives comparable water elevation data for the various units of Bowdoin Refuge back through 1948. At the close of the period Lakeside Marsh is being purposely lowered gradually to facilitate the construction of a control check between Lakeside Marsh and Lakeside Extension.

### C. Fires

No wild fires occurred on the area or in the general vicinity during the period. At no time were conditions hazardous, however, fires could have traveled and spread rapidly during the latter half of February had they ever got out of control. Some controlled burning was done around the headquarters site and along the headquarters reservoir inlet canal during February for the purpose of cleaning up the grounds and cleaning debris out of the canal. Very stringent precautionary measures were practiced to insure the control of this burning.

## WEATHER DATA TABLE

| Month  | Precip.     | Snow*       | Maximum | Minimum | Mean  | Average* |
|--------|-------------|-------------|---------|---------|-------|----------|
| (1954) |             |             |         |         |       |          |
| Jan.   | .74         | 13.0        | 47      | -51     | 2.7   | 12.0     |
| Feb.   | .39         | 2.5         | 62      | 1       | 34.18 | 14.9     |
| Mar.   | 1.88        | 25.5        | 60      | -9      | 23.28 | 28.4     |
| Apr.   | <u>1.25</u> | <u>11.0</u> | 74      | -3      | 38.19 | 44.9     |
| Total  | 4.26        | 52.0        |         |         |       |          |
| (1953) |             |             |         |         |       |          |
| Jan.   | .50         | 7.9         | 56      | -22     | 20.0  | 12.0     |
| Feb.   | .52         | 7.3         | 48      | -14     | 25.9  | 14.9     |
| Mar.   | .73         | 10.1        | 73      | -14     | 30.5  | 28.4     |
| Apr.   | <u>3.09</u> | <u>6.2</u>  | 73      | 5       | 38.7  | 44.9     |
| Total  | 4.84        | 31.5        |         |         |       |          |
| (1952) |             |             |         |         |       |          |
| Jan.   | .41         | 9.2         | 45      | -33     | 3.5   | 12.0     |
| Feb.   | .69         | 12.6        | 50      | -26     | 17.1  | 14.9     |
| Mar.   | .53         | 11.0        | 48      | -18     | 17.2  | 28.4     |
| Apr.   | <u>.12</u>  | <u>5.0</u>  | 88      | 22      | 51.5  | 44.9     |
| Total  | 1.75        | 33.3        |         |         |       |          |
| (1951) |             |             |         |         |       |          |
| Jan.   | .49         | 9.3         | 42      | -31     | 7.5   | 12.0     |
| Feb.   | .52         | 9.0         | 46      | -31     | 9.5   | 14.9     |
| Mar.   | .52         | 8.4         | 51      | -29     | 12.3  | 28.4     |
| Apr.   | <u>.53</u>  | <u>5.0</u>  | 80      | 8       | 41.0  | 44.9     |
| Total  | 2.07        | 31.7        |         |         |       |          |
| (1950) |             |             |         |         |       |          |
| Jan.   | .90         | 19.0        | 27      | -52     | -14.0 | 12.0     |
| Feb.   | .51         | 8.3         | 42      | -24     | 12.8  | 14.9     |
| Mar.   | .74         | 8.0         | 47      | -15     | 20.1  | 28.4     |
| Apr.   | <u>.41</u>  | <u>2.0</u>  | 68      | 11      | 39.9  | 44.9     |
| Total  | 2.56        | 37.3        |         |         |       |          |

\*Average temperature data obtained from records dating back through 1909. Snowfall during same period of 1949 and 1948 was 8.5 inches and 13.2 inches respectively.

TABLE OF GAUGE READINGS - BOWDOIN

| End of | 1954    | 1953    | 1952   | 1951   | 1950   | 1949   | 1948   |
|--------|---------|---------|--------|--------|--------|--------|--------|
| Jan.   | 2206.79 | 2205.74 | 2206.5 | 2205.9 | 2204.5 | 2206.0 | 2205.9 |
| Feb.   | 2206.99 | 2205.74 | 2206.5 | 2205.9 | 2204.5 | 2205.9 | 2205.9 |
| Mar.   | 2206.99 | 2205.94 | 2206.5 | 2206.7 | 2204.4 | 2205.8 | 2205.9 |
| Apr.   | 2207.40 | 2206.24 | 2207.5 | 2206.9 | 2205.3 | 2205.8 | 2206.0 |

## DRY LAKE

|      |         |         |         |         |         |     |         |
|------|---------|---------|---------|---------|---------|-----|---------|
| Jan. | 2206.85 | 2205.30 | 2206.00 | 2206.10 | Dry     | Dry | 2204.80 |
| Feb. | 2207.00 | 2205.30 | 2206.00 | 2206.10 | Dry     | Dry | 2204.80 |
| Mar. | 2207.00 | 2205.50 | 2206.00 | 2208.00 | Dry     | Dry | 2204.80 |
| Apr. | 2207.30 | 2205.90 | 2207.50 | 2206.50 | 2206.50 | Dry | 2204.80 |

## LAKESIDE MARSH

|      |         |         |         |         |         |         |         |
|------|---------|---------|---------|---------|---------|---------|---------|
| Jan. | 2222.70 | 2222.10 | 2222.50 | 2222.00 | 2222.50 | 2223.00 | 2223.00 |
| Feb. | 2223.00 | 2222.10 | 2222.50 | 2222.00 | 2222.50 | 2223.00 | 2223.00 |
| Mar. | 2223.00 | 2223.00 | 2222.70 | 2223.00 | 2222.50 | 2221.80 | 2223.00 |
| Apr. | 2222.80 | 2224.00 | 2222.00 | 2223.00 | 2223.00 | 2221.80 | 2223.00 |

## Highest Elevations for Period

## Bowdoin

|      |          |         |
|------|----------|---------|
| 1954 | April 17 | 2207.56 |
| 1953 | April 30 | 2206.24 |
| 1952 | April 5  | 2208.44 |
| 1951 | April 30 | 2206.90 |
| 1950 | April 30 | 2205.30 |
| 1949 | Jan. 1   | 2206.00 |

## Dry Lake

|      |                       |         |
|------|-----------------------|---------|
| 1954 | April 17              | 2207.56 |
| 1953 | April 30              | 2205.90 |
| 1952 | April 5               | 2209.44 |
| 1951 | March 29              | 2209.00 |
| 1950 | April 30              | 2206.50 |
| 1949 | Dry throughout period |         |



## II WILDLIFE

A. Migratory Birds

## 1. Population and Behavior

## a. Waterfowl

Wintering mallards generally were again down from that of winter periods preceding 1953, however, were about 150 percent greater than last year. Small concentrations were scattered along the open riffles of the Milk River from Malta eastward and also on the Nelson Reservoir seep areas. Two supplementary feeding stations were maintained during January.

The spring migration of Canada geese, pintails and mallards into the Bowdoin area started appearing March 10 which was just about on schedule, however, the sudden return of winter on March 11 put an immediate stop to the first vanguards of this migratory movement. So far as we know the few pintails and mallards and up to 50 Canada geese that came in March 10 remained in the refuge area throughout the balance of March as they were sighted on numerous occasions, but no increase in numbers were observed until April 3. Reports came into the refuge office, however, that many migrants were piling up in the open waters of the Missouri River to the south and west of us.

The migration came in rapidly as the heavy March snows started melting on April 3. Early duck concentrations were not too spectacular though because of the vast amount of newly flooded areas that were being created. Mallards and pintails were considerably scattered throughout the general area. As a whole a very large number of these ducks were moving through and the writer believes that more ducks were present than during last year's migration.

As is usually customary we did not observe the large migratory movements of geese as is common in the fall. No snow geese were observed at all this spring. The 2000 or so geese that made up the concentration peak at Bowdoin on April 10 is believed to compose the resident flocks that normally spend the summer in the Phillips County area. The migration of whistling swans through the refuge was also very light there being only 9 observed.

Baldpates, green-winged teals, shovellers, canvasbacks, scaups, goldeneyes, American mergansers and coots were not observed until the week of April 3 through 10. Gadwalls, redheads and buffleheads came in during the week following April 10 and blue-winged teals were not observed until April 24. No ruddy ducks were noted during the period. Mallard and pintail peaks were between April 3 and 10, while other duck species except blue-winged teals peaked in number about April 24. Refuge concentrations generally, with the exceptions of swan, Canada geese, pintails and canvasbacks were larger than last year.

The number of canvasbacks was about the same as last year. Due, however, to the extension of winter and the shorter period of use, this year's total waterfowl use days will likely be somewhat lower than last year.

#### b. Marsh and Other Water Birds

Eared grebes were first observed in this area on April 15. No western grebes were observed up to April 28, however, it is possible that they are present at the time of this writing although we have not had an opportunity to make a check. One common loon was observed on the headquarters irrigation reservoir on April 16. Observations of loon on the refuge are quite rare. White pelicans started coming in on April 5, 15 being observed on that date. By April 12 the usual large colonies were present on the refuge nesting grounds. Double-crested cormorants and great blue herons were also first observed April 5 and were very common by April 12. All three of these colonial nesters are present in number comparable to past years.

#### c. Shore Birds, Gulls and Terns

Shore bird arrivals during the period consist of killdeer, Wilson's snipe, long-billed curlew, western willet, greater and lesser yellow-legs, pectorial sandpiper, Baird's sandpiper, long-billed dowitcher, avocet, and norther phalarope. Generally the migration of these species is somewhat earlier than usual. Several of the listed species were not observed until after May 1 last year. California and ring-billed gulls began flocking into the refuge on April 5, however, one ring-bill was observed on March 23. Concentrations are again very large. A very large flight of Franklin's gulls through this entire general area was observed April 27 to the end of the month. A large number are still with us at the time of this writing, May 4.

#### d. Doves and Pigeons

Western mourning doves were first observed April 24 when 7 were observed in the refuge headquarters area. It now appears that we will again be favored with a large dove population. Contemplated dove coo counts to be made during late May and early June will give us valuable information regarding the present status of this bird in the refuge and surrounding area.

### 2. Food and Cover

As mentioned above supplementary feeding of mallards had to be done during the severe cold period of January. This feeding program was dispensed with after the February thaw that completely bared the entire country-side. While wintering mallards may have had a hard time obtaining food throughout most of March we did not attempt to carry on any feed program due to the fact that ducks had become so widely dispersed during February that we did not think we could pull them in enough to justify the expense of carrying out such a program. Then too, we were



always expecting that weather conditions would improve within a day or so. Thus food and cover were both scarce and hard to obtain during most of March. Conditions improved rapidly during early April. Runoff from the deep snow cover soon flooded vast areas of lake shore lines, higher marsh areas and many new upland grass areas as well as grain stubble fields. Foods made available by such flooding thus became abundant. Submerged aquatics did not become available until the latter half of April. Upland grass cover throughout the refuge is considerably above normal due to the very dense and rank growths made during last year's growing season. Ground moisture this spring should also be conducive to another good growing season if the weather ever warms up.

### 3. Diseases

None observed this period.

### B. Upland Birds

The usual large winter concentration of Chinese pheasants were again present. If anything, this winter's population was higher than usual. A count made on January 27 by refuge personnel and Mr. Dale Witt of the State P.R. Division, involving a sample of 555 pheasants, disclosed a sex ratio of 1 cock per 2.51 hens. This appears to be a fairly good ratio but also indicates that cocks could possibly stand a more intensified harvest.

Hungarian partridges were considerably more evident than during previous winter periods. Several coveys numbering up to 13 birds were observed and mated pairs seen during late April were commonly observed. Only two sharp-tailed grouse were observed around the refuge headquarters but a flock of about 35 wintered in a neighboring farm Russian Olive grove. Sage hens did not make an appearance in the refuge to date of this writing.

During the deep snow periods of January and March the diet of refuge pheasants was supplemented by the feeding of barley at eight or nine different locations on the refuge. During the snow-free periods this supplementary feeding was not necessary as natural food was quite abundant. Refuge caragana and Russian olive shrubs furnished a large part of the food consumed by pheasants during the deep snow periods. Generally olive shrubs were pretty well stripped of their fruit by the time the March snow disappeared. Refuge cereal food plot areas were heavily utilized during February. The newly gravelled roads through pheasant habitat areas furnished ideal places for these birds to obtain all the grit they needed. Generally many of the higher graded areas were blown free of snow and just a little sun quickly bared the gravel thus making it easily obtainable. Such refuge road shoulders also made ideal feeding stations when the weather was not too severe.



## C. Big Game

Antelope remained pretty much scattered over the entire refuge except for about a two-week period during late January. We started the period this year with only 87 head as compared with 101 on January 1, 1953. On several occasions during January we were able to count up to or near the 87 head that were present on January 1 but since January, possibly due to their scattered locations, we have not been able to count more than 65. It is apparent that we have had some winter loss and also a few killings by trains. In all 6 carcasses have been located, two of which we know were train kills.

While it appears that food conditions should be more than ample for the small band of antelope we have here, when looking at it from a grass angle standpoint, it is quite evident that something is lacking as refuge animals do not come through the winter in as good a shape as they should. Our declining winter populations is also indicative that winter death losses are heavier than what we think or else a greater number is leaving the refuge for more desirable feeding areas. The insufficiency of food appears to be in the browse plant line.

On a few occasions during the period several antelope were observed that appeared to be in a poor and weakened condition. These were always observed by themselves and two of the three that drew special notice were last year fawns, the other being a doe of undetermined age. When approached they could always travel fast enough to get away but it was apparent that something was wrong. We are quite certain that these three animals died during the period but we could not pin any carcass found down to these specific individuals, and always when found the carcasses were of no use for any post mortem examination. It is possible that the sick fawns observed were some that were orphaned too early after birth to compete against our severe winters when entering the winter in an already weakened condition. An investigative study of browse and possible diseases would be welcomed on this area.

## D. Fur Bearers, Predators, Rodents and Other Mammals.

Muskrats: The population trend is decidedly upward. House and bank den counts during the preceding period proved this to be true. Fall water elevations were much more favorable for maintenance of muskrats in a wider spread area than during the previous winter, thus a smaller trapping quota was recommended and approved for the 1953-1954 fur harvest season. The need of more intensive marsh clearing and the price of muskrat furs were also instrumental in our recommendation for a smaller fur harvest program. All muskrat trapping this year was confined to our very shallowest marsh areas. While we experienced considerable difficulty in interesting anyone to take on the fur trapping this year and while we did not get over all the units recommended for harvest, we did clean out the shallower units before they froze to the bottom.

Mink: Only two mink were taken during the fur harvest operations this year. However, since our trapper did not begin operations until the



closing days of the mink trapping season this catch could not be classed as indicative of a reduced population. Signs were quite numerous throughout the period and we believe a normal population exists. It is also evident that mink predations on muskrats was higher than usual judging from the number of houses that had been entered by mink.

Of the predatory species, skunk are the only offenders that are numerous enough to give us any trouble. We have continued to eliminate these at every opportunity but will have to give more attention to control during the nesting season. No coyotes or weasels were observed and very few signs of badgers or rodents noted. Mice are always quite abundant and at times become a problem around refuge buildings, especially where we have to store grass and aquatic seeds in our service building. Jack rabbits continue to be on the upswing of the cycle and were very numerous on the refuge during the deep snow period of January. Cotton-tails appear to be about the same as for the past several years.

#### E. Predaceous Birds, Including Crows and Magpies

The golden eagle and horned owl were common residents throughout the period. It was evident that some predation on ducks and pheasants was taking place, but jack rabbits and mice were also furnishing much of the diet of these two species. One horned owl kept a constant vigil on our hen house during the early evening hours in January until it had to be discouraged with a load of fine shot. Rough-leg hawks and short-eared owls were very common throughout the period. Three snow owls also maintained residence on the refuge during January and February. Two bald eagles were present for about a 10-day period the forepart of April. Marsh, sharp-shinned, Cooper's, Swainson's and sparrow hawks appeared in normal numbers during March and April. Only normal small numbers of crows migrated through this area and nesting population is again small. Extensive magpie control programs are holding populations down somewhat in outside areas, thus the movement into the refuge is no greater this year than usual. Continued control during the nesting season will be necessary to prevent excessive robbing of duck and pheasant nests.

#### F. Fish

All fish life in refuge waters was apparently maintained without a winter freezeout loss. No dead fish were observed along shore lines when the ice went out. Winter ice reached a thickness of only about 14 to 18 inches this year in spite of some very low temperature readings. The late freezeup date last fall and mild February no doubt created this shallow ice condition. Pelicans are feeding in refuge waters much more consistently than during past years which may be indicative of a high fish population in refuge waters.

## III REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development

During January maintenance man Haugness completely resacked and cleaned up approximately 5000 pounds of prairie bulrush seed that is being held over from 1952 harvest operations. This was because of extensive damage mice were doing to the sacks of stored grain. During March a bin in our steel granary was cleaned out and this sacked bulrush seed moved and stored loose in this bin as it was impossible to keep mice out of the stored sacked seed in the service building.

Also during January refuge personnel with assistance of State Fish and Game P.R. Division biologist made the annual waterfowl census in Phillips County.

On January 11 work was started on the construction of a combination drawing desk and supply storage cabinet in the laboratory section of refuge office. This project was carried on as time permitted during January and February and is an attractive piece of office furniture. (See photo) After the completion of this cabinet, walls and ceiling of the vault and storage closet in laboratory room were painted and floor tile and base cove installed. A series of shelves were also installed in the storage closet which now gives us an abundance of much more desirable storage space.

Clerk Davenport kept busy during the bad weather periods by completely renovating the refuge files and form supply cabinet.

Waterfowl feeding stations were maintained by refuge personnel during January on Milk River just out of Malta and at the warm water seep area below Nelson Reservoir. Refuge personnel also carried on a pheasant feeding program for refuge pheasants, maintaining eight stations. This feeding program extended through the bad weather periods of January and March.

Took up water boundary markers on public hunting area.

Dozed cattails out of dike C drain canal. We find that cutting cattails off at top of ice, especially when at low water elevation, is a very good practice to retard summer growth especially where a higher water elevation can be maintained as soon as the ice breaks up.

Cleaned snow and ice out of refuge patrol road culvert ends during heavy runoff periods of February and April.

Walked Lima dragline from refuge bridge 13 into Malta; loaded same on flatcar and anchored it down for transfer to Willipa Refuge. Along with this project manager made trip to Medicine Lake Refuge to trade buckets on General Excavator dragline so as to send new bucket with Lima.



Cleaned up headquarters grounds, irrigation turnout structure sites and 1 mile of inlet canal to headquarters irrigation reservoir by controlled burning.

Constructed forms for three irrigation turnout structures, excavated for these structures and set forms for pouring of concrete. Unit number 1 of this series of turnouts was completed with the pouring of 20 cubic yards of concrete, backfilled and riprapped. (See photo).

Constructed forms for approximately an 8 cubic yard control gate in canal between Lakeside Marsh and Lakeside Extension units. Also made working model of this structure to facilitate construction details.

Picked up 25 cubic yards of rock along refuge patrol road and hauled and placed same for riprap up and downstream on bridge No. 11. Also hauled 5 cubic yards to site of bridge No. 15. Hauled and placed 20 cubic yards of gravel fill material along bank of spillway canal immediately upstream from bridge No. 11.

Cut down a large tree from site of addition to refuge guest house and surveyed foundation lines. Also constructed foundation and footing forms and dug 5½ foot deep by 2 foot wide excavation for foundation for our approved 12' 4" by 26' addition to refuge guest house. Poured concrete foundation walls, installed floor sills, sub-floor, wall studs, rafters, ceiling joists, all sheathing, windows and doors by the close of the period. This structure is to be used as temporary living quarters for our refuge clerk until a second residence building is obtained. In connection with this project refuge personnel made two truck trips to the Fort Peck Game Range for building materials salvaged from barracks-razing program carried out at that refuge.

All refuge motor vehicles were maintained and given 5000 mile tuneup and safety checks during this period. The 75 foot drop pipe of the headquarters water system had to be pulled once during the period to repair the foot valve.

A six-compartment Canada goose hatching and rearing pen was constructed for Canada goose egg salvage program this spring. Eggs are hatched under domestic hens and goslings are to be shipped to two refuges in region 3 to establish new nesting flocks. 25 goslings are also requested by the Patuxent Research Refuge for parasitic research. We are requested to furnish a total of 75 goslings.

Many minor maintenance jobs such as the burning of old bridge structures south of G.N. tracks, the sand-bagging of section of temporary dike to keep Dry Lake waters away from structure No. 2, periodical cleanup of refuge buildings, etc., were taken care of during the period.

B. Plantings                      None this period.

C. Collections                    None this period.

#### D. Receipts of Seed and Nursery Stock

Refuge Management Biologist Watson E. Beed delivered to us 4 pounds of atroplex SPP for experimental planting on the refuge. Due to weather and ground conditions this seed has not been planted todate. Seed is uncleaned and contains considerable debris.

### IV ECONOMIC USE

#### A. Grazing

Economic use permit BOW No. 24 for the grazing of horses in units No. 5-G expired on April 1. Only 32 AUMs were utilized this season. No competition with wildlife resulted and remaining nest cover is abundant.

#### B. Haying

None this period. All hay harvested under permit No. BOW No. 18 was removed from the refuge during January.

#### C. Fur Harvest

Fur harvest plans this year were approved for the removal of 415 muskrats from unit numbers 2-6-8-9-11-12. These were the shallower marsh units and units bordering refuge dikes and water control structures. Because of very low prices being offered by local fur buyers and the necessity of giving 50 percent of furs taken to the government we experienced extreme difficulty in finding anyone who was interested to trap on the refuge. The open trapping season proscribed by the State Fish and Game Commission was long advanced before we located a trapper who was willing to trap the refuge and he would take it only on part-time basis as he was employed on a neighboring ranch. He could only spend 3 to 4 hours during the middle of the day on trapping activities. While he had done some trapping in years back he was not an experienced trapper by any means.

Trapping operations began on December 23. The extremely cold weather starting around January 10 soon discouraged operations and we did not see our trapper after January 14 until we sent for him for a pelt division on February 17. A total of 256 muskrats were obtained from 3 units; 201 from unit 8, 21 from unit 9, and 34 from unit 6. Approved quota for these 3 units were 200-25-100 respectively. Since units 8 and 9 composed our shallowest marsh areas and areas adjacent to dikes A and B we were fortunate in cleaning them out before the weather got to severe.

Returns on the 128 muskrats and 1 mink composing the governments share and shipped to the Seattle Fur Exchange have not been received todate. Estimated value received from the Seattle Fur



Exchange on receipt of shipment was as follows:

|                   |        |
|-------------------|--------|
| 18 large winters  | @ .75  |
| 45 medium winters | @ .60  |
| 60 small winters  | @ .40  |
| 5 kits            | @ .30  |
| 1 mink low 2's    | @ 5.00 |

The trapper informed us that he shipped his share of furs to the Seattle Fur Exchange and received an average of 56 cents per pelt. The 1 mink fur netted him \$9.00.

## V FIELD INVESTIGATION OR APPLIED RESEARCH

### A. Canada Goose Nesting Study

A Canada goose nesting study has been approved for cooperation with State Fish and Game Department, P. R. Division personnel. There is not much to report on this project at this time other than counts, both aerial and land, on number of nesting pairs on selected project areas. Aerial counts on the three areas selected were made by Mr. Dale Witt of the P.R. Division of State Fish and Game. Mr. Witt and his assistant also made the ground count on Nelson Reservoir, one of the selected areas. The other two areas compose the Hewitt Lake Refuge and Bowdoin Refuge areas. Ground counts on these latter two areas were made by the refuge manager. Dates of ground and aerial counts were about a week apart which might account for some of the variation of pairs observed, however, generally both counters come up with very near the same number of pairs on each area. At Bowdoin the aerial count disclosed 376 pairs. Many geese were observed on nests and included in the pair count. 91 pairs were observed at Nelson Reservoir and 23 at Hewitt Lake. This gives a total of 500 nesting pair on the three areas.

No nest study has been started in the refuge areas to date, however, 44 nests are under observation in the Nelson Reservoir area. Results of this study will be included in the May-August report if all data has been completed. One of the nests under observation, located on an island in Nelson Reservoir, was endangered by rapidly rising water elevations, thus the eggs were taken and brought to Bowdoin for hatching by domestic hens.

### B. Parasitic Research in Canada Geese Goslings

The refuge will cooperate with the Research Division at Patuxent Research Refuge by furnishing up to 25 day-old goslings for this project. The request is for goslings that have not had a chance to become contaminated by the parent birds through or after hatching thus eggs will be obtained and hatched under domestic hens and the goslings shipped to Patuxent immediately.



## VI PUBLIC RELATIONS

A. Public Uses

No hunting or fishing use this period. Miscellaneous uses were not of much consequence due to the abundance of wet, stormy weather of the period.

B. Official Visitors

Official visitors were also very scarce this period, however, several individuals of the local State Fish and Game Department made numerous visits to the refuge office on matters pertaining to management, law enforcement, wildlife studies, etc. These were:

H. C. Friede      Game Warden Supervisor, Dist. No. 6, Northeastern Montana  
 Fred DeRosier    Local Deputy Game Warden  
 Dale Witt        Biologist on Waterfowl Development, P.R. Division, SF&G.  
 Watson Beed (1/12/54) Refuge Mgmt Biologist, Range improvement.  
 H. F. Kuning (4/22/54) From Stillwater Refuge on transfer of equipment.

C. Refuge Participation

- Jan. 5    Attended dinner of Strater-Malta-Dodson Whist Club.
- Jan. 7    Participated in annual duck-census-planning meeting in Malta with SF&G personnel.
- Jan. 18   Manager and maintenance man took an active work part in annual fund drive for Boy Scouts of America.
- Jan. 19   Gave a 20 minute talk on Activities and Development at Bowdoin to Malta Kiwanis Club.
- Jan. 27   Participated in pheasant sex ratio count on refuge with SF&G, P.R. Division personnel.
- Feb. 5    Attended dinner meeting of Phillips County Commissioners, local Supt. Reclamation Bureau, Supt. Bureau of Land Management, County Attorney and American Legion Health Plunge Committee to formulate plans for a State Park in Nelson Reservoir area.
- Mar. 2    Attended Valley County Sportsmen's meeting in Glasgow and furnished data to assembled group on time of arrival of fall duck and geese migrations.
- Mar. 7    Maintenance man Haugness, as representative of Phillips County Wildlife Club, attended meeting of NE Dist. Montana Wildlife Federation at Wolf Point.

- Mar. 8 All personnel attended annual banquet of Phillips County Wildlife Association held in Malta. Bison Range buffalo meat was main dish.
- Mar. 15 Attended meeting of Game Warden Supervisor for district 6 in Malta where all game wardens of the district discussed management problems including management of Canada geese nesting flock of Phillips County area.
- Mar. 16 Attended annual meeting and banquet of Hill County Sportsman's Association in Havre and was one of three guest speakers for the evening. Gave 15 minute talk on Activities and Management at Bowdoin Refuge.
- Mar. 21 Attended afternoon meeting of North Central Montana Wildlife Federation in Havre and extended information and data on fall migrations of ducks and geese. This data given so as to assist the Federation in their recommendations to the SF&G Dept. as to whether or not a split season or later season was desirable.
- Apr. 30 & May 1 Attended annual convention of Montana Conservation Council in Havre, Montana.

All refuge personnel attended monthly meetings of the Phillips County Sportsmans Association and took part in the programs of the Association. Maintenance man Haugness is secretary for this Association.

Refuge personnel also attended all monthly meetings of the local American Legion Post and were active in all of the various phases of Americanism and Youth Activity programs carried out by the Legion. Boy Scout activities, Junior Legion Baseball, school awards programs, community improvement programs and civil defense programs were all entered by refuge personnel. Clerk Davenport is taking part in coaching of Junior Legion Baseball. The manager was re-elected as Adjutant of the Malta Post and maintenance man Haugness elected to serve as first Vice Commander.

D. Violations

None this period.

VII OTHER ITEMS

A. Items of Interest

On the evening of February 4 just after dark refuge personnel were the first witnesses to a two-car collision about 300 feet from the headquarters entrance gate. Front seat passengers in each car were fatally hurt and died shortly after arrival at the hospital. Drivers of each car were also critically injured and are still in the Malta Hospital. The manager and maintenance man received a subpoena to be witnesses at the inquest at which a sealed verdict was returned. Driving



while under the influence of liquor was evident with one of the drivers. It is almost assured that witnesses will be called in again when charges are preferred, which no doubt will be as soon as both drivers are able to leave the hospital.

B. Christmas Bird Count

Refuge personnel again participated in the annual Christmas Bird Count sponsored by the Audubon Society. This year 18 species totaling 1667 individuals were counted. Of particular interest was the presence of redwing, Brewer's and yellow-headed blackbirds. The manager also compiled data on wintering birds which was submitted to Field Editors of Audubon Field notes.

C. Photos      Included in back of report.

May 3, 1954  
Date Completed

Leon C. Snyder  
Leon C. Snyder  
Refuge Manager

[Signature]  
Regional Office      Regional Director

yma MAY 12 1954



3-715Ca  
Cont. NR-1  
(Rev. March 1953)

**WATERFOWL**  
(Continuation Sheet)

REFUGE Bowdoin MONTHS OF Jan. 1 TO April 30, 19 54

| (1)<br>Species    | (2)<br>Weeks of reporting period |        |        |       |        |        |        |        | (3)<br>Estimated<br>waterfowl<br>days use | (4)<br>Production<br>: Broods: Estimated<br>: seen : total |  |
|-------------------|----------------------------------|--------|--------|-------|--------|--------|--------|--------|-------------------------------------------|------------------------------------------------------------|--|
|                   | Mar 13                           | Mar 20 | Mar 27 | Apr 3 | Apr 10 | Apr 17 | Apr 24 | Apr 30 |                                           |                                                            |  |
| Swans:            |                                  |        |        |       |        |        |        |        |                                           |                                                            |  |
| Whistling         |                                  |        |        |       | 9      |        |        |        | 63                                        |                                                            |  |
| Trumpeter         |                                  |        |        |       |        |        |        |        |                                           |                                                            |  |
| Geese:            |                                  |        |        |       |        |        |        |        |                                           |                                                            |  |
| Canada            | 25                               | 25     | 50     | 450   | 2000   | 1800   | 800    | 850    | 42,000                                    |                                                            |  |
| Cackling          |                                  |        |        |       |        |        |        |        |                                           |                                                            |  |
| Brant             |                                  |        |        |       |        |        |        |        |                                           |                                                            |  |
| White-fronted     |                                  |        |        |       |        |        |        |        |                                           |                                                            |  |
| Snow              |                                  |        |        |       |        |        |        |        |                                           |                                                            |  |
| Blue              |                                  |        |        |       |        |        |        |        |                                           |                                                            |  |
| Other             |                                  |        |        |       |        |        |        |        |                                           |                                                            |  |
| Ducks:            |                                  |        |        |       |        |        |        |        |                                           |                                                            |  |
| Mallard           | 100                              | 100    | 100    | 2500  | 20,000 | 17,000 | 17,000 | 15,000 | 502,600                                   |                                                            |  |
| Black             |                                  |        |        |       |        |        |        |        |                                           |                                                            |  |
| Gadwall           |                                  |        |        |       |        | 1000   | 3000   | 3000   | 49,000                                    |                                                            |  |
| Baldpate          |                                  |        |        |       | 750    | 3500   | 7500   | 7500   | 134,750                                   |                                                            |  |
| Pintail           | 50                               | 100    | 100    | 3500  | 25,000 | 20,000 | 15,000 | 15,000 | 575,750                                   |                                                            |  |
| Green-winged teal |                                  |        |        |       | 100    | 4000   | 7500   | 5000   | 116,200                                   |                                                            |  |
| Blue-winged teal  |                                  |        |        |       |        |        | 5000   | 8000   | 91,000                                    |                                                            |  |
| Cinnamon teal     |                                  |        |        |       |        |        |        |        |                                           |                                                            |  |
| Shoveler          |                                  |        |        |       | 100    | 2500   | 8000   | 8000   | 120,200                                   |                                                            |  |
| Wood              |                                  |        |        |       |        |        |        |        |                                           |                                                            |  |
| Redhead           |                                  |        |        |       |        | 500    | 4000   | 4000   | 59,500                                    |                                                            |  |
| Ring-necked       |                                  |        |        |       |        |        |        |        |                                           |                                                            |  |
| Canvasback        |                                  |        |        |       | 1200   | 15,000 | 20,000 | 18,000 | 379,400                                   |                                                            |  |
| Scaup             |                                  |        |        |       | 150    | 2500   | 10,000 | 5000   | 123,550                                   |                                                            |  |
| Goldeneye         |                                  |        |        |       | 500    | 1200   | 1000   | 400    | 14,700                                    |                                                            |  |
| Bufflehead        |                                  |        |        |       |        | 2      | 200    | 150    | 2,464                                     |                                                            |  |
| Ruddy             |                                  |        |        |       |        |        |        |        |                                           |                                                            |  |
| Other             |                                  |        |        |       |        |        |        |        |                                           |                                                            |  |
| A. Merganser      |                                  |        |        |       | 25     | 150    |        |        | 1,225                                     |                                                            |  |
| Coot:             |                                  |        |        |       | 150    | 1500   | 9000   | 7500   | 127,050                                   |                                                            |  |

(over)



|             | (5)            | (6)         | (7)              |                                                         |
|-------------|----------------|-------------|------------------|---------------------------------------------------------|
|             | Total Days Use | Peak Number | Total Production | SUMMARY                                                 |
| Swans       | 63             | 9           |                  | Principal feeding areas Newly flooded marshes and shore |
| Geese       | 42,000         | 2,000       |                  | lines; open water areas also used extensively.          |
| Ducks       | 2,170,339      | 98,200      |                  | Principal nesting areas Islands, dikes and muskrat      |
| Coots       | 127,050        | 9,000       |                  | houses.                                                 |
| Reported by |                |             |                  | Leon C. Snyder                                          |

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

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).



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

MIGRATORY BIRDS  
(other than waterfowl)

Refuge Bowdoin

Months of Jan 1 to April 30 1945

| (1)<br>Species<br><br>Common Name | (2)<br>First Seen |         | (3)<br>Peak Numbers |         | (4)<br>Last Seen |      | (5)<br>Production  |                  |                | (6)<br>Total<br>Estimated |
|-----------------------------------|-------------------|---------|---------------------|---------|------------------|------|--------------------|------------------|----------------|---------------------------|
|                                   | Number            | Date    | Number              | Date    | Number           | Date | Number<br>Colonies | Total #<br>Nests | Total<br>Young | Number                    |
| <b>I. Water and Marsh Birds:</b>  |                   |         |                     |         |                  |      |                    |                  |                |                           |
| Western Grebe                     | 3                 | 5/1/54  |                     |         |                  |      |                    |                  |                |                           |
| Eared Grebe                       | 7                 | 4/15/54 |                     |         |                  |      |                    |                  |                | 500                       |
| Common Loon                       | 1                 | 4/16/54 |                     |         |                  |      | 1                  |                  |                | 3                         |
| White Pelican                     | 15                | 4/5/54  | 3500                | 4/30/54 |                  |      |                    |                  |                | 3500                      |
| Double-crested Cormorant          | 12                | 4/5/54  | 350                 | 4/30/54 |                  |      |                    |                  |                | 350                       |
| Great Blue Heron                  | 8                 | 4/5/54  | 150                 | 4/30/54 |                  |      |                    |                  |                | 150                       |

**II. Shorebirds, Gulls and**

**Terns:**

|                       |     |         |      |         |  |  |  |  |  |      |
|-----------------------|-----|---------|------|---------|--|--|--|--|--|------|
| Killdeer              | 1   | 3/23/54 | 400  | 4/20/54 |  |  |  |  |  | 400  |
| Wilson's Snipe        | 1   | 4/26/54 |      |         |  |  |  |  |  | 20   |
| Long-billed Curlew    | 1   | 4/17/54 |      |         |  |  |  |  |  | 175  |
| Western Willet        | 11  | 4/24/54 |      |         |  |  |  |  |  | 500  |
| Greater Yellow-legs   | 9   | 4/17/54 |      |         |  |  |  |  |  | 125  |
| Lesser Yellow-legs    | 16  | 4/29/54 |      |         |  |  |  |  |  | 50   |
| Pectorial Sandpiper   | 3   | 4/29/54 |      |         |  |  |  |  |  | 25   |
| Baird's Sandpiper     | 2   | 4/29/54 |      |         |  |  |  |  |  | 25   |
| Long-billed Dowitcher | 4   | 4/28/54 |      |         |  |  |  |  |  | 100  |
| Marbled Godwit        | 27  | 5/1/54  |      |         |  |  |  |  |  |      |
| Avocet                | 2   | 4/17/54 |      |         |  |  |  |  |  | 500  |
| Northern Phalarope    | 30  | 4/29/54 |      |         |  |  |  |  |  | 200  |
| California Gull       |     | 4/5/54  | 1000 | 4/30/54 |  |  |  |  |  | 1000 |
| Ring-billed Gull      | 1   | 3/23/54 | 4500 | 4/30/54 |  |  |  |  |  | 4500 |
| Franklin's Gull       | 350 | 4/27/54 | 1500 | 4/30/54 |  |  |  |  |  | 1500 |

(over)



| (1)                     | (2)    | (3)      | (4) | (5)            | (6) |
|-------------------------|--------|----------|-----|----------------|-----|
| III. Doves and Pigeons: |        |          |     |                |     |
| Mourning dove           | 7      | 4/24/54  |     |                | 35  |
| White-winged dove       |        |          |     |                |     |
| IV. Predaceous Birds:   |        |          |     |                |     |
| Golden eagle            | Winter | Resident |     |                | 9   |
| Duck hawk               |        |          |     |                |     |
| Horned owl              | Winter | Resident |     |                | 3   |
| Magpie                  | Winter | Resident |     |                | 35  |
| Raven                   |        |          |     |                |     |
| Crow                    | 1      | 3/24/54  | 15  | 4/30/54        | 75  |
| Snowy Owl               | Winter | Resident | 3   | 1/15/54        | 3   |
| Sharp-shinned Hawk      | 2      | 4/6/54   |     |                | 2   |
| Bald Eagle              | 2      | 3/30/54  |     |                | 3   |
| Marsh Hawk              | 1      | 3/15/54  | 18  | 4/15/54        | 35  |
| Reported by             |        |          |     | Leon C. Snyder |     |

#### INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and 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 Jan. 1 to April 30, 19454

| (1)<br>Species         | (2)<br>Density                           |                      | (3)<br>Young<br>Produced     |                    | (4)<br>Sex<br>Ratio | (5)<br>Removals |                     |                 | (6)<br>Total                           | (7)<br>Remarks                                                                   |
|------------------------|------------------------------------------|----------------------|------------------------------|--------------------|---------------------|-----------------|---------------------|-----------------|----------------------------------------|----------------------------------------------------------------------------------|
| Common Name            | Cover types, total<br>acreage of habitat | Acres<br>per<br>Bird | Number<br>broods<br>obs'v'd. | Estimated<br>Total | Percentage          | Hunting         | For Re-<br>stocking | For<br>Research | Estimated<br>number<br>using<br>Refuge | Pertinent information not<br>specifically requested.<br>List introductions here. |
| Chinese<br>Pheasant    | 800                                      | .61                  | -                            | -                  | 1 to 2.55<br>C - H  | -               | -                   | -               | 1300                                   |                                                                                  |
| Hungarian<br>Partridge |                                          |                      |                              |                    |                     |                 |                     |                 | 25                                     |                                                                                  |
| Sharp-tailed<br>Grouse | 600                                      |                      |                              |                    |                     |                 |                     |                 | 2                                      |                                                                                  |

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# INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.\*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

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



3-1754  
Form NR-4  
(June 1945)

# SMALL MAMMALS

Refuge Bowdoin

Year ending April 30, 1954

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., those species which are considered in control operations.)

| (1)<br>Species           | (2)<br>Density                            | (3)<br>Removals        |         |                |                       |                     |                   | (4)<br>Disposition of Furs |                   |                 |                              |              | (5)<br>Total<br>Popula-<br>tion |      |
|--------------------------|-------------------------------------------|------------------------|---------|----------------|-----------------------|---------------------|-------------------|----------------------------|-------------------|-----------------|------------------------------|--------------|---------------------------------|------|
| Common Name              | Cover Types & Total<br>Acreage of Habitat | Acres<br>Per<br>Animal | Hunting | Fur<br>Harvest | Predator<br>Control * | For Re-<br>stocking | For Re-<br>search | Share Trapping             |                   |                 | Total Refuge<br>Furs Shipped | Furs Donated | Furs<br>Destroyed               |      |
|                          |                                           |                        |         |                |                       |                     |                   | Permit<br>Number           | Trappers<br>Share | Refuge<br>share |                              |              |                                 |      |
| Muskrat                  | 3000                                      | 1.37                   | 256     |                |                       |                     |                   | 5877                       | 128               | 128             | 128                          |              |                                 | 2200 |
| Mink                     | 3000                                      | 150                    | 2       |                |                       |                     |                   | 5877                       | 1                 | 1               | 1                            |              |                                 | 20   |
| Skunk<br>(Narrow Stripe) |                                           |                        |         |                | 7                     |                     |                   |                            |                   |                 |                              |              | 7                               | 35   |
| Jack Rabbit              | 10,000                                    | 25                     |         |                |                       |                     |                   |                            |                   |                 |                              |              |                                 | 400  |

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

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

\* List removals by Predator Animal Hunter

\* List removals by Predator Animal Hunter

REMARKS: Value of refuge furs shipped to Seattle Fur Exchange not received todate.  
Value of trapper's furs shipped to Seattle Fur Exchange: muskrats \$71.68; mink \$9.00.

Reported by Leon C. Snyder



## INSTRUCTIONS

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

## (1) SPECIES:

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

## (2) DENSITY:

Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, 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) REMOVALS:

Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headings 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, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprime-ness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.

## (5) TOTAL POPULATION:

Estimated total population of each species reported on as of April 30.

## REMARKS:

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

116007



## REFUGE GRAIN REPORT

Refuge BowdoinMonths of Jan. 1 through April 30, 1954

| (1)<br>VARIETY* | (2)<br>ON HAND<br>BEGINNING<br>OF PERIOD | (3)<br>RECEIVED<br>DURING<br>PERIOD | (4)<br>TOTAL | (5)<br>GRAIN DISPOSED OF |        |     |       | (6)<br>ON HAND<br>END OF<br>PERIOD | (7)<br>PROPOSED OR SUITABLE USE* |      |         |
|-----------------|------------------------------------------|-------------------------------------|--------------|--------------------------|--------|-----|-------|------------------------------------|----------------------------------|------|---------|
|                 |                                          |                                     |              | Transferred              | Seeded | Fed | Total |                                    | Seed                             | Feed | Surplus |
| Wheat           | 180                                      |                                     | 180          |                          |        | 30  |       | 150                                | 20                               | 130  | -       |
| Barley          | 295                                      |                                     | 295          |                          |        | 135 |       | 160                                | 20                               | 140  |         |

(8) Indicate shipping or collection points Malta, Montana(9) Grain is stored at Headquarters granary(10) Remarks Grain was fed to refuge pheasants and wintering ducks in Milk River Valley of Phillips County.

\*See instructions on back.

(10) Estimate grain lost to rodents, birds, insects, etc. in this area. Letter of estimate should be submitted.

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 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. 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 break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters granary," etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

16-61482-1 U. S. GOVERNMENT PRINTING OFFICE

| Amount. | Of Grain<br>Received<br>On Hand | Grain<br>Received | Total | Disposed          | Stock | Exp | Loss | Grain<br>Exp On<br>On Hand | Stock                    | Exp | Balance |
|---------|---------------------------------|-------------------|-------|-------------------|-------|-----|------|----------------------------|--------------------------|-----|---------|
|         |                                 |                   |       | Grain Disposed of |       |     |      |                            | Expended on Balance Due. |     |         |
| (1)     | (2)                             | (3)               | (4)   | (5)               |       |     |      | (6)                        | (7)                      |     |         |

Refuge: \_\_\_\_\_ Month of: \_\_\_\_\_ Year: \_\_\_\_\_

REFUGE GRAIN REPORT



## NARRATIVE REPORT

## CREEDMAN COULEE NATIONAL WILDLIFE REFUGE

January 1 to April 30, 1954

## I GENERAL

A. Weather Conditions

No detailed weather data available. Generally speaking weather conditions should be comparable to that of Havre, Montana and the Thibadeau Refuge area. However, it does appear that snowfall was possibly slightly heavier. For further comments pertaining to this area please refer to the report for Thibadeau Refuge.

B. Water Conditions

Because of ground conditions and light winter snowfall, runoff was very small. On visiting Creedman Coulee Refuge April 29 the writer found that some runoff had entered the reservoir area and that a small stream was still flowing in. However, this was not creating any rise in water elevation because of the fact that the H. Earl Clack Company ranch operators were drawing off about the same amount as was coming in. At freezeup time last fall water elevation was 6 inches below the level of the automatic irrigation control structure operated by the Clack Company, or about at the 89.5 contour level. About 2 inches was spilling over the 90 foot contour elevation on April 29. The draw off of water for irrigation purposes at this stage of the reservoir level and at this season of the year means that the supply available for irrigation will not last for long and unless additional late spring or early summer runoff is received this reservoir will get quite low by next fall freezeup time.

C. Fires

No fires were reported.

## II WILDLIFE

A. Migratory Birds

Like at Thibadeau Refuge a very large concentration of ducks was observed on April 29. Here too, baldpates were the predominant species but there was not so pronounced a difference. Lesser scaups were next in abundance followed by pintails, mallards, gadwalls, shovellers, redheads, green-winged teals, goldeneyes, and canvasbacks. About a hundred each of blue-winged teals and buffleheads were estimated. Coots were estimated at 700 and eared grebes at 2500. In all, about

27,000 ducks, coots and grebes were estimated on Creedman Coulee reservoir. No Canada geese were observed which is a very uncommon occurrence. Shore birds observed included killdeer, avocets, willets, lesser yellow-legs, northern phalarope, pectorial and Baird's sandpipers.

Upland grass cover, while not near as luxuriant as at Bowdoin, is much better than many other nearby areas and considered ample for nesting cover. Apparently the submerged aquatic foods of the reservoir are quite sufficient as all birds on the water appeared to be feeding and quite contented.

B. Other

No upland birds or big game animals were observed on the April 29 visit.

III MAINTENANCE

Nothing to report other than inspection of the dam, spillway, and boundary markers.

IV ECONOMIC USE

A. Fur Harvest

A muskrat trapping permit issued to Peter Wornick expired on April 30. Mr. Wornick reported that mink had cleaned out the muskrats and that no muskrats were taken.

V APPLIED RESEARCH

None

VI PUBLIC RELATIONS

Since this refuge is in the Havre area please refer to comments under this heading made relative to the Thibadeau Refuge.



Leon C. Snyder  
Refuge Manager



3-7150a  
 Cont. NR-1  
 (Rev. March 1953)

WATERFOWL  
 (Continuation Sheet)

REFUGE

Creedman Coulee

MONTHS OF Jan. 1 TO April 30, 19<sup>54</sup>

| (1)<br>Species    | (2)<br>Weeks of reporting period |    |    |    |    |    |    |             | (3)<br>Estimated<br>waterfowl<br>days use | (4)<br>Production<br>Broods: Estimated<br>seen : total |
|-------------------|----------------------------------|----|----|----|----|----|----|-------------|-------------------------------------------|--------------------------------------------------------|
|                   | 11                               | 12 | 13 | 14 | 15 | 16 | 17 | 18 : Apr 29 |                                           |                                                        |
| Swans:            |                                  |    |    |    |    |    |    |             |                                           |                                                        |
| Whistling         |                                  |    |    |    |    |    |    |             |                                           |                                                        |
| Trumpeter         |                                  |    |    |    |    |    |    |             |                                           |                                                        |
| Geese:            |                                  |    |    |    |    |    |    |             |                                           |                                                        |
| Canada            |                                  |    |    |    |    |    |    |             |                                           |                                                        |
| Cackling          |                                  |    |    |    |    |    |    |             |                                           |                                                        |
| Brant             |                                  |    |    |    |    |    |    |             |                                           |                                                        |
| White-fronted     |                                  |    |    |    |    |    |    |             |                                           |                                                        |
| Snow              |                                  |    |    |    |    |    |    |             |                                           |                                                        |
| Blue              |                                  |    |    |    |    |    |    |             |                                           |                                                        |
| Other             |                                  |    |    |    |    |    |    |             |                                           |                                                        |
| Ducks:            |                                  |    |    |    |    |    |    |             |                                           |                                                        |
| Mallard           |                                  |    |    |    |    |    |    | 2500        | 87,500                                    |                                                        |
| Black             |                                  |    |    |    |    |    |    |             |                                           |                                                        |
| Gadwall           |                                  |    |    |    |    |    |    | 2300        | 80,500                                    |                                                        |
| Baldpate          |                                  |    |    |    |    |    |    | 5600        | 117,600                                   |                                                        |
| Pintail           |                                  |    |    |    |    |    |    | 2800        | 98,000                                    |                                                        |
| Green-winged teal |                                  |    |    |    |    |    |    | 1200        | 25,200                                    |                                                        |
| Blue-winged teal  |                                  |    |    |    |    |    |    | 100         | 1,400                                     |                                                        |
| Cinnamon teal     |                                  |    |    |    |    |    |    |             |                                           |                                                        |
| Shoveler          |                                  |    |    |    |    |    |    | 2100        | 44,100                                    |                                                        |
| Wood              |                                  |    |    |    |    |    |    |             |                                           |                                                        |
| Redhead           |                                  |    |    |    |    |    |    | 1600        | 33,600                                    |                                                        |
| Ring-necked       |                                  |    |    |    |    |    |    |             |                                           |                                                        |
| Canvasback        |                                  |    |    |    |    |    |    | 300         | 8,100                                     |                                                        |
| Scaup             |                                  |    |    |    |    |    |    | 4800        | 100,800                                   |                                                        |
| Goldeneye         |                                  |    |    |    |    |    |    | 900         | 25,200                                    |                                                        |
| Bufflehead        |                                  |    |    |    |    |    |    | 100         | 1,400                                     |                                                        |
| Ruddy             |                                  |    |    |    |    |    |    |             |                                           |                                                        |
| Other             |                                  |    |    |    |    |    |    |             |                                           |                                                        |
| Coot:             |                                  |    |    |    |    |    |    | 700         | 14,700                                    |                                                        |

(over)



|       | (5)<br>Total Days Use | (6)<br>Peak Number | (7)<br>Total Production |
|-------|-----------------------|--------------------|-------------------------|
| Swans |                       |                    |                         |
| Geese |                       |                    |                         |
| Ducks | 623,400               | 24,300             |                         |
| Coots | 14,700                | 700                |                         |

# SUMMARY

Principal feeding areas Creedman Reservoir

Principal nesting areas

Reported by Leon C. Snyder

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

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).



## NARRATIVE REPORT

## THIBADEAU NATIONAL WILDLIFE REFUGE

January 1 to April 30, 1954

## I GENERAL

A. Weather Conditions

We have no source of information from which to obtain detailed weather information. In the past we have always referred to weather statistics compiled in the Bowdoin report. However, we now believe that as a general rule there is a considerable difference in weather conditions in the 100 miles that separates Thibadeau and Creedman Coulee Refuges from Bowdoin, especially in amounts of snowfall and precipitation received. During this period the manager paid close attention to weather data broadcasted from the Havre radio station and compared it with data obtained from the Reclamation Bureau station in Malta. This year at least, in practically every instance, temperature recordings in Malta averaged considerably lower than those released by the weather bureau station in Havre, and there was a vast difference in the amount of precipitation and snowfall received. This fact was very noticeably borne out through ground observations made in the area on April 29. When leaving Bowdoin on April 28 there was approximately 5 inches of new snow that had fallen during the early a.m. hours. On arrival in Havre the same day the ground was just barely covered. When Bowdoin had a 13 inch snowfall in 6 hours on April 11, Havre had 5 inches. It must therefore be said that weather conditions in the Thibadeau and Creedman Coulee refuge areas was quite noticeably milder and much dryer than at Bowdoin.

B. Water Conditions

Generally, water conditions in this refuge area are very bad. The Grassy and Mud Lake units received no runoff during the period, thus they remain dry. Lake Thibadeau also did not receive any runoff and while there is a sufficient water depth in this unit to last through the summer and fall months it is quite evident that the lake will be dry at the start of the next winter period. The only thing that can prevent this now is heavy May and June rains that would have to be far in excess of normal. It is possible that the Diversion unit may have received a small amount of local runoff, however the present water elevation of this unit is only about the same as at freezeup time and lacks about 4 feet of being up to spill elevation. Stock water ponds and natural pothole areas of the surrounding countryside all tell the same story - no spring runoff. It is almost unbelievable that in a distance of only about 50 airline miles to the east, which brings one up to the Black Coulee Refuge area, a vastly different picture exists in that runoff

there reached flood proportions and almost every land depression filled to overflow level.

### C. Fires

No fires occurred during the period. It was noted by the manager that Schnitzmeyer Brothers, owners of the land comprising this refuge, have plowed fire guards running north and south about midway through this refuge.

## II WILDLIFE

### A. Migratory Waterfowl

Because of the heavy work load being carried on at Bowdoin by regular personnel and also because of weather conditions and the lateness of the season, Thibadeau and Creedman Coulee Refuges were visited only once this period that being on April 29. It is rather difficult to say what the waterfowl picture may have been on this refuge a week or two weeks previous to this visit. About all the writer can do is to mention what birds were present on the April 29th visit. However, he feels that with the exception of possibly mallards and pintails, this visit does coincide with the peak migrations and concentrations of other duck species.

Approximately 18,200 ducks were observed on this refuge April 29. Of this total possibly 1000, chiefly divers, were on the Diversion unit, the balance being on Thibadeau Lake. By far the major part of all ducks observed were baldpates, approximately 11,000. Mallards and pintails ranked only 4th and 6th in order of abundance being outnumbered also by gadwalls, scaups and goldeneyes. All common species except blue-winged teals and ruddies were observed. Since mallards, pintails and blue-winged teals are normally the predominant duck species during the nesting and rearing season, it is quite evident that other species are now about at peak concentration levels.

In addition to ducks, approximately 1800 American coots, 500 eared grebes, 50 avocets and approximately 1000 Franklin's gulls were observed on Thibadeau Lake. The approximately 21,000 birds concentrated on this 300 acre body of water presented quite an attracting picture. A wave of Franklin's gulls were no doubt passing through this general area about this time as large concentrations showed up at Bowdoin on April 27 and very many were observed along the highway between Malta and Havre on April 28.

Upland grass nesting cover at Thibadeau is normal or better, however, normal cover on this area or any of the easement refuge areas does not come up to normal standards of Bowdoin Refuge. We feel safe



in stating however, that nest cover will be very ample for the expected number of ducks that will remain in the area to nest. With Mud and Grassy Lake units out of production this year aquatic foods will be far from adequate. Present indications, however, point out that Thibadeau Lake must be furnishing quite an abundance of submerged aquatic food since it is attracting such a large concentration of baldpates, gadwalls, scaups and coots. According to Mr. Schnitzmeyer about this same size concentration has been on Thibadeau for the past two weeks.

B. Upland Birds                      None observed.

C. Big Game

Twelve antelope were observed in the eastern half of the refuge on April 29. Antelope use this area off-and-on and sometimes are not observed. Population trends are steadily climbing throughout the general area.

D. Fur Bearers

None observed. From all indications it appears that the refuge trapper or some trapper operating without a permit did a good job on removing the muskrats from the Thibadeau and Diversion units.

### III MAINTENANCE

No maintenance work was performed other than to patrol the area and inspect boundary signs, fence and structures. All were found in good condition.

### IV ECONOMIC USE

A. Fur Harvest

The trapping permit issued to Mr. Fred Raw for removal of muskrats expired April 30. Mr. Raw is an employee of the Schnitzmeyer Brothers who own all lands composing this refuge. He stated that while he was successful in obtaining quite a few muskrats on Schnitzmeyer lands outside the refuge boundary he did not obtain as many within the refuge as expected. He believes that some other trapper operating without a permit beat him to the punch on the refuge lands. Mr. Raw reported taking 36 muskrats off the refuge which were sold to the Minot Hide and Fur Company on December 22, 1953. 26 rats were sold for 45 cents each (\$11.70) and 10 rats were sold for 65 cents each (\$6.50) making total receipt of \$18.20

## V APPLIED RESEARCH

None

## VI PUBLIC RELATIONS

On every visit to the refuge areas in Hill County the manager spent some time in Havre visiting with and discussing wildlife problems with leading members of the Hill County Sportsmens Association. The manager also was a guest speaker at the annual Hill County Wildlife banquet held in Havre during March and also attended the spring meeting of the North Central Montana Wildlife Federation held in Havre. On April 30 and May 1 he also attended the Montana Conservation Council meeting held in Havre.

## VII OTHER

A. Notes of Interest

On visiting this refuge April 29 the mangger noted that the Schnitzmeyer Brothers have spuded in another wildcat oil well, this time on lands covered by easement to the Service. This well is located in the southeast corner of the SE $\frac{1}{4}$  SE $\frac{1}{4}$ , Section 22, T35N, R16E on private lands obtained by easement from Ed Bough and indicated as tract No. 7 Lake Thibadeau Refuge.

No request for drilling permit was ever submitted to the manager of to the Service so far as is known. However, the writer does not know if such a permit is required seeing as how the well is being drilled by the land owner on his own land. No drilling details are known at this writing, however, an endeavor will be made to obtain some at a later date.



Leon C. Snyder  
Refuge Manager



3-7150a  
Cont. NR-1  
(Rev. March 1953)

WATERFOWL  
(Continuation Sheet)

REFUGE Thibadeau

MONTHS OF Jan. 1 TO April 30, 19 54

| (1)<br>Species    | (2)<br>Weeks of reporting period |    |    |    |    |    |                  | (3)<br>Estimated<br>waterfowl<br>days use | (4)<br>Production<br>: Broods: Estimated<br>: seen : total |  |
|-------------------|----------------------------------|----|----|----|----|----|------------------|-------------------------------------------|------------------------------------------------------------|--|
|                   | 11                               | 12 | 13 | 14 | 15 | 16 | 17 : Apr 29 : 18 |                                           |                                                            |  |
| <b>Swans:</b>     |                                  |    |    |    |    |    |                  |                                           |                                                            |  |
| Whistling         |                                  |    |    |    |    |    |                  |                                           |                                                            |  |
| Trumpeter         |                                  |    |    |    |    |    |                  |                                           |                                                            |  |
| <b>Geese:</b>     |                                  |    |    |    |    |    |                  |                                           |                                                            |  |
| Canada            |                                  |    |    |    |    |    |                  |                                           |                                                            |  |
| Cackling          |                                  |    |    |    |    |    |                  |                                           |                                                            |  |
| Brant             |                                  |    |    |    |    |    |                  |                                           |                                                            |  |
| White-fronted     |                                  |    |    |    |    |    |                  |                                           |                                                            |  |
| Snow              |                                  |    |    |    |    |    |                  |                                           |                                                            |  |
| Blue              |                                  |    |    |    |    |    |                  |                                           |                                                            |  |
| Other             |                                  |    |    |    |    |    |                  |                                           |                                                            |  |
| <b>Ducks:</b>     |                                  |    |    |    |    |    |                  |                                           |                                                            |  |
| Mallard           |                                  |    |    |    |    |    | 750              | 26,250                                    |                                                            |  |
| Black             |                                  |    |    |    |    |    |                  |                                           |                                                            |  |
| Gadwall           |                                  |    |    |    |    |    | 1500             | 31,500                                    |                                                            |  |
| Baldpate          |                                  |    |    |    |    |    | 11,000           | 231,000                                   |                                                            |  |
| Pintail           |                                  |    |    |    |    |    | 500              | 17,500                                    |                                                            |  |
| Green-winged teal |                                  |    |    |    |    |    | 300              | 6,300                                     |                                                            |  |
| Blue-winged teal  |                                  |    |    |    |    |    |                  |                                           |                                                            |  |
| Cinnamon teal     |                                  |    |    |    |    |    |                  |                                           |                                                            |  |
| Shoveler          |                                  |    |    |    |    |    | 200              | 4,200                                     |                                                            |  |
| Wood              |                                  |    |    |    |    |    |                  |                                           |                                                            |  |
| Redhead           |                                  |    |    |    |    |    | 100              | 2,100                                     |                                                            |  |
| Ring-necked       |                                  |    |    |    |    |    |                  |                                           |                                                            |  |
| Canvasback        |                                  |    |    |    |    |    | 150              | 4,200                                     |                                                            |  |
| Scaup             |                                  |    |    |    |    |    | 3500             | 73,500                                    |                                                            |  |
| Goldeneye         |                                  |    |    |    |    |    | 600              | 16,800                                    |                                                            |  |
| Bufflehead        |                                  |    |    |    |    |    | 50               | 700                                       |                                                            |  |
| Ruddy             |                                  |    |    |    |    |    |                  |                                           |                                                            |  |
| Other             |                                  |    |    |    |    |    |                  |                                           |                                                            |  |
| <b>Coot:</b>      |                                  |    |    |    |    |    | 1800             | 37,800                                    |                                                            |  |

(over)



|       | (5)<br>Total Days Use | (6)<br>Peak Number | (7)<br>Total Production |
|-------|-----------------------|--------------------|-------------------------|
| Swans | :                     | :                  | :                       |
| Geese | :                     | :                  | :                       |
| Ducks | 414,050               | 18,650             | :                       |
| Coots | 37,800                | 1,800              | :                       |

# SUMMARY

Principal feeding areas Lake Thibadeau

Principal nesting areas

Reported by Leon C. Snyder

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

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).



## NARRATIVE REPORT

## BLACK COULEE NATIONAL WILDLIFE REFUGE

January 1 to April 30, 1954

## I GENERAL

A. Weather Conditions

Please refer to report for Bowdoin Refuge.

B. Water Conditions

By the end of the preceding period water elevations had receded to a point where they would have dried up completely during the summer period of 1954 had not sufficient snow runoff brought water levels back to desired elevations. While the refuge was not visited during the winter months it was evident that the February thaw did add somewhat to last fall's low water levels. March snowfall in the general area of the Black Coulee Refuge must have equaled that of the Bowdoin area because when the writer visited the refuge on April 15, a date about a week after all runoff had ceased in the Bowdoin area, water was still flowing over the spillway at Black Coulee. Runoff water impounded in the surrounding country-side was comparable to that impounded during the high flood period of 1952 and trails to the refuge after leaving main County roads were all but impassable. The writer spent 3 hours stuck in eroded silt muck in the bottom of one coulee where there was no other way around and finally had to put chains on front wheels to get out. Black Coulee Refuge thus again has the assurance of an adequate water supply for at least another two waterfowl rearing seasons. On April 15 ice in the reservoir had all broken up and high winds had it drifted over along the east shore lines. This ice drift along the east shore was about 150 yards wide.

C. Fires

None.

## II WILDLIFE

At the time of the April 15th visit only about 500 ducks were present at Black Coulee. In order of abundance these consisted of mallards, pintails, canvasbacks, scaups, goldeneyes, baldpates, redheads, and green-winged teals. Since this was the first visit of the period we do not know just when waterfowl first arrived but presume that first arrival dates would coincidewith the start of the April thaw which was April 3-5. The infrequency of visits to these easements also tends to make it difficult to make a positive statement relative to peak concentrations, but here again the relatively

short distance from Bowdoin to Black Coulee (approximately 50 miles) leads us to believe that concentration peaks should coincide with those observed at Bowdoin. A close observance of the many potholes and lakes along the travel route to Black Coulee disclosed only occasional pairs of mallards and pintails.

No other wildlife was observed at the time of the April 15 visit. The manager had planned a second visit for the latter part of the month but considerable snow and extremely bad road conditions made it necessary to postpone this visit.

Food and cover in the fenced portion of this refuge continues to be good. Present higher water elevations will no doubt tend to increase shore line cover and enhance the growth of emergents such as smartweed and bulrushes. Higher marsh areas that did not produce last year should also bear fruit this summer. We are also expecting a much better submerged aquatic growth this year.

### III MAINTENANCE

The only maintenance work this period consisted of patrol of fence lines and inspection of boundary signs, dikes and water-control structures. It was found that some posts will have to be replaced in the north nesting area fence line. The dam and large rubble masonry spillway remains in good condition.

### IV ECONOMIC USE

Economic use permit BOW 22 issued to William Helgeson for winter grazing of horses in the fenced unit of this refuge expired March 31. Horses had been removed sometime prior to the April 15 visit. Hold-over grass cover for ground nesting birds remains good.

### V APPLIED RESEARCH

### VI PUBLIC RELATIONS

Nothing to report on these items this period.

*Leon C. Snyder*

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Leon C. Snyder  
Refuge Manager



## NARRATIVE REPORT

## HEWITT LAKE NATIONAL WILDLIFE REFUGE

January 1 to April 30, 1954

## I GENERAL

A. Weather Conditions

Please refer to report for Bowdoin Refuge.

B. Water Conditions

At the beginning of this period the western marsh areas were just about dry. The 12 to 14 inches of snowfall during January melted completely during the period February 5 to 10 and created considerable runoff for this time of year and the western marsh area became flooded about 6 inches deep. Runoff waters that entered the refuge during this runoff period froze up during the latter half of February and remained frozen until the start of the April thaw. The approximately 30 inches of snowfall during March did not start melting until April 3. Melting of this heavy accumulation of wet snow created runoff conditions comparable to the spring period of 1952. Hewitt Lake filled to overflow level and spilled considerably over the 200 foot wide spillway. Heaviest runoff period was April 4 through 6. Deep freezes during night hours retarded melting considerably and possibly prevented major flood conditions. The western marsh areas were filled to the very maximum possible, thus we have insurance of an abundance of water for the production of optimum marsh growth again this year. High winds of April 13 thru 15 broke up the winter ice cover.

C. Fires

None.

## II WILDLIFE

A. Migratory Waterfowl

## 1. Population and Behavior

No data is available as to just what dates waterfowl may have first arrived at this refuge but it is generally assumed that first arrival dates would coincide very closely with those recorded for Bowdoin Refuge.

When this area was visited on April 7 about 75 Canada geese, 8 whistling swan and a scattering of mallards, pintails, canvasbacks,

lesser scaups and goldeneye were the only waterfowl observed. An aerial count for the purpose of determining Canada goose nesting pairs and the start of a Canada goose nesting study of the refuge was made by Mr. Dale Witt of the State Fish and Game Pittman-Robertson Division on April 22. Mr. Witt counted 23 nesting pairs of Canada geese here on this date and stated that geese were observed on nests in several instances. He also stated that he estimated about 200 ducks on the refuge composed chiefly of mallards, pintails, canvasbacks and redheads.

## 2. Food and Cover

The 150 to 200 acres of newly flooded alkali bulrush marsh made an abundance of this type of food readily available for waterfowl use. This marsh area seeded heavily during the 1953 growing season but because of the area being mostly dry during the fall migration period it was not used very extensively last fall and the majority of this food remains available for 1954 use. The high flooding of shore lines that remained dry last year also created additional feeding areas. The main lake, however, continues to be very unproductive in aquatic food plants. Nesting cover generally this spring, especially in the 320 acre area fenced last year, is much better than any time in the past. Nesting pairs of Canada geese have already showed 50 percent increase over last year and we believe that a substantial increase in nesting ducks will also be observed.

## B. Marsh and Shore Birds

A few ring-billed gulls, a great blue heron, and several killdeer were observed April 7.

## III MAINTENANCE

No maintenance work was done on the area this period other than to patrol the fence lines, and inspect boundary markers and the main dike that impounds the refuge waters. These were all found to be in good condition. The overflow through the spillway, however, creates a condition that is very detrimental to the few ranchers who have to travel over the dike road to commute back and forth from their homes to shopping centers. Our dike furnishes the only possible route of ingress and egress to ranch areas to the north and west of the refuge south of Milk River and this route necessarily has to also cross the spillway of Hewitt Lake. This spillway becomes very soft and boggy during spring periods when the lake overflows. This year the period of unusability of this road lasted somewhat over two weeks.



IV ECONOMIC USE

V INVESTIGATIONS AND RESEARCH

VI PUBLIC RELATIONS

Nothing to report on above items this report period.

*Leon C. Snyder*

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Leon C. Snyder  
Refuge Manager



R-86, E-1 (2/12/54) Bowdoin. Completed drawing desk and storage cabinet constructed by refuge personnel for laboratory section of office.



R-86, E-2 (2/12/54) Same cabinet showing storage design.





R-86, E-3 <sup>2-12</sup> (~~4/28~~/54) Bowdoin guest house before start of work on addition of two more rooms. Originally this was old office building.



R-86, E-6 (4/28/54) Looking at addition on guest house from northwest.



R-86, E-7 (4/28/54) View of guest house addition from the east.



R-86, E-8 (4/28/54) View of guest house from the south. Approximately 5 inches of new snowfall during preceding night.





R-86, E-4 (4/6/54) Bowdoin. Runoff from melting snow going over patrol road south of G.N. tracks. This flow caused mainly by break in south Reclamation canal that picks up runoff from hills to the south of refuge.



R-86, E-5 (4/16/54) Bowdoin. Three-way irrigation turnout structure at outlet to headquarters irrigation reservoir.