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BEAR RIVER NATL WILDLIFE REFUGE NARRATIVE REPORT

JANUARY - APRIL 1943

Summary Fiscal Year 1943

Return to: F. Cook

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

BEAR RIVER MIGRATORY BIRD REFUGE
BOX ELDER COUNTY, UTAH

--NARRATIVE REPORT--

FOR PERIOD: JANUARY, FEBRUARY, MARCH, and APRIL, 1943

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I - GENERAL

A - Weather Conditions

	<u>Snowfall</u>	<u>Precipitation</u>	<u>Max.</u> <u>Temp.</u>	<u>Min.</u> <u>Temp.</u>
January, 1943	5"	0.80"	50°	2°
February, 1943	3 $\frac{1}{2}$ "	0.59"	55°	7°
March, 1943	1"	0.47"	75°	17°
April, 1943	0"	2.53"	82°	33°
Total	9 $\frac{1}{2}$ "	4.39" Ext.	82°	2°

The weather during the month of January was exceptionally mild in comparison with that of a year ago. We had no sub-zero temperatures during the month as compared with a -23° for the previous year. There was practically no snow on the ground during the entire month, what little fell melted almost immediately. The total snowfall for the month was only 5" as compared with 22" for the previous January.

February weather was mostly mild and there were no severe storms nor protracted cold periods. The mean temperature for the month was 32.8° as compared with 21.2° for the previous year. The precipitation for the month was somewhat below normal and the total wind movement was 1,093 miles.

The weather during the month of March was comparatively mild with no severe storms or wind. The mean temperature being 40.9° as compared with 30.9° for the previous year. The total wind movement for the month being 2,406 miles.

The weather during April was in general mild and spring like, with above normal precipitation and temperatures. The total rainfall was 2.53 inches as compared with 1.62 inches for the same period a year ago. The total wind movement for the month was 1,944 miles.

In general the weather during the past four months has been exceptionally mild in comparison with similar periods in previous years. It now appears that we will have an early and favorable spring. The vegetation has already made an excellent start.

B - Water Conditions

The flow of water entering the various units of the Refuge, from the Bear River, during the months of January and February was about normal as compared with the past few years. The water areas in the various units, the overflow channels, canals and ditches were all frozen over during January with the exception of the main river channel; this the central third of which stayed open or free of ice all winter.

The ice started to leave some of the overflow channels and canals about the middle of February and by the 18th we were able to start some muskrat trapping operations. Last year the main river channel did not open up until the 17th of March or approximately one month later than this year.

We had no early spring run-off down the Bear River as is usually the case; this, undoubtedly was due to the fact that we had but little or now snow on the low lands or valley floors and most of the early spring rains soaked into the ground.

The river control gates at Refuge Headquarters were lowered or partly closed on March 27, and the water surface above the gates raised from elevation 4205.20 to 4206.40 in order to divert as much water as possible into units 1, 3, 4, and 5. The flow in the river remained about constant during most of March, estimated at between 1,200 and 1,500 cfs.

Additional flashboards were placed in the spillboxes through the main dike on the 2nd of April and the refilling of the units started. By April 12 all five of the large units were near elevation 4205.0 or normal holding capacity. The flow in the river started to increase about the first of the month and by the end of the month it was estimated at 5,000 cfs. and near flood stage.

Due to the high water in the river and the holding up of the water surface in the units, practically all of the nesting area in unit 2 has been flooded during the past month.

It will be noted from our report on water gage readings previously submitted for the month of April, that the five large units stood at or near elevation 4205.0 at the end of the month. It is our plan to pick units 2 and 5 up to elevation 05.5 just as soon as the high water in the river starts to recede. The water surface in these units has been held down to near elevation 05.0 in order to protect the dikes and spillways from excessive erosion during the high water stage in the river.

The new plan of water level management as provided by the Central Office will be carried out during the coming summer and fall as closely as is possible.

C - Fires

We have had no fires of any kind on the Refuge during the period covered by this report. Our fire engine and pump were overhauled last month and are now in first class condition. Our other fire fighting equipment has just recently been inspected, including the Refuge buildings for fire hazards, and in our opinion the buildings and equipment are in good condition.

II - WILDLIFE

A - Migratory Birds

The number and various species of waterfowl passing through the Bear River Refuge on their spring migration appeared to be about normal as compared with the past few years. While some species showed a slight increase in numbers others showed a decrease. For example, there appeared to be more canvasback and lesser scaup present and they remained for a longer period of time than usual. However, the green-winged teal did not appear to be as abundant as in previous years.

Due to a rather mild and open winter followed by an early spring, the birds began to arrive somewhat earlier than in previous years, and by mid-February the spring migration of ducks and geese was well under way. The peak of the spring migration was probably reached about March 15.

Approximately 1,000 Whistling swan, 50 to 60 canada geese and a few miscellaneous ducks wintered on the area.

The spring migration of shore birds, such as avocets, western willet, black-necked stilts, godwits, yellow-legs, sandpipers, etc. appeared to be about the same as usual. The dates of arrival for the various species are shown on the accompanying NR-1 Forms.

Our records show that for the past fifteen years the long-billed curlew has arrived at the Refuge in the spring between March 18 and 29th. This year the first birds arrived on March 22. Several pair are now nesting along the main dike on the Refuge.

The canada geese nesting on the Refuge are just begining to hatch out their eggs. Eight nests have been located on the main dikes. On May 1st, 22 broods of young geese were counted on a trip around unit 2. One pair of geese nested on the inside of the woven wire fence enclosing the hospital pond at Refuge Headquarters, and in an artificially built up nest or box.

Judging from the size of the broods (averaging about 5) it would appear that the hatch of young geese has been very successful so far.

Large colonies of california gulls have just started to renest on the artificial islands in units 4 and 5 and on the partition dike between the units. Several pair of double-crested cormorants are also nesting on the islands. A more detailed nesting survey will be made latter on this spring.

A flock of from 30 to 40 starlings was observed on March 12 and for a number of days thereafter along the river bank about two miles east of Refuge Headquarters. This is a new and probably undesirable record for this locality.

2 - Food and Cover. Food conditions on the Refuge during the period covered by this report appeared to be about normal or if anything somewhat above the average. The better waterfowl food conditions undoubtedly accounts for the fact that the canvasback, scaup and some of the other ducks stayed longer on the area during the spring migration than is usual.

The sago pondweed has made an excellent start this spring in all the open water areas. The salicornia or glasswort has made a good showing on the alkaline flats and should provide a good source of food this coming fall.

The emergent vegetation, such as the Scirpus paludosus, Scirpus acutus, Typha, etc. has made a good start and the new growth at the present time is from 6 to 12 inches high. As a result of the mild winter with no heavy snows the last year's growth of emergent vegetation is mostly in an upright position, and with the new growth should make good cover conditions for nesting and rearing of young birds.

3 - Botulism. So far this year we have had no spring out-break of Botulism, and it is very doubtful that we will now have one. Only two sick ducks picked up this spring have had any symptoms of botulism.

4 - Lead Poisoning. The loss of bird life from lead poisoning appeared to be somewhat less than usual this past period. Nine whistling swan and one golden-eye were picked up and their death attributed to lead poisoning. Undoubtedly a few more of the whistling swan that wintered here and probably some ducks have been lost from lead poisoning but have not been observed or found.

B - Upland Game Birds

The ring-necked pheasant is the only upland game bird we have at Bear River. Our pheasant population appears to remain about constant from one season to the next. At the present time we estimate we have between 250 and 300 pheasants on the Refuge. Food and cover conditions are good this spring and due to a mild open winter it was not necessary to carry on any winter feeding.

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

In order to determine the trend in our muskrat population and any shifting of densely populated areas, we have made a count of the muskrat houses or lodges on the Refuge each spring for the past three years. The following list give the results of these counts and may be of value for future reference.

<u>Date</u>	<u>Unit 1</u>	<u>Unit 2</u>	<u>Unit 3</u>	<u>Total</u>
January, 1941	868	1406	115	2,389
January, 1942	1319	1779	166	3,264
February, 1943	921	1188	204	2,313

From the above data and general field observations, we estimated our muskrat population this early spring and before trapping operations at between 8 and 9 thousand. During our spring trapping operations a total of 5,082 rats were taken. A report on the number of trapping permits issued, the number of rats taken and the price received by each permittee will be discussed under "Economic Uses of the Refuge" later on in this report.

A year ago we estimated that we had 3 or 4 pair of beaver on the Refuge; however, this spring it would appear that but one pair remains. This pair is located in No. 2 overflow channel leading into unit 3. Last summer two young beaver were found dead in the main river channel. The research men stationed here concluded that they had died from tularemia. It may be possible that some of the others died of this same cause, or they may have migrated up the river as there are a number of beaver on the river above the Refuge.

On February 25, one striped skunk was taken just south of Refuge Headquarters. Other than this one, we have been unable to locate any additional skunks or their dens on the nesting areas or along the channel banks.

E - Predaceous Birds

The american raven and magpie are the only predaceous birds of any consequence we have at Bear River. Our raven population at this time of the year is estimated at 20 to 30 birds. The raven does not nest on the Refuge but moves in from the adjacent mountains. Undoubtedly some duck egg predation can be attributed to the raven, however this we feel is relatively small and not of too serious a consequence.

While our magpie population on the Refuge proper is relatively small and probably does not exceed 30 to 40 birds, a considerable number of magpies nest in the willows along the river banks just above the refuge. Undoubtedly these birds move to and from the Refuge during the nesting season to a considerable extent.

Each spring for a number of years past, some magpie control has been carried on. This year from April 20 to 24, a total of 15 nests and 75 eggs were destroyed on the Refuge, and 91 nests with 530 eggs were destroyed along the river banks just east of the Refuge.

F - Fish

General conditions affecting fish life on the Refuge have been

about normal as compared with previous years. There is no noticeable change on our fish population and it would appear that the fish-eating birds and other natural controls hold the population about constant.

III - REFUGE DEVELOPMENT AND MAINTENANCE

A - Physical Development

We have no new construction work or development jobs going on at the present time. The field work during the past period has consisted mainly of maintenance and repair jobs. Our Refuge Mechanic, Mr. Leo Young, spent January and February at Sacramento Refuge operating a dragline and cleaning ditches.

During the past two months considerable time has been spent hauling gravel for surfacing roadway at new water control structures west of headquarters and for patching roadway on main dikes. The dikes have also been graded and several loads of drift wood hauled off.

The spillbox in the partition dike between units 1 and 2 was repaired and center part replaced. All other spillboxes were checked over and minor repairs made where necessary. Additional flashboards have been made in order to hold the water up in units 2 and 5 to the higher elevation as planned for this season.

Two low places in the partition dike and roadway between units 1 and 2 have been raised with the use of the dragline. This dragline work will make it necessary to close this road for several months, or until the new fill dries out and can be graded and graveled.

At the present time we are making minor repairs to the main dike in unit 5 where the wind and wave action has caused some erosion at the high water line.

Our motor vehicles, boats, tractor, other equipment and tools have all been carefully checked over and repairs made where necessary during the past winter and early spring.

Due to the flow of water in the river being somewhat higher this spring than for the past few years, it has been necessary to spend considerable time moving trash and drift wood from our water control structures.

B - Plantings

No planting of trees, shrubs or marsh plants has been done during the past period other than the replacing of three small trees at Refuge Headquarters that had failed to survive.

C - Collections

No seeds, tubers, or other plant materials have been collected

during the past period.

Three small birds, one american pippit and two savannah sparrows, were collected for specimens. One of the savannah sparrows is almost a true albino.

D - Receipt of Seed and Nursery Stock

No seed or Nursery stock was received during the past period.

E - Distributions

During the past period, 545 pounds of sago pondweed seed on hand at Bear River was shipped to the following refuges:

Bitter Lake ✓	Roswell, New Mexico	50 lbs.
Salt Plains ✓	Cherokee, Oklahoma	50 "
Muleshoe ✓	Muleshoe, Texas	25 "
Wichita ✓	Cache, Oklahoma	25 "
Havasut ✓	Needles, California	50 "
Imperial ✓	Yuma, Arizona	50 "
Swan Lake ✓	Summer, Missouri	75 "
Reelfoot ✓	Tiptonville, Tenn.	100 "
Horicon ✓	Waupun, Wisconsin	25 "
Sullys Hill ✓ (Ardoch)	Fort Totton, N. D.	25 "
Red Rock Lakes ✓	Monida, Montana	70 "
	Total	545 "

IV - ECONOMIC USE OF REFUGE

The only economic use of the Refuge we have to report on at this time is that of our fur harvest.

C - Fur Harvest ✓

During the past spring trapping season ten trapping units were set up and ten permits were issued to local trappers to take the surplus muskrats from the Refuge on a percentage basis. The trappers retained 50 percent of their catch and released 50 percent to the government for the trapping privilege.

Trapping operations started February 18, however there was still considerable ice on the marsh and channels and some of the trappers were not able to start until about the 25th of the month. All trapping operations were concluded on March 26.

The following is a list of the permittees, the number of muskrats taken by each, and the amount of money received by each from the sale of his share of the pelts.

<u>Permit No.</u>	<u>Name and Address</u>	<u>Total No. Retained taken</u>	<u>Retained by trapper</u>	<u>Retained by Gov't.</u>	<u>Amount Sold for</u>
R2-1-BR	Joseph E. Wheeler Plain City, Utah	511	255	256	\$388.25

<u>Permit No.</u>	<u>Name & Address</u>	<u>Total No. taken</u>	<u>Retained by trapper</u>	<u>Retained by Gov't.</u>	<u>Amount Sold for</u>
R2-2-BR	Orville Jensen Brigham, Utah	516	258	258	\$451.50
R2-3-BR	Willard Jensen Corinne, Utah	510	255	255	420.75
R2-4-BR	Leo Hansen Brigham, Utah	508	254	254	462.37
R2-5-BR	Joseph Hansen Brigham, Utah	508	254	254	462.37
R2-6-BR	Eugene Jorgensen Brigham, Utah	504	252	252	453.00
R2-7-BR	Elwin Q. Taylor Plain City, Utah	502	251	251	414.15
R2-8-BR	Herman Green Salt Lake City	506	253	253	480.70
R2-9-BR	Floyd Knudson Brigham, Utah	510	255	255	465.08
R2-10-BR	Roland Jorgensen Brigham, Utah	503	251	252	459.05
Totals		5078	2538	2540	\$4457.22

The 2,540 muskrat pelts retained as the government's share, plus 4 skins taken by refuge personnel, were shipped to the Seattle Fur Exchange on March 19 and April 6, 1943.

Last year the pelts sold by the permittees brought an average price of approximately \$1.64 each, whereas this year they averaged \$1.75 per pelt.

Last year the permittees sold 2,319 pelts to local buyers for a total of \$3,795.90, as compared with the government's sale of 2,320 pelts for \$3,598.24 less 5 percent commission or \$3,418.33. In other words the government received \$377.57 less than the trappers and this does not include shipping charges to Seattle Fur Exchange. *referred to the bank BEG*

The following table shows the number of rats taken from the Refuge during the past eleven years.

<u>Year</u>	<u>No. Taken</u>	<u>Year</u>	<u>No. Taken</u>
1933	535	1936	1,242
1934	199	1937	2,101
1935	819	1938	3,416

<u>Year</u>	<u>No. Taken</u>	<u>Year</u>	<u>No. Taken</u>
1939	6,963	1942	4,639
1940	6,380	1943	5,082
1941	3,584		

V - FIELD INVESTIGATION OR APPLIED RESEARCH

No work has been done under this heading during the past period other than assisting the research men stationed here whenever possible, and compiling data on our bird banding operations and botulism outbreaks.

A - Bird Banding

As mentioned in our last narrative report, we are including herewith tables just recently completed showing the number and species of birds banded last year at this station, the total number banded since 1929 and the returns to date. Also a table showing a summary of returns and recoveries by states, countries, and species on birds banded at Bear River Refuge since 1929.

Bear River Migratory Bird Refuge, Utah

Table showing, by species, number of birds banded from
1929 to 1941, number banded in 1942, and total returns
to date.

12-31-42

Species	Total banded 1929 to 1941	Banded 1942	Total Banded	Total Returns to date
Canada Goose	2,786	3	2,789	565
Mallard	1,294	67	1,361	189
Baldpate	481	75	556	33
Green-winged Teal	8,974	545	9,519	388
Pintail	8,773	1,105	9,878	428
Gadwall	224	9	233	23
Shoveler	795	82	877	74
Redhead	3,226	4	3,230	516
Cinnamon Teal	531	6	537	10
Ruddy	30	--	30	1
Canvasback	4	--	4	3
Golden-eye	1	--	1	--
Lesser Scaup	5	--	5	1
Whistling Swan	--	2	2	--
American Coot	171	--	171	5
California Gull	101	--	101	--
Brewster's Egret	98	--	98	1
Phalarope	6	--	6	--
Long-b. Dowitcher	12	--	12	--
Black Tern	4	--	4	--
Black-necked Stilt	28	--	28	--
Sandpiper	24	--	24	--
Killdeer	9	--	9	--
Western Willet	18	--	18	--
Treganza's Heron	19	--	19	-3
Black-c. N. Heron	24	--	24	--
Glossy Ibis	31	--	31	--
Avocet	52	--	52	--
Marbled Godwit	13	--	13	--
White Pelican	5	--	5	--
Franklin Gull	12	--	12	--
Pied-billed Grebe	5	--	5	--
Western Grebe	48	--	48	2
Eared Grebe	166	--	166	--
Marsh Hawk	4	--	4	--
Long-billed Curlew	16	--	16	1
Double-c. Cormorant	22	--	22	1
Sanderling	10	--	10	--
Totals	28,022	1,898	29,920	2,244

Bear River Migratory Bird Refuge, Utah

Summary of returns and recoveries by states and species on birds banded at Refuge,
1929 to 1942

12-31-42

State in which recovered	Can. Goose	Mallard	Baldpate	G.W. Teal	Pintail	Gadwall	Shoveler	Redhead	Cin. Teal	Ruddy	Canvasback	L. Scaup	Coot	Brew. Egret	T. Heron	W. Grebe	L.B. Curlew	Cormorant	Totals
Alabama								1											1
Arkansas					2						1								3
Arizona	6	1	2	11	4		1	9											34
California	8	6	8	191	77	2	9	47	3	1	1		2			2			357
Colorado	1	4		3	2			51											61
Idaho	21	25	2		2	1		19							1				71
Illinois		1																	1
Iowa		2		2	1														5
Kansas				1	1			3											5
Louisiana				2	11														13
Maryland								2											2
Michigan								3			1								4
Minnesota				1	3			5											9
Missouri				2	1														3
Montana	1	3		2	1	1		9	1										18
Nevada		2	1	3	1	1		21											29
Nebraska		2			2		1	11											16
New Mexico		1		3		1	1	14											20
North Dakota		1						4											5
Ohio								1											1
Oklahoma		1		1	3			8											13
Oregon		1		1				4											6
South Dakota					1		1	4											6
Tennessee					1														1
Texas				1	59	1	3	47											111
Utah	524	131	18	154	204	14	55	188	5			1	3	1	1		1	1	1300
Wisconsin				1															1
Wyoming		5						39											44
Washington								1											1
Alaska			1	1	4														6
Canada	4	3	1	6	26	1	1	8											50
Mexico				1	23	1	2	15	1						1	1	1		45
TOTALS	565	189	33	387	429	23	74	514	10	1	3	1	5	1	3	2	1	1	2,242

VI - PUBLIC RELATIONS

A - Recreational Uses

During the past period the number of visitors to the Refuge has materially decreased. A total of 145 people were registered at headquarters and granted permission to drive around unit 2 of the Refuge. In addition to this we estimated that approximately 200 people have used the public picnic facilities near headquarters and fishing privileges on the river.

B - Refuge Visitors

The following is a list of the officail visitors to the Refuge during the period:

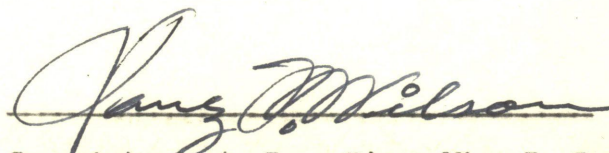
<u>Date</u>	<u>Name</u>	<u>Title</u>	<u>Address</u>
1-26-43	E.H. Nelson	Asst. Engineer	Salt Lake City
2-1-43	E.H. Nelson	Asst. Engineer	Salt Lake City
2-6-43	Brice McBride	Sr. Hyd. Engineer	Salt Lake City
2-6-43	E.H. Nelson	Asst. Engineer	Salt Lake City
2-23-43	Clarence Cottam	Sr. Biologist	Chicago, Ill.
3-13-43	H. H. Dill	Refuge Mgr.	Ruby Lake, Nev.
3-13-43	Mr. Moore	Laborer-patrol.	Ruby Lake, Nev.

F - Violations

We have had no violations to report during this period.

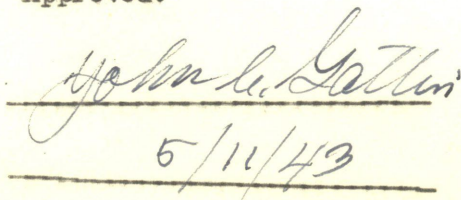
Submitted by:

May 7, 1943



Superintendent, Bear River Mig. B. Refuge

Approved:


5/11/43

SUMMARY OF PAST YEAR'S ACTIVITIES AND HIGH LIGHTS

While there has been no outstanding events or major changes take place at the Bear River Migratory Bird Refuge during the past year we feel that considerable progress and a general improvement of the area has been accomplished.

Our nesting surveys show that more birds used the Refuge last year for nesting and rearing of their young than for the previous year. One noticeable accomplishment of the area is the marked increase in our Canada goose population, both from the standpoint of nesting and rearing of young and the numbers using the Refuge during migration.

Water conditions on the Refuge during the past summer were somewhat below normal and food and cover conditions were not as favorable as in some years past. However, our fall migration of waterfowl appeared to be about normal.

We had a rather serious outbreak of botulism last summer and a total of 20,646 dead birds were picked up and disposed of. However, when you consider that our bird population during the botulism period was estimated at between 1 and 1½ million birds the percentage of loss is very small.

Water conditions on the Refuge are much improved this spring and the prospects at the present time are that we will have a normal or better water supply this coming summer. The run-off this spring has been the highest we have had since 1938.

During the past open season on migratory waterfowl a total of 4,509 people hunted upon the area of the Refuge open to public hunting. This is approximately 2,000 less than used the area the previous year. The decrease in hunters was undoubtedly due to war conditions. The total take of waterfowl on the open area was 16,683 birds as compared with 23,467 for the previous year. The average take per hunter per day was 3.7 birds which is slightly higher than for last year.

Our annual muskrat fur harvest was somewhat above the previous year. During the past trapping season a total of 5,082 muskrat pelts were taken by share trappers on a percentage basis. The average price received by the trappers for their share was \$1.75 per pelt. This is eleven cents per skin better than was received last year.

Based on the average price received by the share trappers the Refuge income from our muskrat crop would amount to \$8,893.50 for the past season.

5082
2544 (25% share)
2538

The most important physical development or improvement completed during the past year was that of constructing six concrete water control structures. Three of these structures are located at the end of Whistler Canal and are so designed as to permit control of the water entering into Units 4 and 5. The other three structures are located about $1\frac{1}{2}$ miles west of Refuge Headquarters at the three-way diversion on the main canal between Units 1 and 2.

Last year 550 pounds of sago pondweed seed were gathered at Bear River and shipped to other Refuges for planting purposes.

Under our bird banding operations a total of 1,898 waterfowl, including ten species, were banded during the past season. One very interesting and unusual return was received; that of a male pintail banded at the Refuge August 15, 1942, after recovering from botulism, was found in an exhausted condition, along with some other ducks, by Arthur R. Murphy, Ensign, U. S. Navy at the Naval Air Station, Palmyra Island, T. H..

On October 8, 9 and 10 a conference on the botulism problem was held at the Bear River Refuge, under the chairmanship of Dr. Clarence Cottam. The following men were in attendance: E. R. Kalmbach, A. L. Nelson, Chas. C. Sperry, C. S. Williams, E. R. Quortrup, R. L. Sudheimer, R. E. Griffith; T. B. Murray, Clarence Aldous, C. L. Fretwell, Ben Hazeltine, D. I. Rasmussen, Marcus Nelson, Nolan Nelson, and V. T. Wilson. Many phases of the botulism problem were discussed and future work outlined.

BEYOND THE ISLANDS, L. H.

WHEEL AND RUBBER CO. OFFER KETCHUPS FOR BUNTING BARBECUES.

MIGRATORY BIRDS

Refuge Bear River Migratory Bird Refuge Months of January to April, 1943

1612

(1) Species	(2) First Observed		(3) Became Common	(4) Peak Concentration		(5) Last Observed		(6) Young Produced			(7) Total
Common Name	Number	Date	Date	Number	Date	Number	Date	No. Broods Obsvd.	Avg. Size	Esti- mated Total	Number Using Refuge
Western Grebe	4	3/21	4/10								
Hared Grebe	3	4/16									
Pied-billed Grebe	1	3/24									
White Pelican	2	3/25	4/1								
Double-cr. Cormorant	5	3/23	4/1								
Treganza's Heron	(A few wintered on refuge)										
Brewster's Egret	1	3/27	4/15								
Blk-crowned Night Heron	3	4/16	4/30								
White-faced Glossy Ibis	26	4/12	4/15								
Whistling Swan	(Approx. 1000 wintered)			4,200	3/15						
Lesser Snow Goose	18	2/16	2/20	500	3/15	50	4/5				
Canada Goose	(Approx. 50 wintered)										
Mallard	(a few wintered)			520	2/16						
Gadwall	2	2/16	4/1	750	4/30						
Baldpate	(A few wintered)			600	3/15						
Pintail	(Several wintered)			50,000	3/15						
Green-winged teal	(Several wintered)			110	3/15						
Blue-winged Teal	1	4/3									
Cinnamon Teal	6	3/14	4/15								
Shoveler	12	3/1	3/15	500	4/15						
Redhead	2	2/2	4/10								
Canvasback	30	2/16	2/20	2,000	3/15						

REMARKS: (Pertinent information not specifically requested)

The figures in column No. 4 represent the largest number observed of the various species during the period covered by this report and as taken at the time of our bi-monthly bird census for trip over the dikes.

INSTRUCTIONS

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

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

- (1) SPECIES: Use correct common names as found in the A.O.U. Check List, 1931 Edition, and list in A.O.U. order. General terms are to be avoided, such as "scaup", "teal", etc.; use "green-winged teal" or "lesser scaup".
- (2) FIRST OBSERVED: The first refuge record for the species during spring migration, fall migration, wintering, or summering, and the number observed. In the case of resident species this column may be disregarded.
- (3) BECAME COMMON: The date the species became common on the refuge.
- (4) PEAK CONCENTRATION: The greatest number of the species present on any one date or limited interval of time.
- (5) LAST OBSERVED: The last refuge record for the species during the spring or fall migration, wintering, or summering, and the numbers observed exclusive of obvious cripples or non-migrants.
- (6) YOUNG PRODUCED: Estimated number of young produced based upon observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact are to be omitted.
- (7) TOTAL: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the manner in which birds come through; i.e., in waves or all at once. On refuges representing the terminus of the flight lane, the figures would probably be the same in many cases.

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

MIGRATORY BIRDS

Refuge Bear River Migratory Bird Refuge Months of January to April, 1943

1612

(1) Species	(2) First Observed		(3) Became Common	(4) Peak Concentration		(5) Last Observed		(6) Young Produced			(7) Total
Common Name	Number	Date	Date	Number	Date	Number	Date	No. Broods Obsvd.	Avg. Size	Esti- mated Total	Number Using Refuge
Lesser Scaup	47	2/22	2/20	650	3/15						
Am. Golden-eye	(A few wintered)			35	2/16	7	4/3				
Bufflehead	(A few wintered)										
Ruddy	14	2/22	4/10	400	4/15						
Am. Merganser	15	2/16	2/20	65	3/15						
Red-breasted Merganser	(A few wintered)										
Fer. Rough-legged Hawk	(A few wintered)										
Am. Rough-legged Hawk	(A few wintered)										
Marsh Hawk	(A few wintered)										
Prairie Falcon	(A few wintered)										
Duck Hawk	(A few wintered)										
Bald Eagle	(A few wintered)										
Golden Eagle	(A few wintered)										
American Coot	26	2/22	3/15								
W. Snowy Plover	1	4/21									
Killdeer	3	2/23	3/15								
Long-billed Curlew	1	3/22	4/1								
Wilson Snipe	1	4/6									
Long-billed Dowitcher	2	4/19	4/25								
Western Willet	1	3/29	4/10								
Lesser Yellow-legs	6	3/26	4/1								
Marbled Godwit	20	4/3	4/3								

REMARKS: (Pertinent information not specifically requested)

INSTRUCTIONS

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

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- (4) PEAK CONCENTRATION: The greatest number of the species present on any one date or limited interval of time.
- (5) LAST OBSERVED: The last refuge record for the species during the spring or fall migration, wintering, or summering, and the numbers observed exclusive of obvious cripples or non-migrants.
- (6) YOUNG PRODUCED: Estimated number of young produced based upon observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact are to be omitted.
- (7) TOTAL: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the manner in which birds come through; i.e., in waves or all at once. On refuges representing the terminus of the flight lane, the figures would probably be the same in many cases.

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Form NR-1

MIGRATORY BIRDS

Refuge Bear River Migratory Bird Refuge Months of January to April, 1943

1612

(1) Species	(2) First Observed		(3) Became Common	(4) Peak Concentration		(5) Last Observed		(6) Young Produced			(7) Total
Common Name	Number	Date	Date	Number	Date	Number	Date	No. Broods Obsvd.	Avg. Size	Esti- mated Total	Number Using Refuge
Avocet	2	3/11	3/15	1,000	4/10						
Black-necked Stilt	3	3/29	4/25								
California Gull	120	3/1	3/1								
Ring-billed Gull	(Wintered)										
Franklin's Gull	20	4/8	4/10								
Herring Gull	(A few wintered)										
Caspian Tern	1	3/30									
Forster's Tern	3	4/3	4/15								
Black Tern	2	5/1									
W. Mourning Dove	2	4/22									
W. Burrowing Owl	1	3/11									
Short-eared Owl	1	3/24									
Long-eared Owl	1	4/21									
Desert Horned Lark	(Wintered)			450	2/2						
Tree Swallow	3	3/24	4/1								
Barn Swallow		4/17									
N. Cliff Swallow		4/16									
W. Marsh Wren	3	3/9	4/1								
Sage Thrasher	3	4/3									
Western Robin	1	3/12									
Mountain Bluebird	2	2/16	2/20	75	2/20						
American Pipit	(a few wintered)										

REMARKS: (Pertinent information not specifically requested)

INSTRUCTIONS

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Gaviidae through Strigidae; also doves and
woodcocks)*

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on the Gulf Coast, use only the columns that apply.

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in A.O.U. order. General terms are to be
avoided, such as "scaup", "teal", etc.;
use "green-winged teal" or "lesser scaup".
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during spring migration, fall migration,
wintering, or summering, and the number
observed. In the case of resident species
this column may be disregarded.
- (3) BECAME COMMON: The date the species became common on the
refuge.
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- (6) YOUNG PRODUCED: Estimated number of young produced based
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representative breeding areas. Brood
counts should be made on two or more areas
aggregating 10% of the breeding habitat.
Estimates having no basis in fact are to
be omitted.
- (7) TOTAL: Estimated total number of the species using
the refuge during the period. This figure may
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MIGRATORY BIRDS

Refuge Bear River Migratory Bird Refuge Months of January to April, 1943

1612

(1) Species	(2) First Observed		(3) Became Common	(4) Peak Concentration		(5) Last Observed		(6) Young Produced			(7) Total
Common Name	Number	Date	Date	Number	Date	Number	Date	No. Broods Obsvd.	Avg. Size	Esti- mated Total	Number Using Refuge
Whit-rumped Shrike (?)	(A few wintered)										
Western Meadowlark	(A few wintered)										
Yellow-headed Blackbird	2	3/21	4/1								
Red-winged Blackbird	(A few wintered)										
Pale Goldfinch	(30 to 40 wintered on refuge)										
W. Savannah Sparrow	1	3/15	3/20								
Vesper Sparrow	1	3/19	4/1								
W. Tree Sparrow	(Several wintered)										
Spurred Towhee	1	4/22									
Mountain Song Sparrow	(Several wintered)										
Sage Sparrow	1	3/15									
Pine Siskin	16	2/2		30	2/10						
Juncoes (Oregon var.)	(Several wintered)										
W. Lark Sparrow	1	4/28									
Ruby-crowned Kinglet	1	4/3									
Sparrow Hawk	1	4/7									
Starling	35	3/2									
Bohemian Waxwing	1	2/18									

REMARKS: (Pertinent information not specifically requested)

INSTRUCTIONS

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Refuge Bear River Migratory Bird Refuge, Utah April 30, 194 3

(1) Species	(2) Density		(3) Removals					(4) Disposition of Fur						(5) Total Popula- tion
Muskrat Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control	For Re- stocking	For Research	Share Trapping			Total Refuge Furs Shipped	Refuge Income	Furs Donated	Furs Destroyed
								Permit Number	Trappers' Share	Refuge Share				
Muskrat	<u>Scirpus & Typha</u>			5082				R2-1-BR	255	256	256			
								R2-2-BR	258	258	258			
								R2-3-BR	255	255	255			
								R2-4-BR	254	254	254			
								R2-5-BR	254	254	254			
								R2-6-BR	252	252	252			
								R2-7-BR	251	251	251			
								R2-8-BR	253	253	253			
								R2-9-BR	255	255	255			
								R2-10-BR	251	252	252			
Striped Skunk					1									3,000

REMARKS:

INSTRUCTIONS

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

- (1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan. "List of North American Recent Mammals" by G. S. Miller, Jr., a very good reference, is now out of print, although a revision is scheduled for publication in the near future.)
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.) Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year. Also show any removals not falling under heading listed.
- (4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market and the total income to the refuge by species, including share-trapped furs and furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness 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.