

NARRATIVE REPORT REPORTING SLIP

REFUGE BLACKWATER

PERIOD January-April 1963

CHIEF'S OFFICE: Mr. Gilliam

~~Mr. [unclear]~~ COU

~~Mr. [unclear]~~ e

Mr. Goldman

WILDLIFE MANAGEMENT: Mr. Benson

Mr. Stiles

WTBS

RESOURCE MANAGEMENT: Mr. Worley

Mr. Stollberg

BRS

Mr. Lusk ERL

OPERATIONS: Mr. [unclear]

A

~~Mr. [unclear]~~

WRC

PUBLIC USE: Mr. [unclear]

Mr. [unclear]

PLANNING: Mr. Harlow

ADMINISTRATIVE SERVICES: Miss Bane

Blackwater National Wildlife Refuge

Narrative Report

January, February, March and April, 1963

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Personnel

Cornelius W. Wallace.....	Refuge Manager
Jerome T. Carroll.....	Refuge Manager
Guy W. Willey.....	Wildlife Technician
G. Wallace Stewart.....	Maintenanceman
Owens P. Hughes.....	Maintenanceman
William G. Richardson.....	Maintenanceman

U. S. Department of the Interior

Fish and Wildlife Service

Bureau of Sport Fisheries and Wildlife

Blackwater National Wildlife Refuge
R.F.D. #2 Cambridge, Maryland

Established January 23, 1933

Total Acreage - 11,216

Blackwater National Wildlife Refuge

Narrative Report

January, February, March and April, 1963

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Blackwater National Wildlife Refuge

Narrative Report

January, February, March and April, 1963

I. General

A. Weather Conditions.

January. Temperatures this January ranged somewhat below normal with a -2 degrees recorded on the 24th. The maximum of 56 degrees was recorded on the 12th. Precipitation also was below normal with only 2.49 inches recorded, including 3 inches of snow which fell on the 31st. Prevailing winds were from the N.W. most of the month and combined with the severe low temperatures served to keep the bays, rivers and marshes choked with ice.

February. Below normal precipitation continued on into February with only 2.63 inches being recorded on nine days. This precipitation came in the form of snow, sleet and freezing rain accompanied by a brisk N.W. wind. February temperatures were severe enough to keep the ice frozen on most of the ponds and marshes. The mercury dropped to freezing or below every night in the month. A low of 8 degrees was recorded on the 22nd, and the monthly high of 54 degrees was reached on the 11th. Winds prevailed mostly from the N.W.

March. A warming trend began early in March and continued throughout the month. Steadily rising temperatures quickly cleared the rivers and marshes of ice. The warming trend reached its peak during the last week with a welcome 75 degrees. The minimum for the month was 26 degrees on the 3rd. The mercury dipped below freezing 7 times during the month. Precipitation likewise increased in March to an above normal 6.35 inches. This rainfall was beneficial in melting the ice that had been with us for so long. The winds during this proverbial windy month were from the N.W. and S.W.

April. April was the beginning of what has proven to be a really dry Spring. We measured only .85 inches of precipitation. This lack of rain and the ever present dry N.W. wind served to bring about the highest burning index recorded in the state in many years. This dangerous situation prevailed until showers at the end of the month alleviated it somewhat. But not before numerous marsh and woods fires had occurred throughout the state. The mercury dipped to a recorded 32 degrees twice during the month. The monthly high was a sultry 84 degrees on the 19th. The first of the season's thunderstorms occurred on the 22nd. The dry weather enabled refuge personnel to begin seedbed preparation on our farmlands early and continue without interruption.

		<u>Precipitation</u>		<u>Max.</u>	<u>Min.</u>
<u>Snowfall</u>		<u>This Month</u>	<u>Normal</u>	<u>Temp.</u>	<u>Temp.</u>
January	3	2.49	3.47	56	-2
February	1	2.63	4.12	54	8
March	T	6.35	3.82	75	26
April		0.85	3.82	84	32
<hr/>		<hr/>	<hr/>	<hr/>	<hr/>
4		12.32	15.23	Extremes 84	-2

B. Habitat Conditions.

1. Water. Although rainfall was below normal for the period, our fresh water impoundments retained sufficient water for waterfowl use. The stoplogs were removed from the Dieffenbach water control structure in February and with this accomplished the area soon became dry enough to begin farming operations.

Tides during the period have been below normal due to the prevailing N.W. winds. This period was not characterized by any late winter or early spring storms moving up the Atlantic, as was the case in 1962.

2. Food and Cover. Due to the high concentration of waterfowl on the Refuge throughout the Winter and the extremely low temperatures prevailing throughout most of the period, waterfowl food was severely reduced. Only a few acres of corn remained at the beginning along with a substantial amount of standing soybeans. The little green browse left at the beginning of the period quickly evaporated and experienced no regrowth until late in the period. Small grain fields adjacent to the Refuge and throughout the county consequently experienced heavy depredation by geese. During January and February we began burning the marsh under our controlled burning plan. Late in the period the resprouting marsh offered considerable browse. During our waterfowl banding activities we fed up a sizeable amount of shelled corn.

On March 8 Refuge personnel assisted U. S. Game Management Agents in the aerial dispersal of corn by Marine helicopter to so called starving birds in the area. This airlift came too late to do any real good since the heavy ice conditions which had placed a hardship on the birds hadn't existed for some time. Throughout the entire period during our banding activities, we found no birds that appeared to be suffering from malnutrition. We concluded therefore, that the food supply on the Refuge and surrounding lands was fairly substantial during the period.

II. Wildlife

A. Migratory Birds. Waterfowl populations remained high throughout January and early February. 40,000 Canada geese and 61,875 ducks were estimated early in the period with a decline late in February when only 15,000 geese and 16,00 ducks were present.

The 15,000 geese remained throughout March and 5,000 were still present as late as April 30. The duck population decreased during the week of February 11 thru 17 after reaching the peak of 61,875 the first week of January.

Mallards and Blacks were the predominant species of ducks found on the Refuge during early January. 40,000 Mallards and 20,000 Blacks were estimated during the peak reached in early January.

During the Spring migration 5,000 G.W. Teal and 3,000 B.W. Teal stopped off on their trip north in late March. Nesting began in early April with the man-made nesting boxes in use by the Mallards. 100 man-made type wood constructed nest boxes were placed in Pond #1 and 2. 72 of the nesting boxes were in use by the end of the period. These man-made nests protect the eggs from predators such as the raccoons, crows, fox and skunk which in past years destroyed most of the natural nests on the Refuge. No young birds were observed during the period. Blacks and B.W. Teal which nest in the marsh areas begin to pair off in April. No evidence could be observed as to possible goose nesting at this time.

The dove population estimated at 300 was evenly distributed over the Refuge. The largest numbers could be observed along Old Mill Road and Egypt Road. Standing soybeans and corn left in Refuge fields provided the food needs of these birds during the Winter months.

B. Upland Game Birds.

The population of the bob-white quail remains high on the Refuge. No predation was noted during the period with 875 estimated to be the population. Nesting was underway by the quail with good food and cover available on all areas. The largest numbers can be observed at Headquarters and Dieffenbach Pool Unit adjacent to dike and wooded areas. Several coveys can be found on the McGraws Island area.

C. Big Game Animals.

Although a record number of deer were killed in the County during the open season adjacent to the Refuge, the population remains about static on the Refuge with 110 estimated using the area. Excellent cover and food left standing for waterfowl use makes Blackwater an ideal area for deer. The deer are distributed over much of the Refuge with many using the marsh islands and wooded areas.

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

1. Muskrat. The population estimated at 7,250 is slightly higher than reported in 1962. However, the population is very low compared to ten years ago and only a few areas showing any gain over previous years.

These areas are adjacent to dikes and roads and show substantial populations each year although under heavy trapping pressure with relatively heavy harvest. We believe this is due to the protection the muskrats gain in the dikes and roads from predators, storms and other weather conditions. In the past three years severe cold weather and ice conditions force the muskrats to migrate to the dikes and banks for protection. One trapper removed 1,410 by permit to prevent possible damage to these dikes and roads tunneling and burrowing during the annual trapping season January 1 1963 thru March 15, 1963.

2. Raccoon. Raccoon population has remained extremely high with 500 estimated on the Refuge. Although refuge trapping permits stipulate that the trapper may keep all raccoons caught on the muskrat trapping units only four were trapped by the local trapper during the season. Raccoons are numerous by the numbers observed at nights and by the amount of activity along dike and water edges. Local persons believe this animal is the main controlling factor in the low muskrat population on the marshes. However, no definite proof has been obtained except they will bore muskrat houses during the breeding season. We know they interfere with waterfowl trapping in some areas and can destroy waterfowl nests. The estimated 500 are distributed over the entire 11,216 acres.

3. Fox. The fox population has remained static on the Refuge. We estimate 50 red fox on the Refuge with most of them found on the isolated marsh areas and Kuehnle Tract area. No foxes were taken under the Refuge trapping permit this season.

4. Squirrel. No increase could be noted in either the Grey Squirrel or Bryant Fox Squirrel populations during the period. The estimated populations for the Grey squirrel is 350 and Bryant Fox Squirrel 175. Food and cover has been plentiful since some corn was available in Refuge fields along with a good crop of acorns produced last summer.

5. Cotton Tail Rabbits. Rabbit population remains at an estimated 500 on the Refuge. A good supply of both food and cover has been available. During the period several more rabbits were killed by motor vehicles which seem to be the greatest predator of this animal. Ladino clover will provide sufficient food during the coming season.

6. Skunk. The skunk population on the Refuge remains the lowest in several years with only 70 estimated compared to 150 in 1960. Only a few have been observed on the county roads or refuge trails. And we are glad to report none adjacent to the Headquarters residences.

7. Miscellaneous Fur Bearers.

Opossum. This animal can be observed frequently along refuge roads and dikes at night. We estimate the population at 170 for the entire refuge area.

Otter. The heavy amount of activity in the Harpers Pond, Keens Ditch and Big Blackwater River shows a good population. We estimate 40 on the refuge area the same as the corresponding period of 1962. Excellent food is available in the refuge deep waters year round for the otters.

Nutria. As reported in our preceding narrative the nutria population is very low on the refuge. Although we had a severe winter activity on the Meekins Creek, Cow Point and Bull Point areas at the end of the period shows a few are still present. Sixteen were killed during the period by refuge personnel and the local trapper. However, many marsh owners adjacent to the refuge report nutrias on their marshes and we believe complete eradication may be difficult since these animals will migrate from one area to another. There is very little trapping by local persons for nutria since the value of the nutria is from \$0.25 to \$0.40 per pelt. The estimated refuge population is 15 and shows no problem as far as management is concerned. However, we will put forth every effort to seek complete eradication while the population is at a low peak.

E. Hawks, Eagles, Owls, Ravens and Magpies.

Hawks. Marsh hawks have been the most numerous during the period. Red-tailed, Red-shouldered, Coopers, and Sparrow Hawks could be observed in good numbers. Sharp-shinned, broadwinged, rough-legged, duck and pigeon hawks were observed but are uncommon.

Eagles. The Bald Eagle, a permanent resident of the refuge, has been observed in good numbers. A total of 11 Eagles were observed in late January. No nesting of Eagles were observed on the refuge during the period. However, two Eagles could be observed in the vicinity of Barbadoes Island in early March but no nest was observed from ground observation. A Golden Eagle observed during the Christmas bird count was present in early January in the Dieffenbach Pool. We failed to see the bird from late January until April 28, when Wildlife Technician Willey, accompanied by Mr. John Findlay, Chief, Division of Wildlife, Regional Office and Agent Joseph Withers observed the Eagle while on a tour of the Dieffenbach Pool dike. We believe it is the same Eagle trapped and banded by former Asst. Manager Webster and Technician Willey in 1957 and later recaptured in New York State by another bander. However, we have no proof since we were unable to observe a band if any were present.

Owls. The Great-Horned and barn owls are the most numerous on the refuge. Barn Owls are using the two observation towers on the refuge with 4 young owls in the Headquarters Tower and 4 eggs in the Dieffenbach Pool Tower at the end of the period. These owls have used the towers for nesting for several years and always produce young birds even with human activity from nature lovers.

Crow. The population of the crow during the period has been estimated at 700 which is near normal. There is no known roost on the refuge but they could be observed flying over marsh areas in late April, probably looking for duck nests which they can do a good job of destroying.

F. Other Birds. None to report.

G. Fish. Good numbers of white perch, carp, catfish, herring, shad and striped bass were present in the refuge waters during the period.

H. Reptiles. The Snapping Turtle is the only reptile which may cause a problem on the refuge. They could destroy young waterfowl if the population is not controlled. It is difficult to get local fishermen to catch snappers since the price is down and cost of net and equipment high. We know of no heavy concentrations of Snapping Turtles on any of the areas of the refuge.

I. Disease. None to report.

III. Refuge Development and Maintenance

A. Physical Development.

During the period preventative maintenance was performed by refuge personnel on refuge farm tractors and equipment.

Repairs and maintenance of floating equipment was carried out including fiberglassing of Patrol Boat used at the Martin Refuge. A pilot house was constructed and installed on the refuge L.C.M. to be used for transporting materials to Martin Refuge.

Cement walkways were poured at quarters number 2 and 3.

At the close of our banding operations the Cannon Net was disassembled and after necessary repairs made, stored away. Toward the end of the period the weekly grass cutting ritual was begun.

The Accelerated Public Works Project.

The end of the period found numerous projects of the Accelerated Public Works Program in various stages of completion.

In the recreation area, progress was facilitated immensely by the warm dry weather. Six complete concrete picnic tables have been poured. The winding walkways have been laid off and filled with slag. The large picnic shelter is 80% complete, lacking only the two fireplaces and two picnic tables. Plumbing facilities are nearly complete with the installation of the septic system in the rest rooms and water fountains scattered about the area.

The rest rooms are 75% complete. An electric line has been run to the picnic area by REA personnel. A heavy coat of coarse slag has been spread over the leveled parking area.

Culverts have been installed at appropriate locations along the new roads and where we widened existing roads. To date approximately 260 feet have been installed at five locations. A dragline was used to dig a graded ditch along the new road from Headquarters to the Diffenbach Pool. This new road was leveled with the bulldozer during the recent dry weather and 60 truckloads of fill were hauled and spread along the first $\frac{1}{4}$ mile from Headquarters. Near the end of the period we received and stockpiled 300 tons of No. 2 slag and 700 tons of No. 3 slag for improving these road surfaces. The road leading from the recreation area to the tower was widened primarily using a dragline. This road also received its share of fill during the three weeks we spent hauling.

The large dike very nearly saw completion during the period except for reshaping. Several major breakdowns on the draglines delayed their progress considerably. The Wakefield sheathing along the jetty leading to the hangar was completed and continued behind quarters No. 1. The bridge leading on to the jetty was widened to 22 feet.

Seven graded drainage ditches totaling 7,500 feet were dug with a dragline across the refuge farm lands under the Accelerated Public Works Program and our own Soil and Moisture program. It is believed that these ditches will be highly beneficial in draining our farm lands.

B. Plantings.

1. Aquatics and Marsh Plants. None to report.
2. Trees and Shrubs. None this period.
3. Upland Herbaceous Plants. None planted.
4. Cultivated Crops. A total of 114 acres of Ladino clover was planted in March. This included Field C, P, Q, T, I, K. Kuehnle Tract and McGraws Island. It is found that Ladino clover is the main browse crop and regrowth is faster than both the ryegrass and wheat.

Due to dry weather conditions in April we were well advanced in our farming operations. Over 100 acres of corn land and 10 acres of soybean land was plowed and disked for planting in early May. We are waiting for the large number of geese (approx. 5,000) to migrate before we plant our corn since a replant will be necessary if the geese continue to use the fields.

Stoplogs in the Dieffenbach Pool control structure were removed in February and the area has been drained. The low bottoms will be planted in millet in the next period.

C. Collections and Receipts.

1. Seed or Other Propagules. Sixty-nine bushels (69) of mixed grain was picked up at the U. S. Grain Appraisers, Baltimore, Md. This grain has been used for banding and feeding operations.

200 lbs. of Ladino clover was received from Eastern Service and J. M. Willis & Sons for planting in refuge fields.

2. Specimens. None this period.

D. Control of Vegetation. None this period. Necessary Dalpon is on hand for treating small patches of Johnson grass in refuge fields.

E. Planned Burning.

1. General. Marsh management units No. 1, 2, 3, 4, 5, 8, 10, 12, 14, 16, 17, 36, 37 and 38 or a total of 1,965 acres were controlled burned during January and February. Refuge personnel with the aid of the local trapper, keeping it under control and preventing it from spreading to adjacent private marshes. Heavy use of these areas were observed in early March when large concentrations of geese could be observed. The geese prefer green shoots over other grains as the weather begins to get warm.

2. Conditions Prior to Burning. Excellent growth of three-square (*Scirpus-Clineyi*) and small patches of cattail and bend grass were present on the areas before burning. Marsh was very dense and ranged in height from 2 to 3 feet on an average. Only a few waterfowl use the areas before burning.

3. Conditions following Burning. Due to the prevailing winds from the N.W. excellent results were gained with a 90% burn on all areas. Units were burnt at intervals to help supply supplementary feeding for the waterfowl. All the burned marsh areas were used with the heaviest use on Unit 3, adjacent to the Diffenbach Pool dike where from 8,000 to 10,000 geese could be observed at times during March.

F. Fires. There were no uncontrolled fires on the refuge during the period.

IV. Resource Management

A. Grazing. None to report.

B. Haying. None to report.

C. Fur Harvest. The result of a survey during November showed a surplus of muskrat on areas adjacent to the dikes and roads. One trapper was issued a permit to trap an unlimited number on Unit No. 3, 8, 36, 9, 16, 17, 18, and 19 adjacent to roads and dikes to eliminate possible damage to the outside structure of the dikes and roads caused by muskrats tunneling or burrowing. The local trapper removed 1,410 muskrats from these areas.

The following is a tabulation of the trapping results.

Trapper	Lic. No.	Permit No.	Unit	Muskrat Catch	Raccoon Catch	Nutria Catch
Ray Willey	MD-91064	T-6622	3	267	2	4
			8	122		
			9	443		
			16	102		
			17	83		
			18	96		
			19	139		
			36	158		
			Totals	1410	4	4

The Government's share of the muskrat pelts were packed and shipped to the New York Auction Co. on April 18, 1963. One Bale shipped by Masten Trucking Co. under Government B/L IN-189609 contained 348 Black Adults, 25 Black Kits, 314 Brown Adults, 19 Brown Kits or a total of 706 pelts.

D. Timber Removal. Approximately 10,000 B. F. of timber (mostly pine) was sold during the period. Timber removed from areas where roads are being constructed under the Accelerated Public Works Program.

E. Commercial Fishing. Permits were issued to two local fishermen to catch fish by use of gill nets. Success was poor due to severe cold weather during the early part of the period.

F. Other Uses. None to report.

V. Field Investigation or Applied Research

A. Progress Report. A total of 3,654 waterfowl were banded during this period. This included 1,658 Canada Geese,; 1,621 Mallards; 339 Blacks; 14 Pintails; 19 B.W. Teal; and 3 American Widgeon. Waterfowl banding progress for the 1962-63 wintering season which started on October 26, 1962 and ended April 12, 1963 shows a total of 5,195 waterfowl banded. A breakdown by species follows:

Canada Geese.....	2,870
Mallards.....	1,901
Blacks.....	367
Pintail.....	16
G.W. Teal.....	19
B.W. Teal.....	19
American Widgeon.....	3
Total	5,195

The 2,870 Canada geese were trapped mainly by use of the Cannon net trap at one permanent banding site. We used two 75 x 25 nets spliced together and fired 6 cannons at one time. A record catch of 189 new geese were trapped during one shot along with 40 new ducks.

Extreme cold weather and ice conditions prevailed throughout most of December, January and February. Shelled corn was used for bait for both ducks and geese.

An estimated 1,240 regular man hours and 600 donated man hours were utilized early mornings, late evenings and weekends. This is necessary in the trapping operation to keep from leaving the birds in the traps too long and to keep the traps baited to continue trapping new birds.

The main problems encountered this season were the extreme cold weather and ice conditions along with heavy activity from both equipment and personnel used in connection with the Accelerated Public Works Program which started in November.

VI. Public Relations

A. Recreational Uses. The new Recreation Area being constructed under the Accelerated Public Works Program was well advanced by the end of the period. A new Shelter, Rest Rooms, Picnic Area with tables, stoves, walkways, parking area will be open for Public use before June 30, 1963.

B. Visitors.

Mr. Lawrence Givens, Regional Refuge Supervisor, and Mr. William Taylor, Branch of Engineering, Regional Office, visited Blackwater on Feb. 7 and 8 in connection with the Accelerated Public Works Program. *Retiree?*

Mr. Milford Thurber, Budget & Accounting Office, made a stop off on a visit to Game Management Division in Cambridge, Md. on April 25.

Mr. John Findlay, Chief, Division of Wildlife, Atlanta, visited the Refuge on April 28 accompanied by Mr. William T. Davis, Regional Supervisor, Branch of Mgt. & Enforcement, Agents Withers and Thurman.

Mr. Paul Springer, Chief, Section of Wetland Ecology, Patuxent Research Refuge, visited the Refuge on April 6. He accompanied a Field Ecology Class from the U. S. Department of Agriculture Graduate School.

Mr. Rex Smith, Photographer for the Bureau of Sport Fisheries and Wildlife, Washington Office visited Blackwater on Feb. 20 and 21 and took photographs of personnel and equipment working on the Accelerated Public Works Program.

Other visitors included: State Game Wardens Robert Cannon and William Marine in connection with law enforcement work.

Audubon Society groups from Baltimore, D.C., Easton and Pa. visited the Refuge on weekends to observe bird life.

C. Refuge Participation. On February 6, Asst. Manager Carroll met 30 members of a Brownie Troop from Cambridge, Md. and took them on a guided tour of the Refuge.

The Refuge participated in the annual Outdoor Show held in Cambridge, Md. on Feb. 7, 8, and 9th. Over 5,000 persons attended the show held at the R.F.C. Arena. Blackwater had an exhibit of mounted animals and birds. Refuge personnel passed out literature on the Refuge and were present to answer questions concerning the Refuge.

Maintenanceman G. Wallace Stewart showed the film, "Mass-Produced Woodies" to 30 Boy Scouts and 8 Scout Leaders in Cambridge, Md. on March 11. Mr. Stewart also gave a talk on wood-duckbox construction and refuge work.

D. Hunting. No hunting is permitted on the refuge.

E. Violations. None this period.

F. Safety. A monthly safety meeting has been held each month of the period. A minor accident on January 25 when the mechanic working under the Accelerated Public Works Program required first aid. However, it was not a lost time accident and the station has gone 1,104 days since the last lost time accident and includes 57,562 employee hours worked. Date of last lost time accident was June 8, 1960 and last motor vehicle accident was August 17, 1955. In connection with the Accelerated Public Works Program this station has employed a large staff with as many as 37 employees working at times during the period. We are well pleased with our safety record and hope to keep it at the zero level.

VII. Other Items

A. Items of Interest.

Jerome T. Carroll, Asst. Refuge Manager, and Wildlife Technician Guy W. Willey attended the Regional Conference held in Athens, Ga. the week of April 6 - 13. Refuge Manager Wallace was unable to attend due to the heavy work load in connection with the Accelerated Public Works Program at Blackwater and Martin Refuges.

Maintenanceman Owens P. Hughes returned to work early in the period after being on sick leave due to an off-duty boating accident on September 2, 1962.

Two surplus dump trucks were obtained from the Norfolk Naval Base in March for use in road construction under the APW Project.

A new plow, cultivator and rotary cutter was received during the period for use in cropland management.

Asst. Manager Carroll and Wildlife Technician Willey assisted in preparation of this narrative.

B. Photographs. Attached.

Respectfully submitted,

Cornelius W. Wallace
Cornelius W. Wallace

CWallace:vfm

APPROVED:

Laurence S. Givens

Regional Refuge Supervisor

MAY 15 1969

Date

Regional Director

Date

WATERFOWL

REFUGE Blackwater N.W.

MONTHS OF January thru TEX April, 19 63.

(1) Species	(2) Weeks of reporting period									
	1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling						2	2	2	2	10
Trumpeter										
Geese:										
Canada	40,000	30,000	30,000	30,000	30,000	30,000	15,000	15,000	15,000	15,000
Cackling										
Brant										
White-fronted										
Snow	36	28	28	28	28	28	28	28	28	28
Blue	19	12	12	12	12	12	12	12	12	12
Other										
Ducks:										
Mallard	40,000	25,000	25,000	20,000	20,000	20,000	10,000	10,000	10,000	10,000
Black	20,000	15,000	15,000	10,000	20,000	20,000	5,000	5,000	5,000	5,000
Gadwall										
Baldpate	500	500	500	500	500	500	500	500	500	500
Pintail	500	1,000	1,000	500	500	500	500	500	500	500
Green-winged teal		100	100							
Blue-winged teal										
Cinnamon teal										
Shoveler										11
Wood										
Redhead	25									
Ring-necked	500	500	500	200						
Canvasback	25				200	200				
Scaup	25									
Goldeneye										
Bufflehead										
Ruddy										
Other C. Merganser	300	30	30	30	30	30	50	50	50	50
Coot:										
	100	100	100	100	100		100	100	100	100

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Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)REFUGE Blackwater N.W.MONTHS OF January ^{thru} April, 19 63.

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen: total	
	11	12	13	14	15	16	17	18			
Swans:											
Whistling	25	25	25						651		
Trumpeter											
Geese:											
Canada	15,000	15,000	15,000	12,000	8,000	5,000	5,000		2,275,000		
Cackling											
Brant											
White-fronted											
Snow	28	28	28						2,604		
Blue	12	12	12						1,341		
Other											
Ducks:											
Mallard	10,000	10,000	5,000	5,000	3,000	3,000	800		1,587,600		
Black	5,000	5,000	5,000	5,000	2,000	2,000	500		1,011,500		
Gadwall											
Baldpate	500	500	1,000	500	500				56,000		
Pintail	500	500	2,000						63,000		
Green-winged teal		1,000	5,000	3,000	1,000				71,400		
Blue-winged teal	1,000	1,000	3,000	3,000	3,000	1,000	500		87,500		
Cinnamon teal											
Shoveler	11	11	11	11	11				162		
Wood											
Redhead									175		
Ring-necked			500	100					16,100		
Canvasback									2,975		
Scaup									175		
Goldeneye											
Bufflehead											
Ruddy											
Other C. Merganser	50	100	100	50					6,650		
Coot:	100								7,700		
					(over)						

	(5)	(6)	(7)	SUMMARY
	Total Days Use :	Peak Number :	Total Production :	
Swans	651	25		Principal feeding areas Refuge grain fields. Dieffenbach
Geese	2,278,745	10,055		Pool Unit, Headquarters Unit, Burned Marsh Areas, Kuhnle
Ducks	2,703,537	61,875		Tract.
Coots	7,700	100		Principal nesting areas
				Reported by C.W. Wallace, G.W. Willey and J. Carroll.

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).

Interior Duplicating Section, Washington, D. C.
1953

3-1751

Form NR-1A

(Nov. 1945)

MIGRATORY BIRDS

(other than waterfowl)

Refuge Blackwater N.W.Months of January

thru

April1963

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Great Blue Heron	2	1/15/63	30	4/30/63						30
Common Loon	5	4/1/63	20	4/30/63						20
Snowy Egret	3	3/30/63	40	4/30/63						40
Little Blue Heron			20	4/30/63						20
Louisiana Heron			15	4/30/63						15
II. <u>Shorebirds, Gulls and Terns:</u>										
Killdeer	25	3/15/63	200	4/30/63						200
Herring Gull	55	4/15/63	500	4/30/63						500
Laughing Gull	50	4/15/63	500	4/30/63						500
Yellowlegs (lesser)	25	1/24/63	275	4/30/63						275
Yellowlegs (Greater)	25	1/24/63	275	4/30/63						275
Semi-palmated Sandpiper	20	4/15/63	200	4/30/63						200
Sanderling	10	4/15/63	225	4/30/63						225
Virginia Rail	20	4/15/63	150	4/30/63						150

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove		300	4/30/63		300
White-winged dove					
IV. <u>Predaceous Birds:</u>					
Golden eagle		1	4/28/63		1
Duck hawk		50	3/15/63		50
Horned owl					
Magpie					
Raven					
Crow		700	2/10/63		700
American Bald Eagle		11	1/25/63		11
Red-tailed Hawk		25	2/15/63		25
Sparrow Hawk		225	3/15/63		225
Barn Owl		25	4/30/63	2	29
Reported by <u>G.W. Wallace, J. Carroll, G.Willey</u>					

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 Blackwater N.W. Refuge Months of January ~~thru~~ April, 19463.

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Bob-White Quail	600 acres crop- land and 250 acres second growth.	1			60% Male				875	Population the same as the preceding period.

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 Blackwater N.W. Refuge

Year ending April 30, 1963.

(1) Species	(2) Density	(3) Removals	(4) Disposition of Furs						(5) Total Popula- tion				
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control	For Re- stocking	For Re- search	Share Trapping Permit Number	Trappers Share	Refuge share	Total Refuge Furs Shipped	Furs Donated	Furs Destroyed
Muskrat	9,692 acres marsh and Ponds	1		1110				T-6622	704	706	706		7,250
Byrant Fox Squirrel													175
Grey Squirrel													350
Raccoon													500
Red Fox													50
Otter													40
Nutria (S.A. Beaver)				16				T-6622	4			12	15
Opossum													170
Skunk													70
Cotton Tail-Rabbit													500

* List removals by Predator Animal Hunter

* List removals by Predator Animal Hunter

REMARKS:

Reported by C.W. Wallace, Jerome T. Carroll & G.W. Willey

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, 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, 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.



Photo #1. Note concentration of geese and ducks at Headquarters dock during severe cold weather. #42-448



Photo #2. Work being performed in Recreation Area during snowfall and cold weather under APW Program. #42-449



Photo #3. Aerial view of marsh and ponds during heavy
ice and snow conditions. #42-450



Photo #4. Same view after break-up of ice conditions.
#42-451



Photo #5. Installing Wakefield piling on Headquarters Dike
Road under APW Project. #42-452



Photo #6. Road after Wakefield installed and fill placed
on same. #42-453



Photo #7. Construction of Rest Room in Recreation Area.
Note wet conditions.

#42-454



Photo #8. Construction of road to Recreation Area. Seaplane
Hangar in background.

#42-455



Photo #9. Note bulldozer stuck in road during extreme wet conditions - road to Recreation Area #42-456



Photo #10. Dragline used in ditching under APW Project. Forced to use matts due to wet conditions. #42-457



Photo #11. Road to Tower at Headquarters before start of
APW Project. #42-458



Photo #12. Same road after widening by use of Dragline.
#42-459



Photo #13. Helicopter used in air lift of corn to waterfowl.
#42-560



Photo #14. Loading of corn by refuge personnel in
cooperation with Game Management Division. #42-561



Photo #15. View of Bale of Muskrat Pelts ready for shipment to N.Y. Auction Co. M.M. Richardson looks on. #42-562



Photo #16. M. M. Franklin Hughes plowing in late April for planting of refuge corn. #42-563