

BLACKWATER

NARRATIVE REPORTS

JANUARY-DECEMBER 1961

X

Narrative Report Routing Slip

Mr. Salyer

~~Mr. Ackerman~~ *ea*

Mr. Crawford

Administrative Services

Miss Bann

Operations

~~Mr. Fermanich~~

~~Mr. Regan~~

Public Use

Mr. DuMont

Mr. Kubichek

Mr. Stollberg

Resource Management

Dr. Morley

Mr. Hickok

Wildlife Management

Mr. Banko

Mr. Stiles *8*

Mr. Goldman

Refuge BLACKWATER

Period September - December 1961

Blackwater National Wildlife Refuge

Narrative Report

September, October, November and December, 1961.

Personnel

Cornelius W. Wallace.....Refuge Manager
John C. Fields.....Refuge Manager
Guy W. Willey..... Wildlife-Aid
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

September, October, November and December, 1961.

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Blackwater National Wildlife Refuge

Narrative Report

September, October, November and December, 1961.

I. General.

A. Weather Conditions.

September. September was the driest since 1931. Rainfall was very light with only 0.63 inches recorded for the entire month. Temperatures ranged in the upper 80's and low 90's throughout most of the month. A high of 94 degrees was recorded on the 3rd, and a low of 42 degrees on the 30th. No killing frost was recorded and Hurricane "Esther" passed off-shore on the 19th. and 20th. with only light winds and 0.36 inches of rainfall recorded. Winds have prevailed from the S. and S. W. and days with sunshine have been above normal. Due to the dry weather of August and September water levels dropped to zero in our fresh water ponds.

October. Heavy rainfall occurred on October 3 and 21 and helped fill our fresh water ponds somewhat, however levels remained below the desired amount required. The 5.87 inches was above normal for October. Precipitation occurred on seven days with the greatest one day amount of 2.24 inches on the 3rd. The first frost of the season was recorded on the 5th when the mercury dropped to 37 degrees. A low of 33 degrees was on the 28th. and a high of 82 degrees on several days of the month. This was a mild October with no damaging storms or long cold waves to report. Winds prevailed mostly from the S.W. and days with sunshine were above normal.

November. This was another mild and dry month with only 1.70 inches of rainfall for the month. Normal precipitation for November is 5.33 inches. On fourteen days of the month the mercury reached 60 degrees or more. Freezing or below occurred on only three nights of the period. A maximum of 78 degrees was recorded on the 1st. and a low of 26 degrees on the 11th. Light snowfall (trace) occurred on the 20th. Sunshine was above normal since rainfall occurred on only 5 days with the greatest one day amount of 0.80 inches on the 20th. Winds prevailed mostly from the S. and S.W.

December. Unlike last December (1960) this month was near normal for the period. Only 0.25 inches of snowfall was recorded compared to 8 inches last year. Precipitation was recorded on ten days in the amount of 4.32 inches. This is above the normal of 3.43 inches for the area. There was a high of 61 degrees on the 5th and a low of 18 degrees on the 31st. Freezing or below was recorded on 17 days of the month compared to 27 days last year. Winds prevailed from the North and North West.

		<u>Precipitation</u>			
<u>Snowfall</u>		<u>This Month</u>	<u>Normal</u>	<u>Max. Temp.</u>	<u>Min. Temp.</u>
September	0	0.63	4.03	94	42
October	0	5.87	5.13	82	33
November	T	1.70	5.33	78	26
December	0.25	4.32	3.43	61	18
Totals	0.25	12.52	17.92	Ext. 94	18

B. Habitat Conditions.

1. Water. Levels in the fresh water ponds dropped to zero and were completely dewatered except for bar pits by late September and remained dry until heavy rainfall of October 3rd. By the end of the period all gauges were at the desired levels since sufficient rainfall was recorded in December. The millet planted in the Dieffenbach Pool bottom was flooded during the period and waterfowl use has been high.

Fluctuations in our tidal marshes and rivers have been normal except extremely high on October 23 thru 25th due to a Northeaster at that time. Ice conditions prevailed on most of the water levels at the close of the period. We have been able to follow our annual water program after sufficient rainfall was recorded in early October.

2. Food and Cover. The good crop of corn, buckwheat, ladino clover, millet, wheat and ryegrass has provided sufficient food for the waterfowl during the period. Due to the mild weather early in the migration most all the green foods were consumed by the geese by early December. Only a portion of the sorghum was consumed since the height was too great for waterfowl to reach and we could not mow it since this would cause criticism from hunters. However, after the close of the annual hunting season on January 8, 1962 we will mow the entire 45 acres at intervals to provide food for the waterfowl. It will probably be needed worse at that time since severe cold weather usually prevails.

The aquatics in our tidal marshes and ponds also provided excellent food. Widgeon grass, sago pondweed and patches of robust wild millet could be found in the marshes and ponds. We will initiate our approved controlled burning of marsh areas in January and this will help provide supplementary feeding for the waterfowl.

Aerial seeding over standing crops helped provide us with additional acres of ryegrass and this provided excellent food badly needed by the large concentrations of geese. 227 acres were completely consumed during the period. Ladino clover (124 acres) was the most used of any crops planted and every acre has been browsed over by the geese. Approximately 75 acres of the 101 acres of corn available for waterfowl has been consumed. Both the ducks (Mallards, Blacks and Pintail) and geese (Canadageese, snows and blues) have used all the corn fields. Field R. & S located on the West side of the refuge has a little corn left, however, this will help feed the waterfowl in severe cold weather and snow storms of the coming months. The millet and buckwheat was consumed early in the period as a large concentration (117,000) of ducks arrived in early November. At this time dry conditions prevailed in the low bottoms of the Dieffenbach Pool and the waterfowl feed on it before water came to flood the area.

II. Wildlife

A. Migratory Birds.

The first Canada geese arrived at the refuge on September 27 and by the first of October 3,000 were present. A peak of 70,000 was reached by early November. The population remained high throughout the period, with 40,000 present during the final week. The peak of 70,000 represents a decrease of 20,000 over last year. However, large numbers of geese could be found adjacent to the refuge and use of the area has been extremely high with large numbers feeding in our refuge fields daily.

Snows and Blues arrived on October 25. A peak of 73 snows and 29 blues were observed from November 15 until the end of the period. This represents an increase of 6 snows and a decrease of 28 Blues over last years count for the corresponding period. Both the blues and snows used the corn, ladino clover and millet fields at headquarters and Dieffenbach Pool Unit.

Mallards begin to arrive in large numbers by early October with the largest concentration observed during the middle of ~~November~~ ^{Nov} when 40,000 were estimated. The population has remained high throughout the period. Refuge grain fields makes Blackwater home sweet home to this specie. Last year were able to trap and band 4,400 mallards during our banding operations. With a large population present again this year we are hoping to set a new record. From field observations and banding shows that the males outnumber females by a ratio of 3 to 1 on an average and sometimes large flocks the ratio is greater in favor of the males. This factor might have a great effect on the production of mallards. The 40,000 is about the same as reported during the corresponding period last year.

A peak of 30,000 Blacks were reported during early November and again during the final week of the period. Large numbers were present throughout the period. The blacks rest mostly in the marsh areas and can be observed feeding along with the mallards and pintail in refuge grain fields. Blacks could be found on all areas of the refuge with the largest concentrations at Sunken Islands, Barbadeous and Hog-Rooting Areas. The peak represents 5,000 less than estimated in November of 1960.

The largest concentration of Pintail was recorded on October 24 and 25th. An estimated 35,000 were present in the Dieffenbach Pool at this time during a severe Northeaster on the bays and rivers with tides above normal forcing the birds to move on the refuge to feed. On both December 12th and 20th during stormy, foggy weather large concentrations were present again. Pintail prefer the Dieffenbach Pool bottoms and will feed in refuge grain fields along with the mallards and Blacks. The 35,000 peak is 5,000 less than observed during the corresponding period last year. A good number of Pintail were present at the end of the period.

Blue-Winged Teal begin to arrive in large numbers in late September and reached a peak of 10,000 in early November. They remained longer this year due to the mild weather. This is a huge increase over last year when only 3,500 were reported in late October. Hunting pressure adjacent to the refuge was lessen this season as the hunters would pass up Teal to kill larger ducks since they were allowed only 2 in their bag.

Green-Winged Teal remained on the refuge throughout the period with 500 present at the close on December 31. The first G.W. teal were observed in the Dieffenbach Pool the first week of October and continued to increase weekly until 10,000 a peak number was recorded in early November. This is also a huge increase over the corresponding period last year when only 1,500 were observed. Little to no hunting pressure was applied to this specie adjacent to the refuge as stated above about the B.W. Teal.

The American Widgeon which showed a huge decrease last year when 12,000 was reported reached a peak of 20,000 during November. The Balpates were present throughout most of the period and used the ponds & marshes since an excellent supply of food was available.

The wood duck population estimated at 55 early in September and October is about the same as last year when 50 were reported. The wood ducks leave the area early and since the hunting season did not open until November 11th no reports of any kills were recorded adjacent to the refuge.

Gadwall arrived at Blackwater on schedule. 2,500 were present in October but did not remain long. 2,500 represents no change in the peak number of Gadwall compared to last year for the corresponding period.

Ringnecks present were estimated at 1,500 compared to 3,000 last year. Goldeneye, mergansers and coot were reported in small numbers as in previous years. 25 Canvasbacks were observed in Harpers Pond on the 19th of December, the first in several years. 27 Brant were reported on December 1 also a sight not recorded for many years.

A summary of the waterfowl population at Blackwater shows the Canada geese population estimated at 70,000 in early November was 20,000 less than the 90,000 reported last year. The peak of 117,050 re-^{ducks} presents a slight increase over the corresponding period last year. Mallards, Gadwall, Wood duck, coot, goldeneye and Mergansers showed little to no change in peak numbers compared to last year. Ducks showing a good increase have been the B.W. Teal, G.W. Teal and American Widgeon. Blaks, Pintail and Ringnecks showed a decrease over the corresponding period last year. This has been a normal trend with some ducks either decreasing or increasing each year.

Dove/ population estimated at 1,000 in September is higher than 750 reported last year during the month of October. Hunting pressure adjacent to the refuge has been about normal during dove season. The largest concentrations could be observed on the Old Mill Road, Egypt Road, Dieffenbach Pool dike and at McGraws Island.

B. Upland Game Birds.

The Bob-White Quail the only game bird of the refuge is estimated at 875. There has been excellent food and cover for the Quail. They prefer buckwheat, sorghum, corn and soybeans and large broods can be found in the areas adjacent to the agricultural fields. No predation was noted during the period and the population remained about static compared with the preceding period.

C. Big Game Animals.

The White-Tailed deer population has remained about the same with an estimated 110 present on the refuge. Farming of refuge lands for waterfowl provides excellent food for the deer. They prefer ladino clover, buckwheat, soybeans and corn which has been plentiful throughout the period.

In co-operation with the Maryland Inland Game and Fish Commission the refuge ^{was} used as a checking station during the open season in Dorchester County. Approximately 700 deer were killed compared to 500 last year. A large number (estimated 50 using refuge) were killed adjacent to the Blackwater and this helps keep the deer from becoming over-populated on the refuge. No hunting is permitted on the refuge.

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

1. Muskrat. A survey of the muskrat population conducted during the period November 16 thru 24 on the marshes of the refuge showed an estimated population of approximately 7,000. This is about the same as last year for the corresponding period. A surplus was found on several units adjacent to the roads and dikes and trapping was recommended and approved for these areas, during the forthcoming season Jan. 1 thru March 15, 1962. One trapper will trap these areas and remove an unlimited number. We believe that the reason for substantial populations found on areas adjacent to the dikes and roads each year is the protection the muskrats gain in the banks and roads from predators, storms and severe cold weather conditions. Three-square made an excellent growth this summer and has supplied the necessary food for this animal.

2. Raccoon. This animal has remained high with 500 estimated on the refuge. They are observed mostly at nights and their presence is known by the tracks and signs present on the trails and dikes and wooded areas.

3. Fox. There was no noticeable fox increase on the refuge. It is quite common to see fox tracks on dikes and around the islands of the marsh areas. 50 is the estimated population for the refuge.

4. Squirrel. Like last year the squirrel population on the refuge has shown an increase. Both the bryant fox and gray squirrels are plentiful and it has been common to observe from 8 to 10 squirrels on the Old Mill Road a distance of three miles during routine patrol work. There has been excellent food present with both acorns and refuge corn and sorghum available for the squirrels during the period.

5. Cotton Tail Rabbits. As mentioned in our preceding Narrative the rabbit population is high for the area with 500 estimated. There has been an abundance of food available. A few have been hit by vehicles on the county roads. No predation was noted during the period.

6. Skunk. We are pleased to report that the population is at the lowest peak in years. Only a few have been observed during the period. It is felt that the cold weather of January, February, and March, 1961 had a great effect on this animal. Although we did not find any dead ones during that period we believe the population is lower than the 100 estimated in the April report. We are estimating the population at 70. A few have been observed at night on the county roads but the population adjacent to the headquarters area is way down compared to previous periods.

7. Miscellaneous Fur Bearers (Opossum, Otter, Weasel and Nutria).

Opossum. The population estimated at 170 has remained about static since the last period. They are still seen quite frequently along the refuge roads and in our fields at night.

Otter. This animal has increased over the corresponding period last year with 40 present compared to 30 at that time. Otter activity has been observed in Harpers, Keens Ditch and along the Big Blackwater Rivers and Meekins Creek. The food supply is available in these areas the year round.

Nutria. A survey was made of the Nutria during November when the Muskrat count was taken. We are glad to report that only minor activity was observed on a few areas and we estimate the population at 20. However, we are making an effort by trapping in the forthcoming period for complete eradication. Another severe cold winter may help us in this operation.

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

1. Hawks. Hawks have been plentiful during the period with the marsh hawk the most numerous. The Red-tailed, Red Shouldered, Coopers and sparrow hawk could also be observed in good numbers. Sharp-shinned, broad winged, rough legged, duck and pigeon hawks were also recorded during November and December. A total of 14 different hawks have been observed on the refuge during the period.

Eagles- The Bald Eagle a permanent resident at Blackwater has been estimated at 30. They make their rounds over our ponds and marshes looking for injured waterfowl upon which they feed. The Eagles do not pose any sort of refuge problem except during banding they sometimes keep the waterfowl away from our traps. A Golden Eagle was reported observed by a member of one of the Bird Clubs in December, however, refuge personnel have been unable to verify this report.

Owls. The Great Horned and barn owls have been common on the refuge this period. It is believed that the population has remained static. No predation problem has been encountered.

Crows. The heaviest concentration of crows was observed in December. 1,000 were estimated using the refuge. This is a decrease of 1,000 over last year for the corresponding period. Crows use the islands of the marsh areas and wooded areas of the refuge. Large numbers were present at the Kuehnle Tract.

F. Other Birds. We have had several ducks which have been a cross between species (Pintail & Mallard) (Black & Mallard) and (Mallard & Domestic Muscovy). We are holding a number of these birds in our holding pen for exhibit to school classes and visitors.

G. Fish. There were no fishing permits issued during this period.

H. Reptiles. None.

I. Diseases. None to report.

III. Refuge Development and Maintenance

A. Physical Development.

Mbt. Bufflehead FWS-16, Mbt. Petrel FWS-185 and Airboat FWS-110 were all pulled on the marine railway at headquarters and bottoms checked and painted.

All heating facilities in all residences and buildings were checked, cleaned and repairs made as needed.

All water systems of the motor vehicles and motorized equipment were drained, checked for leaks and filled with anti-freeze for winter service.

A new motor has been placed in the Willys Jeep during the period. The motor was obtained from surplus sources in 1960.

Crane was used to dig channel around the edge of headquarters pond from holding pen to dike to provide deeper water for waterfowl use.

Preventative maintenance was performed on all vehicles and boats during the period.

Minor repairs have been performed on the Ford Courier, Jeep, Jeep Pickup, Chev. Pickup I-50367 and 50969 and D-7 Caterpillar Tractor.

3 New duck traps were constructed for use in banding operations. Several old traps were repaired and placed in service.

Master radio set was checked and repairs performed and placed in good operating condition for use in period.

Refuge boundaries were checked and all damaged signs and broken post were replaced. New signs and post were placed from Headquarters to the West Side of the refuge, a distance of (3) three miles. The new "Bureau of Sport Fisheries and Wildlife" signs replaced the old Fish and Wildlife Service signs.

Painting of trim of fur house, dozier garage, and oil shed and doors of all the refuge buildings were completed in September.

New Tile was placed in the bathroom of Qtrs #1.

Bathroom in the office was given a fresh coat of paint.

Repairs have been performed on the 35 H.P. Johnson motor and motor used in patrol work with the Seaflyer.

Minor repairs were made to the motors of the LCM Barges and since drained for the winter.

B. Plantings.

1. Aquatics and Marsh Plants. None this period.
2. Trees and Shrubs. None to report.
3. Upland Herbaceous Plants. None planted.
4. Cultivated Crops. Planting of all agricultural lands were completed by the end of the last period. A total of 867 acres was placed in a variety of 8 different crops and was available for waterfowl use.

We harvested approximately 1,200 bushels of corn from our refuge fields. This corn was picked and shelled all in one operation. 200 Bushels is held for the Game Management Division for banding. The remained corn is being used for banding and feeding purposed during the winter months. The corn was harvested from the ends of our fields bordering the county road. This helps keep the waterfowl from feeding too close to the road and they are out of gun range. A total of 27 acres was harvested by commerical sources with the yield near 50 bushels per acre which is a good crop for our refuge lands.

C. Collections and Receipts.

1. Seed or Other Propagules. Sixty-seven bushels of mixed grain was picked up at U.S. Grain appraisers, Baltimore, Md. This grain has been used for feeding and banding purposed.
2. Specimens. None this period.

D. Control of Vegetation. Approximately 1/2 Acre of Johnson Grass in Field O was treated twice this year by using Dalpon by power spraying. The first spraying was done on July 17, and followed up again on July 31, 1961.

Recorded 4/30
H.B.S.

Materials used - 25 lbs. Dalpon.....\$21.25
Labor- 8 hours (One Man) 18.50
\$ 39.75

The estimated kill was about 60% compared to 40% of previous years. We have a new sprayer and plan to continue the spraying of the pest until we gain a 100% kill.

We are glad to report that the Johnson grass is confined within the small area in Field O and not spread out over the entire refuge.

E. Planned Burning. No burning has been done during the period. Our approved controlled burning of marsh areas will start during January.

F. Fires. None to report, although much of the period our wooded areas have been very dry.

IV. Resource Management

A. Grazing. None

B. Haying. None to report.

C. Fur Harvest. None this period.

D. Timber Removal. None this period. A timber management plan was made by Mr. Verlon Carter, Regional Forester and approved during the period.

E. Commerical Fishing. None to report.

F. Other Uses. None to report.

V. Field Investigation or Applied Research

A. Progress Report. The following is a breakdown of waterfowl banded during the period.

Mallards.....822
Blacks..... 87
Pintail..... 14
Ring-Necks..... 1
C. Goose..... 71

Total 995

The 995 waterfowl have been trapped in walk in type traps located at headquarters. We were limited in our banding operations during the hunting season since we did not want to cause criticism from the hunters due to the baiting to draw the birds into the trap. We have the necessary traps

and bait and are hoping to top last seasons record when we banded a total of 4,679 waterfowl.

The cannon net trap will be used as soon as the hunting season on geese comes to an end in January. We have a good waterfowl population present and if weather conditions are good we should be able to trap a large number of both ducks and geese.

VI. Public Relations

A. Recreational Uses. None available on the refuge.

B. Visitors. Official visitors during the period were as follows:

Mr. Phil Dumont of the Washington Office visited the refuge on October 20 with members of the National Audubon Society attending a convention in Washington. The group had members from different states and were very impressed with the refuge.

Mr. Verlon Carter, Regional Forester, visited the refuge and cruised refuge timber during the week of November 1, for information necessary in preparation of a Timber Management Plan for Blackwater.

Mr. Robert Young, Branch of Realty, Regional Office and Mr. Scharr, Branch of Realty, Washington Office visited the refuge during early December in connection with purchase of additional lands to Blackwater.

Mr. Ted Ball visited the refuge on December 7, 8 and 9 and completed an aerial survey of geese on the refuge and adjacent areas. Wildlife Aid-Willey assisted Mr. Ball during the flight.

Mr. Chandler Robbins of Patuxent visited the refuge with members of the Maryland Ornithological Society On November 5. A return trip was made on December 26 to make a Christmas Bird Count. Mr. Seth Low, a former employee of Patuxent was also present during the Christmas count.

Game Agents Withers, Shuffler, Gambrill, Hanes, and Thurman visited the refuge on several occasions in connection with law enforcement work.

Other Visitors included the following:

State wardens Robert Cannon and William Marine in connection with enforcement work.

Audubon Society groups from Baltimore, Washington D.C., Annapolis, Denton, Md. Easton, Md. , all visited the refuge during the period to observe the large numbers of waterfowl. Aid-Willey accompanied these groups on a tour of the refuge. All the visits were made on weekends and holidays of the period.

80 pupils and 2 Teachers from Academy School, Cambridge, Md. visited the refuge on October 23. They were given a talk and taken on a tour of the refuge by Manager Wallace and Fields.

Classes from Crapo School, Crapo, Md. (60 in group) and Easton High School (59 in group) visited the refuge during November and were given a talk and taken on a tour of the refuge by Aid-Willey.

One 4-H Club group (19 persons) from the Neck District, Dorchester Co. Md. visited the refuge on Saturday December 16th and were taken on a tour of the refuge and given a talk by Aid-Willey.

C. Refuge Participation.

On December 6, M. Man Stewart and Wildlife Aid-Willey showed Service films "Behind the Flyways" and "Waterfowl in Action" to Crapo Grade School and South Dorchester High School. The same films were also shown to the Lutheran Father & Son Group, Cambridge, Md. on the night of December 6. A total of approx. 200 persons saw the films and were given a talk about the Blackwater refuge. These groups were very impressed by the films and we feel more of this type of public relation work will help educate persons toward good conservation of waterfowl.

Ma. M. W. G. Richardson and Aid-Willey will appear on a television Show on station WJZ- Channel 13 (Baltimore, Md) during early January. This one-half hour show (Adventures with Youth) will show banding of ducks by the Game Management Division and Goose net trapping on the Blackwater. Mounted waterfowl is scheduled to be used to identify ducks and geese by 4-H members who will appear on the show from this area. Approximately 10 minutes of the time will be used for Wildlife Aid-Willey to talk on refuge work.

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

E. Violations. None observed on the refuge.

F. Safety. Monthly safety meetings have been held during the period. No accidents of any type have occurred and this station has gone without a lost time accident for 554 days or a total of 23,540 employee work hours. The meetings have touched on all work being performed on the refuge.

VI. Other Items

A. Items of Interest.

Asst. Mgr. John Fields has been at the Martin Refuge throughout most of this period.

Refuge Manager Wallace has been on sick leave since early December.

An article appeared in the Baltimore News-Post (Daily paper) during November and showed photographs of waterfowl and told of refuge work. Many visitors followed and over 700 persons registered at headquarters on November 5. Visitor use has been greater this year due to the mild weather of the period.

A new Grain Drill, Plow and Cultipacker were received during the period for use in our farming operations.

New uniforms have been received and worn by personnel during the period. The public has been very impressed and many favorable comments have been received.

This report has been prepared by Wildlife Aid-Willey since Refuge Manager Wallace was on sick leave at the end of the period and Asst. Fields was assigned to the Martin Refuge.

B. Photographs. Attached. Our thanks for Agent Hines and Shuffler for the color photos.

Respectfully submitted,

Cornelius W. Wallace
Cornelius W. Wallace

CWWallace:gw

Samuel B. Linder

Regional Refuge Supervisor

Jan. 22, 1962

Date

Regional Director

Date

W A T E R F O W L

REFUGE Blackwater N.W.

MONTHS OF September thru ~~xxx~~ December, 1961.

(1) Species	(2) Weeks of reporting period									
	1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling Trumpeter										
Geese:										
Canada	150	150	150	3,000	5,000	32,000	60,000	65,000	70,000	70,000
Cackling Brant										
White-fronted Snow								22	22	22
Blue Other								14	14	14
Ducks:										
Mallard	1,450	1,450	1,800	2,000	3,000	10,000	10,000	30,000	30,000	40,000
Black	1,100	1,100	1,500	3,500	3,500	8,000	8,000	20,000	20,000	30,000
Gadwall				500	500	500	500	2,500	1,500	500
Baldpate			100	1,300	3,000	5,000	5,000	12,000	15,000	20,000
Pintail				250	1,000	1,000	1,000	35,000	10,000	10,000
Green-winged teal			200	700	700	1,000	1,000	3,500	4,000	10,000
Blue-winged teal	1,250	1,800	2,000	3,200	3,500	3,500	3,500	10,000	10,000	5,000
Cinnamon teal										
Shoveler										
Wood	55	55	55	55	25	25	25	25	25	25
Redhead										
Ring-necked Canvasback								1,200	1,500	1,500
Scaup Goldeneye										
Bufflehead										
Ruddy Merganser									25	25
Other										
Coot:								200	200	200

3 -1750a

Cont. NR-1

(Rev. March 1953)

W A T E R F O W L
(Continuation Sheet)

REFUGE		Blackwater N.W.							MONTHS OF				September		thru		December		, 1961	
		(2)								(3)		(4)								
		Weeks of reporting period								Estimated		Production								
(1)										waterfowl	Broods	Estimated								
Species		11	12	13	14	15	16	17	18	days use	seen	total								
Swans:																				
Whistling																				
Trumpeter																				
Geese:																				
Canada		14,458	45,000	50,000	18,500	25,000	20,000	40,000		3,628,856										
Cackling																				
Brant				27						189										
White-fronted																				
Snow		73	73	73	73	73	15	73		3,633										
Blue		29	29	29	29	29	7	29		1,561										
Other																				
Ducks:																				
Mallard		40,000	25,000	25,000	25,000	25,000	25,000	30,000		2,279,900										
Black		30,000	20,000	20,000	20,000	20,000	20,000	30,000		1,796,900										
Gadwall										45,500										
Baldpate		20,000	10,000	5,000	500	500	500	500		688,800										
Pintail		10,000	5,000	5,000	500	25,000	20,000	3,000		887,250										
Green-winged teal		10,000	5,000	5,000	1,000	1,000	500	500		308,700										
Blue-winged teal		3,000	2,000	500						344,750										
Cinnamon teal																				
Shoveler			120	120	25	25				2,030										
Wood										2,590										
Redhead																				
Ring-necked		1,500	1,500	1,500	500	500	500	500		74,900										
Canvasback							25			175										
Scaup																				
Goldeneye					25	25	25	25		700										
Bufflehead																				
Ruddy								100		700										
Other Merganser		25	100	100	100	100	100	500		7,525										
Coot:		200	200	200	200	200	200	200		14,000										
(over)																				

	(5)	(6)	(7)
	Total Days Use	Peak Number	Total Production
Swans	:	:	:
Geese	3,634,239	70,036	:
Ducks	6,440,420	117,050	:
Coots	14,000	200	:

SUMMARY

Principal feeding areas Refuge grain fields - ladino clover, ryegrass- Dieffenbach Pool bottom, Colsten, Harpers, Twins Ponds, Hog-Rooting, Barboadoes, Sunken Island, and Meekins Creek.

Principal nesting areas _____

Reported by C.W. Wallace & G.W. Willey

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 Blackwater N.W.Months of September through December 1945.

(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			50	10/25						50000
Black-Crowned Night Heron			50	10/25						
American Egret			300	9/15						
Eastern Least Bittern			50	10/1						
II. <u>Shorebirds, Gulls and Terns:</u>										
Killdeer			500	9/15						500
Lesser Yellowlegs			500	9/15						500
Wilson Snipe			200	10/15						200
Sanderlings			700	10/15						700
Least Sandpiper			650	10/15						650
Virginia Rail			400	10/15						400
King Rail			625	10/15						625
Clapper Rail			425	10/15						425

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove		1,000	9/15		1,000
White-winged dove					
IV. <u>Predaceous Birds:</u>					
Golden eagle					
Duck hawk					
Horned owl		50	12/15		50
Magpie					
Raven					
Crow		1,000	12/20		1,000
American Eagle		30	12/15		30
Red-Tailed Hawk		25	12/15		25
Marsh Hawk		100	12/15		100
Sparrow Hawk		25	12/15		25
Reported by <u>C.W. Wallace, & G.W. Wailley</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.

Months of September Thru December, 1941.

(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.
Quail		1			65 % Male				875	Personal observation afield.

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.

3-1753
Form NR-3
(June 1945)

BIG GAME

Refuge Blackwater N.W.

Calendar Year 1961.

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
White-Tailed Deer		20										December	110	60% Male

Remarks:

Reported by C.W. Wallace

INSTRUCTIONS

Form NR-3 - BIG GAME

- (1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.
- (2) DENSITY: 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 total number of young produced on refuge.
- (4) REMOVALS: Indicate total number in each category removed during the year.
- (5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.
- (7) TOTAL REFUGE POPULATION: Give the estimated population of each species on the refuge at period of its greatest abundance and also as of Dec. 31.
- (8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

116000

DISEASE

Refuge Blackwater N.W.

Year 19 61.

Botulism None

Lead Poisoning or other Disease None

Period of outbreak _____

Period of heaviest losses _____

Losses:

	Actual Count	Estimated
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Areas affected (location and approximate acreage) _____

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.) _____

Condition of vegetation and invertebrate life _____

Remarks _____

Kind of disease _____

Species affected _____

Number Affected Species	Actual Count	Estimated
_____	_____	_____
_____	_____	_____
_____	_____	_____

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks _____

PUBLIC USE

Refuge Blackwater N.W.

Calendar Year 1961.

Total Use Visitor-Days	Hunting Use	Fishing Use	Miscellaneous Use
28,600	None	600	28,000

Where practical, by means of occasional spot checks, or other methods, show by percent and visitor-days the breakdown of the above figures and other related information:

Hunting (on refuge lands):	Percent	Visitor-Days	Acres	Miscellaneous:	Percent	Visitor-Days
Waterfowl	None	None	None	Recreation *	90	25,200
Upland Game	None	None	None	Official	5	1,400
Big Game	None	None	None	Economic Use	2 $\frac{1}{2}$	700
Supervised by refuge _____ by State _____		No. of blinds _____		Other	2 $\frac{1}{2}$	700

Hunting (off
refuge lands): Estimated man-days of hunting on lands
adjacent to the refuge 6,400 (These figures
should not be included in hunting-use totals above).

Fishing:

Acres of ponds or lakes 600 and miles of streams
5 open to fishing.

Comments: Number of visitors this calendar year
has doubled over last. Mild weather in October
and December was a big factor. Viewing the
large numbers of waterfowl makes up the largest
percentage of the visitors.

*(including picnicking, swimming, boating,
camping, viewing wildlife, and photographing)

3-1757
Form NR-7
(April 1946)

PLANTINGS
(Marsh - Aquatic - Upland)

Refuge Blackwater N.W. Year 1961.

Species	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount & Nature of Propagules	Date of Plant- ing	Survival	Cause of Loss	Remarks
None to report.								

TOTAL ACREAGE PLANTED:

Marsh and aquatic.....
Hedgerows, cover patches.....
Food strips, food patches.....
Forest plantings.....

3-1758
Form NR-8
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Blackwater N.W. County Dorchester State Maryland.

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water- fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
Buckwheat					51	1020	51	Ladino Clover	124
Corn			27	1,200	74	3700	101	Ryegrass	227
Millet					149	5960	149	Wheat	47
Sorghum					45	450	45	Soybeans (as green Manure crop)	76
								Fallow Ag. Land	867

No. of Permittees: Agricultural Operations None Haying Operations None Grazing Operations None

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle				
				2. Other				
				1. Total Refuge Acreage Under Cultivation				867
Hay - Wild				2. Acreage Cultivated as Service Operation				867

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

REFUGE GRAIN REPORT

Refuge Blackwater N.W.

Months of September through December, 1956.

[illegible]

(8) Indicate shipping or collection points 1,200 bushels of corn harvested from refuge fields. 200 bushels transferred to Game Management Division (Agent Withers) for banding. 400 bushels used during period for banding 995 waterfowl and feeding waterfowl in holding pen. 67 Bushels of mixed grain received from U.S. Grain Appraisers,

(9) Grain is stored at Baltimore, Md. and used for feeding waterfowl in holding pen. Grain stored in grain bins at Blackwater Refuge.

(10) Remarks 600 bushels on hand will be needed for banding operations in January, Feb. and March, 1962 and to feed waterfowl in holding pen.

*See instructions on back.

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.

3-1759
Form NR-9
(April 1946)

COLLECTIONS AND RECEIPTS OF PLANTING STOCK
(Seeds, rootstocks, trees, shrubs)

Refuge Blackwater N.W. Year 1956.

Species	Collections				Receipts		Total Amounts on Hand	Amount Surplus
	Amount	Date or Period of Collection	Method	Unit Cost	Amount	Source		
None this period.								
<div>Interior Duplicating Section, Washington 25, D.C. 17261</div>								

Interior Duplicating Section,
Washington 25, D.C. 17263

3-1761
Form NR-11
(2/46)

TIMBER REMOVAL

Refuge Blackwater N.W. Year 1961

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
None to Report.								

Total acreage cut over.....

Total income.....

No. of units removed B. F.

Method of slash disposal.....

Cords.....

Ties.....



Photo. #1- Note how Canada geese have browsed ladino clover in Field C near headquarters- geese in background in October.

#42-355



Photo. #2- Mr. Phil Dumont and Members of Audubon Convention (National) on tour of refuge in October.

#42-356



Photo. #3 - View of members of Baltimore Chapter of
Bird Club w/Mr. Chan. Robbin on Nov. 5.
#42-357



Photo. #4- Note cars at headquarters during busy
Sunday during Waterfowl season- persons come
to see large numbers of birds. #42-358



Photo. #5- Members of the Maryland Ornithological
Society on trip to Blackwater in November.
#42-359



Photo. #6- View of Canada geese and ducks on Pond #1
near headquarters.
#42-360



Photo. #7- View of Fur House at headquarters after
completion of painting of trim & doors during period.
#42-361



Photo. #8- View of Weather Gauge and station and
Dozier Garage after fresh paint job of trim in
September.

#42-362



Photo. #9- M.M. Franklin A. Hughes operating
Crane near headquarters Pond. #42-363



Photo. #10- Another view of Crane digging on edge
of headquarters Pond. #42-364



Photo. #11- View of Canada Geese feeding on ladino
Clover in Field near Highway 335. Note how close
geese feed to Quarters #3 when not molested.

#42-365



Photo. #12- Another view of Canada geese browsing
on clover in Field Q on west side of refuge.

#42-366



Photo. #13- Note Waterfowl feeding near headquarters
holding pen in December. #42-367



Photo. #14- Another view of geese in Pond #1 near
headquarters- #42-368



Photo. #15- View of Estimated 2,000 geese in Field
P near State Highway 335 and Old Mill Road. #42-369



Photo. #16- Note large concentration of geese on
Headquarters Pond during freeze-up in late December.
#42-370



Photo. #17- Canada geese feeding on refuge lawn near
Office- note Game Management Seaplane hanger
in background. #42-371



Photo. #18- Note geese and ice conditions - holding pen
were banding operations have taken place during period.
#42-372



Photo. # 19 - Note area adjacent to Pond #1 at headquarters were Crane dig out to provide deeper water and same leveled by use of Bulldozer.

#42-373



Photo. #20- A few of the ducks banded during period in trap near Headquarters holding pen- M. Men Richardson & Stewart ready to band same- 995 waterfowl were banded in this area adjacent to holding pen from early November to December 31, 1961.

42-374



Photo. #21- Color shot of geese in Field P near highway 335.

#42-375



Photo. #22- Geese feeding on ladino clover in Field C. near headquarters.

#42-376



Photo. #23- Repainted entrance sign on Old Mill Road and Deer checking sign to assist hunters in finding station to check deer in co-operation with State.

#42-377



Photo. #24- Aerial Photo. taken by Agent Hines of Martin Refuge headquarters (Loon, Buffehead, Lyman, Work boat). Also shows re-construction of Tower by Fields and Marshall during period.

#42-378

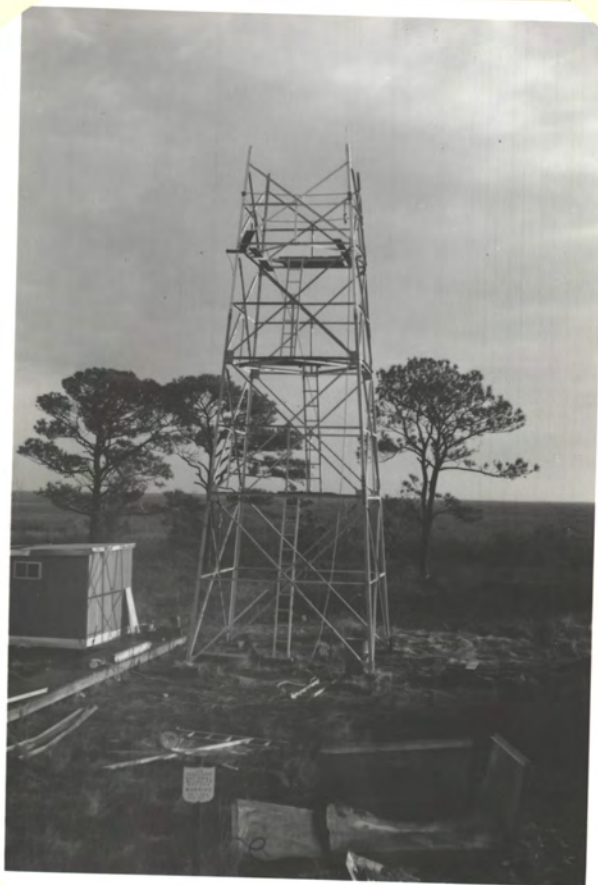


Photo. #25- View of re-construction of Tower
at Martin Refuge . Photo. by Asst. Fields.
#42-379