

BLACKWATER

NARRATIVE REPORTS

JANUARY-DECEMBER 1957

BRANCH OF WILDLIFE REFUGES NARRATIVE REPORTS

MR. SALYER \_\_\_\_\_

MISS BAUM \_\_\_\_\_

MR. GRIFFITH \_\_\_\_\_

Operations

~~MR. BEGAN~~ \_\_\_\_\_

✓ ~~MR. DUMONT~~ POAD

Land Management

~~MR. ACKERKNECHT~~ Cora

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Habitat Improvement

DR. ERICKSON \_\_\_\_\_

MR. STILES WTBS

MR. KUBICHEK \_\_\_\_\_

Stenographers

REFUGE BLACKWATER

PERIOD SEPT - DEC 1957



Blackwater National Wildlife Refuge

Narrative Report

September, October, November and December, 1957.

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Personnel

Cornelius W. Wallace .....	Refuge Manager
W. Steele Webster.....	Asst. Refuge Manager
Oden B. Keen.....	Maintenanceman
Owens P. Hughes.....	Maintenanceman
G. Wallace Stewart.....	Maintenanceman
Guy W. Willey.....	Refuge Aid

U.S. Department of the Interior

Fish and Wildlife Service

Bureau of Sport Fisheries and Wildlife

Blackwater National Wildlife Refuge  
R.F.D. #1, Cambridge, Maryland.

Established January 23, 1933.  
Total Acreage 11,216



Blackwater National Wildlife Refuge

Narrative Report

September, October, November and December, 1957.

Contents

	Page
I. General	
A. Weather Conditions	1
B. Habitat Conditions	2
II. Wildlife	
A. Migratory Birds	3 & 4
B. Upland Game Birds	5
C. Big Game Animals	5
D. Fur Animals, Predators, Rodents and others	5 & 6
E. Hawks, Eagles, Owls, Crows, Ravens and Magpies	6 & 7
F. Other Birds	7
G. Fish	7
H. Reptiles	7
I. Disease	7
III. Refuge Development and Maintenance	
A. Physical Development	7
B. Plantings	8
C. Collections and Receipts	8
D. Control of Vegetation	8
E. Planned Burning	8
F. Fires	8
IV. Resource Management	
A. Grazing	8
B. Haying	8
C. Fur Harvest	8
D. Timber Removal	8
E. Commerical Fishing	8
F. Other uses	8
V. Field Investigation or Applied Research	
A. Progress Report	9
VI. Public Relations	
A. Recreational Uses	9
B. Refuge Visitors	9
C. Refuge Participation	10
D. Hunting	10
E. Violations	11
VII. Other Items	
A. Items of Interest	11
B. Photographs	11



## Blackwater National Wildlife Refuge

## Narrative Report

September, October, November and December, 1957.

## I. General

A. Weather Conditions.

This September was the wettest since 1935. Seven and sixteen hundred inches was recorded for the month compared to a normal of four and three hundred inches. Heavy rains on the 7th brought 60% of the monthly total. Temperatures averaged about 2 degrees above the normal and was the warmest since 1954.

The first frost of the season arrived on October 12 when a low of 32 degrees was recorded which also made it the coldest day of the month. Temperatures averaged near normal for the month. On October 6th winds from a northeast storm reached a velocity of 70 miles per hour. Precipitation was normal for the month with 5.13 inches recorded.

The month of November was considered very mild with only freezing temperatures on 6 nights, and then the lowest was only 22 degrees recorded on the 12th. Four and five hundred inches of rainfall were recorded for the month which is a deficiency of 1.28 inches. Local farmers had wished for less rain as it was still wet from the preceding months for them to harvest their crops.

Snow occurred twice in December with the heaviest amount of 2 inches on the 4th and 1 inch on the 11th, making a total of 3 inches for the month. Precipitation was 2 inches above normal for the month. Five and fifty eight hundred inches was recorded for the month. Temperatures for December were normal. A high of 60 degrees was recorded on the 19th and a low of 16 degrees on both the 11th and 12th.

		<u>Precipitation</u>		<u>Max.</u> <u>Temp.</u>	<u>Min.</u> <u>Temp.</u>
	<u>Snowfall</u>	<u>This Month</u>	<u>Normal</u>		
September	0	7.16	4.03	90	38
October	0	5.13	5.23	74	32
November	0	4.05	5.33	68	22
December	3	5.58	3.43	60	16
Total	3	21.92	17.92	Extremes 90	16



## B. Habitat Conditions.

1. Water. During the late summer the water levels in our fresh water impoundments were very low due to the lack of rainfall this past summer. However, we were fortunate in having an extremely wet September which filled the ponds to the desired levels. In fact, we had to remove stop logs on several occasions in our Dieffenbach Pool control structure to prevent the county road (Old Mill Road) from being flooded.

The Dieffenbach Pool was drained in the spring and planted in millet and buckwheat, which made a good growth in spite of drought conditions. After these crops had matured, about the first of September, stop logs were replaced in the water control structure and by the middle of September there had been enough rainfall to bring the water level to our desired height. We depend on the run off of excess rainfall from Kentuck swamp to maintain our water levels in this pond.

Water levels on the river and tidal marshes have fluctuated near normal for this period.

The approved water Management Plan was followed as submitted since sufficient rainfall was available during this period.

2. Food and Cover. There has been an adequate supply of food for the wintering waterfowl on the refuge this fall, but it is about exhausted at the end of the period. The marsh burning program will be initiated the first of January and this will provide supplementary feeding.

The buckwheat, soybeans, corn and wheat have made a fair growth although we experienced a severe drought this summer. The fields of millet and buckwheat were denuded in about 3 weeks after the wintering waterfowl arrived. The next crop the geese started feeding on was wheat which lasted about 2 weeks. The wheat will grow back after a warm spell, and this helped supply them throughout the period. Wheat planted in our newly cleared area was completely denuded due to wet conditions which caused them to pull it up by the roots. Other wheat planted in the Dieffenbach area and Kuehnle Tract fields in late August established a good root system and provided excellent food throughout the period.

This year we did not disc our standing corn as we have in the past. We used our rotary mower to cut about an acre per field, the waterfowl would start feeding on this cut down area and work into the standing corn reaching up for the ears of corn. This made the waterfowl work for the corn and held them on the refuge longer. A field disced down would only last a week or so compared to a month or more if left standing.

The waterfowl especially the Canada geese have preferred the ladino clover planted in Field A. Ladino clover like wheat will grow during our warm spells.

The aquatics in our tidal ponds have supplied an abundance of food. These ponds are usually so muddy the aquatics don't have much of a change to grow. This being an extremely dry year, and the river more salty and high tides caused the ponds to clear, permitting more sunlight and producing a better growth of aquatics.



## II. Wildlife

### A. Migratory Birds.

The waterfowl population on the refuge hit its peak during the last week of November. The Canada goose population was estimated at 95,000. A total of 27 snows and 22 Blues was the peak of these species also occurring in November. The ducks could also be found in large numbers during the same week of November and estimated at 191,700. This shows an increase over the peak of last year in both the ducks and geese. The peak population of 80,000 geese and 155,050 ducks was reported last year (1956) in November. An estimated 100 swan could also be found on the refuge during the last week of November, this is about the same as reported in 1956.

It is interesting to note that 23 species of waterfowl were observed on the refuge on December 31 during the Christmas Bird Count conducted by the Patuxent Research Refuge.

The first Canada geese arrived at Blackwater on September 27th the same date reported in last year's narrative. The population increased and by the end of October 60,000 were present on the refuge. The population hit its peak during the last week of November with an estimated 95,000 found on the refuge. The population leveled off during December after much of the food was consumed and colder weather arrived. Approximately 30,000 were present at the end of the reporting period.

The peak concentration of mallards was 80,000 compared to only 50,000 reported during the peak in 1956. The mallards remained on the refuge in good numbers throughout December and used in the Dieffenbach Pool and Headquarters standing corn and soybeans fields until most of the food was consumed. Thousands could be observed feeding with the Canada geese and pintail. Many more could be observed in the area of Sunken Islands, Cattail and Hog-Rooting ponds which are ideal for surface feeding waterfowl.

Black ducks arrived early in September and increased in numbers reaching a peak of 50,000 in late November. This is twice the number reported during the peak last year. The black ducks could be found distributed over the entire refuge with a large number using Flag pond, Twins Ponds, Barbadeous pond and Sunken Islands. Many could also be observed feeding in the refuge corn fields in the Dieffenbach Pool and Headquarters Area.

The 40,000 Pintail observed on Blackwater in late November is 10,000 less than reported during the peak concentration of last year. This species prefers to feed in the refuge grain fields of buckwheat, millet and corn. They could be observed feeding with the Canada geese and mallards. Others could be found in the shallow ponds on the north side of the refuge.

The B.W. Teal started to arrive in good numbers in September and reached a peak of 10,000 in late October. This is a slight increase over last year when 8,000 was observed. These birds remained until late November and then could no longer be observed on the refuge.



The G.W. Teal arrived in small numbers early in September but increased during October and arrived in large numbers in the middle of November when an estimated 20,000 were observed on the refuge. This is a 50% increase over last years count. By the end of December most of the G.W. Teal had moved further south due to cold weather and ice conditions.

Wood duck appeared in smaller numbers for the second consecutive year. 100 was the estimated peak population of the wood duck in early November. These birds did not remain on the refuge very long due to ice conditions which cause them to move further south. The entire population was observed in the area of Meekins Creek and Kuehnle Tract. Many hunters adjacent to the refuge report no kill of wood ducks this year. The 100 is a 50% decrease over last years peak population.

The American Widgeon reached its peak in numbers during the period of October 27 thru Nov. 2th. when 25,000 were present on the refuge. An estimated 70% used the Dieffenbach Pool Unit during their stay at the refuge. The Balpates remained longer this year probably due to the excellent supply of grasses found in our ponds. Hog-Rooting Pond and Muddy Gut area supply excellent feeding areas and many could be observed in these areas. The 25,000 is 5,000 more than observed during the same period last year.

Some of the diving ducks showed an increase during the last of the period, the Canvasbacks were estimated at 12,000 on the 24th. of December. This is over a 50% increase compared to last years peak of 5,000. Ring-necked duck population was 10,000 during the last of November which is about the same as reported last year. A large decrease was observed in the Redhead population, 500 reported and only 25 Scaup. During the same period last year 2,000 Redheads were reported and 1,500 Scaup could be observed. These birds could be found in Harpers, Raymonds and Colsten Pond. A few Canvasbacks were observed flying over the Dieffenbach Pool late in the period.

There was very little change in the population of Goldeneye, Merganser and Coot compared to last year. The Mergansers and Goldeneye could be observed in the Little and Big Blackwater Rivers, Meeking Creek and Bar Pit at the Dieffenbach Pool.

A summary of the population shows that the surface feeding ducks and Canada geese increased at Blackwater again this year. The wet weather which arrived in the early fall and remained throughout the winter was to their advantage since all the refuge crops were consumed since harvest was impossible due to these wet conditions. Only the Redhead and Scaup population showed any great decrease. This is not alarming since we do not also get these birds each year until January. As a whole the population of waterfowl on Blackwater was a great success since most species showed a good increase over last year.

The peak concentration of doves was in late September when 700 was reported on the refuge. This is slightly higher than reported during September of last year. By the end of the period most all the doves had left the refuge, approximately 50 was present at this time. The heaviest concentration were in the refuge grain fields in the Dieffenbach Pool Unit, Headquarters and McGraws Island. Large numbers of doves could be observed along Old Mill Road.



## B. Upland Game Birds.

The Quail population shows a decrease over the same reporting period last year. The population is estimated at 700 compared to 735 last year. Quail prefer the refuge Agricultural fields of buckwheat, sorghum, corn and soybeans. It was noted that fewer were observed in the headquarters area this period, however an increase was noted at the McGraws Island area and woods bordering the refuge fields. The mild weather throughout the period with the exception of two small snow storms was ideal for the birds. No predation was noted during the period.

## C. Big Game Animals.

The White-Tailed deer population remains about the same on the refuge as reported last year. As many as 22 could be observed feeding in the refuge agricultural fields at one time during this period. The population is estimated at 70. Deer seem to be about evenly distributed over the Agricultural and wooded areas of the refuge. A large number use the Kuehnle Tract area and Kentuck Swamp. They feed on the refuge corn, soybeans and ladinn clover which supply excellent food.

The refuge co-operated with the State of Maryland Inland Game & Fish Commission in the checking of deer during the opening season in December. The county was allowed a one week season on bucks and over 100 were checked at this station. The kill for the county was 183 or twice the number killed last year. Several deer were killed adjacent to the refuge. The deer killed were in good condition and ranged in the 175 to 200 lb. range which shows the food supply is excellent in the county to support the deer.

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

1. Muskrat. The muskrat population decreased again this year. The population is estimated at 10,000 compared to 15,000 at the close of the 1957 trapping season in March. The decrease is not known but the dry summer which caused many fresh water marshes to dry up may be one of the factors involved. Many adjacent marsh owners believe that predators have great effects on the decrease in population. A check of our marshes during the period by refuge personnel found only slight evidence of raccoon and fox predation.

Our marsh areas have excellent growths of three-square which provides the necessary vegetation desired for muskrats.

Due to the decrease in the population no trapping of muskrats was recommended during the forthcoming trapping season.

2. Raccoons. The raccoon population remains high on the refuge. The population is estimated at 500 distributed over the refuge. Raccoons use our marsh areas and refuge agricultural fields. As in the past years, adjacent marsh owners complain about the damage being done to their marshes by the raccoons. They claim raccoons break into muskrat houses and destroy the young muskrats. This condition if proven, could lead to a predator control program on the refuge.



3. Fox. The red fox population is about the same as reported last year. An estimated 90 can be found on the refuge, these animals have the refuge islands located in the marshes for their home. Many signs of fox were noted at McGraws Island and many have been observed near headquarters and the Dieffenbach Pool Unit during the waterfowl season. The Gray fox is about the same as reported during the same period last year.

4. Squirrel. The population of both the Gray and Byrant fox squirrel is about the same on the refuge as reported last year. Hunters who hunted adjacent to the refuge during October of this year report a poor season probably due to the heavy cover of leaves which remained on the trees due to the mild fall. After the leaves fell many squirrels could be observed along Old Mill Road adjacent to refuge corn and grain fields.

5. Skunk. The skunk population remains about the same as reported this period last year. The population is estimated at 150. Many can be observed adjacent to Headquarters and along the county roads adjacent to the refuge.

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

There has been no great increase in the above species during this period. Opossum is estimated at 220, Weasel 50, Otter 20 and Nutria 20.

A control program to eliminate the Nutria completely on the refuge if possible will be carried out when weather conditions permit. This is necessary to head off the possibility of severe damage to our marshes as experienced by several other refuges, since the Nutria destroy the vegetation so valuable to waterfowl and a good muskrat population.

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

The heaviest concentrations of hawks on the refuge is during the fall migration in October. They take advantage of the strong Northwest winds when they start on their flight south. The sparrow hawks are the first to arrive. The marsh hawks can be seen at most any time soaring over the fields and marsh areas. The sparrow hawks are usually observed resting on the telephone and electric lines that run through the refuge. Red-tailed hawks are most common near the wooded areas. The Coopers and Sharp-Shinned hawks are observed in the wooded area at the Kuehnletract during this period. The hawk population has remained about the same as reported in the corresponding period last year.

There is an estimated population of 30 American Eagles using the refuge. This is about the same as of last year. The Eagles are most common in the Dieffenbach Pool Area and old dead trees along the dike. They take care of the sick and cripple ducks. They make their rounds over the ponds where the waterfowl rest, and when a cripple or sick bird cannot fly they will catch him. The heaviest concentration of the eagles on the refuge is in November and December.

The two most common owls on the refuge are the Great Horned and Barn owl. Being nocturnal we see very little of the owls except the barn owl which use our observation towers. There is an estimated population of 25 Barn owls and 50 Great Horned owls, which is about the same as last years count. By the number of mice and other rodents found in the tower the owls are doing a good job of ridding the marsh of rodents.



The black birds have completely consumed the entire 12 acres of corn on McGraws Island this period. We plan to have a different crop in this field in order for the waterfowl to receive the full benefit of the area.

Crows are still quite plentiful on the refuge. They can be seen at most anytime flying on the refuge and feeding in the Agricultural fields. The heaviest concentrations observed were in the corn fields near headquarters and wheat fields at the Kuehnle Tract. Many could be seen flying over the marsh areas during this period. Their numbers seem to be about static.

F. Other Birds. Three species of birds that refuge personnel observed during the period, which are not on the refuge bird list are, Northern shrike, Orange-crowned Warbler and Pine-woods Sparrow. These species were also seen by the group making the annual Christmas bird count for South Dorchester County. Noted  
PAD

G. Fish. One fishing permit was issued to a local resident to use gill nets in taking fish in Bear Garden Pond. However, due to ice conditions he has only been able to fish about one week. He caught approximately 100 lbs of White perch. He considered this a good catch for this time of year.

H. Reptiles. Not applicable to this refuge during this period.

I. Diseases. Glad to report that there has been no disease in wildlife on the refuge.

### III. REFUGE DEVELOPMENT AND MAINTENANCE

#### A. Physical Development.

The clearing of the 100 acre tract on the west side of the refuge was closed down due to the excess rainfall this fall. We will proceed with this clearing this spring, weather permitting it should be completed by June 30.

Bid invitations were prepared and sent out for the construction of the proposed Equipment Shed and Service building. All bids were rejected and it will probably be built by force account.

Prior to the waterfowl hunting season all refuge boundaries were patrolled and all penalty and blue goose signs checked. All damaged signs were replaced, and some additional signs installed.

Dikes and fields in the Dieffenbach and Headquarters area were mowed.

Slag has been hauled to fill holes in headquarters road and roads graded.

The engine of the Ford Courier I-50370 was rebuilt during this period.

Preventative maintenance has been performed on all boats and motor vehicles. Radiators of all motors that are to be used this winter have been filled with anti-freeze.



## B. Plantings.

1. Aquatics and Marsh Plants. None planted this period.
2. Trees and Shrubs. None this period.
3. Upland Herbaceous Plants. None planted.

4. Cultivated Crops. Millet and buckwheat planted in the Dieffenbach Pool bottoms have made a fair growth in spite of the dry summer. The corn and soybeans did not fair as well as the production of these crops was cut in half. All crops were given a good application of fertilizer but were damaged due to drought conditions. Sharecropper McCollister's crops were also damaged and yielded about one half a normal crop. One field of soybeans was not worth the time for harvesting and was left for the wildlife. A breakdown of yields and crops can be found on NR-8.

## C. Collections and Receipts.

1. Seed or other Propagules. We were unable to harvest any crops due to the wet conditions this fall.

Forty bushels of mixed grain was picked up at the U.S. Grain Appraisers, Baltimore, Md. This grain will be used for supplementary feeding and in banding operations.

2. Specimens. None this period.

## D. Control of Vegetation. None to report.

## E. Planned Burning.

Our controlled burning plan approved for fiscal year 1958 will be carried out during January, and February. The units recommended and approved to be burned will be 18, 19, 20, 21, 22, 23, 24, 25, 26, 30 and 31 or a total acreage of 2,639. This planned burning data will be included in our April 30, report.

- F. Fires. None to report this period. Due to heavy rainfall throughout the period, the fire danger index was low.

# IV. RESOURCE MANAGEMENT

- A. Grazing. None to report.

- B. Haying. None to report.

- C. Fur Harvest. None this period.

- D. Timber Removal. None this period.

- E. Commerical Fishing. One permit was issued to Mr. Curtis Insley who reports only 100 lbs of white perch taken during this period.

- F. Other Uses. None to report.



## V. FIELD INVESTIGATION OR APPLIED RESEARCH

### A. Progress Report.

Banding was not carried out during this period because of possible criticism from waterfowl hunters who have claimed that by baiting waterfowl at banding sites during the hunting season from Nov. 7 to January 15, we hold the birds on the refuge making hunting adjacent to the refuge poor. In the interest of good public relations no banding was done during this period.

## VI. PUBLIC RELATIONS

A. Recreational Uses. No recreational areas are available on the refuge.

B. Refuge Visitors. Official visitors during this period are as follows:

Mr. Victor Kay, Wildlife Management Biologist, Regional Office, made a Supervisory Inspection of Blackwater on Nov 1 to 2, 1957.

Mr. Richard Griffith, Asst. Chief of Wildlife Refuges, Washington Office, visited the refuge several times during the period to observe our waterfowl concentrations.

Mr. Charles Cook, Regional Engineer, Regional Office, also visited the refuge to stake out the proposed Service Building and survey areas at the Glen Martin Refuge on November 7 and again on December 5.

Mr. Seth Low, Chandler Robbins, and a group of birders from the Patuxent Refuge made the Christmas Bird count on December 31.

Game Management Agents who visited the refuge during the period were Agents Withers, Bain, Hines, Robbins, Williams and Shuffler.

Mr. Ernest Vaughn, Director of Maryland Inland Game & Fish Commission and Mr. George Shields, Chief Game Warden for Md. visited the refuge on October 2, to discuss Maryland Game laws and conditions in the state.

State Wardens who visited the refuge were Mr. Bozman, Cannon, Robbins and Campbell.

Audubon Society groups and members of bird clubs visited the refuge from Baltimore, Washington, Delaware, N.Y. and N.J.

Three school classes visited the refuge during the period and were taken on a tour of the refuge. The 4th grade class of Crapo School, Crapo, Md. (Approx. 50 students) visited the refuge on Oct. 7. On Oct. 19, (101 students and teachers) from North Dorchester High School visited the refuge. 86 Members of the 4th grade class of Academy School, Cambridge, Md. also visited the refuge on Oct. 30. These classes were studying wildlife in their school work and found many interesting things to assist in their work.

Mr. Leon Spicer, Charge of State Dept. of Forests & Parks for this area visited the refuge on October 7 and conferred with Mgr. Wallace on problems connected with this area on fire control etc.



### C. Refuge Participation.

On November 13, Mr. Ernest Vaughn, Director of Maryland Inland Game and Fish Commission and six State wildlife technicians met at the Blackwater office with Manager Wallace to discuss technical advice to farmers, sportmen, and Conservationist in development of areas for wildlife use, a project to be carried out by the State. Mr. Vaughn and his staff were shown the areas on the refuge developed for waterfowl use by Manager Wallace which may assist them in their project.

WBAL-TV (Channel 11) Baltimore, Md. showed the film about Goose banding by use of the net trap at Blackwater during December.

Asst. Mgr. Webster gave two talks during the period. A talk on the Economic Value of the muskrat in the State of Maryland was given at the Easton High School to a group of Teachers. Another talk was given on bird life to a 7th grade class at the Cambridge Junior High School on September 30.

D. Hunting. No hunting is permitted on the refuge. Hunting adjacent to the refuge was heavy. Hunting of waterfowl in the wooded area on the Old Mill Road across from our newly cleared fields began this year. As many as 15 to 20 hunters shot at waterfowl daily as they traveled to and from the refuge. Because the waterfowl flew high many were crippled and died after returning to the refuge, others fell in the woods and could not be found. It is estimated that 9 out of every 10 birds hit was lost either in the woods or died later of injury caused by the shooting. This also forced the waterfowl to stop using the area adjacent to the shooting. The state law reads that hunting is legal adjacent to the refuge line, and since this is a dirt road they could shoot near the road. Some steps should be taken to stop the waste caused by this shooting. The fields we are developing in this area will be of no value to waterfowl unless action can be taken to stop shooting near the area. We have been concerned about this matter since the opening of the hunting season and we are in hopes that some action will be taken either to purchase, or trade other non-beneficial refuge lands for a narrow strip along the Old Mill Road beginning at the west entrance of the Dieffenbach Pool dike running west to the State road, a distance of .75 of a mile. We have contacted our County Commissioners and presented our problem. They have verbally promised to black-top this section of the Old Mill Road by June 30, of this year. If this is accomplished the hunters will then be forced to move back in the wooded area 100 yards and should ease the hunting pressure. A memorandum concerning this matter will be submitted at a later date.

The kill of waterfowl adjacent to other areas of the refuge was estimated at 50% less than reported last year. Several deer were killed adjacent to the refuge during the deer season in December. Hunting success on squirrel was reported poor due to mild weather conditions during the fall which caused the trees to hold the leaves longer and this remained during the squirrel season. Only a few squirrels were reported killed adjacent to the refuge lines.



E. Violations.

One violation occurred on the refuge during this period. A hunter was apprehended by M.M. Stewart on December 7 with a shot gun in the wooded area near refuge field E. This case is now pending in State court.

Long hours of patrolling the refuge kept other possible violators from shooting waterfowl and other wildlife on the refuge.

VII. OTHER ITEMS

A. Items of Interest.

Refuge Manager Wallace, Asst. Mgr. Webster, M.M. Keen and M.M. Stewart all received 10 year Length of Service Awards during December.

This report was prepared by Refuge Manager Wallace, Asst. Manager Webster and Refuge Aid Willey.

B. Photographs. Attached.

Respectfully submitted,

*Cornelius W. Wallace*  
Cornelius W. Wallace

CWWallace: gww

APPROVED:

*Samuel A. Quinn*

Regional Refuge Supervisor

JAN 28 1958

Date

Regional Director

Date



3-1750  
Form NR-1  
(Rev. March 1953)

WATERFOWL

REFUGE Blackwater N.W.

MONTHS OF September thru ~~10~~ December, 19 57

(1) Species	(2) Weeks of reporting period									
	1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling									100	100
Trumpeter										
Geese:										
Canada	115	115	115	500	10,000	30,000	45,000	60,000	60,000	60,000
Cackling										
Brant										
White-fronted										
Snow						1	5	10	23	23
Blue						3	3	7	18	18
Other										
Ducks:										
Mallard	625	625	625	625	1,000	3,500	6,000	6,000	20,000	20,000
Black	1,000	1,000	1,000	1,500	5,000	8,000	10,000	10,000	15,000	25,000
Gadwall					500	500	500	500	500	500
Baldpate	100	100	100	500	2,000	3,000	3,500	15,000	25,000	20,000
Pintail			300	500	4,000	5,000	10,000	30,000	40,000	20,000
Green-winged teal		300	500	800	500	4,000	3,000	3,000	6,000	10,000
Blue-winged teal	800	2,500	4,000	8,000	8,000	6,000	6,500	10,000	8,000	2,000
Cinnamon teal										
Shoveler										
Wood	50	50		50	50	100	100	100	100	100
Redhead					50	500	500	500	500	2,000
Ring-necked										
Canvasback										
Scaup									25	25
Goldeneye										
Bufflehead										
Ruddy							100	100	100	200
Other										
Red-Breasted Merganser						50	50	100	100	100
Coot:							200	200	200	500



3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL  
(Continuation Sheet)

REFUGE <u>Blackwater N.W.</u>		MONTHS OF <u>September</u> thru <u>December</u> , 19 <u>57.</u>								
(1) Species	(2) Weeks of reporting period								(3) Estimated	(4) Production
	11	12	13	14	15	16	17	18	waterfowl days use	Broods: Estimated seen : total
Swans:										
Whistling	100	100	100	100	100	100	100		6,300	
Trumpeter										
Geese:										
Canada	75,000	92,000	95,000	70,000	50,000	40,000	30,000		5,024,915	
Cackling										
Brant										
White-fronted										
Snow	23	25	27	27	27	10	10		1,477	
Blue	18	22	19	19	19	14	14		1,218	
Other										
Ducks:										
Mallard	20,000	55,000	75,000	80,000	80,000	25,000	25,000		2,933,000	
Black	50,000	50,000	50,000	50,000	50,000	15,000	15,000		2,502,500	
Gadwall	500	500							2,800	
Baldpate	10,000	10,000	5,000	5,000	5,000	1,000	1,000		747,600	
Pintail	40,000	40,000	40,000	20,000	10,000	5,000	5,000		1,923,600	
Green-winged teal	20,000	20,000	10,000	10,000	8,000	2,000	2,000		700,700	
Blue-winged teal	1,000	500							401,100	
Cinnamon teal										
Shoveler										
Wood									4,900	
Redhead		500	500	500					10,500	
Ring-necked	5,000	10,000	10,000	5,000	2,500	2,500	2,500		290,850	
Canvasback		1,000	1,000	500		500	12,000		105,000	
Scaup									350	
Goldeneye										
Bufflehead										
Ruddy						100	500		7,700	
Other										
Red-breasted Merganser	100	100							3,500	
Common Merganser			200	500	500	500	500		15,400	
Coot:	500	500	500	500	500	500	500		32,200	
(over)										

(over)



	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	6,300	100	
Geese	5,027,610	95,046	
Ducks	9,649,500	191,700	
Coots	32,200	500	

# SUMMARY

Principal feeding areas Dieffenbach Pool, Headquarters Ponds, Twin Ponds, Harpers, Shorters Creek, Meekins Creek, Colsten, Harpers Barbadeous, Round and Deadwoods Ponds.  
 and all Agricultural fields.  
 Principal nesting areas \_\_\_\_\_

Reported by C. W. Wallace

## 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 thru December 1947.

(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			85	10/21						85
Black Crowned Night Heron			75	10/15						75
American Egret			325	9/3						325
Eastern Least Bittern			50	10/3						50
II. <u>Shorebirds, Gulls and Terns:</u>										
Killdeer			500	9/3						500
Lesser Yellowlegs			750	10/3						750
Wilson Snipe			200	10/3						200
Sanderling			900	10/15						900
Virginia Rail			500	10/15						500
Clapper Rail			375	10/15						375
King Rail			675	10/15						675

(over)



(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove		700	9/27		
White-winged dove					
IV. Predaceous Birds:					
Golden eagle		1	11/8		1
Duck hawk		50	12/28		50
Horned owl					
Magpie					
Raven					
Crow		4,000	11/8		4,000
American Eagle		30	12/3		30
Red-Tailed Hawk		30	12/3		30
Sparrow Hawk		150	10/8		150
Reported by <u>W. Steele Webster &amp; C.W. Wallace</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, 1947.

(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					60% Male				700	Personal observations 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 1957.

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions	(7) Estimated Total Refuge Population		(8) Sex Ratio
			Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss		At period of Greatest use	As of Dec. 31	
Common Name	Cover types, total Acreage of Habitat	Number								Number	Source		
White-Tailed Deer		15									December	70	30% Males

Remarks:

Reported by W. Steele Webster & 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 57.

Botulism

Period of outbreak None.

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 \_\_\_\_\_

Lead Poisoning or other Disease

Kind of disease \_\_\_\_\_

Species affected \_\_\_\_\_

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

Number Recovered \_\_\_\_\_

Number lost \_\_\_\_\_

Source of infection \_\_\_\_\_

Water conditions \_\_\_\_\_

Food conditions \_\_\_\_\_

Remarks \_\_\_\_\_



Form NR-6  
(April 1946)

Blackwater N.W.

Refuge.

..Year 194<sup>x</sup> 57.

REMARKS:



3-1757  
Form NR-7  
(April 1946)

PLANTINGS  
(Marsh - Aquatic - Upland)

Refuge Blackwater N.W. Year 19457.

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								

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. Refuge 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					35	875	35	Soybeans as green manure crop.	55
* Corn	20	363			104	5580	124	Wheat for browsing	95
Millet					54	1520	54	Ladino clover for browsing	23
* Soybeans	79	849			15	225	94		
Following Cash Receipts on Soybeans & Corn.									
*Corn	\$450.87								
*Soybeans	\$1,640.26								
Total	\$2,091.13							Fallow Ag. Land	4

No. of Permittees: Agricultural Operations 1 Haying Operations 0 Grazing Operations 0

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				
Hay - Wild				2. Acreage Cultivated as Service Operation				381



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, 1957

(1) VARIETY*	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED OR SUITABLE USE*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Corn	350		350			150	150	200		200	
Mixed Grain	20	40	60			60	60				
Wheat	56		56		40	16	56				

(8) Indicate shipping or collection points Mixed grain from U.S. Grain Appraisers, Baltimore, Md.(9) Grain is stored at Grain Bins at the Blackwater Refuge, R.F.D. #1, Cambridge, Maryland.(10) Remarks The 200 bushels of corn will be used to bait duck traps in our banding program and supplementary feeding in case of heavy snowfall.

\*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.



Interior Duplicating Section,  
Washington 25, D.C. 84267



## TIMBER REMOVAL

Refuge Blackwater N.W. Refuge Year 19457.

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 this period.								

Total acreage cut over..... Total income.....

No. of units removed B. F. .... Method of slash disposal.....

Cords.....

Ties.....

.....



PUBLIC USE - C. Y. 1957.

Please supply figures, or your best estimates for the following categories when applicable to your refuge:

A. Blackwater National Wildlife Refuge.

B. Estimated total use of all types 13,152 visitor-days.

1. Hunting use (for those refuges having public or regulated hunting.)

Estimate visitor-days None.

2. Fishing use.

Estimated visitor-days 350.

3. Miscellaneous use (lump such uses as picknicking, swimming, wildlife observation, birdwatching, as well as those on the area for business or official use, including economic uses such as farming or trapping.)

Estimated visitor-days 12,802.

C. Remarks.

January 17, 1958.

Date

Charles W. Wallace  
Refuge Manager





Photo. #1 - Note Canada geese browsing on ladino clover  
in Field A. 12-2-57 #42-205



Photo. #2- Canada geese in foreground feeding on millet  
west of Headquarters Area. 12-2-57 #42-206