

20

BLACKWATER NATIONAL WILDLIFE REFUGE
Cambridge, Maryland
Glen L. Martin NWR
Susquehanna NWR

ANNUAL NARRATIVE REPORT
Calendar Year 1978

NATIONAL WILDLIFE REFUGE SYSTEM
Fish and Wildlife Service
U.S. DEPARTMENT OF THE INTERIOR

RESOURCE MANAGEMENT ROUTING SLIP

Rec'd 5/21/79

____ Beaty
____ Kvernmo
____ Wills
____ Williams

____ ~~Young~~
____ ~~Frickie~~ *D.M.F.*
____ ~~Baldacchino~~ *MB*
____ ~~Wemmerus~~ *W.*

____ ~~Sontag~~ *[Signature]*
____ ~~Fowler~~ *[Signature]*
____ ~~McCrea~~ *[Signature]*
____ ~~Hughes~~ *[Signature]*

____ Belcher *B*

____ Nelson
____ Quinter
____ Stieglitz

____ Operations
____ Planning

From: Date:

PERSONNEL

<u>NAME</u>	<u>TITLE</u>	<u>GRADE</u>	<u>EOD</u>	<u>STATUS</u>
William H. Julian	Refuge Manager	GS-12		PFT
Matthias A. Kerschbaum	Assistant Refuge Manager	GS-09		PFT
	Transferred 11-05-78			
James M. Applegate	Refuge Manager Trainee	GS-05		PFT
	Transferred 11-11-78			
Guy W. Willey	Biological Technician	GS-08		PFT
William M. Giese	Biological Technician	GS-05		PPT
Kathleen Z. Zeamer	Interpretive Specialist	GS-07		PFT
Steven Gniadek	Recreation Assistant	GS-05		CS
Carole T. Henry	Clerk Typist	GS-05		PFT
Wanda T. Ciekot	Recreation Assistant	GS-04		Temp.
Franklin A. Hughes	Automotive Mechanic	WG-10		PFT
G. Wallace Stewart	Maintenanceman	GS-07		PFT
Joseph H. Cornish	Laborer	WG-02		PFT
Jeanette Haas	Recreation Aid	GS-04	10-10-78	Temp.
Susan Sindt	Recreation Aid	GS-04	10-10-78	Temp.
Judy S. Jull	Recreation Aid	GS-04	10-13-78	Temp.
Patti R. Hall	Recreation Aid	GS-04	01-29-78	Temp.
			04-30-78	Term.

Review and Approvals

William Koch 5-7-79
 Submitted by Date

Blackwater National Wildlife Refuge
 Route 1, Box 121
 Cambridge, Maryland 21613

Refuge

RR Rudegh 5/11/79
 Area Office Date

Edward S. Moore 5-15-79
 Regional Office Date



BLACKWATER STAFF, YCC & YACC 1978

FRONT ROW: YACC - Lycurtis Sharp, Luther Davis, Pegi Holsberg, Linda Bugas, Nedra Confer, Group Leader; STAFF - Carole Henry, Joe Cornish, Kathy Zeamer; YCC - Lisa Todd, Melody Shockley, Valerie Potter, Paige Andrews, Paula Murphy, Lori Bramble, Cornelia Saunders.

MIDDLE ROW: YACC - George Stanley, Fred Grey, Bill Handley, Group Leader, Wayne Willey, Frank Dickerson; STAFF: Matt Kerschbaum, Bill Julian, Guy Willey; YCC - Lisa Swann, Robert McCulley, Sam Bennett, Linda Richardson, Cathy McCulley, Dwayne Banks, Paul Julian, Sherri-Le White, EA Instructor.

BACK ROW: YACC - Don Perry, Dail Sampson, Ivy Cooper, Barry Brooks, Cortez Brannock, Woody Jolley; STAFF: Steve Gniadek, Wally Stewart, Bill Giese; YCC - Bob Boetgger, Group Leader, Jeanette Haas, Group Leader, Vince Vigneri, Richard Slacum III, Barbara Burns, Camp Director, Don Conner, Dennis Grafton, Fred Thompson, Danny Ellis, Group Aid.

TABLE OF CONTENTS

I. GENERAL

	<u>Page</u>
A. Introduction.....	1
B. Climatic and Habitat Conditions.....	1
C. Land Acquisition.....	2
D. System Status.....	2,3,4

II. CONSTRUCTION AND MAINTENANCE

A. Construction.....	4,5
B. Maintenance.....	5
C. Wildfire.....	5

III. HABITAT MANAGEMENT

A. Croplands.....	6
B. Grasslands.....	6
C. Wetlands.....	6
D. Forestlands.....	7
E. Other Habitat.....	7
F. Wilderness and Special Areas.....	7
G. Easements for Waterfowl Management.....	7

IV. WILDLIFE

A. Endangered and Threatened Species.....	7,8,9,10
B. Migratory Birds.....	11,12,13
C. Mammals and Non-Migratory Birds and Others.....	13,14

V. INTERPRETATION AND RECREATION

A. Information and Interpretation.....	14,15,16,17,18, 19,20,21,22,23
B. Recreation.....	23
C. Enforcement.....	23,24

VI. OTHER ITEMS

A. Field Investigations.....	24,25
B. Cooperative Programs.....	25,26,27,28
C. Items of Interest.....	28,29,30,31,32,33
D. Safety.....	33



<u>NAME</u>	<u>TITLE</u>	<u>GRADE</u>	<u>STATUS</u>
John Stanley Marshall	Maintenance Worker	WG-07	PFT
	Deceased 1-22-79		

Review and Approvals

William Koch 5-7-79
Submitted by _____ Date _____

Martin Refuge
Smith Island
Ewell, Maryland 21824

Refuge

Area Office _____ Date _____

Regional Office _____ Date _____

TABLE OF CONTENTS

I. GENERAL

	<u>Page</u>
A. Introduction.....	34
B. Climatic and Habitat Conditions.....	34
C. Land Acquisition.....	34
D. System Status.....	34,35,36

II. CONSTRUCTION AND MAINTENANCE

A. Construction.....	36
B. Maintenance.....	36
C. Wildfire.....	36

III. HABITAT MANAGEMENT

A. Croplands.....	36
B. Grasslands.....	36
C. Wetlands.....	36
D. Forestlands.....	36
E. Other Habitat.....	36
F. Wilderness and Special Areas.....	37
G. Easements for Waterfowl Management.....	37

IV. WILDLIFE

A. Endangered and Threatened Species.....	37
B. Migratory Birds.....	37,38
C. Mammals and Non-Migratory Birds and Others....	38,39

V. INTERPRETATION AND RECREATION

A. Information and Interpretation.....	39
B. Recreation.....	39
C. Enforcement.....	39

VI. OTHER ITEMS

A. Field Investigations.....	39
B. Cooperative Programs.....	40
C. Items of Interest.....	40
D. Safety.....	40

SUSQUEHANNA NATIONAL WILDLIFE REFUGE

TABLE OF CONTENTS

	<u>Page</u>
I. <u>GENERAL</u>	41,42

Review and Approvals

William Koch 5-7-79
Submitted by Date

Area Office Date

Susquehanna NWR
Harford & Cecil Counties, Md.
Refuge

Regional Office Date

I. GENERAL

A. Introduction

Blackwater National Wildlife Refuge is located in Dorchester on the Delmarva Peninsula in southeastern Maryland 10 miles south of Cambridge and 100 miles southeast of Washington. The refuge consists of 14,279 acres of which includes more than 10,000 of marsh and open water that are a part of the vast marshlands along the eastern shore of the Chesapeake Bay.

The refuge was established under authority of the Migratory Bird Conservation Act of December 3, 1931 to provide habitat for migrating and wintering waterfowl. Since 1931 the goal of the refuge has changed and along with providing habitat for migratory waterfowl, now there is major emphasis on management for endangered species and regulated public use. Both the southern bald eagle and Delmarva fox squirrel receives top priority with respect to any management decision.

Blackwater's challenge is to provide a high quality wildlife experience to the large numbers of visitors through observation, environmental education, displays, aids and films provided through the Visitor Center. Utilization by the public must be carried out without exploitation of our wildlife resources.

B. Climatic and Habitat Conditions

Total precipitation for the year amounted to 46.51 inches which is a little above normal. January, March, May, July and August all recorded more than normal amounts of precipitation. The driest month was February which was extremely cold with 0.73 inches of precipitation. An estimated 12 inches of snow was recorded during February and another 6 inches in March giving us a yearly total of 18 inches which is above the annual 15 inch normal.

The drought conditions of 1976-77 which prevailed in most the fresh water marshes and timbered swamps was broken by the rainfall of late 1977 and early 1978.

Heavy ice conditions prevailed on all the marshes and ponds throughout much of January and early February. Extremely high tides were recorded in early January.

Weed growth which was evident in 1976-77 did not appear in 1978. Sufficient rainfall and tidal flow from rivers made it an excellent growing season. Three-square made excellent growth even in areas of low growth in 1977.

Only small amounts of aquatic plants were found in the tidal ponds. Widgeon grass was the main submergent and this limited to hard bottom ponds. Due to lack of heavy silt and mud deposits and unstable waters the rivers are also free of any aquatic growth.

The broad habitat for waterfowl and marsh animals recovered with both water and food sufficient on most areas. We had an excellent growing season for agricultural crops and except for flooding out of some milo and millet, yeilds were above normal.

C. Land Acquisition

1. Fee Title

The acquisition of 1,632.17 acres in January 1978 and 852.84 acres in August 1978 from The Nature Conservancy made the Jarrett Tract a part of the Blackwater Refuge. The Conservancy had been a holding agency of the endangered species habitat for the past three years. A question of title on approximately 225 acres within the block had delayed proceedings. A good portion of the land was surveyed and posted during 1978. The remaining 600 courses and 30 miles of boundary posting will be completed in 1979.

2. Easements

Not applicable.

3. Other

Not applicable.

D. System Status

1. Objectives

The primary objective of the 1210 program in 1978 was waterfowl maintenance. Total waterfowl use days exceeded 8,950,000. However, goose use made up 6,029,000 leaving duck use at 2,890,000, well below planned objective level. In 1978, we begin the marsh loss study project in efforts to find the reasons for loss of three-square. We hope this study will find ways to promote three-square regeneration over some of the present marsh areas as well as stop future loss. Purchase of the Jarrett Tract (2,500 acres) provided additional wetland areas on a portion of the area. This will increase black duck use for Blackwater and be in line with increasing outputs to objective level. Waterfowl maintenance outputs will present complicated problems in the future. As goose outputs are reduced we find that the deficit between current waterfowl outputs and objective outputs cannot be made up by ducks. Therefore, meeting waterfowl maintenance objectives will be a difficult management challenge and we may have to provide

higher goose use to reach the planned duck objective level.

During 1978 under the 1220 program we trapped furbearers under a bid system to maintain the muskrat and nutria populations at optimum levels. Management of other species which come under this activity include white-tailed deer, Sika deer, bob-white quail and the many furbearers or predator type animals. Enforcement patrols and surveys of the refuge for these species both in time and equipment accounts for much of the provided funding.

Since the Endangered Species Act of 1973 reflected a growing public concern for a multitude of plant and animal species the refuge has been funded under 1400 funds to manage and protect such species. Four species on the endangered list which use the refuge are: the bald eagle (Haliaetus leucocephalus), the Delmarva fox squirrel (Sciurus niger cinereus), the Arctic Peregrinus falcon (Falco peregrinus tundrius) and the red-cockaded woodpecker (Picoides borealis). The purchase of the Jarrett Tract increased objective levels on both the Delmarva fox squirrel and the bald eagle. Protection of five pairs of nesting bald eagles through law enforcement, surveillance and posting has been accomplished in 1978. In addition, the Refuge Manager served as a member of the Delmarva Fox Squirrel Recovery Team. This included many meetings in Annapolis and other sites during the year.

Although I&R objectives at this station need some quantitative revision they are accurate for qualitative information. The Wildlife Drive and Visitor Center generate most of the interpretative outputs. Our refuge objectives call for significant increases in interpretation outputs over those of 1978 levels. The present interpretation objectives need quantitative revision primarily because of more accurate I&R information. When revised, objectives are expected to be reduced but will certainly be well above 1978 levels.

Outputs will increase simply because of normal changes in visitor demand. However, the most significant increases will result through upgrading existing facilities and creating new interpretive opportunities through BLHP funds. Examples of planned upcoming improvements are: construction of new observation tower, remodeling of Visitor Center, improving existing trails and developing new interpretive trails and completing Wildlife Drive resurfacing.

Current EE outputs are far below objective level of 53,000 ah. In 1978 plans were developed and work was begun on 3 temporary outdoor learning sites. As our EE program develops, we plan, through the BLHP process, to construct two permanent EE sites with basic facilities such as shelter, water, access roads and comfort stations. All schools are being encouraged to utilize the refuge as an outdoor classroom. It is hoped that EE use will greatly increase after our August 79 teacher workshop.

2. Funding

The 4 programs presently funded at Blackwater are 1210, 1220, 1240 and 1400. A breakdown by activity follows showing the financial picture for two year period.

<u>Funding-Blackwater NWR</u>			
<u>Activity</u>	<u>Activity No.</u>	<u>FY 78</u>	<u>FY 77</u>
MB	1210	134,000	123,000
MNMB	1220	10,000	10,000
IR	1240	73,000	47,000
ES	1400	13,000	20,000
Total		230,000	200,000

In 1978 cyclic maintenance projects were made a part of the refuge budget. It did much to aid regular maintenance. The following table shows cyclic maintenance funds expended by activity.

<u>Activity</u>	<u>Amount</u>
MB	\$11,000
MNMB	2,000
IR	11,000
	<u>\$24,000</u>

Under BLHP in 1978 we received 2 PFT positions. Both the Assistant Manager Trainee and Interpretive Specialist were hired in 1978. We also hired three part-time employees at the Center during the busy months. If we continue to maintain the present staffing we should be able to operate MB and IR programs at very high standards in future years if funding is forthcoming as planned.

II. CONSTRUCTION AND MAINTENANCE

A. Construction

Quarters II received much needed roof and window replacement. An air conditioner was taken out of a window and installed into the wall. These improvements greatly enhanced "liveability" at this residence.

The refuge office underwent major improvements with the kitchen area being panelled with formica sheets. Old laboratory cabinets were removed and replaced with smaller units enabling a small eating area to be installed. BLHP allowed contracting for remodeling of office sections. Two new offices were partitioned off and all walls were insulated and panelled. Much needed closet and storage areas were also built in. Exterior fascia and gable ends of the office and Visitor Center were covered with aluminum.

The Wildlife Drive and refuge parking areas were resurfaced through BLHP.

Additional electric outlets and lighting were installed in YCC buildings.

Construction was started on a 40' by 64' pole building for YACC in October. Building exterior was completed in November except for two walk-in doors and two large garage doors. This prevented the staff from occupying the building until after the first of year. One-quarter of a mile entrance road was constructed.

Major purchases for 1978 include: 20' Monark flat bottom aluminum boat, 12' aluminum skiff, 16' aluminum canoe, 2 boat trailers, 4 outboard motors - 150hp, 50hp, 9.8hp, 7.5hp, 3 portable radios, 50mm camera, 600mm lense, Case diesel farm tractor and a 1978 AMC Hornet.

B. Maintenance

Refuge office was treated for termites in May.

The 20' aluminum flat bottom boat was sanded and painted with anti-fouling paint. A new canvas top was purchased for our 21' Glassmaster boat.

Boundary maintenance was carried out by YACC and refuge staff on 10 miles of refuge boundary including a 1 mile area where signs and posts were totally removed.

Two hundred eighty tons of rip-rap were hand placed by YACC at the new water control structure on the Pool 3 dike. Since the structure's completion in 1977 there has been severe erosion around it.

C. Wildfire

There were no reported wildfires on the refuge in 1978.

III. HABITAT MANAGEMENT

A. Croplands

The refuge had 1 cooperative farming agreement in 1978. Blackwater Farms cropped a total of 298 acres. Corn, soybeans and milo were the crops grown.

Dorchester County had a good growing season resulting in excellent yields. Soybean yield was 51 bushels and corn 89 bushels per acre. Milo yield was down in the Dieffenbach Pool due to heavy rainfall and flooding early in the season. Yield was 30 bushels per acre and was left standing in the rear of the Visitor Center.

Browse for geese and other wildlife included 50 acres of fescue. This crop made an excellent growth and provided much needed green foods for geese in the fall months.

B. Grasslands

None to report.

C. Wetlands

The drought of 1976-77 was broken and all fresh water ponds and wetlands had more than sufficient water. The tidal marshes had extremely high tides on January 26 and 27 due to 50 mph winds from the SW storm. Twelve to 15 hours of tides were more than 3 feet above normal on many of the refuge marshes and above average rainfall caused erosion of the marsh road along the Little Blackwater River. A severe winter storm continued after January 27 and continued for several days. Winds shifted to the WNW and gusted to 40 mph causing even more damage to marshland. Temperatures dropped to the low 20's and ice scouring caused even more erosion along ponds and rivers.

No other major storms were recorded in 1978 and excellent rainfall and near normal tides the remainder of the year made vegetation growth above normal. Three-square which had a set-back in 1976-77 due to the freezing of root system and drought conditions made a great recovery and was the best growth in 5 years. However, there was no growth of 3-square in the areas of marsh loss during the past 20 years.

Approved control burning of 3,000 acres of marshlands was carried out to increase waterfowl food, remove rough vegetation and aid in nutria and muskrat control. Waterfowl use of the burned areas was high by Canadas and snows during late February and March. Burning helps prevent goose depredations to winter grain crops adjacent to the refuge.

D. Forestlands

Some timber stand improvement was carried out under the YCC program in 1978. Underbrush was removed on approximately 10 acres of land in Kentuck Swamp adjacent to Key Wallace Drive.

Control burning of 15 acres in pine timber located on the Egypt Road tract was done in 1978. This burning was performed along the marsh edge and thus prevented wildfire from spreading to the hard wood portion of this tract. It also retards the growth of perennial grasses and shrubs leaving conditions suitable for legumes and annual weeds to become established.

Mature pine is a preferred Delmarva fox squirrel habitat and maintaining small stands of almost pure pine in or adjacent to hardwoods provides a diversified forest. Taylor (1973) found an open understory favors the Delmarva fox squirrel over the grey.

E. Other Habitat

None to report.

F. Wilderness and Special Areas

None to report.

G. Easements for Waterfowl Management

None this period.

IV. WILDLIFE

A. Endangered and Threatened Species

Four species listed by the U. S. Fish and Wildlife Service as endangered or threatened used the refuge in 1978. These species are the Delmarva fox squirrel (Sciurus niger cinereus), the southern bald eagle (Haliaeetus leucocephalus leucocephalus), the red-cockaded woodpecker (Dendrocopos borealis) and the Peregrine falcon (Falco peregrinus tunstall).

Four hundred and fifty Delmarva fox squirrels were estimated on Blackwater in 1978. This reflects a 150 increase in population due to acquisition of the 2,500 acre Jarrett Tract. Use days for 1978 totaled 146,000.

Modification of the cooperative farming agreement changed corn to soybeans in fields adjacent to highways and high squirrel population areas, where roadkills were problems in 1977. These changes plus mowing of road shoulders and ditches eliminated all known roadkills in 1978.

Blackwater is cooperating with the Maryland Wildlife Administration on a study involving population surveys, collection of biological and habitat data and determination of management techniques of the Delmarva fox squirrel.

Refuge Manager Julian served as a member of the Delmarva Fox Squirrel Recovery Team which has been responsible for completing a recovery plan for this species.

A total of 38 southern bald eagles used the refuge during the peak period in July-September 1978. Use days amounted to 11,808 compared to 11,475 reported in 1977.

Four pairs of bald eagles began nesting activity by the end of February. On May 5 the nests were checked by the Maryland Wildlife Administration and found to contain a total of 5 young: 3 in the nest on Barbadoes Island (same nest produced 3 in 1977) and 2 in nest on newly acquired Jarrett Tract. Remaining two nests were unproductive. There were 3 active nests adjacent to refuge which produced 5 additional young. The National Wildlife Federation's Raptor Information Center and the Maryland Wildlife Administration coordinated banding of eagle nestlings on and around the refuge during May. Three eaglets were banded on the refuge and three on adjacent areas. The remainder of the young birds were either too old to band safely or the nest tree was unsafe to climb. One of the three young birds banded adjacent to refuge was found dead on the Bruce Peninsula in southern Ontario on September 25, 1978. This is the second bird banded at Blackwater which traveled north to Canadian provinces and was found dead in less than a year period. All eaglets were banded with aluminum U.S.F.W.S. bands with a pop-rievet and a colored numbered vinyl band and band tag. Two improvements were implemented in 1978 to prevent removal of tags by eagles. The band tags thickness was doubled and a metal eyelet placed in tag where the rivet passed through. Color marking of tags, by states, was adopted as a technique to increase recovery information. All eaglets hatched during 1978 were believed to have reached flight stage.

Several close calls were experienced during the eagle nesting season in 1978. The Barbadoes Island nest, which produced 3 young birds, collapsed in July shortly after the young birds had fledged. An adjacent nest on the Malkus property, north of the refuge, was hit by lightening during a thunderstorm in April while the two eaglets were still in the nest. The birds however were uninjured, even though bark was split from the top of the tree to the ground. On April 20 refuge staff and visitors observed an immature bald eagle that was having difficulty flying because of completely missing tail feathers and a number of right wing feathers also missing. It was believed that the young bird wandered into the territory of another nesting pair and suffered the consequences. Later checks in the area failed to find the bird and it's fate remains unknown.

Commercial fishing permits were issued for period commencing in November and running through May. Permits require that rough fish be placed in designated locations for use as eagle food during that period.

Staff observation during May could not confirm the presence of the red-cockaded woodpecker. Fresh woodpecker activity in living pines was observed on the Kuehnle and Jarrett Tracts. All other species of woodpeckers indigenous to the area were observed by staff. Blackwater is cooperating with the Maryland Wildlife Administration's sponsored study of these woodpeckers in the area. Results will be forthcoming. An estimated peak population of 20 with use days totaling 1,800 was maintained during 1978.

A Peregrine falcon was observed on October 15 at the refuge and was sighted periodically during the rest of the month.

On June 8, 1978 a young osprey was found on the Honga River by a lady who dropped it off at the refuge. Since the bird was very young it was decided that we should try to place it in a foster nest. Several nests were checked to find young of the four week age class. One was located on a duck blind on the Little Blackwater River. The foster parents had two other young which appeared in a healthy condition and nearly the same size.

The bird was placed in the nest under the direction of Guy Willey, Biological Technician. The placement took from 15-20 minutes. As we departed the nest the foster parents returned directly to the nest and appeared not to be too upset with an addition to the family. Willey monitored the nest with checks throughout June and July. All three birds seemed to grow at the same rate. On July 13 all the birds were able to fly some and flew from the nest during the visit. All five osprey remained in the nest area throughout the summer and early fall. They all left the area during early October for the migration south. It appears that the key factors in successful transplanting of abandoned osprey's are as follows: 1) Nest selection; 2) Age of birds; 3) Numbers in nest should not exceed 4 young; 4) Health of bird at time of transplant. All the above factors contributed to the Blackwater's transplant success.



Young osprey in foster nest

B. Migratory Birds1. Waterfowl

Total use-days for ducks, geese, swans and coots totaled 8,955,510. This was an increase over 1977 but down from 1976. A summary of use follows:

<u>Species</u>	<u>Use Days 1978</u>	<u>Use Days 1977</u>	<u>Use Days 1976</u>
Geese	6,029,190	5,254,199	7,151,900
Ducks	2,899,980	2,524,958	2,812,300
Swans	16,560	12,970	10,345
Coots	9,780	11,565	40,525
	8,955,510	7,803,692	10,015,070

The Canada goose population peaked at 65,000 on October 16. This was down from 85,000 reported in October 1977. Factors for this 25,000 decrease has been the mild fall and early winter to the north of us. Snow geese peaked at 2,700 on November 19. These birds arrived much later than in 1977. A white-fronted goose was reported on October 1 and observed throughout the remainder of the year. Seven hybrid white-fronted Canadas were observed from early November throughout December feeding near the Visitor Center. These birds resembled Canadas more than white-fronted geese. Three were observed in 1977 near the same location and reported in previous years.

Duck use-days were 2,899,980 which was higher than the 2,524,958 reported in 1977. Peak duck numbers were 50,800 reported in October. Included in this total were American widgeon 10,000, green-winged teal 10,000, blue-winged teal 8,000, mallard 8,000, black duck 500, wood duck 500 and the remainder spread between 10 other species.

Again, we must stress the point that the black duck population at both Blackwater and Martin Refuges are at very low levels. The 1,000 black duck population at Blackwater is about the same as last year but down from peak concentrations of the 1950's and 1960's when they numbered more than 40,000.

Banding of waterfowl during 1978 in cooperation with State of Maryland:

*Black duck (special banding)	162
Mallard	21
Canada geese	90
	<u>273</u>

*Black duck reward band study which began on January 1, 1978 and is continuing through September 30, 1979 is a joint effort between the U. S. Office of Migratory Bird Management and the Canadian Wildlife Service with all state and Provincial

cooperators. We exceeded the refuge quota of 75 blacks but failed in our efforts to band pre-season wood ducks. The quota of 400 was set and although considerable effort was made to trap these birds with several hundred using one area, the extremely hot weather which extended into the annual hunting season forced us to halt trapping operations. Blackwater supplied corn for bait to Eastern Neck, Back Bay, Prime Hook, Glen L. Martin and Chincoteague and nets and cannons to the state of Maryland to carry out banding programs. This cooperation aided the states of Maryland and Delaware in reaching flyway quotas.

Waterfowl production was 425. This was an increase over 1977 when only 350 were reared. This year's Canada goose production was 25 compared to 0 in 1977. Also included in this total were 150 mallards, 50 blacks, 50 gadwalls, 100 blue-winged teals 50 wood ducks. Water conditions on all the ponds, rivers and marshes were ideal for the nesting season. A problem with production compared with the 1960's is the lack of nesting pairs of blacks and mallards.

2. Marsh and Water Birds

Total use days on marsh and water birds for 1978 were 170,071 use-days. Great blue herons, great egrets, snowy egrets, black-crowned and yellow-crowned night herons make up most of the total use on marsh and water birds. Use days were down when compared to 1977 when 376,000 were recorded. The decline in these birds was due to high water levels throughout the spring and summer keeping many of these birds in small ponds scattered throughout the county. There were no large concentrations of birds on the refuge due to a lack of water as experienced in 1977.

3. Shorebirds, Gulls, Terns and Allied Species

Unlike the marsh and water birds this group increased over 1977. A total of 753,790 use-days was recorded in 1978 compared to 735,914 in 1977. Herring gull, ring-billed gull, greater and lesser yellowlegs, sandpipers and killdeer are the species most numerous on the refuge.

4. Raptors

Southern bald eagle is covered in Section IV, A - Endangered and Threatened Species of this report.

Osprey production was 8 on the refuge and a peak population of 30 reached on July 1, 1978. The additional lands purchased during 1978 (Jarrett) should support more osprey since we will provide protection from possible nesting loss from boating and fishermen disturbance. Nest structures are also planned for the area to provide more permanent sites.

Total use-days from raptorial birds for 1978 was 115,293. This was higher than in both 1976-77. Turkey vultures, marsh hawks, great horned owls, golden eagles, red-tailed hawks and kestrel are numerous during different periods depending on food availability.

5. Other Migratory Birds

The mourning dove population which in 1976-77 was near 300-500 increased to 800 in September 1978. The refuge and adjacent areas had a good nesting season. The Christmas bird count came up with 94 species on December 26 and more than 24,000 individuals were counted. On May 5 a ruddy turnstone was observed near Pond 1, a new record for this station.

C. Mammals and Non-Migratory Birds and Others

1. Game Mammals

White tail deer population was estimated at 600 and Sika deer at 650 during the fall of 1978. The increase in both species was due to the acquisition of the Jarrett Tract which increased the total woodland acreage and also gave us the huge increase in Sika deer habitat. The white-tails prefer the croplands and the Sika the marsh and the marsh edge.

The state of Maryland placed a three deer limit in Dorchester County. This could include no more than 1 white-tail during the 1978 season. Deer kill was near 2,000 and this along with road kills keeps the deer herd on and adjacent to the refuge in a good condition.

2. Other Mammals

1. Muskrat. Muskrat population was estimated at 10,500 with a total of 3,757 removed by 12 trappers. The refuge received a total of \$15,081.00 for the 1978 trapping rights. This was done by sealed bids on all trapping units.
2. Nutria. Nutria population was estimated at 325 with a total of 83 removed. The severe winters of 1976-77 dropped the population from 7,600 to less than 400. At the end of 1978 it appeared that these animals were very scarce on the refuge.
3. Otter. Population was estimated at 30. No increase was noted in 1978 and no trapping was permitted.
4. Raccoon. A total of 16 raccoons were removed from the estimated 800 population during the January-March trapping season. The price of these animals has caused a decrease

in population adjacent to the refuge. Winter die-off in both 1976-77 has also helped keep the raccoon population at a desired level.

5. Fox. A total of 3 red fox were removed in the 1978 trapping season by the muskrat-nutria trappers. From track counts and daytime observations the fox population is estimated at 150. This is about the same number as reported in 1977. Both fox and raccoon populations keep waterfowl production at a low level.
6. Eastern Grey Squirrel. This animal was estimated at 500 due to the increase in acreage of woodlands acquired by purchase of the Jarrett Tract.
7. Opossum. Two hundred were estimated using the refuge in 1978. This is twice the number reported in 1977 due to newly acquired lands.
8. Skunk. Like the other animals due to acquisition of habitat the population increased to 100 compared to 50 in 1977.
9. Cotton-tailed Rabbit. Population was estimated at 800. The large red fox population helped keep the rabbits in check.

3. Resident Birds

The bob-white quail population was estimated at 1,000 compared to 700 in 1977. Increase was due mostly as the result of the purchase of additional lands. Breeding season was excellent and we had sufficient cover and food throughout the year.

4. Other Animal Life

After two years of severe winters and one drought year the frog, turtle and snake populations began to recover. A few more bullfrogs and a large number of snakes were reported in 1978.

V. INTERPRETATION AND RECREATION

A. Information and Interpretation

1. On-Refuge

Refuge visits during CY 78 totaled 93,777 and represented a 3.4% decrease over CY 77. October and November continued to be the months of highest public use with 21,388 visits in October and 19,473 in November. The summer months of June, July and August were again periods of low use, most probably

due to the lean numbers of waterfowl and the tremendous number of flies and mosquitoes.

Public use was concentrated most heavily under the category of Wildlife Interpretation. The Wildlife Drive accounted for 73,739 visits, the Visitor Center 43,389 visits and the wildlife foot trails 13,696 visits. On-site programs and tours were conducted to 6,781 people.

Special programs in addition to the daily films were offered to the general public on busy week-ends in October, November and December. Recreation Assistant Susan Sindt developed and conducted the programs which included banding talks, guided interpretive walks and slide programs. A total of 1,613 people participated in the programs which involved 8 week-ends. Over 200 general programs were presented to the public on a daily basis. Approximately 7,300 people participated.

As in years past the Visitor Center operated at a reduced level during the summer months of June, July and August. Because of the need to conserve energy, the poor condition of the present air conditioner and the annual drop in visitation at this time of the year, the Visitor Center was closed except to YCC, YACC and organized groups.

Proper staffing continues to be a problem at the Visitor Center. The situation fluctuates so often that one never knows what to expect from month to month. The inconsistency of the situation is perhaps worse than the situation itself. Occasionally the Center is in full swing with two permanent employees and a number of seasonals. Then someone transfers, one temporary person finds more permanent employment and the Center is again back to operating with only one person. It is very difficult to coordinate new programs and continue the old when one individual is left in charge of the entire I&R program. Community organizations and schools have a difficult time understanding the inconsistency of our program opportunities and available expertise. Certainly this problem is not unique to Blackwater alone but having company does not make it any less frustrating.

During the fall of CY 78 strides were made in the direction of EE. The development of three outdoor discovery sites were approved and one site was developed and in use by October. The other two will require boardwalks which will most likely be constructed in the spring of '79. Students and teachers alike were quite receptive to this "new way of learning about the refuge". A total of 947 students accounted for 1,131 activity hours. Most of this time involved forest ecology activities at the woodland EE site. Groups also toured the Wildlife Drive, were guided through the Visitor Center and viewed films in the auditorium. It is hoped that EE use will increase in the spring.

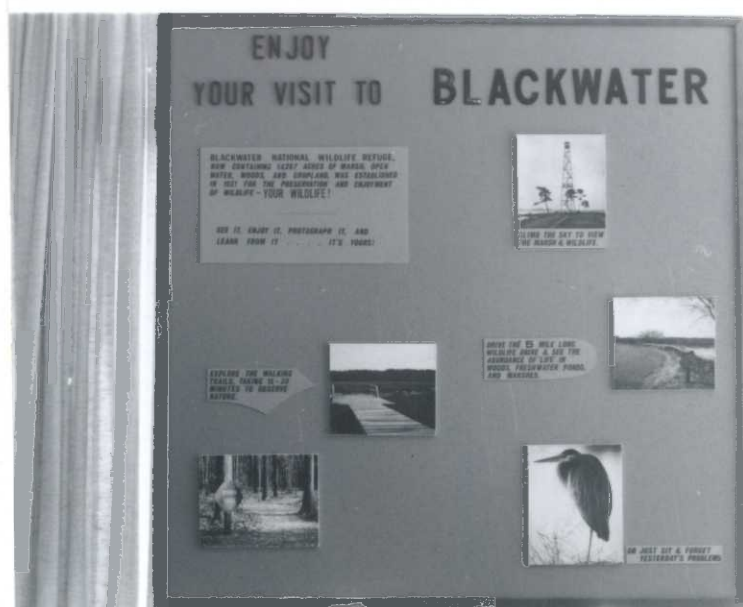


New woodland EE site, located near Woods Trail.
Benches planned for spring of '79.

Many improvements were made this year beginning with several new exhibits in the Visitor Center. Among these were a Blackwater display on the interpretive facilities of the refuge, a display of local Indian artifacts, informational boards for the eagle diorama and the eagle display case, a children's touch and feel area, a new taped message and glass panels for the observation bee hive, a display on woodpeckers nesting at the refuge, new photos for a display panel on the refuge and a bulletin board advertising leaflets available on request. Awards and winning photos from the Seventh Annual Wildlife Photography Contest were also available for viewing.



Children's area designed and constructed by Recreation Assistant Jeanette Haas.



Guide to interpretive facilities of the refuge. Panel is suspended from ceiling above 4'x6' map table which shows locations of facilities.

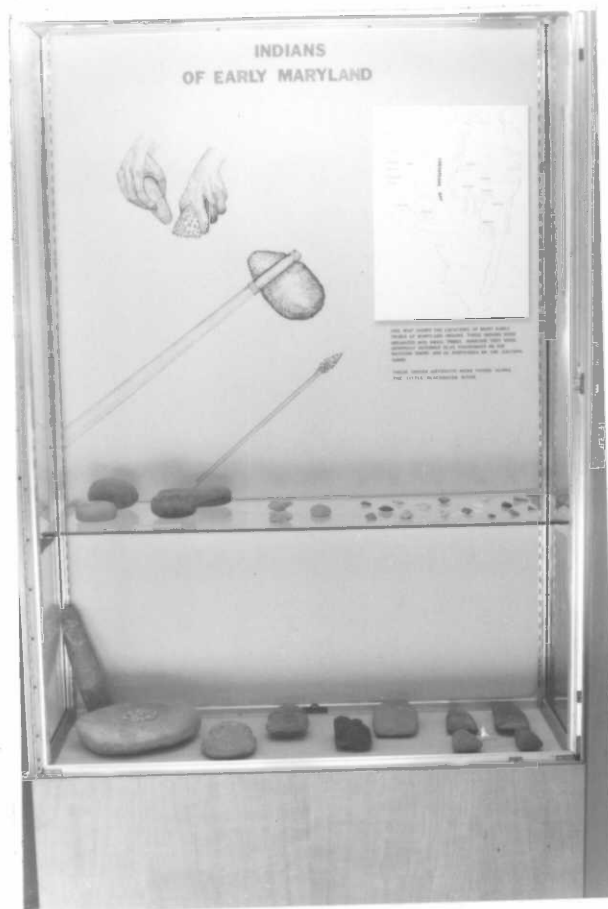
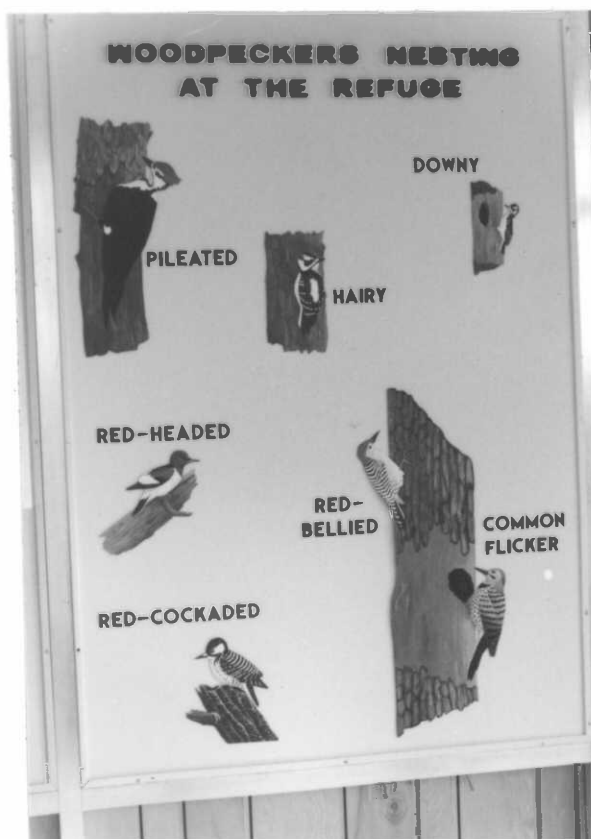


Exhibit of local
Indian artifacts.

Panel on nesting
woodpeckers. All
work hand painted
by Recreation
Assistant Judy Jull.



Several special programs, tours and visits took place during 1978:

Biological Technician Willey talked with 20 students from the University of West Virginia on marsh ecology and trapping in March.

Pat Birnie, a Recreation Planner from Columbia, Maryland met with Manager Julian and Interpretive Specialist Zeamer in March to obtain information for a waterfowl/recreation area in Columbia, Maryland.

National Wildlife Week was observed during March 19-25. Special programs concerned with the needs of animals were presented. Activities involved discussions on endangered species, a look at projects that students could do to aid wildlife and guided walks geared toward discovering wildlife activity. One hundred and thirty students participated in the programs.

In April Assistant Manager Kerschbaum conducted a guided tour of the refuge for a wildlife management class from the University of Maryland followed by a slide program on Blackwater presented by Recreation Assistant Patti Hall.

Blackwater participated in the 1978 4-H Citizenship Tour on May 6. Five hundred young people ages 14-19 visited the refuge and were given tours, talks and films throughout the day.

Fifty members of The Nature Conservancy visited the refuge June 3 and were given guided tours by Zeamer and Recreation Assistant Gniadek. They returned in September with 95 members. Manager Trainee Applegate, Kerschbaum and Gniadek handled the group.

Conley Moffit and 3 other members of the Task Force on EE and Interpretation visited the refuge July 17.

Tom Potts, a seasonal photography intern with the Washington Office, visited Blackwater July 27 to photograph various aspects of the refuge.

In September Michael Sader, who is writing a screen play about an American Indian, did background research at Blackwater.

Refuge personnel conducted tours, walks and programs for 90 Congressional Aids and USFWS Washington Office personnel October 18. Zeamer, Gniadek, Julian and Recreation Assistant Haas handled the group.

Deputy Director Cook and Deputy Assistant Secretary Myshak informally visited the refuge Saturday, November 11.

High quality photographs highlighted the Seventh Annual Wildlife Photography Contest which was held March 4. Sixty-two photographers from 6 states submitted 182 entries. Fifteen honors were awarded and the high scoring photographs were on display in the exhibit room during the month. A one man show by last year's best-in-show winner was on exhibit in the Visitor Center auditorium.

Lisa Myers, a film major at Montgomery County Community College, used the refuge throughout the fall to make a film on the Canada goose.

Three new traffic counters purchased from Scientific Dimensions, Inc. were installed at three locations on the refuge. To date they have proven to be very reliable and accurate.

Three leaflets were developed and a third and fourth revised during the year. Endangered Species of Blackwater has already been received and is being distributed to the public. The Canada Goose of Blackwater has been sent to PAO and should be available for distribution in 1979. A mock-up of Birds of Blackwater was recently received and should also be available in 1979. The printing of the Woods Trail Guide is pending due to funds. Hopefully this will also be available to the public in 1979.

Aluminum siding was installed on the fascia at the Visitor Center during the fall.

In August the contract for daily cleaning of the Visitor Center and refuge office was revised and renewed for another year. Cleaning takes place before or after hours seven days a week.

Resurfacing of the refuge's paved roads and parking areas made possible by BLHP monies was completed in September. A sealer coat, planned for the spring of 1979, is needed to complete the project.

A recycling bin which was constructed by the 1978 YCC was made available to the public in September. Aluminum and steel cans are collected and taken to a nearby recycling area as needed. Joe Cornish, refuge Laborer, is sorting recyclable items as part of his litter control duties.

2. Off-Refuge

Ten news releases were made during the year. A number of seasonal stories about the refuge wildlife were also reported by area newspapers.

Off-site programs were delivered to eight groups. In January Interpretive Specialist Zeamer spoke to 85 members of the Cambridge Rotary Club. She also presented a program to 26 local elementary school students on the wildlife of Dorchester County in February. Manager Julian spoke to the Cambridge Bird Club March 16. The topic of his talk was bees. Also in March Zeamer presented a program on environmental quality to 16 members of the League of Women Voters and conducted a program on the wildlife of Dorchester County to 125 local elementary students. Recreation Assistant Patti Hall presented a slide program on Blackwater to the Dorchester Chapter of the DAR in April. Manager Trainee Applegate assisted with an off-site canoeing program presented to 20 South Dorchester students in May. On June 1 Zeamer presented a program on Endangered Species to the Cambridge Ruritan Club. Julian spoke to 30 members of the St. Paul's Methodist Church Men's group in October. His topic was wildlife management.

A news release announcing a special week-end showing of the new film "At the Crossroads" encouraged 116 interested citizens to visit the refuge in January.

Tom Leonard, photographer for the Salisbury Maryland Times, did a full page photostory on Blackwater NWR.

In January ABC-TV's Roger Caras used Blackwater NWR as a background for a news story on wildlife artist, Maynard Reese. The story appeared on the ABC Evening News with Harry Reasoner and Barbara Walters.

Two feature reporters from WMAR-TV (Channel 2) News visited the refuge on October 19 to interview Manager Julian and prepare a 3 minute news segment on Blackwater and the fall migration. The segment was aired October 20.

Blackwater accomplished the grand slam of the networks on Friday, November 10, when CBS filmed a 4 minute news segment on Blackwater and the Canada goose. Earlier in the month ABC and NBC also aired 2-4 minute segments about the annual migration.



One of several TV news segments on Blackwater.



Manager Julian being interviewed on CBS, ABC, NBC (?) News.

The February 9 "Leisure" section of the Cambridge Banner featured an article on the refuge and the Delmarva fox squirrel photo blind in particular.

Ann Stinson of the Easton Star Democrat spent several days at Blackwater gathering material for an article on the marsh loss study.

Bill Burton and Mr. Black of the Baltimore Evening Sun visited the refuge on October 10 to gather material for a pair of articles published on October 11 and 12.

Four display cases were loaned to the Dorchester County Commissioners during the Maryland Association of County Governments meeting which was held in August at Ocean City, Md.

A table display of leaflets and information concerning the refuge was exhibited at the annual Outdoor Show on February 9, 10 and 11.

B. Recreation

1. Wildlife Oriented

Wildlife-wildlands observation and photography use totaled 54,411 visits. Most of this use was associated with the Wildlife Drive, foot trails and observation tower. Plans are being developed for a new 30 foot tower made possible by BLHP funding. Construction should begin in 1979.

The refuge was closed to all hunting; however, sport fishing and crabbing were permitted from April 15-October 31. One thousand seven hundred and eighty seven visits for sport fishing and 1,147 visits for crabbing were recorded during the year. Fishing was up 617 visits from CY 77 and crabbing was also up 907 visits from CY 77.

2. Non-Wildlife Oriented

Nothing to report.

C. Enforcement

The following chart outlines violations which occurred at Blackwater NWR in 1978:

<u>Violation</u>	<u>Date</u>	<u>Persons Involved</u>	<u>Disposition</u>
Illegal entry w/motorcycle	3/28/78	2	Warning given
Illegal entry w/motorcycle	5/25/78	2	Warning given
Illegal entry after hours	6/19/78	2	Warning given

<u>Violation</u>	<u>Date</u>	<u>Persons Involved</u>	<u>Disposition</u>
Unauthorized use of refuge tower	6/20/78	2	Warning given
Possession of bow & arrow in closed area	10/21/78	1	Fined \$100
Take migratory waterfowl	11/24/78	1	Fined \$100
Use of artifical light in refuge	11/24/78	2	Fined \$50 each

Manager Trainee Jim Applegate and Biological Technician William Giese completed 120 hours of law enforcement training at Glynco, Georgia in the spring.

Littering still remains a problem along refuge roads because of the large volume of public use.

VI. OTHER ITEMS

A. Field Investigations

A summary of the hydrologic and ecologic studies to determine marsh loss at the Blackwater Refuge in 1978 follows: Gauges (15) were set at different locations and read daily to determine water flow on the Little and Big Blackwater Rivers. A total of 18 grazing exclosures and 9 rhizome planting exclosures were completed. A total of 6 more grazing exclosures have been planned for 1979. All the exclosures are constructed from welded wire (stainless steel, 2mx2mx2m) and implanted into peat (30-40" in depth) to prevent burrowing from muskrat and nutria. Each exclosure has a control also placed in three-square (Scirpus olneyi). The exclosures will determine, when compared with each control, the amount of damage from geese, ducks, muskrat and nutria.

A detailed analysis of net primary production will be made using Wiegert and Evan's techniques. This will provide an accurate measure of net primary production whereby litter production is measured in addition to simple standing crop changes. Measurements of litter production are important to determine the peat accretion rates. Some peat borings were taken in 1978 and more scheduled in 1979. Throughout 1978 a large amount of time was spent by refuge personnel in construction of exclosures, reading gauges, providing boats, attending meetings and providing base data and expertise to get the study underway. Biological Technician Willey's knowledge of vegetation, water areas, waterfowl concentrations, animal use, etc. saved considerable time and money to secure base data before the proposal could be approved. We are hoping the investigation will provide an answer to the loss of the productive marsh and recommendations for restitution and maintenance of existing wetlands.

The State of Maryland continues to study furbearers on the refuge under project #W-49-R. A study which began in June 1974 was extended thru June 1979. Nutria, raccoon and otter are the three species under investigation. Also part of the nutria study is the effect of prescribed marsh burning on both vegetation and populations. This study is on contract with the University of Maryland with work being carried on by Appalachian Environmental Laboratory, Frostburg College and the Horn's Point Center for Environment and Estuarine Studies, Cambridge, Maryland, both branches of the University of Maryland.

The State, under the direction of the Delmarva Fox Squirrel Recovery Team, checked nesting boxes on the 52 acre block located off Egypt Road the summer of 1978.

Habitat range of the red-cockaded woodpecker is under study by the State of Maryland, under contract to Appalachian Environmental Laboratory, University of Maryland. Mr. Bill Devlin, who was assigned to the project, checked possible nesting sites on the refuge during the spring and summer.

B. Cooperative Programs

January of 1978 brought the start of our YACC program. Three enrollees, no leaders, no office, no tools but lots of problems. An abandoned cannery adjacent to the refuge was rented for a camp work area. First projects were building an office and tool shed. The cannery served as work area for the entire year even though rent was not paid until June because of a mix-up in GSA. The full compliment arrived in May with 20 enrollees and 2 group leaders and soon afterward we experienced a turnover in both group leader positions. Three leaders went quickly and finally on the fourth and fifth try we picked two competent and capable leaders. Lack of supervision seemed to be our major problem with the camp. Two leaders, who must purchase materials, do office work as well as supervise 20-23 enrollees, just is not adequate. Enrollee attitudes, lack of most work skills and disrespect for regulations and equipment caused problems as well. With capable leaders, refuge cooperation, several dismissals and closer supervision by the end of the year the YACC program at Blackwater has come a long way. Far from perfect but much better than the earlier chaos.

YACC work projects accomplished included: Rehabilitation and painting of YCC pavillion and office, erecting a 64' x 40' pole building for YACC work area, posting, painting and clearing 15 miles of Jarrett Tract boundary, weekly litter pick-up, brushing of 4 miles Jarrett Tract roads, lawn care, riprapping Pool 3 water control structure, planting 9 acres of millet in Pool 3, constructing 30 osprey nest structures, clearing of undesirable plant species from 20 acres of Pool 3, guard rails erected on 5 Wildlife Drive observation pull-offs, painting all refuge sign posts and guard rails and clearing of an EE site at Woods Trail.



Found best way for YACC to remember to bring paint brushes!



A riprapping job done by YACC.

The Youth Conservation Corps program at Blackwater NWR began June 19 and ended August 10, 1978. Our non-resident camp was budgeted at \$26,000 with an enrollment of 20 youth. Young women and men were recruited from Dorchester and part of Talbot Counties. The camp was administered with a staff of five comprised of a Camp Director, Environmental Education Instructor and three Group Leaders.

Accomplished work projects included the construction of benches for the Visitor Center, construction of a recycling bin, compost bin, cement floor for manager's carport, safety rails on 80' boardwalk, painting of boathouse, trim at Quarters 2 and refuge machinery, boundary posting, the removal of willows from marsh to enhance growth of duck food, planting Jap millet and trail maintenance.



Recycling bin constructed by 1978 YCC. Bin is located at Visitor Center.

Trips to Milburn Landing State Park and Assateague National Seashore were taken to investigate swamp and marine habitat.

EE activities included insect collecting and classification, wildlife habitat investigations, mapping exercises, rotting log studies, herb collecting and wildlife study techniques. Most EE activities were coordinated with on-going work projects.

Period from March 19 - April 1, 1978 -- Avian cholera was confirmed in sea duck population on the Chesapeake Bay. The disease hit sea ducks hard on the bay from Reedville, Virginia to the head of the Chesapeake Bay with 100,000 old squaw, scoter, bufflehead and a few diving and puddle ducks perishing. The outbreak came in a period when bald eagle nesting was underway. The areas around Barren Island to James Island were monitored for eagles feeding on these birds. We found no dead eagles although the state reported sighting eagles feeding on dead birds from an aerial flight in late March. In all, refuge personnel found more than 500 birds in the area assigned by the state. The states of Virginia and Maryland picked up more than 50,000 birds.

Two oil spills occurred in the bay area during the 1978 calendar year. One occurred in late February on the Chesapeake Bay near Reedville, Virginia. Maintenance man Stewart was detailed from this station for a period of two weeks. An estimated 5,000 waterfowl died from a sunken barge leaking heavy fuel oil. More than 20,000 gallons of oil had to be cleaned up and waterfowl kept from the area. Most of the loss was suffered by sea ducks.

A minor oil spill occurred on Goose Creek, Fishing Bay, Maryland on November 28, 1978. Biological Technicians Guy Willey and William Giese were dispatched to the area. The dredge "Aaritan" was sinking and losing diesel fuel. Fast action by the USCG boat "Chincoteague" and "Port Holland" contained the estimated 2,000 gallons of oil and no damage to waterfowl was observed.

C. Items of Interest

James Applegate, Refuge Manager Trainee, attended the 120 hour refuge law enforcement training at FLETC, Glynnco, Georgia.

Jeanette Haas, TPT Recreation Assistant, worked a 700 hour appointment during 1978. Ms. Haas also served as YCC Group Leader during the 1978 summer camp.

Carole Henry, Refuge Clerk, attended a USCSC course on "Secretarial Decision Making" on February 14, 15 and 16 in Baltimore, Maryland.

James Applegate, Refuge Manager Trainee, attended the Refuge Manager's Academy in Beckley, West Virginia during February and March.

William Giese, Biological Technician, completed the 120 hour refuge law enforcement training at FLETC, Glyncoe, Georgia.

Clerk Henry and Refuge Manager Trainee Applegate attended an Administrative Workshop held in Gettysburg, Pennsylvania April 10-14.

Steve Gniadek, Recreation Assistant, entered on duty on April 22. Steve came to Maryland from Texas. In December Mr. Gniadek accepted a position at Patuxent Research Center. He will be leaving in February 1979.

Kathy Zeamer, I&R Specialist, completed the Refuge Manager's Academy course at Beckley, West Virginia during April and May.

Steve Gniadek, Recreation Assistant, attended the I&R workshop at Patuxent, Maryland in June.

I&R Specialist Zeamer and Biological Technician Guy Willey attended their second 40 hours of supervisory training in Baltimore, Maryland July 31-August 4.

Ms. Zeamer also attended the I&R workshop at Okefenokee NWR August 14-18. She also attended the 40 hour EE workshop at Great Meadows NWR in September.

Recreational Assistants (TFT) Judy Jull and Susan Sindt reported for duty on October 10.

On Friday, October 20, I&R Specialist Zeamer and Recreation Assistant Gniadek attended an EE teachers workshop at Eastern Neck NWR.

Refuge Manager Trainee Applegate began a detail to the Cambridge office of the Law Enforcement Division on October 19.

Assistant Manager Matthias Kerschbaum was transferred to Wetlands Management Development, Litchfield, Minnesota.

Late in October Refuge Manager Trainee Applegate left the FWS and transferred back to the Economic Development Administration, Seattle, Washington, a position he held before coming to the refuge.

Clerk Henry attended a three day USCSC course in "Management Orientation" in Baltimore December 13, 14, 15.

Biological Technician Willey and Mechanic Franklin Hughes were detailed to Brigantine NWR on December 20, 21 to assist the U.S. Army in testing rocket propellents used in cannon net trapping of waterfowl.

Recreation Assistant Wanda Ciekot reported for duty November 1.

On December 8 the Secretary of Interior, Cecil D. Andrus, signed a citation for Meritorious Service to Biological Technician Guy Willey. The award was presented to Guy at the DAO meeting held in Ocean City, Maryland during February (1979) by Manager William Julian, Area Manager John Green, Annapolis office and Howard D. Woon, Assistant Regional Director, Region 5, Boston. The certificate is being framed and medal mounted; the entire staff is proud that he received such a high award. Congratulations have come from many people both on the federal, state and private level.



Mr. Howard Woon, Mr. Guy Willey, Mr. John Green





Mr. Gohn Green, Mr. Guy Willey, Mr. William Julian



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

CITATION

FOR MERITORIOUS SERVICE

GUY W. WILLEY

in recognition of outstanding service with the Fish and Wildlife Service.

During his twenty-five year career at the Blackwater National Wildlife Refuge, Mr. Willey's accomplishments have proved his genuine concern for and his profound sense of dedication to the Nation's fish and wildlife resources. Now a Biological Technician there, he has devoted hundreds of hours without pay to innumerable tasks associated with the management of the refuge. In the early 1950's, when Blackwater Refuge personnel conducted an extensive farming program, he labored long hours during the planting season to ensure the success of the operation. For two years he aided agent pilots of the Division of Law Enforcement in curtailing illegal duck trapping activities on islands in the Chesapeake Bay. When, in 1960, the Assistant Manager drowned and the Manager suffered a heart attack, Mr. Willey served as Acting Manager of the refuge. His loyalty and dependability provided a base for efficient and successful administration. His most distinguished contribution is his outstanding ability to train and orientate incoming managers and then work with them, under their supervision, in a continuing harmonious relationship. As new refuge programs were added and old ones expanded, Mr. Willey's responsibilities increased considerably. Throughout this period of accretion, he continued to work at a sustained level of excellence and as a result received several commendations and awards from the Boston Regional Office. His sincerity and enormous talent in dealing with people resulted in a favorable shift in the attitudes of local residents toward the Eastern Neck Refuge. With widespread knowledge and expertise in wetland ecology, Mr. Willey is in high demand by state and Federal agencies. He has worked with the Soil Conservation Service, the National Audubon Society, and the States of West Virginia and Maryland, teaching marsh management and waterfowl census techniques. He was responsible for establishing the protected area concept for Southern bald eagle nesting sites, and was chosen to serve on an advisory committee to the Maryland State Legislature to help write new trapping laws. As a tribute to his tremendous devotion and high standards of excellence, Mr. Guy W. Willey is granted the Meritorious Service Award of the Department of the Interior.

Cecil D. Andrews
Secretary of the Interior

Refuge Manager Julian attended the week long Cooperative Association Conference in Denver, Colorado December 4-8. He also attended a seminar held by the Eastern National Park and Monument Association with I&R Specialist Zeamer in Philadelphia on December 13. Both meetings were base preparation for new establishment of a cooperative sales outlet at Blackwater NWR.

Refuge Manager Julian received the following awards in the 1978 National Photo Contest; Endangered Species, black and white photo, first, second and third prizes and honorable mention.

Biological Technician Willey served as a member of the Maryland Advisory Committee on trapping of furbearers.

Refuge Manager Julian served as a member of the Delmarva Fox Squirrel Recovery Team.

Julian also served as principle investigator for the marsh loss study.

D. Safety

The Blackwater safety committee conducted monthly safety inspections of refuge facilities and grounds. Staff members attended monthly safety meetings and discussed any problems found during inspections.

Flammable storage cabinets were purchased for Visitor Center, carpenter shop and mechanic's shop. Ground fault interrupter circuit breakers were installed at mechanic's shop, Quarters 1 and 2 and refuge office. Throw rings were placed in plain view on refuge dock. Fire extinguishers were periodically checked and refilled when necessary.

All vehicles were serviced and safety inspected at 3,000 mile intervals.

Credits - Section I was prepared by Biological Technician Guy Willey, portion of Section I, D, prepared by Interpretive Specialist Kathy Zeamer; Section II, A, B, C prepared by Biological Technician William Giese; Section III prepared by Guy Willey; Section IV, A, prepared by William Giese, B and C prepared by Guy Willey; Section V, A and B prepared by Kathy Zeamer, C prepared by William Giese; Section VI, A, prepared by Guy Willey, B prepared by Guy Willey, Kathy Zeamer, and William Giese, C prepared by Kathy Zeamer and Guy Willey, D prepared by William Giese. Acting Refuge Manager Koch (1979) edited the report and typing was done by Refuge Clerk Carole Henry.

GLEN L. MARTIN NWR

GLEN L. MARTIN NATIONAL WILDLIFE REFUGE

I. GENERAL

A. Introduction

Glen L. Martin National Wildlife Refuge, the northern sector of Smith Island in Chesapeake Bay, is located in Somerset County, Maryland. The federally owned land acreage, which totals 4,423 acres, extends to the mean high tide mark. The refuge was established in 1954 with the acceptance by the government of a 2,569.86 acre land gift from the late Glen L. Martin. Additional land purchases by the Migratory Bird Conservation Commission increased the size of the refuge to its present acreage. A 1960 Secretarial Closing Order provided the refuge with a 300 yard wide proclamation boundary inside of which hunting is not permitted.

Primary objectives of the refuge include providing resting and feeding habitat for waterfowl and providing nesting habitat for ducks, wading birds, shorebirds and ospreys. The marsh and estuary of the refuge are also important in the production of crabs, oysters and many other marine species.

Martin NWR is administered from the Blackwater NWR near Cambridge, Maryland. Travel to the refuge is restricted to boats traveling a distance of approximately 11 miles from Crisfield, Maryland.

B. Climatic and Habitat Conditions

Martin NWR experienced heavy ice conditions and cold temperatures through January and February. An estimated 10 inches of snow fell during February and another 6 inches during March. Extremely high tides were recorded during January and February because of northeast winds prevailing from the ocean. Precipitation for year amounted to slightly more than the normal of 40 inches.

Aquatic growth of widgeon grass and eel grass in the tidal ponds was about the same as in 1977.

C. Land Acquisition

None.

D. System Status1. Objectives

Objectives for Martin NWR emphasize migratory bird maintenance. Principal species include black ducks, diving ducks, osprey, marsh and water birds. Public use is impractical and not compatible with wildlife maintenance on this island refuge and has been deleted as an objective. The following chart compares current output production with those of objective levels.

<u>Output</u>	<u>1978</u>	<u>Objective Level</u>
Osprey maintenance	15,210 ud	44,000 ud
Waterfowl maintenance	604,590 ud	1,300,000 ud
Other migratory bird maintenance	1,554,072 ud	2,400,000 ud

Future management at Martin NWR will be directed to increase outputs in the above categories. This will include continued protection, surveys and biological studies and construction funded through BLHP. Construction projects planned through BLHP include constructing potholes, nesting islands and low level dikes for impounding fresh water.

If Glen L. Martin NWR is going to continue in its present status as a manned station, a new refuge residence at Ewell will be needed to replace old Tyler house. Dredging of a navigation channel from Ewell to the boathouse area in interior of refuge is a necessity for patrolling and accessibility to work areas. Old channel is completely filled in and access now is only during high tide.

2. Funding

Over the past several years Martin NWR has been funded at what amounted to custodial level. After salary, there is simply nothing left. This station is a satellite of Blackwater NWR and has needed to draw heavily upon Blackwater's funds and manpower. Funding problems are further complicated by the fact that all work costs on this island refuge are 50% to 75% higher than those on the mainland.

BLHP and cyclic maintenance are the major hopes for accomplishing work projects delayed because of no funding.

Funding - Martin NWR

<u>Activity</u>	<u>FY 79</u>	<u>FY 78</u>	<u>FY 77</u>
MB	28,000	22,000	20,000
MNMB	1,000	1,000	1,000
IR	-	-	-
Total	29,000	23,000	21,000

Manpower over the past three fiscal years has been limited to one full-time maintenanceman. Funds have not been available for hiring any seasonal or part-time help. Whenever extra help was needed, Blackwater NWR personnel either assisted or the job remained undone. This pattern will continue unless funding is increased and additional help hired.

Since the death of Maintenance Worker Marshall, no decision has been made to continue earlier staffing status up to the time of this writing. A number of alternatives are being considered;

from permanent full-time Biological Technician position and Maintenance position to no staffing at all. Whatever action is taken funding and objectives will be affected and changes will have to be made.

II. CONSTRUCTION AND MAINTENANCE

A. Construction

None to report.

B. Maintenance

Routine maintenance was performed on boats, vehicles and refuge buildings by Maintenance Worker Marshall.

Osprey nest structures were checked and repaired in early spring before arrival of ospreys.

C. Wildfire

None to report.

III. HABITAT MANAGEMENT

A. Croplands

None to report.

B. Grasslands

None to report.

C. Wetlands

Martin NWR consists mostly of needlerush marsh with many small guts, creeks and coves. A small ridge known as Cherry Island supports a marsh and waterbird rookery. Baccharis, honeysuckle, poison ivy and some woody shrubs densely cover most of the ridge. The only larger trees found are black locusts, hackberry, red cedars and wild cherries. Several other small hammocks rise out of the needlerush and are covered mostly by baccharis and poison ivy. Marsh areas are flooded regularly with salt water tides. There are no man-made fresh water impoundments on the refuge and fresh water is very scarce in areas.

D. Forestlands

None to report.

E. Other Habitat

None to report.

F. Wilderness and Special Areas

None to report.

G. Easements for Waterfowl Management

None to report.

IV. WILDLIFE

A. Endangered and Threatened Species

None to report.

B. Migratory Birds

1. Waterfowl

Total waterfowl use days were up slightly with 604,590 as compared to 583,322 in 1977. Trend still remains downward from decline in diving ducks, principally redheads and canvasbacks using area. The large concentrations of these divers using the bay appeared to use the western side of the bay during the last three years rather than the eastern side.

On March 17, Maintenance Worker Marshall reported dead waterfowl washed up on the beaches at Martin NWR. Carcasses submitted for examination to the Animal Health Laboratory at Salisbury and to the U. S. Fish and Wildlife Disease Laboratory in Wisconsin were found to have avian cholera. Surveys by federal and state personnel found dead birds throughout the bay area although major concentrations were found in the southern portion. The major concentrations of waterfowl had already moved through the area northward. But it was estimated that up to 100,000 waterfowl may have died in this outbreak. Teams in Maryland and Virginia picked up 28,000 dead birds. Old squaw were the principal species affected but pied-billed grebes, horned grebes, buffleheads, golden eyes, white-wing scoters, surfscoters, lesser and greater scaup, Canada geese, whistling swan, canvasbacks and several species of gull were also affected. All dead birds found on refuge were disposed of by burning and burial.

Production of waterfowl was estimated at 40 with mallards, black ducks and gadwall using refuge for nesting. Black duck population peaked at 300 during August, up slightly from 250 in 1977. It is of interest to note that peak population in 1970 was 3,600 black ducks.

A flock of seven mute swan were observed in July on the refuge and stayed for several days. Later checks revealed that birds had apparently moved on. This was the first sighting of this imported species on Glen L. Martin NWR.

2. Marsh and Water Birds

In 1978, there were 555 young birds produced from the Cherry Island rookery, up from 1977 when a total of 385 were produced. A peak of 1,575 birds were recorded during the nesting season. Total use days were 178,325 as compared to 263,850 in 1977. Use days were down because of rapid dispersal of birds after nesting.

3. Shorebirds, Gulls, Terns, Allied Species

Total use days were 1,368,754 as compared to 1,689,393 in 1977. A peak population of 8,612 birds was reached in September. A gull rookery just outside the refuge on a channel dredging spoil site contributes large numbers of birds using the refuge.

4. Raptors

A peak of 105 ospreys was reached July 1, 1978 compared to 133 on the same date in 1977. Of 50 artificial platforms erected for osprey use on Glen L. Martin NWR 26 were actively used in 1978. Thirty-five young were produced and raised to flight stage from these platforms.

Barn owls and marsh hawks can be seen hunting refuge marshes.

5. Other Migratory Birds

Mourning doves, red-wing blackbirds, robins and marsh wrens are all common on the refuge.

C. Mammals and Non-Migratory Birds and Others

1. Game Mammals

None to report.

2. Other Mammals

The muskrat population was down slightly to 150 as compared to 200 in 1977. Mink population was estimated at 25. The mink population appears to keep the muskrat population in control in this needlerush marsh. River otters were found in the creeks, guts and adjacent bay with a peak population of 15.

3. Resident Birds

None to report.

4. Other Animal Life

The northern diamondback terrapin common in the saltwaters of the Chesapeake Bay can be found at Glen L. Martin NWR in the tidal guts and using the small islands for nesting. An estimated peak of 2,000 in August is substantially higher than the 500 reported in 1977.

V. INTERPRETATION AND RECREATION

A. Information and Interpretation

1. On Refuge

There were no visits reported for Martin NWR because of closure to public use.

There are no interpretive facilities on the refuge.

There were 37 public inquiries concerning this station.

2. Off Refuge

None to report.

B. Recreation

1. Wildlife Oriented

None to report.

2. Non-Wildlife Oriented

None to report.

C. Enforcement

No cases were made during 1978 on Glen L. Martin NWR.

Routine boundary posting and patrol activities were conducted throughout the year.

Because of the death of Maintenance Worker Marshall, the refuge has been left virtually unstaffed except for one temporary employee with no law enforcement authority. Problems may be expected in 1979 until staff replacement is made.

VI. OTHER ITEMS

A. Field Investigations

None to report.

B. Cooperative Programs

None to report.

C. Items of Interest

Glen L. Martin NWR Narrative Report written by Biological Technician William Giese. Biological Technician Guy Willey edited the report and all typing was completed by refuge Clerk Carole Henry.

D. Safety

Buildings and grounds were inspected monthly by Maintenance Worker Marshall and visiting Blackwater personnel.

A new 150 hp outboard was purchased to replace the old outboard on motor boat "Scooter" used in running 11 miles across Tangier Sound to Crisfield.

Ship-to-shore radio units were installed at refuge boathouse, residence and on motor boat "Scooter". This is an invaluable piece of equipment on this one-man station.

SUSQUEHANNA NATIONAL WILDLIFE REFUGE

Harford and Cecil Counties, Maryland

Administered from Blackwater National Wildlife Refuge
Cambridge, Maryland

I. GENERAL

Susquehanna National Wildlife Refuge was established by Presidential Proclamations 2347 (8/24/39), 2383 (1/24/41), 2529 (12/6/41) and Executive Order 9185 (6/23/42). These actions closed 13,363 acres of water in the upper part of the Chesapeake Bay to the hunting of migratory waterfowl and granted the Department fee title to the four acre Battery Island.

The problems with Susquehanna have been enumerated in the last several Narrative Reports. Summarized they include:

1. Lack of recent and poor potential for waterfowl use.
2. Only 2,900 of the 12,363 watery acres have been posted.
3. The potential tort claims associated with the docks and use of Battery Island.
4. FWS lack of funding to maintain the old building.

The final rule concerning the withdrawal of Presidential Proclamations No. 2383 and 2529 was published in the Federal Register, Volume 43, No. 117, June 16, 1978. A copy is on the following page.

The Annual Real Property Review, September 30, 1978, recommended that Battery Island and the building be declared excess. There has been no action on this recommendation. In the meantime another season of problem usage on Battery Island approaches.

FOR FURTHER INFORMATION CONTACT:

Donald G. Young, Division of National Wildlife Refuges, U.S. Fish and Wildlife Service, Washington, D.C. 20240, telephone 202-343-4307.

SUPPLEMENTARY INFORMATION: Donald G. Young is also the principal author of this document. On March 9, 1978, there was published (43 FR 9629) a notice of proposed rulemaking opening the Susquehanna Migratory Waterfowl Closed Area to the hunting of waterfowl.

The public was provided a 31-day comment period, and as a result, one favorable comment was received.

Approximately 13,363 acres of water in the Chesapeake Bay, including part of Susquehanna Flats, were closed to hunting by Presidential Proclamation No. 2383, January 24, 1940, and Presidential Proclamation No. 2529, December 6, 1941; the area was designated as the Susquehanna Migratory Waterfowl Closed Area. The proclamations specifically prohibited "pursuing, hunting, taking, capturing, killing, or attempting to take, capture, or kill migratory birds." At the time the area was closed, there was an abundance of wild celery and other waterfowl foods that attracted a large number of diving ducks. The closure was established to provide a resting and feeding sanctuary for the great concentrations of waterfowl, particularly the canvas-back duck, that occurred there during the waterfowl hunting season.

In the last 37 years, significant ecological changes have taken place in this area. The extent of aquatic vegetation declined through the 1960's and early 1970's, and the remaining vegetation was drastically reduced by Hurricane Agnes in 1972. Bottom substrates of Susquehanna Flats also were changed by siltation and wave action. Consequently, the waterfowl food supply has declined to the point where few waterfowl are attracted to the area.

Since the waterfowl food source has deteriorated and the waterfowl use has declined on Susquehanna Flats, the protection afforded by closure proclamation is no longer necessary. Annual hunting regulations will provide adequate protection for migratory bird management purposes.

Within the Susquehanna Migratory Waterfowl Closed Area in Battery Island (Shad Battery—Edmondson's Island) which was designated as the Susquehanna National Wildlife Refuge by Executive Order 9185 on June 23, 1942. This regulation, which would open areas adjacent to the refuge to hunting, does not apply to the Susquehanna National Wildlife Refuge.

Accordingly, Presidential Proclamation No. 2383, January 24, 1940, and Proclamation No. 2529, December 6, 1941, are rescinded and 50 CFR 32.4 is amended by deleting the above proclamations.

Dated: June 9, 1978.

LYNN A. GREENWALT,
Director, U.S. Fish
and Wildlife Service.

(FR Doc. 78-10764 Filed 6-15-78; 8:45 am)

FEDERAL REGISTER, VOL. 43, NO. 117-

-FRIDAY, JUNE 16, 1978

[4310-55]

Title 50—Wildlife and Fisheries

CHAPTER I—UNITED STATES FISH
AND WILDLIFE SERVICE, DEPART-
MENT OF THE INTERIOR

PART 32—HUNTING

Susquehanna National Wildlife
Refuge, Md.

AGENCY: Fish and Wildlife Service,
Interior.

ACTION: Final rule.

SUMMARY: This rulemaking opens the Susquehanna Migratory Waterfowl Closed Area, in the upper Chesapeake Bay, to the hunting of migratory waterfowl in accordance with annual hunting regulations. The Director has determined that the waterfowl food source has deteriorated to the extent that the attendant waterfowl use, particularly diving ducks, has declined so that a closure is no longer necessary. The effect of this rulemaking would be to rescind the regulations closing the area to hunting that were promulgated by Presidential Proclamations No. 2383 and 2529.

DATE: Effective September 1, 1978.