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GREAT SWAMP NATIONAL WILDLIFE REFUGE

Basking Ridge, New Jersey

ANNUAL NARRATIVE REPORT

Calender Year 1978

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ANNUAL NARRATIVE REPORT  
Calendar Year 1978

NATIONAL WILDLIFE REFUGE SYSTEM  
Fish and Wildlife Service  
U.S. Department of the Interior

Personnel

John L. Fillio	Refuge Manager, GS-12 (PFT) 7/17/77
Theodore W. Gutzke	Refuge Manager, GS-7 (PFT) 7/17/77
Harold P. Laskowski	Refuge Manager, GS-7 (PFT) EOD 8/27/78
Carol J. Ramatowski	Public Use Specialist, GS-5 (PFT) 12/18/77-6/03/78
Louis S. Hinds III	Maintenance Worker, WG-7 (PFT) 6/18/72
James C. Byrne	Maintenance Worker, WG-7 (PFT) 10/09/77- 1/30/78
Phillip N. Myers	Maintenance Worker, WG-7 (PFT) EOD 1/29/78
Rosemary Klimas	Clerk-Typist, GS-4 (PPT) 10/27/74
Claire V. Dabel	Biological Technician, GS-5 EOD 7/02/78 (Temporary)
Marianne M. Adams	Clerk-Typist, GS-3 (Temporary) 9/25/77- 2/03/78
Joanne F. Laskowski	Clerk-Typist, GS-3 (Temporary) EOD 11/19/78

Review and Approvals

John L. Fillio Refuge Manager  
Submitted by

March 31, 1980  
Date

William A. Hutchinson  
Area Office

4-7-80  
Date

Refuge

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We are dedicating this annual narrative to Maintenance Worker James "Chris" Byrne (foreground) whose untimely death is a loss felt by the entire refuge staff. He will be sorely missed.



## I. GENERAL

### A. Introduction

Great Swamp National Wildlife Refuge is located 26 air-miles southwest of Times Square in New York City and more than 15 million people live within 50 miles of the refuge. To the north and west, the refuge is relatively insulated from the coastal megalopolis by scattered estates and restrictive zoning ordinances. Suburbia is rapidly closing in on the refuge boundaries to the south and east. New subdivisions seem to spring up on a regular basis.

The management problems unique to Great Swamp NWR are generally the result of the huge human population surrounding it. The majority of the 15 million people around the refuge are poorly informed in terms of wildlife and wildlife management. Lack of information, misinterpretation of available information and emotional response to management practices, particularly hunting, has led, and will continue to lead, to numerous problems.



View of marsh habitat with dense growth of arum, an excellent duck cover.

The urban nature of the general area has caused staffing problems. Few refuge managers are willing to move to what they believe may be New Jersey's version of Central Park. The cost of living in the area is another detriment to recruiting. The average income in surrounding communities is \$55,000 a year. As a result government quarters rental rates are among the highest in the system. Other costs are proportionally high.

The refuge itself is in a beautiful location, somewhat protected from the surrounding urban sprawl. The management programs are varied and interesting. Many of the problems being faced by Great Swamp NWR and neighboring refuges are the same refuges in less densely populated areas will be faced with in the future.



Much of the refuge includes timbered swamp.

#### B. Climatic & Habitat Conditions

A summary of temperature extremes, overall precipitation and snowfall is presented on the following page.

Month	Temp.		1976 Precip.	(Inches) Normal	1976 Snowfall	(Inches) Normal
	Max.	Min.				
Jan.	58	-12	5.1	3.6	2.5	7.1
Feb.	42	-18		2.9	2.9	8.1
March	66	- 8	2.9	4.3	.8	4.3
April	74	18	.8	4.0		1.0
May	88	18	6.6	4.1		
June	Data Missing					
July	92	36	3.6	4.5		
Aug.	90	45	11.3	5.2		
Sept.	83	25	3.7	4.3		
Oct.	78	16	1.9	3.4		
Nov.	72	16	2.2	4.1	2.5	1.2
Dec.	64	4	6.9	3.6		5.2
Annual Totals	92	-18	44.9	48.38	16.5	26.90

A crippling ice storm hit the refuge on January 14th resulting in downed powerlines and trees. Electricity was lost for three days bringing the refuge to a standstill.

Weather during the month of March was erratic. Temperatures ranged from 6 to 60 degrees. March brought 8.8 inches of snow, sunny warm days and heavy rains with flooding on Pleasant Plains Road. Sunday, March 26th, we had almost 2.5 inches of rain which resulted in heavy flooding.

Weather conditions were varied in July with the temperatures ranging from a high of 92°F to a low of 36°F. Three days rainfall measured over 1 inch with total rainfall of 3.56 inches for the month.

August was a wet month with 8.85 inches of rain between the 4th and the 8th. This heavy rainfall resulted in extensive flooding of Pleasant Plains Road and refuge management roads. Total rainfall for the month was 11.3 inches while temperatures varied from a low of 45°F to a high of 90°F.



A crippling ice storm in January caused numerous headaches but also demonstrated nature's beauty.



The refuge experienced the first snow of the season in November. Over a two-day period, 2.5 inches of snow fell. Rainfall for the month totalled 2.2 inches.

During December, daytime temperatures had been above average (43.3°F). Night-time temperatures dipped below freezing every night in December with the average temperature being 17.4°F.

Precipitation was above average, 6.93 inches in December. Rainfall of 3.1 inches in one 24-hour period resulted in flooding conditions on the refuge.

#### C. Land Acquisition

The Black Brook Addition is still the main focus of the Great Swamp acquisition program. This year 349.5 acres were acquired under this program.

The "Great Swamp Municipal Wildlife Committee" which was established in 1976 held three meetings this year. The area of concern varied at each meeting but mainly included the Black Brook acquisition.

Refuge Manager Fillio traveled to the Regional Office in October to attend the Regional Land Acquisition Review Committee meeting concerning acquisition of land at Great Swamp.

Regional Office personnel Janes and Miller visited the refuge during November to conduct biological inspections at several parcels of land proposed for acquisition.

#### D. System Status

##### 1. Objectives

The Great Swamp objectives were set early with considerable attention to detail. The following objectives serve as guidelines for the management and development of the refuge. The wildlife, educational and recreational management goals are based on the biological and physical potential of the refuge. In order of priority the objectives are as follows:

- a. Preserve the uniqueness and beauty of the Great Swamp National Wildlife Refuge Wilderness Area in accordance with the provisions of the Wilderness Act of 1964.
- b. Provide broad, high quality environmental education and recreation programs.

- c. Encourage scientific study and research by colleges, universities and qualified organizations and individuals.
- d. Provide migration habitat for waterfowl, particularly dabbling ducks.
- e. Provide nesting habitat for waterfowl, particularly dabbling ducks.
- f. Provide habitat for optimum numbers and variety of other migratory birds and wildlife consistent with other objectives.

<u>Categories</u>	<u>1978 Output Level</u>	<u>Objective Level</u>	<u>%</u>
Interpretation	116,685	1,780,200	7
E.E.	1,394	225,000	6
Rec.-Wildlife, Comptive	5,070	12,000	42
Rec.-Wildlife, Non-comptive	98,894	666,600	15
F & W Information	5,234	200,000	3
Studies & Publications	13	12	108
Cooperative Programs	3	14	21
Environments Preserved	5,800	7,000	83
Wildlife Maintenance	1,416,943	5,728,000	25
Wildlife Production	4,310	10,450	41
<u>Totals</u>	<u>1,654,346</u>	<u>8,629,276</u>	<u>20</u>

## 2. Funding

### Fiscal Year 1978

1210 - \$121,000  
 1220 - 21,000  
 1240 - 80,000  
Total - \$222,000

A.

## II. CONSTRUCTION & MAINTENANCE

### A. Construction

- During the early portion of 1978 work on the EIA for Pools 2, 3A and 3B was completed.
- In June application was made for a 404 permit from the Army Corps of Engineers for construction of Pools 2, 3A and 3B.
- Mr. Victor Carbone from the Interagency Archeological Services visited the refuge to review all construction sites with the refuge manager.
- Members of Ecological Services visited the refuge to inspect the Pool 2 site for bridge construction over Primrose Brook.
- The dike construction on Pool 2 has neared completion with only water control structures needing to be constructed.



Construction of the Pool 2 dike road.

#### B. Maintenance

- The maintenance staff kept busy keeping up with routine maintenance on buildings, structures and vehicles.
- A contractor was hired to do some temporary repairs on Pleasant Plains Road and the WOC parking lot.
- Work was begun on rehabilitating the WOC boardwalk (removing the old and replacing the old boardwalk with a new 6' wide walk).



Construction of a new 6' wide boardwalk with all OSHA standards.

- B. - The boardwalk trail to the metal blind was closed while repairs were undertaken. The sportsman's blind trail will remain operative until the WOC boardwalk is completed.
- Other maintenance that was carried out on refuge by YACC and YCC enrollees (other than the boardwalk) included building and repairing bluebird and woodduck boxes, renovating Quarters 7, removing excess goose nesting cones, painting the gas shed and blinds, fencing HQ's and refuge housing and preparing fields for planting.

C. Wildfire

No wildfires occurred on the refuge during 1978. (With the already poor air quality levels in New Jersey and the close proximity of homes and property to refuge boundaries, the Regional Office has directed the refuge to control all fires as quickly as possible including those in the Wilderness Area.)

III. HABITAT MANAGEMENT

A. Croplands

Mr. J. Calvin continued to farm 37 acres of refuge grasslands for the removal of horse hay. Under the S.U.P., Mr. Calvin rehabilitated the acreage, planted timothy and birds-foot trefoil and will be allowed to remove hay until 1980 during the months of June and September. The refuge, in return, received 250 bales of hay for dike mulch, mowing services for 13 acres of grassland along with increased green browse and better aesthetics in the vicinity of refuge headquarters.

B. Grasslands

A total of 148 acres of grassland was mowed by refuge staff, YACC, YCC (hand work), and the haying permittee. The amount mowed was short of the 161 acres proposed, but the ratio of work completed was up; only 38.7% of the fields were mowed in 1977 compared to 91.9% in 1978. Reasons for the improved efficiency are new and better equipment and availability of personnel.

C. Wetlands

The preliminary work on the dike around Pool 2 was completed this year, except for construction of water control devices.

A final draft of the EA for Pools 2, 3A and 3B was submitted and a negative declaration was pronounced for continued construction of control devices and dikes.

Purple loosestrife which has been spreading in wet areas throughout the refuge was the focus of a major YCC project this year. Concentrations of this pest were located around Pools 1 and 2 and in the Wilderness Area. An army of YCC enrollees attacked the plant pest using a very primitive but effective hand pulling technique.

D. Forestlands

For the third year in a row there was a major outbreak of oak-leaf skeletonizer (pin oak sawfly larvae) which affected the majority of pin oak on the refuge as well as a few other "red" oak species.

A small incidence of gypsy moth damage was reported but no major outbreak was realized.

E. Other Habitat

Not Applicable.

F. Wilderness and Special Areas

In keeping with the Wilderness Act no major work was undertaken in the Wilderness. Trails were maintained and one foot-bridge was replaced. Visitation was increased and probably will continue to increase in the next couple of years. Some parking problems were realized with this increase in visitors.

G. Easements for Waterfowl Management

Not Applicable.

IV. WILDLIFE

A. Endangered and/or Threatened Species

Several ospreys were frequently seen during April and May and again in September. Total use-days have been increasing for this species, especially with the near completion of Pool 2, from 25 in 1972, 57 in 1977, to 106 in 1978. The arrival and departure of this bird coincides with the emergence and disappearance of marsh vegetation which limits the open water area.

A goshawk (N.J. endangered species) was reported on February 5 and 11 on the refuge by visitors.

The refuge still supports a stable population of bog turtles and research on these reptiles is still being carried out. Blue-spotted salamanders, another N.J. endangered species, has been seen on many occasions by researchers and refuge staff. The population found within the refuge boundary is the sole representative of this species in New Jersey.

## B. Migratory Birds

### 1. Waterfowl

#### aa. Geese

A peak population of 500 Canadas was recorded in October. Total use-days were up from 1966 (124,943), and just 300 birds short of 1976 (155,485), to 155,125 in 1978. The breeding population was estimated at 90 pair with 200 goslings being produced.

During the moult the majority of refuge geese moved to several neighboring areas. The YCC assisted the refuge staff in conducting refuge drives along with subsequent drives at Somerset County Environmental Education Center and the AT & T complex in Basking Ridge. Geese captured and banded with standard USFWS bands totalled 108 with 44 of the geese being recaptures from previous years.



Our annual goose drive provided YCC enrollees their first "hands on" work with wildlife.

b. Coot

Coot were present during 10 months of the year. A total of 10,594 use-days were realized with an increase from 6,225 use-days last year. The highest monthly population total for this year was in November at 150 birds. Pool 1 seems to be preferred habitat for coot on the Great Swamp NWR.



Although American coot are frequently found on the refuge, no confirmed nesting has yet to be reported.

c. Ducks

Total duck use-days dropped slightly from 1,418,922 in 1977 (which was down from 1976 - 1,475,606) to 1,308,160 in 1978. Seventeen species were recorded including lesser scaup, bufflehead, northern shoveler, ring necked duck and whistling swan during fall migration. Population peaks occurred during October (9,600) and November (7,618).

Ground nesting species continue to receive very high predation losses due to a very large raccoon population and two active fox dens. However, most woodduck boxes suffer little due to adequate predator guard protection.

The following table gives all information and data collected on our woodduck population:

1978 WOOD DUCK NESTING DATA

CPT	# BOXES	CPT AVAL	CPT USED	% CPT USED	EGGS LAID	EGGS HATCH	EGGS FET	DEAD DUCKLINGS	DUCKLINGS PRODUCED	% EGGS HATCH	% HATCH LEAVE BOX
1	173	173	159	92.0	2359	399	1960	21	378	16.9	16.0
2	250	500	420	84.0	5966	1012	4954	61	951	17.0	15.9
3	24	96	68	70.8	888	104	784	8	96	11.7	10.8
4	1	8	3	37.5	19	0	19	0	0	0.0	0.0
TOTAL	448	777	650	83.7	9232	1515	7717	90	1425	16.4	15.4



Wood duck, the most common waterfowl species found during the summer.

## 2. Marsh and Water Birds

Eleven species of water and marsh birds were seen or reported during the year of 1978. Several birds that are worth mentioning due to rareness or at extremes of their ranges are: little blue heron, pied-billed grebe and the big find of the year, a yellow rail.

Great blue heron, green heron and common gullinule were present throughout the spring and summer months. Several broods of gullinule were observed in the vicinity of Pool 1. Green heron were very plentiful with daily sightings common. American bittern and least bittern were present as were sora and Virginia rail which were more commonly heard than seen.

## 3. Shorebirds, Gulls, Terns and Allied Species

Eight species of shorebirds were recorded during 1978. American woodcock and killdeer breed on the refuge and several family groups of both were observed. Regular spring sightings of greater yellowlegs and solitary sandpipers were noted. Herring and ring-billed gulls were also observed during the year.

## 4. Raptors

Red-tailed hawks, red-shouldered hawks and American kestrels nest on-refuge and are commonly observed nesting and hunting throughout the Management Area. Turkey vultures are common visitors/users of our "bone yard" dead deer pile and were present throughout the year.



Turkey vultures congregate near the bone yard.

Sighting of Cooper's Hawk, goshawk and osprey were discussed in section IV, A.. Sharp-shinned hawks and marsh hawks were seen throughout the year. Broad-winged hawks and rough-legged hawks were sighted during the fall migration.

1978 was a good year for owl observations on the Great Swamp National Wildlife Refuge. Six species were reported and all were seen on several different occasions. The list of species is as follows: screech, great horned, barn, barred, long-eared and short-eared owls.



Red-tailed hawk, one of the many rehabilitated raptors released on the refuge.

Len Soucy, the founder of the New Jersey Raptor Society, has through a Special Use Permit been releasing rehabilitated hawks and owls on the refuge.

##### 5. Other Migratory Birds

Loggerhead shrikes are becoming a common fall and winter visitor to the swamp. Sightings in 1976 and 1977 were individual birds, however, during 1978 six birds were seen.

Management for the eastern bluebird paid off with excellent results. A total of 10 nesting pair were found on the refuge producing over 50 young, of that amount 27 were banded.

The bluebird population in New Jersey has been declining for many years to the point that the state is reviewing the species to determine if it should be placed on the state endangered list. A survey of the entire state could come up with only 40 nesting pair, ten of which reside at Great Swamp and 4 others that nest at the Somerset County Environmental Center which borders the refuge. Consequently, the refuge has the largest known bluebird population in New Jersey. This has produced numerous visits to the refuge by birdwatchers and the general public to view this songbird. A positive reaction has developed from this along with coverage from the local press. This has helped to take away some of our "bad guy" image brought on by the annual deer hunt. The public is beginning to realize we manage for more than just game species.



One of the many successful bluebird clutches raised on the refuge.

C. Mammals and Non-migratory Birds and Others

1. Game Mammals

The refuge trapping program was curtailed during 1978, until a revised Fur Management Plan was completed and an environmental assessment conducted. Muskrat populations, needless to say, have increased to a point where the rodents are causing damage to impoundment dikes, especially the dike between Pools 1 and 2. A more intensified trapping program will have to be instituted in the future to bring the muskrat population under control.



Pink flagged stakes pinpoint muskrat damage to the Pool 1 dike road, and this is only a 150' section!

One red fox family group was observed this year. The group consisted of the vixen and 3 kits. With the fox population showing signs of increasing, more and more cases of sarcoptic mange are also increasing. No large outbreaks of mange have been seen in the area since 1973.

Beaver populations on the refuge are restricted to the Wilderness Area. During our deer survey in the later part of 1978, two beaver lodges were seen from the air. Raccoons, as can be expected, are holding their own with a population estimate of 1 raccoon per 7 acres. The predation on ground nesting birds by raccoons is still a major controlling factor in waterfowl production.

The refuge deer herd is improving in health due to the hunting program. Numbers of deer have probably suffered little from hunting pressures.

2. Other Mammals

Otters were seen on several different occasions in the Wilderness Area. It seems that this state endangered species in on-refuge to stay, since the otter has been reported for the past three years. Mink and weasel were observed in several locations and are probably more numerous than previously thought. A flying squirrel was seen along Pleasant Plains Road during October by a member of the refuge staff. Gray squirrels and rabbits are extremely common and the rabbits, in particular, play havoc on refuge gardens.

3. Resident Birds

Bobwhite quail sightings were low; but no forecast to their decline can be made since population estimates are lacking. Ruff grouse populations remain constant, but low, with several sightings by staff and visitors occurring regularly. The Audubon Christmas Bird Count which is carried out annually on the refuge and surrounding area during December compiled a total of approximately 80 species; 47 of which were found on the refuge.

4. Other Animal Life

Studies on the bog turtle and blue-spotted salamander which are state endangered species continue.

V. INTERPRETATION & RECREATION

The Great Swamp National Wildlife Refuge is easily accessible to over 15 million people within a 50-mile radius. Because of this, public use is usually heavy over most of the year. In 1978, visits totalled 405,364 as compared to 281,349 in 1976.

A. Information and Interpretation

1. On-Refuge

Public inquiries (phone calls, letters, visits) concerning the refuge regulations, trails, areas for observing wildlife, general wildlife information, etc., totalled 4,939 in 1978. Many of these inquiries involved visits to the refuge headquarters.

A total of 57 programs were presented to 1,768 students, youth groups and adults. These programs consisted of general orientation, slide talks, lectures, and films. Self-guided tours of the Wildlife Observation Center, interpretive area and Wilderness Area, were scheduled through the refuge clerk. This included the issuing of bus permits for use of the parking areas. During 1978, 143 groups registered with the refuge headquarters and total number of individuals involved was 4,204.

The refuge interpretive facility, known as the Wildlife Observation Center (WOC) is located off Long Hill Road at the eastern end of the Management Area. It includes over a mile of boardwalk trails, two observation blinds, an interpretive exhibit center and restroom facilities. Feeding stations are maintained in front of the blinds to attract a variety of wildlife. The use of this facility is estimated at 200,000 for 1978. A trail counter located in the WOC parking area provided data for our own use estimates.

Forty-six Wildlife Refuge Special Use Permits were issued for entry into portions of the refuge not open to the general public. The majority of these visits were for refuge management studies, birding and photography. Permits were issued to the Summit Nature Club for their monthly bird counts and the annual Christmas Bird Count.

Some of the areas that permits were issued for included trapping snapping turtles and tagging monarch butterflies.

The Morris County Outdoor Education Center has a Special Use Permit for use of part of the refuge trail system located at the southeastern edge of the refuge and Rutgers University, Zoology Department, has a Special Use Permit to conduct studies in parts of the Wilderness Area.

## 2. Off-Refuge

Refuge staff made appearances at high schools to supply information on employment opportunities in the Fish & Wildlife Service during Career Day activities.

Personnel from the refuge participated in two National Hunting & Fishing Day programs during September of 1978.

Approximately 2,000 people made inquiries at the displays and questions ranged from those concerning endangered species to employment with the Fish & Wildlife Service.

On consecutive Sundays, November 12 and 19, a hunter orientation program was presented to 400 perspective Great Swamp NWR deer hunters at the N.J. Division of Fish, Game and Shellfisheries station in Clinton by refuge and state personnel. Information and regulations were explained and all new hunters were required to prove their proficiency with their shotguns and receive certification.

## B. Recreation

### 1. Wildlife Oriented

The 3,660-acre Wilderness Area offers the visitor 16 miles of primitive marsh and woodland trails. Four "primitive" (parking lots) access points provide entrance to wilderness trails. The wilderness receives heavy use during the spring and fall. Numbers of individuals using the Wilderness Area during summer months was down due to the extreme numbers of mosquitoes. Crowds of people are kept to a minimum in the Wilderness Area by limited parking facilities at the access points.

No official auto tour route exists on refuge, but visitors drive along Pleasant Plains Road to observe wildlife. Since traffic counters are in disrepair, no accurate totals of vehicular use are to be had.

### Hunting

A six-day, either sex deer hunt, was conducted December 5 through 9 and December 14. The State of New Jersey issued 379 permits for this special hunt. A maximum of 150 hunters were permitted to hunt each day. After opening day, however, stand-by hunters got an opportunity to return a number of times. Mandatory orientation sessions were held on the two Sundays prior to the hunt at which time hunters were required to pattern their shotguns and be certified using buckshot. A total of 350 hunters made 785 visits to the refuge spending 5,402 hunter hours over the six-day period. One hundred deer were harvested; quite a few animals below the wanted take of 125 deer.



The biggest buck of the 1978 hunting program was taken on the final day. This 2½ year old, 8 point dressed out at 155 lbs.

The special hunt was a safe and efficient program. For the last five years in a row no injuries resulted and no serious conflicts developed.

The Great Swamp Deer Hunt has been a highly controversial issue since 1970. The hunt was delayed for four years (1970 through 1973) through legal action and publicity campaigns by various anti-hunting groups. Preparation for the hunt took a considerable number of man-hours from late September through early December, due to its being the center of attention and a sensitive issue.

A Special Use Permit was again issued to the Humane Society and D.E.E.R., Inc. to observe the operation of the hunter check station. Two observers, identified by orange armbands, were allowed to enter the refuge and observe the check station at any time.

Three personnel from other refuges in Region 5 were present to assist in the hunt program. Also present from the service were four special agents who spent considerable time patrolling the refuge during the hunt.

The State of New Jersey Division of Fish, Game and Shellfisheries also cooperates by assigning two biologists to assist our staff on the opening day of the hunt. Favorable press resulted from the hunt this year, however, preservationist groups maintained their fair share of publicity. Many newspapers repeatedly barraged refuge staff for commentary. TV crews from all the major networks and N.J. Public Television were on hand to film and tape the activities.

#### Trapping

No trapping was conducted on the refuge this year (see section IV., C.).

#### 2. Non-Wildlife Oriented

The Wilderness Area received a moderate amount of non-wildlife oriented recreational use during the year. This included berry, nut and apple picking at old home sites during late summer and fall; along with ice skating and cross country skiing during the winter months.

#### C. Enforcement

Traffic violations were quite frequent again this year as in the past, with illegal parking being the most common offense.

Five trespass offenses occurred, with no major incidents occurring.

### VI. OTHER ITEMS

#### A. Field Investigations

1. RMS-GS-9 "A Study of White-tailed Deer in the Great Swamp National Wildlife Refuge" - continuing.
2. RMS-GS-10 "A Study of Gypsy Moths in N.J." conducted by P. Mina of N.J. Dept. of Agriculture - continuing.
3. RMS-GS-17 "Lepidoptera - Presence, Habitat and Range of Butterflies" conducted by M. Monica - continuing.
4. RMS-GS-18 "A Study of the Ecology of the Snapping Turtle (*Chelydra serpentina*)" conducted by D. Wilhoff (Ph.D.) of Rutgers University - continuing.

5. RMS-GS-19 "A Study of Wood duck Productivity" - continuing.
6. RMS-GS-23 "A Study of the Eastern Bluebird" conducted by C. Buser - completed.
7. RMS-GS-24 "Study of Carrion Beetles" conducted by G. S. Bukowski of Montclair College - continuing.
8. RMS-GS-25 "A Study of the Gray Treefrog" conducted by D. DeVito of Rutgers University - completed.
9. RMS-GS-26 "A Study of Backswimmers of the Great Swamp NWR" conducted by T. P. Shubeck of University of Connecticut - continuing.
10. RMS-GS-27 "A Study of Shagbark Hickory" conducted by H. Price - continuing.

#### B. Cooperative Programs

Three students, all from William Paterson College, participated in the work/study program. The students provided the resource with excellent and valuable assistance.

A cooperative agreement between the refuge and the N.J. Conservation Foundation resulted in the appointment of Lisa Stern who replaced Joanne Smith under the Morris County CETA program. Lisa worked for us 60% of the time.

A Special Use Permit was again issued to Morris County Mosquito Extermination Commission to continue chemical control operation along the refuge (including) boundaries.

#### C. Items of Interest

##### Personnel Changes

After working on various temporary appointments, Hal Laskowski came on board August 27 as a permanent Manager Trainee.

Public Use Specialist, Carol Ramatowski, resigned her position on June 3 to pursue a career in medicine.

The entire refuge was saddened at the untimely death of Maintenance Worker Chris Byrne.

Phil Myers was employed at Great Swamp as a Maintenance Worker on January 29. Phil was formerly employed by the N.J. Division of Fish, Game and Shellfisheries.

The GS-3 Clerk-Typist position at Great Swamp has been vacant for over a year. Marianne Adams and Joanne Laskowski were hired on temporary appointments to help out with the backload of typing. Their help was especially welcomed during the annual deer hunt.

Claire Dabel filled the temporary Biological Technician position this year. Claire not only worked on the Water Quality Study but also handled our public use program, since the Public Use Specialist resigned in June.

D.  
D. Safety

As in the past, refuge personnel assisted YACC and YCC group leaders and camp directors in their safety programs. All enrollees and leaders were given an eight hour Multimedia First Aid Course which ended with a demonstration of what they had learned.



This poor mock accident victim had stopped breathing because of a blocked airway, had multiple lacerations of the extremities and to round it off had a broken arm and leg.

In an effort to promote fire safety and prevention at work and in the home a four-hour course was given to enrollees on the three major elements required for a fire, the different classes of fires and the proper and safe use of a variety of fire extinguishers. A small fuel oil fire in a mortar tub provided enough heat to be a good example.



Enrollees and leaders both walked away with a renewed respect for fire.

Other safety topics covered at our meetings were:

1. Heavy equipment - how to work with and around it.
2. Safe power tool operation
3. Use of power mowers
4. Weather and how to dress for it
5. Use of protective clothing and equipment
6. Proper radio use and purpose of tailgate safety talks
7. Driving methods to be employed during flood conditions
8. Deer hunt and possible safety problems
9. Deer trapping and methods used in animal handling

Also, movies covering driving techniques, hearing protection, "Attitudes and Emotions Towards Safety" and "Accidents Made Easy" were shown to YACC and refuge personnel.

#### Accidents

Unfortunately this year an accident occurred which cost the life of a refuge employee, James "Chris" Byrne. Chris will long be remembered for his congenial and cooperative nature.

There were four other accidents during the past year:

1. A refuge employee was poked in the eye by a piece of phragmites.
2. A YCC staff member hurt her back during an "action socialization experience".
3. The local Culligan man ran into one of the county bridges on the refuge. This resulted in the refuge being given a bridge by the county.
4. A minor fender bender was incurred by one of the refuge staff during a bad ice storm.

### Credits

This narrative was written by Assistant Manager Donald J. Schwab aided by Maintenance Worker Louis S. Hinds who wrote the Safety Section and Administrative Clerk Rosemary Klimas who handled Personnel Changes and Credits. It was reviewed and edited by Refuge Manager John L. Fillio, typed by Clerk-Typist Martha Clark and proof-read by Rosemary Klimas.