

BACK BAY
FISHERMAN ISLAND
PLUM TREE ISLAND
NATIONAL WILDLIFE REFUGES

Virginia Beach, Virginia

ANNUAL NARRATIVE REPORT

Calendar Year 1980

NATIONAL WILDLIFE REFUGE SYSTEM

Fish and Wildlife Service

U.S. DEPARTMENT OF THE INTERIOR

BACK BAY NATIONAL WILDLIFE REFUGE

Virginia Beach, Virginia

ANNUAL NARRATIVE REPORT

Calendar Year 1980

NATIONAL WILDLIFE REFUGE SYSTEM

Back Bay NWR Complex

Fish and Wildlife Service

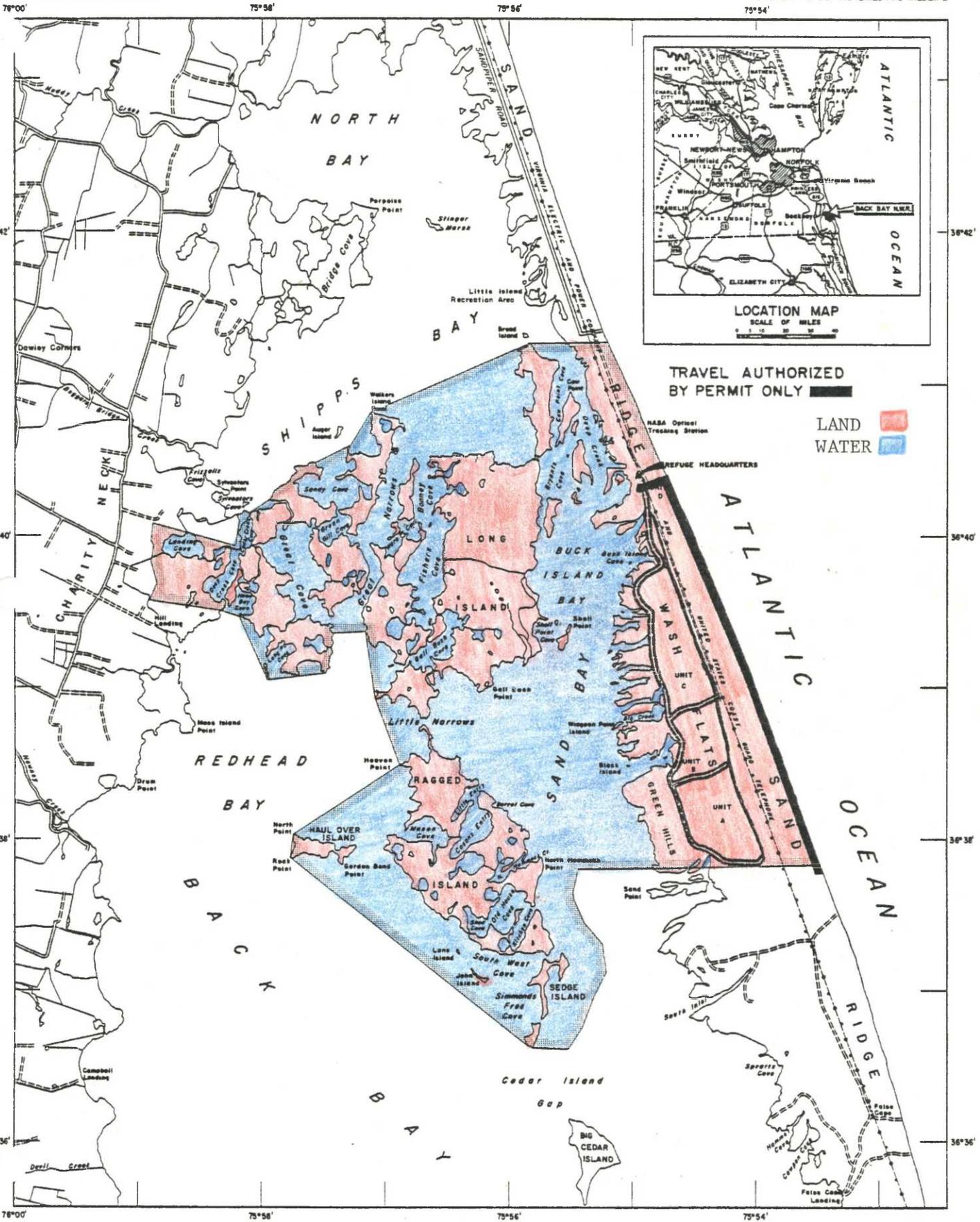
U.S. DEPARTMENT OF THE INTERIOR

BACK BAY NATIONAL WILDLIFE REFUGE

CITY OF VIRGINIA BEACH, VIRGINIA

UNITED STATES
DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE



TRAVEL AUTHORIZED
BY PERMIT ONLY

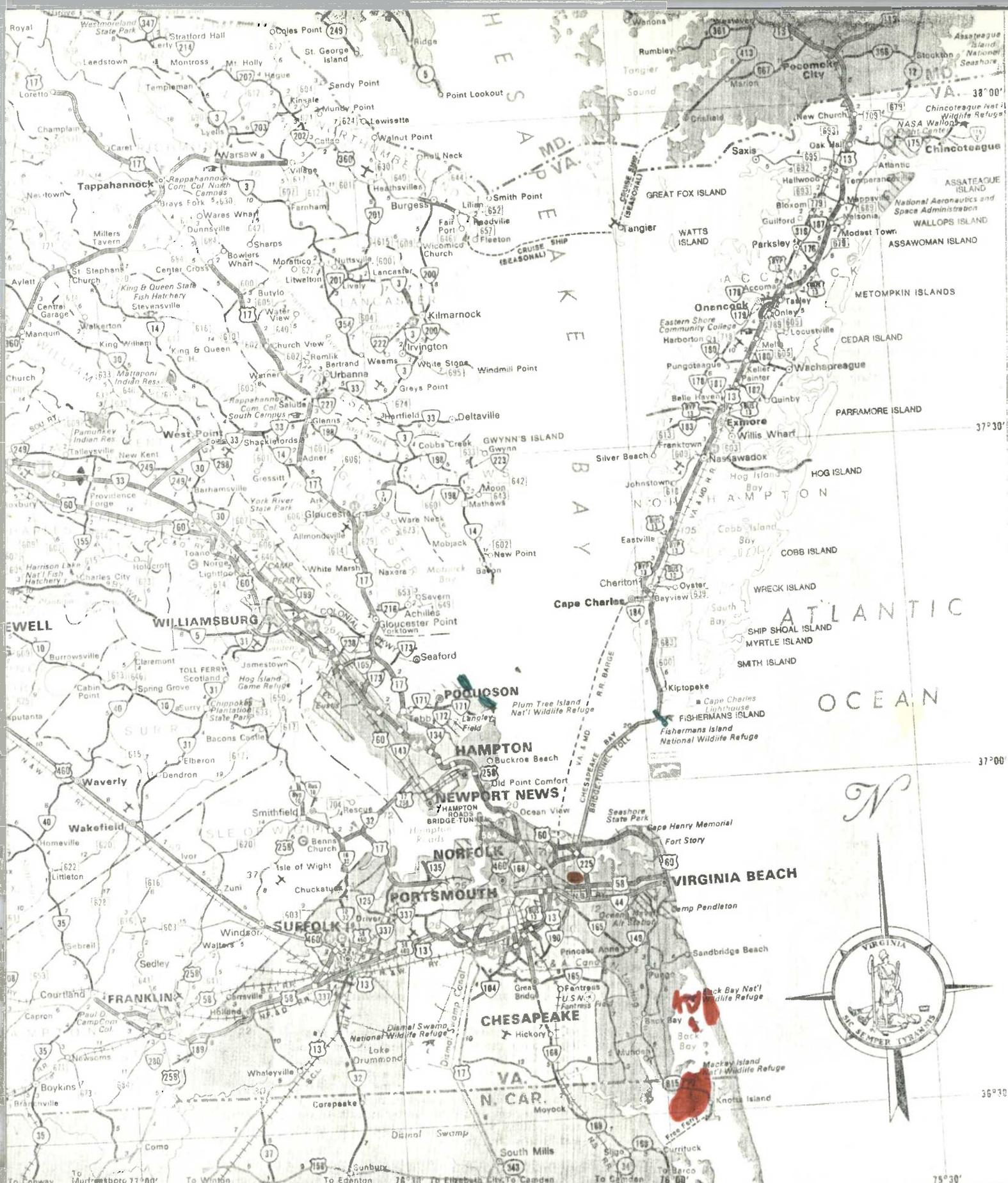
LAND 
WATER 

COMPILED IN THE BRANCH OF REALTY
FROM SURVEYS BY U.S.G.S.

BOSTON, MASS. FEB. 1973



MEAN DECLINATION
1984



- Office Location - Back Bay Complex
- Manned Stations
- Unmanned Stations

PERSONNEL

1.	Glen W. Bond, Jr.	Refuge Manager EOD 09/17/77	GS-12	PFT
2.	Douglas L. Parr	Assistant Refuge Manager EOD 02/10/80	GS-9	PFT
3.	Richard D. Poetter	Assistant Refuge Manager EOD 01/27/80	GS-5	PFT
4.	Paul R. Schmidt	Outdoor Recreation Planner EOD 08/14/78	GS-7	PFT
5.	Edna M. Ford	Administrative Clerk EOD 01/18/65	GS-6	PFT
6.	Ernest Maddron	Maintenance Worker EOD 02/26/73	WG-8	PFT
7.	Andrew Orsargos	Maintenance Worker EOD 03/27/77	WG-7	50-week Seasonal
8.	George A. Batie	Lead Guard EOD 06/09/74	GS-5	PFT
9.	William S. Farrer	Guard EOD 07/04/76	GS-4	PPT
10.	Lester W. Walizer	Guard EOD 05/09/76	GS-4	PPT
11.	Aubrey E. Snow	Guard	GS-4	700 - hour
12.	Joseph C. Vitale	Guard	GS-4	700 - hour
13.	Teresa M. Cherry	Clerk-Typist EOD 03/23/78	GS-1	700 - hour

2. Douglas L. Parr - Transferred from Great Dismal Swamp NWR, Suffolk, VA.
3. Richard D. Poetter - Transferred from Turnbull NWR, Cheney, WA.
4. Paul R. Schmidt - Transferred to Blackwater NWR, Cambridge Md. on 11/13/80.
7. Andrew Orsargos - Converted from 1 year direct hire to 50-week seasonal on 07/13/80.



1

3

5

13

2



6

7



8

Review and Approvals

Glen Bond Jr. Apr. 7, 1981
Submitted by Date

Paul Dwyer 4/22/81
Area Office Date

Back Bay NWRC
Refuge

Howard D. Woon 4/27/81
Regional Office Date

TABLE OF CONTENTS

Page

I. GENERAL

A. Introduction - - - - -	1
B. Climatic and Habitat Conditions - - - - -	2
C. Land Acquisition - - - - -	3
D. Systems Status - - - - -	3

II. CONSTRUCTION AND MAINTENANCE

A. Construction - - - - -	4
B. Equipment Acquisition - - - - -	6
C. Maintenance - - - - -	6
D. Wildfire - - - - -	6

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/or Threatened Species - - - - -	7
B. Migratory Birds - - - - -	11
C. Mammals and Non-Migratory Birds and Others - - - - -	14

V. INTERPRETATION AND RECREATION

A. Information and Interpretation - - - - -	16
B. Recreation - - - - -	18
C. Enforcement - - - - -	19

VI. OTHER ITEMS

A. Field Investigations - - - - -	19
B. Cooperative Programs - - - - -	20
C. Items of Interest - - - - -	21
D. Safety - - - - -	21

I. GENERAL

A. Introduction

What a year 1980 has been at Back Bay. We'd like a refund!

Seriously, it has proven to be an eventful year. Beach access problems (see Sec. V) have been largely brought under control, due to the cut off of access for other than permanent full-time residents of the North Carolina Outer Banks.

Other highlights of the year included a project to enhance water management capabilities (see II), some interesting developments with endangered species, and an episode with the Commonwealth of Virginia over development of the State Park to the south of us.

Other than these incidents, and a few others, it's been business as usual on this 4,608-acre refuge of barrier beach and brackish marshes.



Aerial view of Back Bay NWR, looking north from over False Cape State Park. (Picture taken November of 1980).

B. Climate and Habitat Conditions

Feast or famine seems the most apt way of describing the weather for 1980. The five inches of snow that fell in January is considered a heavy snowfall in this part of the world, but apparently this was just a warm-up for February and March storms, the last being a record snowfall, paralyzing Tidewater and resulting in a declared state of emergency.

Other than that, it seemed to be all downhill for precipitation, and by November, city water was being "rationed" for household and business uses. At this writing, no relief has occurred, and the estimates are being put forth on what will be needed to recharge city water supply reservoirs - a single storm dropping up to 15 inches of rain.

Since domestic water at the refuge is supplied by well, and our use is low anyway, drought has not reduced water availability for human use. However, low Bay levels and lack of rainfall hampered flooding the waterfowl impoundments to past "full pool" levels - but with no apparent loss of waterfowl use days.

Weather conditions recorded by the Official Weather Bureau Station maintained at the refuge subheadquarters are as follows:

	Precipitation (inches)				Temperatures (F ^o)	
	Rain	Snowfall	Normal	Difference	Maximum	Minimum
January	3.52	5.05	3.37	+ .65	65	18
February	1.41	16.25	3.81	- .77	70	15
March	3.14	20.00	3.69	+1.45	73	15
April	4.05		3.97	+ .08	82	35
May	5.98		3.48	+2.50	86	41
June	0.94		3.59	-2.65	94	53
July	1.92		5.14	-3.22	95	55
August	4.77		6.30	-1.53	102	52
September	1.74		5.05	-3.31	93	54
October	5.84		4.39	+1.45	82	42
November	1.70		2.97	-1.27	75	29
December	2.54		2.90	-0.36	70	20
	37.55	41.30	48.66	-6.98		



Now you see it



Now you don't. Somewhere in here is our beach access ramp several days after the March blizzard.

C. Land Acquisition

Nothing to report.

D. Systems Status

1. Objectives

Many of the current objectives, documented in 1972, are unrealistic and have been outdated since shortly after their inception. Consequently, the refuge is in need of an entirely new Master Plan Concept, that provides continuity over long range planning periods and administrative changes.

Nevertheless, the objectives of Back Bay Refuge do focus upon the management of wildlife for a full spectrum of associated benefits. Emphasis is placed

upon waterfowl, shorebirds, endangered and threatened species, and the provision of opportunities for wildlife-oriented recreation and environmental education.

Under conditions which have prevailed since FY 1976, Back Bay has operated with an increase in funds to partially defray expenses associated with the beach access problem.

2. Funding

The funding pattern of Back Bay National Wildlife Refuge for the past six fiscal years is displayed in the table shown on page 5.

The 6810 funds (\$9,000) was based on selling 100 beach access permits at \$90 each. However, the charge for permits was eliminated in 1977 and the funds were and are used to help offset personnel salaries connected with controlling beach access. In actuality the cost for controlling access presently runs more than \$35,000 per year in salaries alone.

The Back Bay budget is also used to defray all costs associated with management activities at Fisherman and Plum Tree Island refuges, since these refuges are not and have not been funded in the past six fiscal years. Because Mackay Island NWR is administered by the project leader at Back Bay a small portion of the project leader's and the administrative clerk's salaries are paid by Mackay Island NWR.

II. CONSTRUCTION AND MAINTENANCE

A. Construction

Contract # 14-16-0005-80-027 was awarded on April 28, 1980 to the Crowder Contracting Company for the rehabilitation of the dike system, installation of a pumping station, and construction of a boat ramp for refuge use. Although untold dollars were put into the planning of these projects, the problems started immediately.

The ^{fill} material selected by the consulting engineers was unsuitable, so work was stopped almost immediately to renegotiate the contract to include delivering a suitable fill to the refuge. Then, access for delivery trucks was threatened by the City of Virginia Beach due to weight restriction on bridges (which they had never worried with before). After some subtle exchanges, the contractor decided to take his chances anyway, and did so successfully. Rehabilitation of the dikes, by raising to a uniform height and gravelling the surface, was complete by year's end.

The boat ramp was also completed to design specifications - and not usable. Excessive grade will be corrected as a maintenance activity in CY 1981.

At year's end only the pumping station remains to be installed. It seems that the specifications for the pump are impossible to meet.

Hopefully, upon installation of the pumping unit, our ability to fill the waterfowl impoundments will be greatly enhanced - enabling us to fill them in a few days instead of a few weeks (waiting on appropriate rainfall).

Item	<u>Fiscal Year</u>					
	1976	1977	1978	1979	1980	1981
Migratory Birds (1210)	\$104,400	\$121,000	\$142,000	\$163,000	\$162,000	\$159,000
Interpretation and Recreation (1240)	\$ 33,000	\$ 33,000	\$ 57,000	\$ 59,000	\$ 46,000	\$ 54,000
National Wildlife Refuge Fund - Expenses for Sales (6810)		\$ 9,000	\$ 9,000	\$ 9,000	\$ 4,000	\$ 4,000
Amended				-\$5,000 Migratory Birds +\$1,000 I & R		
Budget	\$137,400	\$163,000	\$208,000	\$227,000	\$212,000	\$217,000

The rehabilitation of the cross-drainage system enabling flows of water between the impoundments was completed this year by replacing the plugged, undersized corrugated metal pipe with twin 30" smooth asbestos/concrete pipe, and opening up the marsh areas near the ends to stall future plugging. It has worked well for filling the impoundments this fall.

B. Equipment Acquisition

Nothing to report.

C. Maintenance

In preparation for the boat launching ramp contract mentioned in the previous section, the existing boathouse was torn down to the decking. The anticipated boat-storage building that was to be included in the contract was eliminated from the bidding (without consultation) due to a shortage of funds.

The "old yellow jeep", a 1976 Cherokee, received a face-lift and became just another face in the crowd when it was painted with official USFWS colors, after patching the rust-holes.

D. Wildfire

No wildfires occurred on Back Bay National Wildlife Refuge in 1980.

III. HABITAT MANAGEMENT

A. Croplands

Not applicable.

B. Grasslands

Grassland management at Back Bay may be a little more difficult than normal since our only grassland consists of two fescue fields, totalling 60 acres, on Long Island, which is accessible only by water. Low water levels frequently make access impossible.

These fields were mowed twice in 1980, and received no further treatment.

Use by snow geese on these fields is estimated at 94,000 use-days during 1980.

A third field, approximately 10 acres, was abandoned this year due to excessive costs in maintaining it for very few use-days.

C. Wetlands

Fire at Back Bay is used to retard woody growth, primarily myrtle, and enhance the growth of the more favorable sedges and other aquatic species.

Approximately 500 acres of marsh received a prescribed burn in 1980, including 180 acres of heavy needlerush in "C" pool that was first mowed and then disced after burning.

Other management practices are discussed under the Construction and Maintenance section.



"C" Pool after burning and discing for control of black needlerush.

D. Forestlands

Nothing to report.

E. Other Habitat

No management activities to report. See Section V B 2 for information on restrictions on beach use.

F. Wilderness and Special Areas

Nothing to report.

G. Easements for Waterfowl Management

No easement program.

IV. WILDLIFE

A. Endangered and/or Threatened Species

Endangered, threatened and undetermined status species found on the refuge during 1980 included the bald eagle, American peregrine falcon, osprey and the Atlantic loggerhead sea turtle.

For a second year in a row, Mr. Thomas R. Nichols, a local self-employed electrical contractor, captured and banded peregrine falcons on the Barrier Outer Banks. The area covered extended from Back Bay Refuge south to Corolla, N. C. Mr. Nichols does the banding under a permit issued to Dr. F. Prescott Ward, Chief of Ecology Branch, Environmental Technology Division at the U.S.

Army Aberdeen Proving Grounds in Maryland. His banding operations were started on September 18 and concluded on October 19. A total of 36 birds were captured, 13 of which had been banded previously. No birds were captured on the refuge, but 6 birds were observed. Mr. Nichols' capture technique utilized a leather harness, with loops of monofilament line attached, strapped to a pigeon.

On December 13, a peregrine falcon, overwintering in downtown Newport News, was discovered dead at the base of one of the downtown office buildings. Refuge personnel shipped the bird to the Service's National Lab in Madison, Wisconsin, where the cause of death was listed as trauma from hitting a solid object. It is assumed that since 7.5 ppm of strychnine was found in the body, the bird went into convulsions on the roost and fell several stories to the concrete sidewalk.

On January 11, Project Leader Bond and Outdoor Recreation Planner Schmidt participated in the National Wildlife Federation Eagle Count. Upon covering 130 miles by plane, all that could be seen was one bald eagle which was found on an adjacent lake to Norfolk International Airport where the flight had originated. During the rest of the year, bald eagle sightings occurred on March 21 and June 15 on the barrier beach portion of the refuge.

On April 17th, some refuge visitors found and brought to the refuge staff a male osprey. He was found along the entrance road still alive but in a very weakened condition. His head hung low and he could hardly stand up. No visible signs of damage to the bird could be seen. The bird was taken to a local rehabilitation center where it died 45 minutes later. This bird is suspected to be the same one that was released in the area two weeks earlier by the rehabilitation center.

A total of three osprey nests were established on the refuge this year and another two within 1/8 mile of the boundary on off-shore duck blinds. Last year ended with no nesting being attempted on the refuge. One nest was located at the southern end of Ragged Island where debris from a duck blind lodged itself on the shoreline and a pair of osprey constructed a nest upon it. Another pair utilized an artificial nesting structure near the maintenance area in Bush Island Cove. These two nests along with the two on duck blinds were in the incubation stages one week and the next week when checked the nest bottoms were torn apart and only fragments of egg shells could be found. It is suspected that since the areas around these nests are favored spots for sport fishermen, that the disturbance left the nests open for depredation by predators. One other nest was built on another artificial nesting structure, which due to island erosion, began to topple with the weight of the nest and adult birds. The nest was then abandoned.

At 10:30 P. M. on July 25 an Atlantic loggerhead sea turtle came ashore, constructed a nest, and deposited eggs in front of a beach home, 2 miles north of the refuge in the community of Sandbridge. Five citizens observed the event, and the next morning contacted refuge personnel. The nest was in eminent danger of being trampled or run over by sunbathers and vehicles so Assistant Manager Poetter relocated the nest to the refuge in a protected location. Into two partially buried cylindrical wire cages, 104 eggs were placed.

Results are as follows:

Cage # 1 - 59 eggs

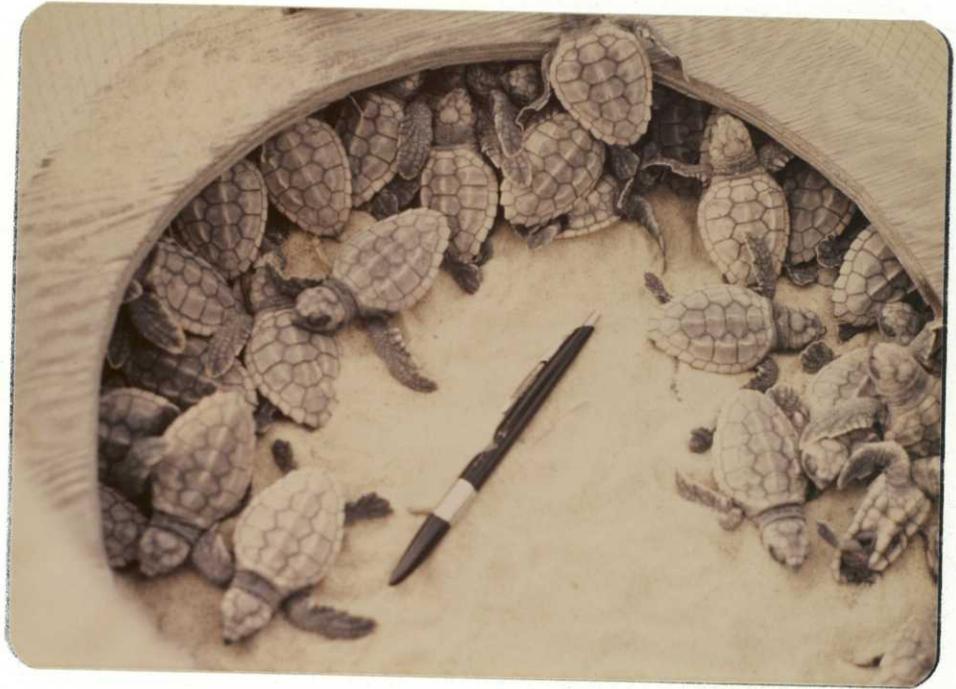
Hatching date: 9/29/80
Age at hatching: 66 days
Number eggs hatched: 51
Number inviable eggs: 8
Hatchlings to sea: 51
Hatchling success: 86.4%

Cage # 2 - 45 eggs

Hatching date: 10/01/80
Age at hatching: 68 days
Number eggs hatched: 39
Number inviable eggs: 6
Hatchlings to sea: 39
Hatching success: 86.7%

Total eggs: 104
Hatchlings to sea: 90
Hatchling success: 86.5%

From the 90 hatchlings, various measurements were taken before releasing them. These include weight, carapace length, carapace width, plastron length, thickness at second vertebral and scute counts (left marginals to right marginals).



Newly hatched loggerheads . . .



are released to the Atlantic Ocean.

Dead stranded sea turtles on the beaches of Back Bay Refuge showed an increase over last year. The first stranding was found on May 11 and the last on October 8. A total of 16 Atlantic loggerhead sea turtles and 1 Atlantic ridley sea turtle were found.

B. Migratory Birds

1. Waterfowl

Waterfowl population trends, in the form of peak population numbers, are presented for the past ten years in the table on the following page. Waterfowl censusing techniques used on Back Bay are designed to cover the major portion of the land and water areas. The impounded areas are surveyed by land vehicle utilizing the network of roads surrounding these impoundments. The bay, open water and marsh islands, is covered by boat if water levels and ice permit. During the year, waterfowl surveys were conducted bi-weekly, except during winter months when they were done weekly if man power demands permitted. Also, during the higher waterfowl use periods, aerial flights were taken once a month to confirm or supplement ground counts.

a. Swans

The year began with 2,200 whistling swans on the refuge, but by the middle of April all had gone north. For the calendar year the peak population occurred in December, when a survey showed 8,750 swans. The peak population in 1979 was only 3,460.

Most of the swans use the coves and shoreline areas of Back Bay.

b. Geese

The refuge greater snow goose flock began the year with a peak population in January of 13,000, which is excellent when compared to the 1,700 in January of 1979. By the end of April all had left the refuge. During the first part of the year, most of the snow goose use was west of Long Island. However, during the summer much of C pool was disced and the snows used that area during the latter part of the year. The year went out with some 8,200 snow geese on the refuge.

Canada geese are always less abundant than the snows, but the year began with 1,020 and ended with 1,200. Some 2,000 were tallied in November as a peak of the population. Even though 200 used pools A and B, most use occurred in the refuge waters of Back Bay.

c. Ducks

This year's post-season banding was not as successful as last year when more than the quota was banded. The quota was again set at 100 black ducks and 100 mallards. The total number of ducks banded, including non-target species, are as follows:

Mallard	116
Black duck	80 (12 of which were REWARD banded also)
Pintail	3
Ring-necked duck	1

CY	<u>DUCKS</u>		<u>WHISTLING SWAN</u>		<u>GREATER SNOW GOOSE</u>		<u>CANADA GOOSE</u>	
	Peak Pop.	Month	Peak Pop.	Month	Peak Pop.	Month	Peak Pop.	Month
1970	84,435	Oct.	10,000	Dec.	15,000	Dec.	14,685	Nov.
1971	75,615	Dec.	10,910	Nov.	19,345	Mar.	14,000	Dec.
1972	47,030	Jan.	2,500	Jan.	20,000	Dec.	6,100	Nov.
1973	34,085	Oct.	4,000	Dec.	20,000	Dec.	4,000	Nov.
1974	37,365	Dec.	6,000	Dec.	20,000	Dec.	4,130	Nov.
1975	28,265	Dec.	8,000	Dec.	25,000	Jan.	4,000	Dec.
1976	22,280	Dec.	4,000	Jan.	15,000	Jan. / Feb.	1,500	Jan.
1977	13,135	Dec.	3,380	Dec.	32,000	Jan.	3,000	Jan.
1978	17,430	Nov.	7,400	Nov.	1,500	Jan. / Dec.	1,200	Nov.
1979	22,390	Nov.	3,465	Dec.	2,525	Dec.	1,040	Nov.
1980	20,150	Nov.	10,000	Dec.	13,000	Jan.	2,000	Dec.

This year was the end of the three year REWARD banding effort. A ratio of 4 control to 1 REWARD bands were placed on all black ducks banded. The green colored band is stamped "REWARD \$15" and was placed on the leg opposite that banded with the standard Fish and Wildlife Service band. Capture methods used included cannon netting and the use of "Y" shaped confusion traps. Again, as in the past, Mackay Island National Wildlife Refuge helped with the banding efforts. The following were banded by them: mallards - 10, black ducks - 12, pintail - 3, and ring-necked duck - 1. These birds are included in the above figures.

The major duck species present during peak use include wigeon, gadwall, pintail, black duck, and mallard.

Known duck production on the refuge consisted of three broods of black ducks (6, 7 and 9 young respectively), two broods of mallards (5 and 7 young respectively) and one brood of five young wood ducks which did not hatch in one of our boxes, but apparently nested elsewhere on the refuge. Of the seven wood duck nest boxes on the refuge, two were used by wood ducks, but neither produced young. One nest with 12 eggs was destroyed by predators when the door came open during a wind storm. The second nest with 11 eggs was simply abandoned and a yellow-shafted flicker took over and laid four eggs. Two of the other boxes were used by screech owls with one of them hatching out three young by May 10.

d. American Coot

Most people don't give two hoots for coots, but their population numbers may be indicators of things to come or results of past conditions. For some reason the refuge coot population is negligible, 1,000 peak this year, when compared to the beginning of 1977 when 32,000 were using the refuge. Practically all of this year's use occurred in the refuge waters of Back Bay.

2. Marsh and Water Birds

While on the Christmas bird count during early January, Manager Bond noted a white pelican just inside the north boundary of the refuge in Back Bay.

Marsh and water bird populations on the refuge varied greatly during the year as these birds migrated through or resided in the area. A peak of 1,320 marsh and water birds, representing 20 different species, were recorded during the last quarter of 1980. Of the species present the largest populations were pied-billed grebe, least bittern, king rail, clapper rail, sora rail and Virginia rail. Black-crowned night herons (10 to 50) still use the wooded area (mostly wax myrtle) immediately south of the parking area for roosting.

Even though it is suspected that several species of these birds nest on the refuge, no nests were sighted during the year. However, no specific surveys were conducted. The stand of pines on Long Island were inspected for great blue heron nesting, but only old nests were located. The reason for abandonment of this area is unknown since management of Long Island has been the same for years.

3. Shorebirds, Gulls, Terns and Allied Species

As was the case last year, the peak populations occurred in the January-March period. However, numbers for 1980 (2,545) were way down when compared to those of 1979 (12,970). The first quarter 1980 figure represents 18 species with ring-billed gulls (900) and sanderlings (650) being the most

numerous. Gulls and sanderlings were present throughout the year. The April-June period showed the greatest diversity with 23 species being recorded.

On June 6, USF&W Deputy Director Cook and Project Leader Bond located an American oystercatcher nest with two eggs in it, 100 yards south of the refuge boundary on the beach at the toe of the dunes. This is the first actual nesting activity on the beach since the substantial increase in recreational vehicle use back in the late '60's. Unfortunately, two weeks later the adult oystercatchers had abandoned the nest and left the area. Vehicle tracks circling the nest area are presumed to be the cause of their departure.

4. Raptors

Some twelve species of raptors were seen on the refuge during the year. Most were migrating through, but some can be seen year round. The various species consisted of the northern harrier, sharp-shinned, Cooper's, and red-tailed hawks, American kestrel, peregrine falcon, osprey, bald eagle, turkey vulture, and great horned, screech and snowy owls. The snowy owl was the most unusual, but was confirmed by more than one person. The kestrel led the way in peak populations with 10.

5. Other Migratory Birds

This group includes mourning dove, belted kingfisher, boat-tailed grackle, common crow and fish crow. The mourning dove was the most numerous with a peak population of 140 and an estimated production of 40 young. The dove was followed in numbers present by the grackle. During the summer, many grackles are noted feeding on the beach.

C. Mammals and Non-Migratory Birds and Others

1. Game Mammals

A population of approximately 110 white-tailed deer can be found on the refuge. This year on September 15, at the request of the Virginia Commission of Game and Inland Fisheries, four deer were taken from the refuge in the area of A and B pools for examination of the herd condition. The technique used in the survey was recently published in a Wildlife Society bulletin. It involves parasite counts and fat tissue evaluation. Preliminary results indicate the herd condition to be very near emaciated. All of the deer that were randomly sampled were females, with two being piebald. Upon noting the animal sizes and inspection of the teeth, it was found that the same age of piebald deer as the "normal" white-tail sampled, showed the piebald to be dwarfed in size. Personnel assisting from the state were Jack Gwynn, Charlie Gilchrist, Hassel Taylor, and Fairfax Settle. An effort to collect deer for analysis of herd condition on Long Island came up short when only one animal was collected. Despite an abundance of animals in a "protected" environment, the animals seemed to have the wariness of a hunted population. Plans are being made for a collection next year.

The Game Commission held its first deer hunt on False Cape State Park this year. False Cape adjoins the refuge on the south boundary and it is felt that a fair amount of herd cross-over occurs. The deer hunt occurred during the last two weeks in October and was for bucks only.

A fur trapping program was not conducted this year. In 1977 a severe winter substantially lowered the nutria and muskrat populations, which are now building up enough to warrant trapping next year. Raccoon populations have remained relatively stable and could be trapped, but at Back Bay they represent no danger to dikes and impoundments and little danger to the meager breeding waterfowl populations. Therefore, raccoon trapping would be allowed only in conjunction with muskrat and nutria trapping. The last fur trapping occurred in February, 1977.

2. Other Mammals

The feral hog population fluctuates to a considerable degree depending on the time of year. An estimated average yearly population is 25 animals. A feral hog control proposal has been approved. Control is accomplished by refuge personnel with firearms, and is implemented as part of normal refuge patrol and maintenance operations, as target species are encountered. This presents minimal risks to nontarget species and minimized public relations problems. All carcasses are buried.

Back Bay Refuge hosted the Southeastern Cooperative Wildlife Disease Study Group in the collection and necropsy of feral hogs. SCWDS headquarters (at the University of Georgia) is currently studying the significance of these animals throughout the South as reservoirs for various pathogenic organisms that may potentially impact man and/or other wildlife species. SCWDS collected two animals from the refuge and performed their necropsy work at the refuge maintenance area during the period of October 10-13. They expressed a desire to return during the winter for more collections to gain a more significant sample.

On August 14, 15 and 16 refuge headquarters was contacted concerning an injured harbor seal sighted on the beach just south of the refuge boundary. In cooperation with National Marine Fisheries Special Agent Fred George, attempts to catch the seal and examine it were made on the 14th and 15th. Unfortunately, no staff personnel were available at the refuge so the 45-minute drive from headquarters was made, but by the time they arrived the seal had been scared back into the ocean by people and vehicles on the beach. On Saturday the 16th, ORP Schmidt happened to be at the refuge on his own time when another report of the injured seal came in. This time the seal was captured with great difficulty and taken to the Norfolk Zoo and treated for multiple propellor gashes in its side and an infected eye. The seal was recovering from its wounds and eating 10 lbs. of fish a day when on September 14 it stopped eating regularly. On September 26 it died. A necropsy revealed the stomach to be extensively ulcerated and that is presumed to be the cause of death.



Injured harbor seal captured at Back Bay eventually succumbed to gastric problems (note - he's laying on the car track).

V. INTERPRETATION AND RECREATION

A. Information and Interpretation

1. On-Refuge

Refuge visits during CY 80 totaled 60,560 in all categories. Leading the categories was wildlife/wildlands observation with 33,300 and off-road vehicling with 14,782. Compared to 1979, the 1980 figure doubles it and most of the increase occurred in wildlife/wildlands observation. The exact reason for this increase is not known, but may be a combination of more interest by the public, better data gathering methods, and publicity by the local news media.

A new traffic counter was put in operation on the refuge in order to get an accurate count of the number of people visiting the refuge. The counter is also set-up to accurately count the vehicles traveling the beach, particularly when a guard is not on duty.

Some categories decreased, such as environmental education. During the latter part of the year, the Virginia Beach School System discontinued busing students to the refuge because of energy costs.

The heavy snows of winter took their toll on Bay Trail with its canopy of large wax myrtles which lined the trail, giving a tunnel appearance. The combination of high winds and heavy snow on March 1, uprooted most of the trees. After cleanup, the trail looked rather bare and desolate.

Some members of the refuge staff spent a great deal of time in discussions with Virginia State Parks representatives and FWS representatives concerning public access to False Cape State Park. The Service agreed to designate the east dike road through the refuge as a hike/bike trail and publish informational brochures on the joint venture to be known as "The Back Bay-False Cape Natural Area". Interpretative signing and printing of the brochures was done by the state with our consent.



The official Virginia Division of Parks gravel-carrier was used in efforts to carry gravel needed for road improvement to the Park by sea after permission to haul gravel through the refuge was denied.

With much of the east dike road being soft sand, it was proposed to stabilize this with a gravel mixture. Of course an environmental assessment was required and the refuge staff did the draft. The year ended with nothing further being accomplished toward the proposal.

The Virginia Beach Chapter of the National Audubon Society organized a "Day of the Coast" celebration in recognition of "Year of the Coast". The refuge assisted in the day long event, entitled "Coast Walk 1980". The chapter members worked in relay teams to walk the length of the coast from the North Carolina line to Cape Henry on June 22. The first team was driven down to the North Carolina line by refuge staff at 6:00 AM to begin the walk with a banner which proclaimed "Year of the Coast". Assistance was also given to the next two teams which included a Virginia Beach Councilman and a local newspaper editor. The day long event culminated with a celebration at Cape Henry Lighthouse with all the members of the chapter. The event served to draw public attention to the needs of the coast, since thousands of beach visitors saw the banner and the event was covered by part of the local news media.

During the summer, the YCC enrollees built about 400 feet of boardwalk to complete Dune Trail. This allows a visitor to make a circular trek beginning at the parking lot, traveling down the dike road to the beginning of the boardwalk, traversing it through the dunes and ending on the beach. At that point the person can take the beach to the paved dune cross-over and return to the parking lot.

2. Off-Refuge

A steel shot program was presented by the U. S. Fish and Wildlife Service's Ballistics Specialist, Tom Roster, to local guides, hunters and State officials on February 5. The refuge staff took the initiative in setting up the program after receiving many steel-shot-questions that the staff couldn't answer. The Back Bay area is a steel shot zone. The program included a short film on lead poisoning, "A Closer Look", followed by an extended question and answer period including slides and scenes from a new steel-shot film being produced by the Service. Many of the 100 people in attendance commented that they were "going to give it a real try next year".

Outdoor Recreation Planner Schmidt gave most of the off-refuge programs, which varied from slide-talks and films to school children to television studio interviews.

B. Recreation

1. Wildlife Oriented

With no visitor center or wildlife drive on the refuge most of the 33,300 people who visited the refuge for wildlife observation, did so on foot in the outdoors. Many of them came to escape from the fast-paced life in the local urban areas of Tidewater Virginia. The peak times for this kind of public use are nice weather weekends in spring, fall and December when the waterfowl are present in large numbers.

Surf fishing on the refuge beach attracted 3,685 people this year. When the blues are running everybody grabs a fishing pole and heads for the beach.

2. Non-Wildlife Oriented

Wherever there is a beach, there is non-wildlife oriented recreation and Back Bay NWR is no exception. Many swimmers, sunbathers, surfers, and picnickers visited the refuge during the year. These activities are not encouraged and no parking or other facilities are provided for such. The people who do use the beach for these activities must park north of the refuge at Little Island City Park.

Use of part of the beach as access to a community south of the refuge is still allowed by special permit. Some 14,782 people used the beach for this purpose in 1980. We started the year with regulations that allowed only permanent residents south of the refuge to Corolla, North Carolina prior to December 31, 1976, to qualify for a permit. In May 1980, Senator Jesse Helms pushed an act through Congress that changed the date to December 31, 1979. At the end of 1980 there were 32 permits issued to permanent residents, six to employees/residents of False Cape State Park and six to commercial fishermen (four of these are part of the 32 permanent residents). Each commercial fisherman is allowed five crewmembers.

Vehicular access through the refuge is still a volatile issue, whether it involves False Cape State Park or the Outer Banks of Currituck County, North Carolina.

C. Enforcement

Although Back Bay has three permanent personnel, and one other part-time, assigned solely to enforcement, the problems are not as severe as might be thought. These four people maintain a control on vehicular access to the refuge beach by manning a guard house located at the refuge ramp to the oceanfront. The massive problems experienced by previous administrations have been brought under control, and now is only at a level to maintain some frustration at a lack of total control.

We have ceased to maintain records of cases after they are closed, and so will only report generalities as to the types of cases instead of specific numbers. By far, our largest number of cases come from illegal beach trespass, but even these will not account for more than 50 cases a year. Most other violations of refuge regulations (illegal parking, dogs off leash, pedestrian trespass in closed areas) are handled with warnings. Although some other violations occur, such as sign destruction, we have not had any luck in making any apprehensions on this type of violation.

Being in an urban area, numerous other violations occur and are often reported to us by phone, albeit often too late for any kind of effective response. One case was made on a hawk-killing incident this year as a result of a timely report.

Most telephone complaints are referred to either the SRA Office or the local State Game Wardens for action, since we try to avoid law enforcement activities off refuge.

No routine or regular patrols of the refuge and adjacent areas are carried out, but instead are performed at irregular intervals as funding and manpower permit.

VI. OTHER ITEMS

A. Field Investigations

The program of transplanting Atlantic loggerhead sea turtle eggs from Cape Romain National Wildlife Refuge, South Carolina, to the beaches of Back Bay Refuge has been terminated under the recommendation of the Southeast Region Marine Turtle Recovery Team. They no longer believe that the transplants are likely to contribute to the conservation of the loggerhead. Their opinion is based on data developed in recent years relating incubation temperature to sex determination, and on the many unknowns regarding turtle life histories and imprinting. However, should information developed in the future (such as greatly increased numbers of crawls in the Virginia area) demonstrate the value of transplants to this latitude, the program will be considered for reinitiating. In an effort to monitor for turtle crawls, refuge personnel traveled the refuge beaches each morning from June 1 thru August 15 to look for nesting activity and stranded sea turtles. See Section IV, A (Endangered and/or Threatened Species) for monitoring results.

Another item of interest here is the beginning of a study to survey the reptiles and amphibians of the refuge, being done by Mr. Chris Pague and Joseph Mitchell. Hopefully we'll end up with an authoritative "herptile" list as a result.

B. Cooperative Programs

Back Bay Refuge hosted both YCC and YACC camps in 1980.

YACC provided invaluable manpower in maintaining beach barricades and our beach ramp, mowing, and all aspects of the day-to-day maintenance of the refuge. Major projects they completed included the demolition of the old boathouse and rehabilitation of the remaining decking, and construction of a new YACC building (shell completed in 1980).

The 1980 YCC was another success, both for us and the enrollees. Projects included the construction and placement of osprey nesting platforms and completion of the boardwalk trail for visitors.



An off-limits to the public dune area



was made accessible to the public by this YCC constructed boardwalk.

C. Items of Interest

Maintenance Worker Maddron received his ten year pin and certificate for service completed on March 16, 1980.

We may have recorded an infamous first this year when, as a result of a confrontation between a refuge guard and one of the "beach permit people", our guard found himself arrested on a city warrant for disturbing the peace. Jurisdiction was quickly moved to U. S. District Court, and the charges were dismissed, but not before a lot of time was expended in our involvement in this unfortunate situation. Prior to the dismissal of charges, a meeting in the Judge's chambers proved most interesting and educational. We were directed to enforce the law, and especially that we were not to back off from the individual who instigated the charges.

In last year's narrative, we reported that a fatality had occurred on the refuge in May of 1979 when the pedestrian victim was struck by a vehicle. This year, we'll follow up by reporting that the case has been solved - at least to the satisfaction of the Virginia Beach police. No criminal charges are pending, as no finding of criminal neglect was found against the allegedly "guilty" party (a refuge employee) - although year's end finds us waiting to find out if a civil suit will ensue, and if so, will the government be named as a co-defendant.

In February, Back Bay was hampered considerably by a sudden imposition of severe energy restrictions - a reduction of fuel allocation by 80% of the original allocation. Operations slowed, but we made it by eliminating all but critical fuel uses. Hopefully, such a drastic move will not be necessary in the future.

D. Safety

We are happy to report that there were no lost-time accidents in 1980, and only one accident on refuge that resulted in any significant damage. Since False Cape State Park lies adjacent to and south of the refuge, the state employees must travel through the refuge to reach the park. The property damage resulted when an off-duty park ranger apparently fell asleep when returning home on the park and failed to make the turn for access to the refuge, subsequently challenging the stone-base refuge sign with a Volkswagen "bug". Both lost.

The VW was not repairable. The stone sign base was heavily damaged, but repairs were made by the Virginia Division of Parks. The driver suffered only soft tissue damage - head lacerations and ligament and tendon damage in one knee.

Monthly safety meetings were held with all available staff participating, with discussions on a variety of topics pertinent to the overall operation.

FISHERMAN ISLAND NATIONAL WILDLIFE REFUGE

Virginia Beach, Virginia

ANNUAL NARRATIVE REPORT

Calendar Year 1980

NATIONAL WILDLIFE REFUGE SYSTEM

Back Bay NWR Complex

Fish and Wildlife Service

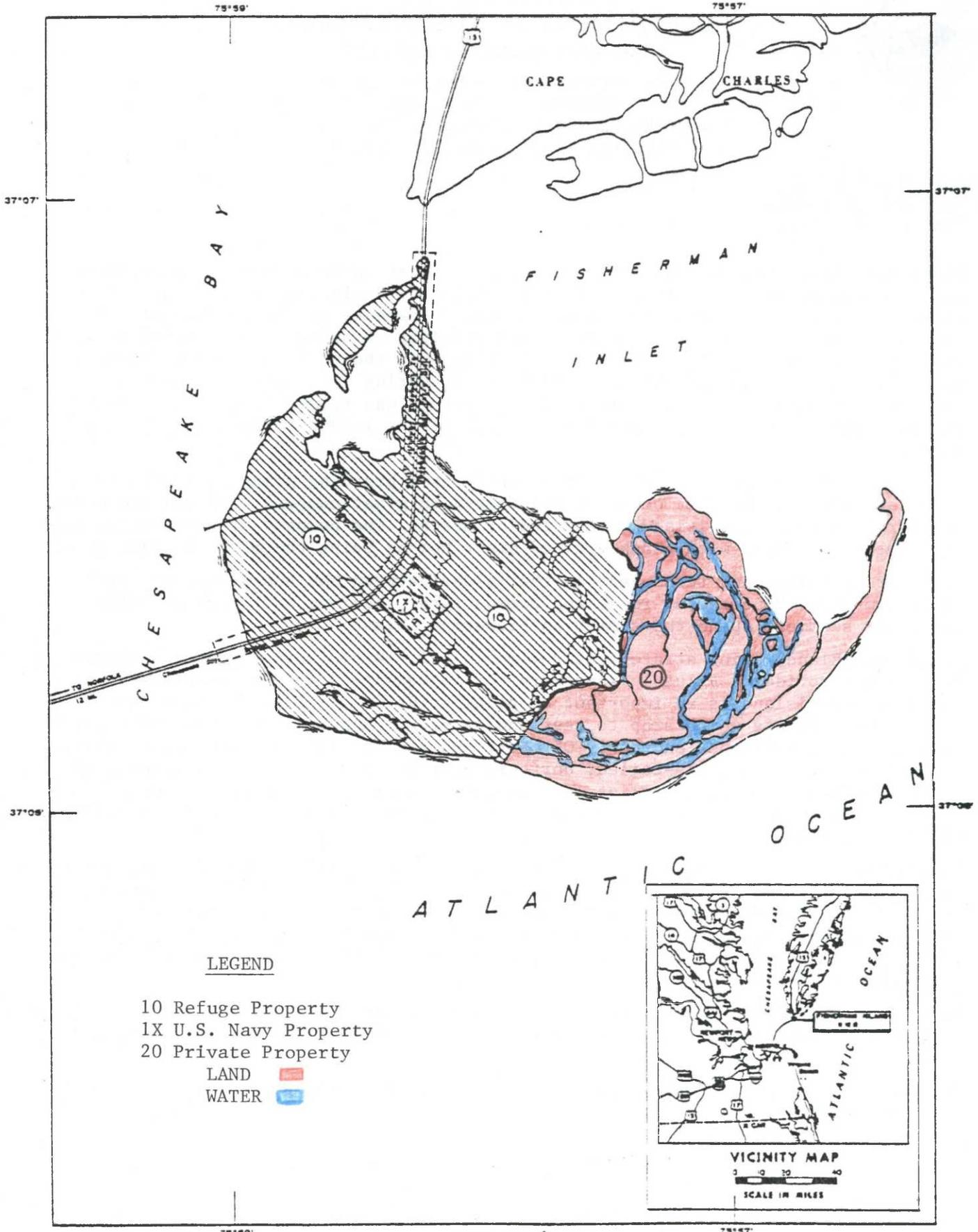
U.S. DEPARTMENT OF THE INTERIOR

FISHERMAN ISLAND NATIONAL WILDLIFE REFUGE

UNITED STATES
DEPARTMENT OF THE INTERIOR

NORTHAMPTON COUNTY, VIRGINIA

UNITED STATES
FISH AND WILDLIFE SERVICE



LEGEND

- 10 Refuge Property
- 1X U.S. Navy Property
- 20 Private Property
- LAND
- WATER



VICINITY MAP

SCALE IN MILES

COMPILED IN THE OFFICE OF REALTY
FROM SURVEYS BY U.S.G.S. AND U.S.F.A.W.S.

BOSTON, MASSACHUSETTS MARCH 1976
POSTED: 6/77

74° 0' True North

MEAN DECLINATION
1960

5R VA 801 403



UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

BACK BAY NATIONAL WILDLIFE REFUGE
PEMBROKE OFFICE PARK
PEMBROKE # 2 BUILDING, SUITE 218
VIRGINIA BEACH, VIRGINIA 23462

MACKAY ISLAND N.W.R.
FISHERMAN ISLAND N.W.R.
PLUM TREE ISLAND N.W.R.

Fisherman Island National Wildlife Refuge is located in Northampton County, Virginia, and is situated at the southern tip of the Delmarva Peninsula at the mouth of the Chesapeake Bay. The refuge is crossed by the Chesapeake Bay Bridge-Tunnel. Fisherman Island National Wildlife Refuge, which consists of approximately 1,000 acres, was a refuge from 1933 until the early 1940's, when the U. S. Navy took charge and used the island as a submarine detection center during World War II. Many of the old Navy structures are still present. The refuge was reestablished in 1969 when the Navy officially relinquished jurisdiction of the island to the U. S. Fish and Wildlife Service.

The refuge was established primarily to serve as a breeding ground and nursery for shore and water birds that occur on the island in great numbers. Herons and egrets begin returning to the island by the end of March. The heronry is very active from then until September with black-crowned night herons being the most abundant species.

Shorebirds, gulls, and terns nest on the island between May and mid-September in large numbers. Hundreds of royal and common terns, herring and laughing gulls, and black skimmers spend the summer on Fisherman Island.

Fisherman Island, being strategically located off the southern tip of the Delmarva Peninsula, provides a valuable sanctuary for migrating waterfowl, shorebirds and raptors. The island is an important stopping point in the fall for thousands of southbound migrants which stop to rest and/or feed. Raptors are common over the island in late September and early October, and may include such species as sharp-shinned, broad-winged, red-tailed, northern harrier, Cooper's and red-shouldered hawks, American kestrels, merlins, ospreys, and peregrine falcons. Since it is an endangered species, the peregrine falcon is of utmost concern to the U. S. Fish and Wildlife Service.

In addition, several ospreys find the old Navy towers suitable for nesting, and at least one peregrine falcon has been reported as wintering there. Due to the nesting activities on Fisherman Island, public use of the Island is restricted to significant environmental education activities of organized groups. The refuge is closed to all public use from May 1 until September 1 to reduce disturbance of the hundreds of nesting birds.

Since Fisherman Island is administered through the Back Bay National Wildlife Refuge office in Virginia Beach, and any use of the refuge must be by permission from that office.

Further information can be obtained by contacting that office, at the above address, or by phone (AC 804-490-0505).

TABLE OF CONTENTS

I. GENERAL

	<u>Page</u>
A. Introduction - - - - -	1
B. Climate and Habitat Conditions - - - - -	1
C. Land Acquisition - - - - -	1
D. System Status- - - - -	2

II. CONSTRUCTION AND MAINTENANCE

A. Construction - - - - -	2
B. Maintenance- - - - -	2

III. HABITAT MANAGEMENT

A. Croplands- - - - -	3
B. Grasslands - - - - -	3
C. Wetlands - - - - -	3
D. Forestlands- - - - -	3
E. Other Habitat- - - - -	3
F. Wilderness and Special Areas - - - - -	3
G. Easements for Waterfowl Management - - - - -	3

IV. WILDLIFE

A. Endangered and/or Threatened Species - - - - -	4
B. Migratory Birds- - - - -	5
C. Mammals and Non-Migratory Birds and Others - - - - -	8

V. INTERPRETATION AND RECREATION

A. Information and Interpretation - - - - -	8
B. Recreation - - - - -	9

VI. OTHER ITEMS

A. Field Investigations - - - - -	9
B. Cooperative Programs - - - - -	10
C. Items of Interest- - - - -	10

I. GENERAL

A. Introduction

Fisherman Island National Wildlife Refuge is located in Northampton County, Virginia. Situated at the southern tip of the Delmarva Peninsula at the mouth of the Chesapeake Bay, the refuge is crossed by the Chesapeake Bay Bridge-Tunnel right-of-way. In excess of 600 acres, Fisherman Island Refuge was reestablished in 1969 under a permit from the U.S. Navy. It was formerly a refuge from 1933 until the 1940's, when the military took it for defense purposes.

B. Climate and Habitat Conditions

An official weather station is not maintained on Fisherman Island. Temperatures, precipitation and winds experienced on the island are similar to those encountered at Back Bay Refuge. For details of climatic conditions of Fisherman Island, see the appropriate section in Back Bay's narrative.

Habitat conditions on the island are ever changing. The amount of change depends on the severity of the northeast winds during the winter months. Erosion is occurring on the northwestern shore and building on the eastern and southern shores. Sand deposition on the eastern side provide ideal nesting habitat for several species of shorebirds.

No studies of the vegetation or food supplies have been carried out on the island. Most of the island is made up of salt marsh interspersed with many tidal creeks. Several salt water ponds up to two acres in size are scattered over the island.

C. Land Acquisition

1. Fee Title

It is said that Fisherman Island was formed from accretions of sand around a ship which was wrecked in the early part of the 19th century. The Commonwealth of Virginia then ceded title to the island to private ownership in 1858. Title became vested in the United States through condemnation proceedings in 1891, at which time the land was controlled by the Surgeon General as a quarantine station and later as a harbor defense installation. Title was transferred to the Department of the Interior on January 4, 1973.

Title to the eastern portion of Fisherman Island, called "The Isaacs," is presently in the hands of private individuals (two Norfolk lawyers). At a closed bid court sale The Nature Conservancy was outbid by the lawyers \$121,000 to \$100,000. TNC would, of course, have sold it to FWS when funds were available. The lawyers say they only want it for personal recreation - no development planned. Time will tell. They have no legal overland access to their property.

2. Easements

"Not Applicable"

3. Other

"Not Applicable"

D. System Status

1. Objectives

Fisherman Island Refuge was established primarily to serve as a breeding ground and nursery for shore and water birds that occur on the island in numbers. Due to the funding level or lack of it, as discussed in the following section, in 1980 little could be accomplished in the way of management to increase outputs toward the objective levels.

2. Funding

Personnel have never been assigned to this refuge, and funds have steadily decreased over the past fiscal years to the point that they can decrease no more. The funds situation is depicted in the following table:

<u>Fiscal Year</u>	<u>Budget</u>
1973	\$8,450
1974	3,000
1975	2,000
1976	0
Zero to date	

Due to this lack of funding, routine maintenance of the trails and boundary signs and limited protection were provided by Back Bay Refuge. All activities such as wildlife surveys and interpretive tours are funded by Back Bay NWR.

II. CONSTRUCTION AND MAINTENANCE

A. Construction

Nothing to report.

B. Maintenance

Most maintenance on the island this year was performed by the YCC enrollees under the direction of refuge staff. Maintenance included the replacement of old routed entrance signs with current "standardized"

entrance signs. Another project included the clearing of overgrown vegetation from the vehicle trail and from the trail along the highway from the parking lot to the beach, and the pick-up of litter along the 4 miles of the Chesapeake Bay Bridge-Tunnel easement. To our knowledge, litter cleanup along this area has never been accomplished before.

The refuge staff has started to replace missing and dilapidated boundary signs this year. Due to the lack of the new updated signs (ordered), work had to be temporarily postponed. A much needed area of posting is the beach, where during the shorebird breeding season these areas are visited by shell collectors and explorers by way of boat.

On the eastern side of the refuge stood a condemned old hunting shack until on the 11th of December when a fire destroyed the building entirely. It was not an accident though, Assistant Managers Parr and Poetter were allowed to relieve their arsonistic tendencies.

III. HABITAT MANAGEMENT

- A. Croplands - Nothing to report.
- B. Grasslands - Nothing to report.
- C. Wetlands - Protection is the only management
- D. Forestlands - Nothing to report.
- E. Other Habitat - Nothing to report.
- F. Wilderness and Special Areas - Nothing to report.
- G. Easements for Waterfowl Management - Nothing to report.

IV. WILDLIFE

Again this year, even with the lack of funding, regular censuses were conducted throughout the year. Biweekly waterfowl, shorebird, marsh and water bird, and raptor inventories were conducted by foot and four-wheel-drive vehicle. During the winter months, aerial waterfowl censuses were flown in conjunction with those for Back Bay and Mackay Island Refuges. Colonial nesting shorebird and heronry surveys are conducted during the summer months, along with non-colonial nesting shore and marsh bird surveys. Also, throughout the nesting season surveys of breeding raptors are conducted. All surveys for wildlife output reporting were conducted only on the FWS owned portion of Fisherman Island, which is contrary to practices of previous years in which the privately owned portion was included. An occasional survey of breeding and wintering wildfowl is undertaken on the private land area to maintain an idea of species and numbers for possible land acquisition justification.

A. Endangered and/or Threatened Species

Species which fall into this category and those with undetermined status which occurred on Fisherman Island Refuge during the year include the peregrine falcon, osprey, and Atlantic loggerhead and Atlantic ridley sea turtles. Bald eagles are very infrequent visitors to the island and none were seen this year.

Dead stranded sea turtles on the beaches of Fisherman Island Refuge also showed an increase over last year, as they did at Back Bay Refuge. The first stranding was found on May 29 and the last on November 14. A total of 13 Atlantic loggerhead sea turtles and 1 Atlantic ridley sea turtle were found. Causes of deaths ranged from the most common of which is boat propellor strikes and drowning in fishing nets to disease.

Osprey nesting showed an increase over last year's six nests. A total of 9 established nesting pairs hatched 15 young, but only 12 were fledged.

This year a peregrine falcon hacking tower was constructed on the east side of the refuge near the salt marshes and tidal creeks. The tower erection and hacking of five young peregrines was undertaken by graduate students of the College of William and Mary in Williamsburg, Virginia, under the direction of Dr. Mitchel Byrd, a professor of biology at the college. On May 15 the five falcons (2 males, 3 females) were brought to the tower and fed daily by the students who stayed on



the island 24 hours a day to maintain a vigil on the birds. In June they were released from their holding box to the wild. Food was provided each day until the week of July 6, when food was provided every other day. After that week food was not provided at all and they were observed for one week, thus completing the hacking process. One male and one female were lost during severe wind storms shortly after they were released. The remaining male and two females, when last seen, were doing well on their own.

B. Migratory Birds

Fisherman Island, being strategically located off the southern tip of the Delmarva Peninsula, provides a valuable sanctuary for migratory birds. The island is an important stopping point in the fall for thousands of southbound migrants which stop to rest and feed before crossing the Chesapeake Bay. In the spring, many northbound migrants stop again after crossing the bay.

1. Waterfowl

Fisherman Island Refuge receives its peak waterfowl use from wintering birds.

Greater snow and Canada geese populations peaked in January at 300 each. Brant were at their peak of 165 in December. Only 15 whistling swan were seen this year, in January.

Top duck usage was from black ducks and American wigeon, which peaked at 150 birds each in December and comprised over 56% of the total peak duck usage for the month. However, in January of this calendar year black ducks comprised over 65% of the total population. Other species of ducks and their peak numbers are as follows: hooded merganser - 57, mallard - 51, northern shoveler - 50, bufflehead - 47, green-winged teal - 20, and gadwall - 7. Red-breasted mergansers are known to be present on the refuge but none were seen on the biweekly censuses. White-winged and surf scoters are commonly seen offshore in the winter months.

This year gadwall were the top waterfowl producers with 18 young from 2 nests being fledged. Mallard and black duck nests numbered one each with a total of 12 young fledged. At least this is the known production.

On May 9 a pair of Canada geese were observed together on the refuge portion of the east side of the island. No young could be located and it was suspected that they had nested on the island but were unable to produce young. Evidence substantiating this was found when a Canada goose egg was discovered on 1-17-81 while refuge personnel were checking waterfowl hunters on the private land area of the island. The egg was intact except on the narrow end where a 20 mm hole had been made. Perhaps next year they will return and have better luck.

2. Marsh and Water Birds

Use of the island by marsh and water birds for nesting was once again heavy. Most of the egrets and herons began returning to the island by the first of April. By May the heronries were fully active, with black-crowned night herons being the most abundant species.

Heronry surveys were conducted by refuge personnel in June and July. The following are production figures from these surveys.

<u>North-East Heronry</u>	<u>No. Feathered Young</u>
Black-crowned Night Heron	11
Yellow-crowned Night Heron	46
Green Heron	7

<u>South-East Heronry</u>	<u>No. Feathered Young</u>
Black-crowned Night Heron	173
Yellow-crowned Night Heron	58
Lousiana Heron	30
Little Blue Heron	15
Green Heron	7
Glossy Ibis	23
Snowy Egret	23
Cattle Egret	17

<u>West Heronry</u>	<u>No. Feathered Young</u>
Great Egret	140
Yellow-crowned Night Heron	51
Black-crowned Night Heron	41

Some of the more uncommon visitors that can be seen at the refuge are: white ibis, American bittern, horned grebe, and rarely, a white pelican. Several hundred double-crested cormorants are found near the refuge, but in March it is not uncommon to see 20,000 of them on a spit of land on the private portion of the island. Other more common species include the clapper and virginia rail, common loon, and gannett.

3. Shorebirds, Gulls, Terns and Allied Species

Black skimmers, common terns and American oystercatchers had established nesting sites on the refuge by May 11. Severe winds and high tides may have been the cause for the colony of 90 breeding adults to abandon their nests in the first week of June. They did not reneest on Fisherman Island.

Known nesting species and numbers of feathered young produced on the refuge are as follows: American oystercatcher - 48, common tern - 92, least tern - 32, herring gull - 6, and willet - 15.

Known species and numbers of breeding adults which nested on the private portion of the island are: herring gull - 305, laughing gull - 150, great black-backed gull - 120, royal tern - 500, and forster's tern - 20.

Other species found on the refuge throughout the year include the ring-billed gull, bonaparte's gull, gull-billed tern, sandwich tern, piping plover, semipalmated plover, black-bellied plover, ruddy turnstone, willet, red knot, semipalmated sandpiper, sanderling, and dunlin to name a few.

4. Raptors

Raptorial populations varied during the year depending on the migrational movements of each species. Hawks using the island included the northern harrier, sharp-shinned, Cooper's, red-tailed, red-shouldered, and broad-winged. Falcons on the island included the peregrine, American kestrel, and merlin. Small numbers of barn, great-horned, and short-eared owls utilized the refuge throughout the year.

As described in section IV, A., from a total of 9 established osprey nests 12 young were fledged. Towers from 50 to 200 feet high, that are remnants of the old Navy submarine detection base, are utilized extensively by nesting and feeding osprey. Yet with all these structures the osprey still find themselves having to nest on the ground. One young was pro-



duced but did not survive more than a few weeks in this ground nest. In an attempt to prevent such nestings, the YCC enrollees erected 3 new osprey platforms. Construction, by YCC, consisted of placing a 4' x 4' frame of 2 x 4's, with chain-link fence affixed to it, to the top of a 12' utility pole. Two of these structures were placed on the eastern side of the island and one near the ground nest on the west side.

The only other raptorial bird noted on the refuge and not previously mentioned is the turkey vulture. A peak population of 30 were seen in December.

5. Other Migratory Birds

Mourning doves are sighted occasionally on the refuge. However, their numbers are low and peak at a maximum of 30 birds.

Common and fish crows along with the boat-tailed grackle are a few of the more common other species found on the refuge.

C. Mammals and Non-Migratory Birds and Others

1. Game Mammals

Fisherman Island Refuge supports a relatively substantial white-tailed deer herd. The actual size of the herd is not known due to the dense thickets in which they can hide, but signs indicate a peak summer population to be approximately 40 individuals. Several 7 - point (eastern count) bucks can be found. Road kills on the 1.5 mile Chesapeake Bay Bridge-Tunnel causeway, across the middle of the island, account for the highest cause of known deer kills.

2. Other Mammals

No detailed mammal surveys have been conducted on the island. Eastern cottontail rabbit signs are plentiful, and muskrats are present in small numbers. Signs show that river otter visit the refuge quite often. An occasional dead porpoise washes up on the beach. One gray fox was sighted in late May.

3. Resident Birds

No upland game birds have been recorded on the island prior to this year's Christmas bird count, when three American woodcock were recorded on December 27.

4. Other Animal Life

Nothing to report.

V. INTERPRETATION AND RECREATION

A. Information and Interpretation

1. On-Refuge

Due to the inaccessibility of the island (\$8.00 toll) and lack of manpower and funds, public use on the refuge is restricted. All groups must be

accompanied by refuge personnel since the gate is locked and the island is not manned. The refuge is closed to all public use between May 1 and September 1 because the area is the sight for nesting herons and osprey along with hundreds of shorebirds. The refuge was used by approximately 143 students and teachers for environmental education activities pertaining to barrier islands. An additional 230 people from groups such as Northern Neck Audubon Society, Richmond Audubon Society, Cape Henry Audubon Society, Tidewater Appalachian Trail Club, and the Defenders of Wildlife were given interpretive tours of the refuge.

2. Off-Refuge

Nothing to report.

B. Recreation

1. Wildlife Oriented

No hunting, fishing or trapping occur on the refuge. Other wildlife oriented types of recreation, such as photography and wildlife observation, occur in conjunction with on-refuge programs.

Adjacent landowners on Fisherman Island, who use their property for hunting and fishing purposes, have prohibited entry to their land to Fish and Wildlife Service representatives and refuge visitors. This includes travel at low tide, since it has been determined that Virginia landowners own to the mean low-water mark. The action was taken in response to action taken by the Fish and Wildlife Service prohibiting their access through the refuge to their property. The Fish and Wildlife Service action would prohibit the landowners from setting a legal precedent for access.

2. Non-Wildlife Oriented

Nothing to report.

VI. OTHER ITEMS

A. Field Investigations

Dr. Mitchel Byrd, a professor of biology at the College of William and Mary, conducted a raptor banding program during the fall migration from mid-September through late October. The total number and species banded are shown on page 10.

<u>Species</u>	<u># Banded</u>	<u># Foreign Recoveries</u>
Sharp-shinned Hawk	230	3
Cooper's Hawk	21	2
Red-tailed Hawk	8	-
Red-shouldered Hawk	1	-
Northern Harrier	6	-
Peregrine Falcon	3	1
Merlin	39	2
Kestrel	45	-
TOTAL	353	8

The low peregrine falcon catch is due in some measure to a reduced number of hours of station operation as well as the presence of a territorial adult male on the island. The banders estimate that they saw about 80 peregrines during their work.

B. Cooperative Programs

The Army Corps of Engineers operates and maintains a 50' radio antenna just inside the west gate on Fisherman Island Refuge. Occasionally a Corps employee will come out to the antenna and hook up radio equipment that will send a location beacon to a Corps ship in the Chesapeake Bay. The ship uses this beacon and several others, which are strategically located, to accurately pin-point the ships position while it is taking soundings of the bay bottom.

On the beach near the east refuge boundary the National Oceanic and Atmospheric Administration operates a compressed gas tide gauge.

C. Items of Interest

This report was written by Bond and Poetter, typed by Clerk Cherry and proof-read by Administrative Clerk Ford.

PLUM TREE ISLAND NATIONAL WILDLIFE REFUGE

Poquoson, Virginia

ANNUAL NARRATIVE REPORT

Calendar Year 1980

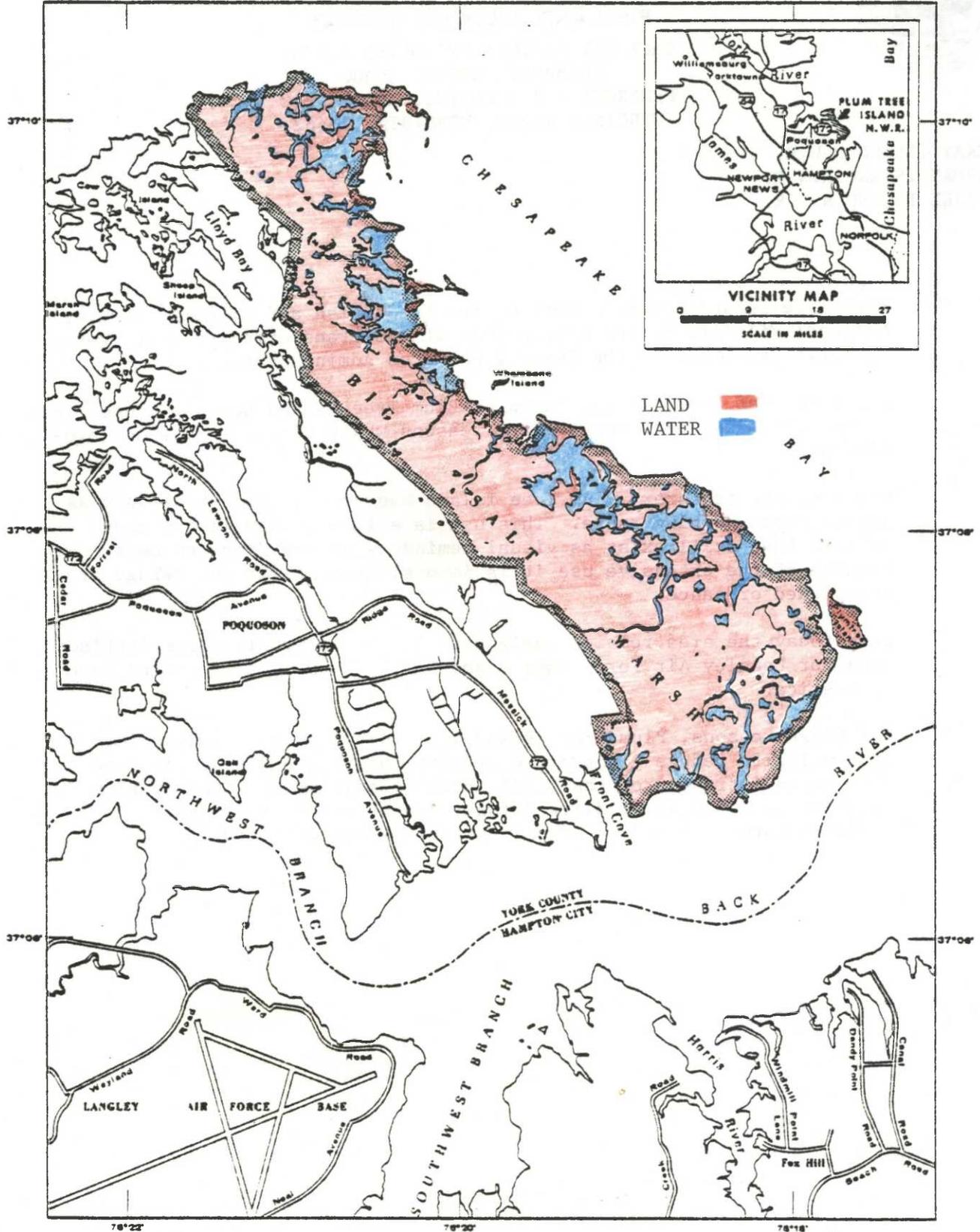
NATIONAL WILDLIFE REFUGE SYSTEM
Back Bay NWR Complex
Fish and Wildlife Service
U.S. DEPARTMENT OF THE INTERIOR

PLUM TREE ISLAND NATIONAL WILDLIFE REFUGE

UNITED STATES-
DEPARTMENT OF THE INTERIOR
76°22'

YORK COUNTY, VIRGINIA
76°20'

UNITED STATES
FISH AND WILDLIFE SERVICE
76°18'



LAND ■
WATER ■

COMPILED IN THE DIVISION OF REALTY
FROM SURVEYS BY U.S.G.S. AND F.W.S.



MEAN
DECLINATION
1970

WASHINGTON, D.C.

APRIL 1973

SR VA. 842-404



UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

BACK BAY NATIONAL WILDLIFE REFUGE
PEMBROKE OFFICE PARK
PEMBROKE # 2 BUILDING, SUITE 218
VIRGINIA BEACH, VIRGINIA 23462

MACKAY ISLAND N.W.R.
FISHERMAN ISLAND N.W.R.
PLUM TREE ISLAND N.W.R.

Plum Tree Island became a part of the U. S. Fish and Wildlife Service's National Wildlife Refuge System when it was transferred to that agency on April 24, 1972, by the General Services Administration.

Prior to that time, it was known as Plum Tree Island Bombing Range. This former title explains most of the reasons why public entry is now prohibited.

Prior to the transfer, Plum Tree Island was used quite extensively as an Air Force bombing range. This use is evident today in the many craters that still exist as visual reminders of the previous uses. Because of the extensive use it is impossible to clear the refuge of unexploded ordnance.

Even today the area remains designated as the external stores jettison area for Langley Air Force Base - possibly the busiest Air Force Base in America.

For these reasons, Plum Tree Island will remain as the purists idea of a wildlife refuge - where the wildlife users are completely free from human intrusion on the 3,275 acres of salt marsh known as Plum Tree Island National Wildlife Refuge. Major wildlife present includes marsh and wading birds, shorebirds and waterfowl.

I. GENERAL

A. Introduction

Plum Tree Island is composed of approximately 3,275 acres and is located in Poquoson, Virginia. The island is actually a peninsula of marsh land from the western shore of Virginia into the southern portion of the Chesapeake Bay. Plum Tree Island is bounded on the south by Back River, on the north by the York River, on the east by the Chesapeake Bay, on the northwest by Lloyd Bay and on the southwest by marsh that separates the area from the town of Poquoson, Virginia, three miles to the west.

Due to the area's isolation, this area was never inhabited and was primarily used for hunting and fishing prior to acquisition by the government for an Aviation Experimental Station in 1917. Air Force records indicate that the area was used for a gunnery and bombing range until the latter part of the 1950's. The island was transferred to the Department of the Interior on May 22, 1972. Langley Air Force Base maintains use of the island as an emergency jettison area and a restricted area for explosive ordnance disposal.

B. Climate and Habitat Conditions

1. Weather Conditions

There is no weather station on the Refuge. Weather conditions approximate those at the Back Bay Station.

2. Habitat Conditions

The majority of the area is under tidal influence as tidal flooding occurs twice daily on an estimated 1,000 acres of low-lying marsh. During severe storms and high tides an additional 1,500 acres are flooded. Hundreds of potholes created by intensive bombing dot the marsh terrain.

C. Land Acquisition

Not applicable.

D. System Status

Plum Tree Island National Wildlife Refuge is unfunded, isolated, and unusable by humans. It is treated accordingly.

II. CONSTRUCTION AND MAINTENANCE

A. Construction

Nothing to report.

III. HABITAT MANAGEMENT

Nothing to report.

IV. WILDLIFE

A. Endangered and Threatened Species

The peregrine falcon is believed to make occasional use of Plum Tree as a hunting area. Dr. Mitchell Byrd of the College of William and Mary reported seeing one on the Refuge in December.

B. Migratory Birds

No significant use of Plum Tree by migratory birds has been confirmed, despite some reports of large (300+) concentrations of black ducks. Other species known to use the area include both hooded and red-breasted mergansers, mallard, and bufflehead.

C. Mammals and Non-Migratory Birds and Others

Nothing of significance to report.

V. INTERPRETATION AND RECREATION

Not applicable.

VI. OTHER ITEMS

The island is saturated with unexploded bombs and other ammunition which has made public use virtually impossible. Attempts have been made to clear the island of dangerous ordnance, but only partial success was achieved. A certificate of clearance was issued in 1959 but the island was never certified safe by the Air Force. The marsh interior still contains the more dangerous hardware.



DLP

Plum Tree Island NWR, from the air . . .



RDP

and from the ground