

EASTERN SHORE OF VIRGINIA
FISHERMAN ISLAND
NATIONAL WILDLIFE REFUGES
KIPTOPEKE, VIRGINIA

ANNUAL NARRATIVE REPORT
Calendar Year 1987

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

K. FEEDBACK

1. Volunteer Program.

A volunteer program at Eastern Shore of Virginia National Wildlife Refuge was started this year. The group grew from four or five individuals to eighteen by fall of the year, and dropped back by several individuals over the winter. Volunteers were active in development of the nature trail, keeping the Visitor Contact Station open on weekends, making signs, clean-up, and a variety of other odd jobs at which they have expertise. The refuge staff can only speak highly about their contribution, however, it must be remembered that you do not get something for nothing. This effort, with our very small professional staff has taken time away from other projects. We hope those in a position of authority will allow us enough professional staff to make this "Take Pride in America" effort a continued success.

J. OTHER ITEMS

3. Credits.

Credit for the Introduction; A, B, E2,6, F, G, go to Louis Hinds, Assistant Manager.

Credit for sections; C, D5, E5, H17, I, and Feedback go to Sherman Stairs, Refuge Manager.

Credit for sections; E, H1,2,3,4,6,7, J, and assembling the narrative go to Irene Morris, Secretary.

Credit for information on I go to Carlton Scott, Facilities Manager.

Credit for typing the narrative go to Louis Hinds, Sherman Stairs, and Irene Morris.

Photography credits to Louis Hinds.

K. FEEDBACK

It seems that computers have finally come to all field stations in Region 5 and should be on line within the next year. This will make a significant difference in the way we do business, but let us hope that someone doesn't believe it's an answer to all administrative problems. It isn't. Computers will help us in many work areas, but have and will create different kinds of problems. It will certainly improve the quality and quantity of written work from daily operations, speed information flow within defined areas and serve as our memory in a variety of ways. However, we hope it will not increase an already burdensome load of paperwork processes.

Of interest - Our current model is usable by just one person at a time and, although we try to share, there are more times than not where someone uses alternate methods. Good news, there is a solution; purchase a desk type unit that interfaces by diskette- and its not too expensive either.

REVIEW AND APPROVALS

EASTERN SHORE OF VIRGINIA NATIONAL WILDLIFE REFUGE

KIPTOPEKE, VIRGINIA

ANNUAL NARRATIVE REPORT

Calendar Year 1987

| | | | |
|------------------------|----------------|----------------------------|---------------|
| <u>Thomas W. Davis</u> | <u>4/14/88</u> | <u>Thomas J. McAndrews</u> | <u>8-5-88</u> |
| Refuge Manager | Date | Refuge Supervisor Review | Date |

| | |
|--------------------------|---------------|
| <u>Chad Young</u> | <u>5/6/88</u> |
| Regional Office Approval | Date |

EASTERN SHORE OF VIRGINIA
NATIONAL WILDLIFE REFUGE

AND

FISHERMAN ISLAND NATIONAL
WILDLIFE REFUGE

ANNUAL NARRATIVE REPORT

Calendar Year 1987

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

INTRODUCTION

Eastern Shore of Virginia National Wildlife Refuge is located on the southernmost tip of the Delmarva (Delaware, Maryland, and Virginia) Peninsula, in Northampton County, Virginia. Lying at the mouth of the Chesapeake Bay this area typifies the eastern coastal plain with gentle rising slopes reaching to only 25 feet.

Written history of the "Shore" area dates back to the earliest colonial times when it's natural diversity caught the eye of explorers. In the early 1600's, Captain John Smith described it as:

"...a faire Bay compassed but for the mouth with fruitful and delightsome land...Heaven and earth never agreed better to frame a place for man's habitation."

And so it was and still is, that the predominate occupations are either "farmin" or "working the water" (fishing). Man's use of the land, in this area, though, is not solely tied to what he might harvest.

The area's strategic location at the entrance to the Chesapeake Bay encouraged fortification throughout our nation's history. Today the landscape is dotted with remnants of that history. Gun emplacements and bunkers rise on the land encompassed by the refuge.

Known by the local folks as the old Cape Charles Air Base, the importance of this area, to avian species, was little understood except by professional and some amateur ornithologists. Now, it has been identified as one of the most important migratory bird habitats along the east coast, comparable to the better known Cape May, New Jersey. The reason for its importance is that the peninsula acts as a natural funnel for migratory birds in the fall. At the tip, millions of these migrants may pause until favorable winds blow, to assist them in their crossing of the bay.

In the early 1980's the threat of development loomed over this area. Condominiums, town houses, and a marina were all part of a large scale construction project planned by a Virginia Beach based corporation. The U. S. Fish and Wildlife Service learning of these plans foresaw the habitat destruction and the other associated problems that increased human activity would have on the area. Responding to the developmental pressure the Service established the Eastern Shore of Virginia National Wildlife Refuge with an approved acquisition boundary of approximately 1350 acres. Fisherman Island, which is located one quarter mile off shore and consisting of 1,000 plus, was assigned to Eastern Shore of Virginia National Wildlife Refuge for management responsibilities. Together these two refuges are to provide a safe haven for migratory birds to rest and feed before crossing the Chesapeake Bay.

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A. HIGHLIGHTS

The 1987 Law Enforcement Refresher Course and the Heavy Equipment Operation and Safety Training Course were held at Eastern Shore of Virginia National Wildlife Refuge.

Region 5's, Southern Zone Biologist, Richard Sojda and family became residents at Eastern Shore of Virginia on May 24, 1987.

The new maintenance and flammable storage buildings were accepted from the contractor.

A volunteers program was initiated to staff the Visitors Contact Center.

On August 10th, Mr. Edward Doggett, a YCC Youth Leader, drowned while conducting refuge operations.

The Army Corps of Engineers let a contract for the demolition of 10 structures located on the refuge.

The 108 acre Skidmore Island was purchased from The Nature Conservancy.

B. CLIMATIC CONDITIONS

The climatic conditions at Eastern Shore of Virginia National Wildlife Refuge are similar to those of the Mid-Atlantic coastal regions, mild and humid with precipitation generally well distributed throughout the year. These conditions are influenced by the water temperatures of the Chesapeake Bay and the Atlantic Ocean. Winter winds blowing out of the northeast or northwest, at an average of 12 miles per hour, will warm slightly as they cross these waters yielding an average January temperature of 42 degrees Fahrenheit. During the summer, winds out of the southwest, blowing at 9 miles per hour, will cool as they cross the water yielding an average July temperature of 77 degrees Fahrenheit. Yearly precipitation amounts average 42 inches and the first killing frost is in late October and the last frost around the beginning of April.

The first year for collecting weather data at the refuge was 1986. Since only one year's material is available for comparison, baseline information was obtained from the Truck and Ornamental Research station in Painter, Virginia. This research station is located 50 miles to the north of the refuge and differences in temperatures and precipitation are known to exist. Therefore, comparisons of their data to ours is not intended to show exact figures but only general trends.

During 1987, the coldest day of the year was January 28th, with a reading of 14 degrees Fahrenheit. The hottest was recorded on July 26th with a reading of 98 degrees Fahrenheit. The last date for temperatures below freezing for the 1986/1987 winter was on March 24th and the first date of below freezing temperatures for the 1987/1988 winter was on November 21st.

Precipitation, or the lack of it, was the single biggest weather factor for most of 1987. During the months of May through September, the average expected rainfall is 18.64 inches, but for 1987 only 10.71 inches fell during this time frame. Refuge operations were not hampered to any great extent by the dry weather but the cooperative farmer lost 43 acres of soybeans due to the lack of rainfall.

The following precipitation table shows the average amount of rain and the actual amount of precipitation received in Fiscal Years 1986 and 1987.

| 45 YEAR AVERAGE ¹ | | 1986 PRECIPITATION | 1987 PRECIPITATION |
|------------------------------|-------|--------------------|--------------------|
| January | 3.46 | 3.65 | 10.18 |
| February | 3.40 | 2.84 | 2.58 |
| March | 4.21 | .60 | 2.55 |
| April | 3.18 | 2.48 | 3.55 |
| May | 3.44 | .73 | 2.65 |
| June | 3.42 | .85 | 1.90 |
| July | 4.30 | 2.47 | .90 |
| August | 4.08 | 7.02 | 2.90 |
| September | 3.40 | .57 | 3.36 |
| October | 3.47 | 1.22 | 2.62 |
| November | 3.18 | 1.77 | 4.41 |
| December | 3.22 | 4.43 | 3.78 |
| Totals | 42.76 | 28.63 | 40.38 |

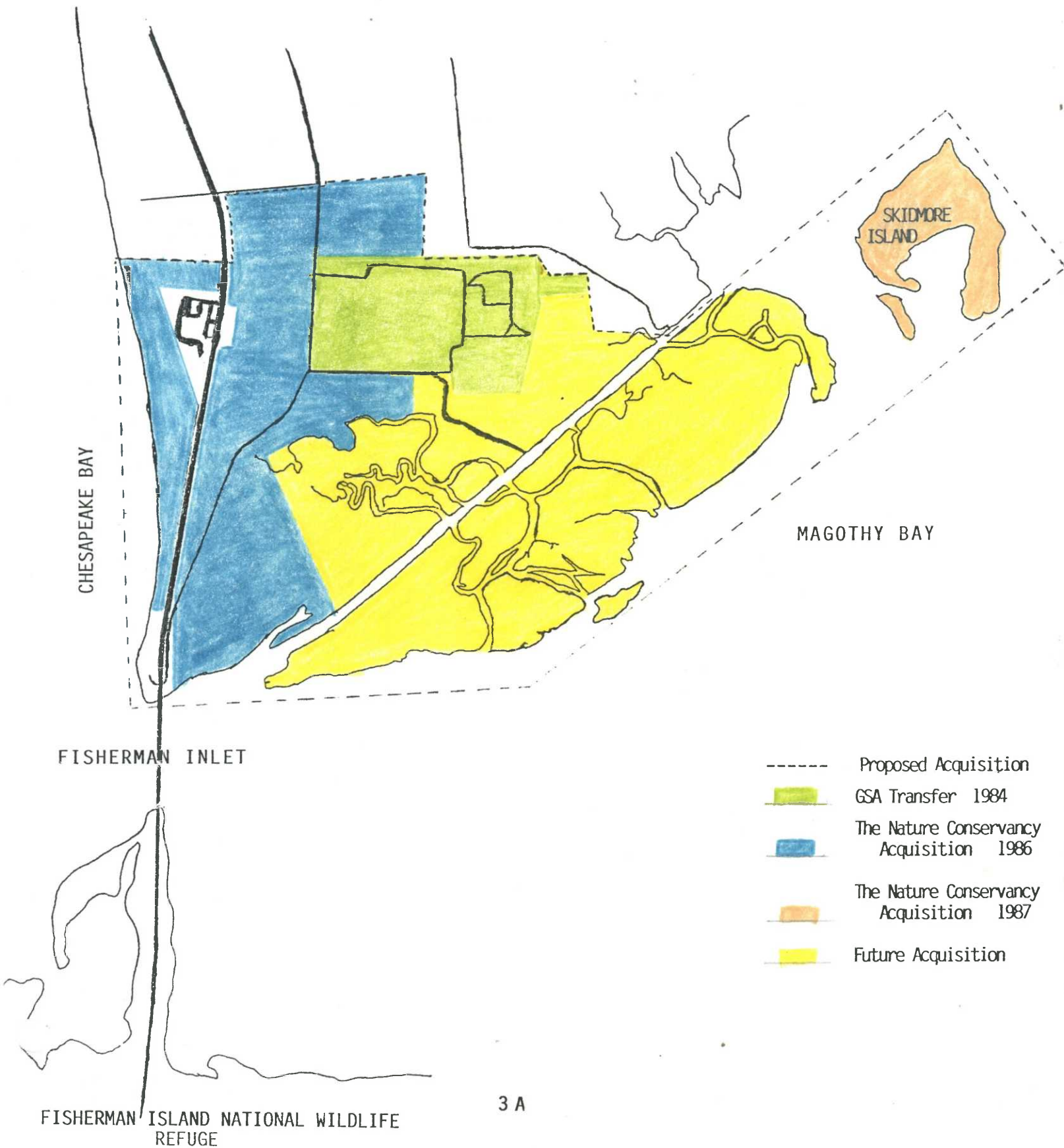
C. LAND ACQUISITION.

1. Fee Title.

Acquisition of land within the approved refuge boundary continued during 1987 with the purchase of Skidmore Island. Skidmore Island is a small 108 acre island lying in the waters of Magothy Bay. This island was put up for sale by owner Mr. Edward S. White, in 1986. Even though the island was within the approved refuge boundary, funding was not available for its purchase. The Nature Conservancy (TNC), a non-profit national conservation agency, foreseeing the eventual purchase of the island by land developers moved quickly to obtain an option on the property. Their quick decisive action put the island under TNC control until the Service was able to secure funding for purchase of Skidmore Island.

1. As reported by the Truck and Ornamental Research Station in Painter, Virginia.

ACQUISITION MAP FOR EASTERN SHORE OF VIRGINIA NATIONAL WILDLIFE REFUGE





Aerial View of Skidmore Island in Fall 1987

LH 1987



Aerial View of Raccoon Creek, a privately owned property within the approved acquisition boundary.

LH 1987

2. Easement.

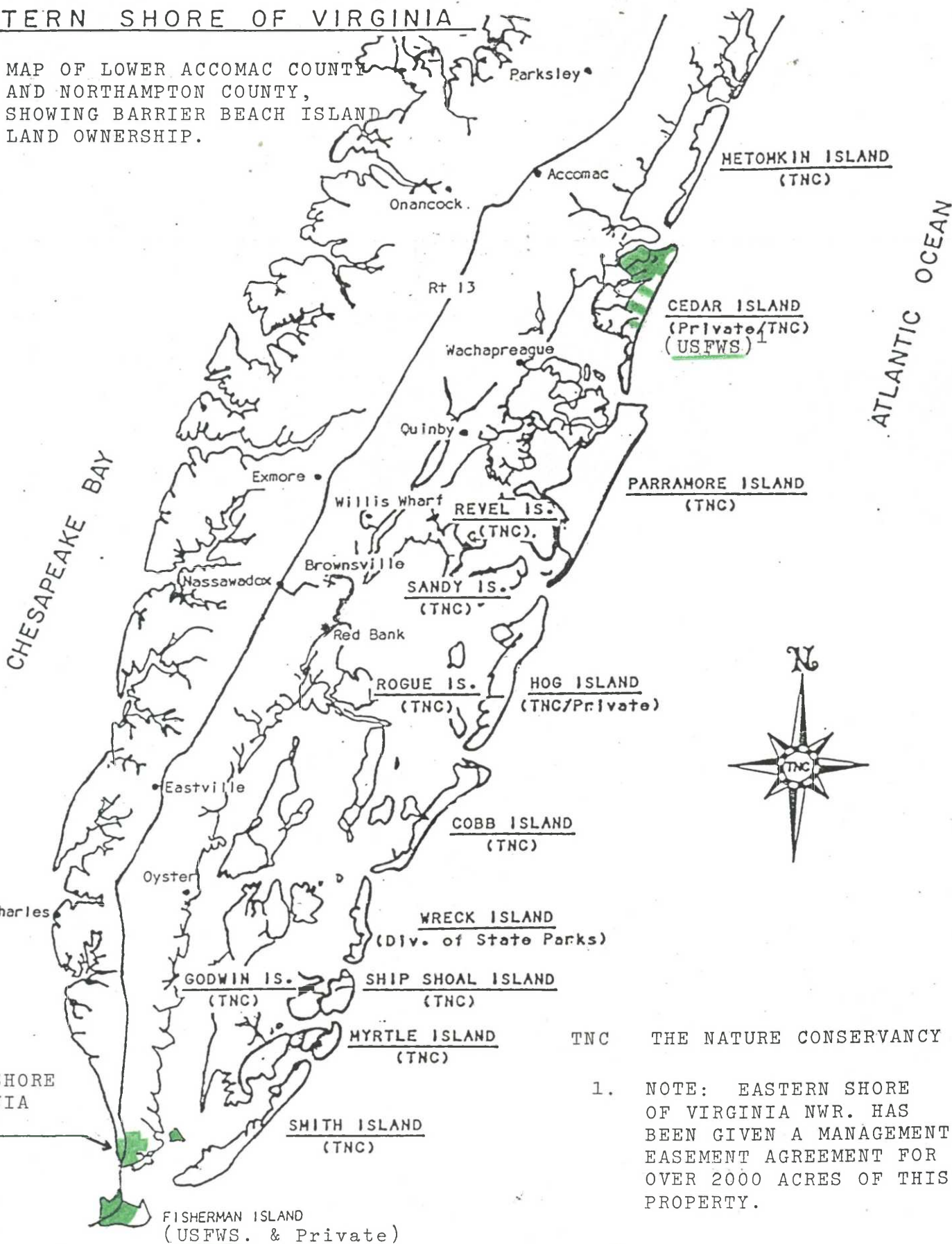
The U.S. Fish and Wildlife Service entered into a management lease that comprised 1,844 acres, more or less, of land located on Cedar Island. This management lease was signed with the National Fish and Wildlife Foundation, a non-profit corporation of the District of Columbia.

Cedar Island is a barrier beach island located along Virginia's Eastern Shore in Accomack County. The island is typical of the barrier islands in that it is a very dynamic system. Large sections of the island may wash away in one storm only to be restored at a later time, in another location. The only access to the island is by water or air. There are several dwellings on the island, some of which are not more than shacks while others are extremely valuable.

Cedar Island became the focal point for an controversial issue in 1986 and 1987. That issue centered on whether the state government should allow the development of barrier beach islands. The problem, although not a new one, arose when the land owner decided to develop a larger portion of the island. He subdivided the property into building lots and sold them as beach front property. The idea of hundreds of homes and miles of streets being built on this fragile environment outraged many local citizens. An organization called the Friends of Cedar Island was formed to fight any further land sale and to block large scale development. The months of hearings, legal maneuvering, and newspaper articles that followed produced a land gift of approximately 1244 acres of salt marsh to the National Fish and Wildlife Foundation. With this land donation a conservation easement was also granted that covered another 600 acres of building lots that stretched from the beach across the primary dunes to the salt marsh. The responsibility for managing this property was then transferred from the National Fish and Wildlife Foundation to the U.S. Fish and Wildlife Service using a two-year management lease. The ultimate responsibility for posting and management was given Eastern Shore of Virginia National Wildlife Refuge in November of 1987.

EASTERN SHORE OF VIRGINIA

MAP OF LOWER ACCOMAC COUNTY
AND NORTHAMPTON COUNTY,
SHOWING BARRIER BEACH ISLAND
LAND OWNERSHIP.



EASTERN SHORE
OF VIRGINIA
N.W.R.

D. PLANNING

5. Research and Investigations.

Eastern Shore of Virginia NR87 - Evaluate the Extent of Genetic Variability Present in Guam Rails.

Dr. Susan M. Haig, National Zoological Park, Smithsonian Institution used the refuge to collect Clapper Rails (Rallus longirostris) and Virginia rails (Rallus limicola) using Federal Collection Permit PTR-722698. The research seeks to evaluate the genetic diversity and degree of relatedness among individual Guam rails (Rallus owstone). The resulting genetic and pedigree information will be used to identify founder lines, and to develop comprehensive captive management plans for Gaum rails.

Eastern Shore of Virginia NR87 - "Bird Banding Activities" 51650-40108.

A permit was issued to Dr. Mitchell A. Byrd, Professor at the College of William and Mary, Williamsburg, Virginia. Banding sites were located at Wise Point on the Eastern Shore refuge, manned by Rudy Cashwell, employed by William and Mary College, and east of the parking lot on Fisherman Island, manned by Paul Baker, Volunteer. For results see: G. Wildlife, Section 16.

Eastern Shore of Virginia NR87 - "Live Trap Cottontail Rabbits." A project of the Virginia Commission of Game and Inland Fisheries 51650-02.

Initial phase of this research was to live trap cottontail rabbits on barrier islands, i.e., Fisherman Island, and mainland areas, i.e., Eastern Shore of Virginia, and send them to the Smithsonian Institute of Science. The primary purpose was to find a distinctive barrier island subspecies "Sylvilagus floridanus hitchensi". No animals were trapped and no tracks or signs observed on Fisherman, Smith and Mockhorn Islands. Last known sightings were in 1960.

E. ADMINISTRATION.



1987 STAFF PHOTOGRAPH

2 6 7 4 3
HINDS, CARPENTER, BLAKE, MORRIS, SCOTT,
5 1
LOOMIS, STAIRS RS 1987



RICHARD S. SOJDA, WILDLIFE BIOLOGIST LH 1987

1. Personnel.

1. Sherman W. Stairs, Refuge Manager, GS-485-12/7. EOD, 12/23/84, PFT.
2. Louis S. Hinds, Assistant Refuge Manager, GS-485-11/4, EOD, 6/23/85, PFT.
3. Carlton T. Scott, Facilities Manager, GS-1640-11/8, EOD, 12/9/84, PFT.
4. Irene G. Morris, Secretary, GS-318-4/2, EOD, 12/23/84, PFT.
5. Jerome C. Loomis, Maintenance Worker, WG-4749-7/5, EOD, 12/9/84, PFT.
6. Robert W. Carpenter, Maintenance Worker, WG-4749-7/5, EOD, 12/9/84, PFT.
7. Maurice T. Blake, Tractor Operator, WG-5795-6/3, EOD, 12/9/84, TFT.
8. Lester W. Walizer, Guard, GS-0085-4/7, EOD, 11/25/84, PFT, Resigned 4/9/87.

The guard position at Eastern Shore of Virginia Refuge was eliminated on April 9, 1987. Lester W. Walizer, incumbent in that position, was offered a tractor operator position but declined. He is presently working in the local community.

Effective November 22, 1987, the appointment of Irene Morris, Secretary, was converted from temporary full-time to permanent full-time.

Maurice Blake, Tractor Operator, was rehired in April-September 30, 1987 as a seasonal worker. Mr. Blake was then rehired to continue on in a temporary position as tractor operator.

Assistant Refuge Manager, Louis Hinds was assigned to the Washington, D. C. office for two weeks, the last of November and 1st week in December, to help technically edit the heavy equipment manuals that the Service is developing for its Equipment Safety Training Program.

On May 11th, Louis Hinds, Assistant Refuge Manager, presented a course in Heavy Equipment Utilization at the Refuge Manager's Academy in Blair, Nebraska.

The Annual Woodcock Wingbee was held at Patuxent Wildlife Research Center in Laurel, Maryland for the week of February 2nd through the 5th, and Louis Hinds assisted at this annual event.

Richard S. Sojda, Zone Biologist for Region 5's Refuges-South, came on board May 24, 1987. He hails from Morris, Minnesota, where he served for four years as the Morris Wetland Management District Biologist. Mr. Sojda's tri-state management responsibilities include Delaware, Maryland, and Virginia.

The following is a comparison of the inboard strength for the last four fiscal years.

| | <u>Permanent Full-Time</u> | <u>Seasonal</u> | <u>Temporary Full-Time</u> |
|-------|--------------------------------|-----------------|--------------------------------|
| FY 87 | 6 | 1 | 1 |
| FY 86 | 6 | | 2 |
| FY 85 | 6 | | 3 |
| FY 84 | 5 | | 3 |

2. Youth Programs.

The refuge hosted an seven person non-residential YCC camp from June 22 to August 14, 1987. Recruitment was accomplished by news releases to newspapers, radio stations, and three local high schools.



Enrollees prepare to remove portion of chain link fence on refuge boundary line.

LH 1987

Three male and three female enrollees were selected by a lottery that was conducted at the office of the County Administrator for Northampton County. One additional enrollee, Edward Doggett, was selected from the 1986 YCC camp to return as a Youth Leader for this year's camp. The selected Camp Director was Douglas Coburn, an American Government Teacher at Northampton County High School.

This summer was characterized by Mr. Coburn as hot and humid with the enrollees constantly fighting ticks, chiggers, and poison ivy. The good side of the program was the enrollees put in eight weeks of hard physical labor and were proud of their work at summers end.

Some of the projects accomplished by the enrollees were; clearing approximately 1.5 miles of brush and small trees for the development of a wildlife trail, construction of .5 mile of wildlife trail, facility maintenance, litter pickup and removal, landscaping, boundary line maintenance, and bird banding.

With one week remaining in the camp, a tragedy occurred that deeply saddened us all. While attempting to retrieve, what was thought to be a dead dolphin floating off the beach of Fisherman Island, Edward Doggett drowned. We now more fully understand the meaning of this young man's contribution to us and his community.

Edward had the unique ability to make everyone he came in contact with his friend. During the summer we were faced with many hard and difficult tasks, but Edward made the work fun just by his being there. We will all miss him dearly and can truly say we've benefitted by having known him.

"The YCC Program can be proud of the values and camaraderie instilled within the young people today. The benefits of such a program cannot be fully realized in a matter of days or months. I fully believe that the impact of such an experience on our youth will serve a lifetime." as quoted from Doug Coburn, Camp Director of 1986.

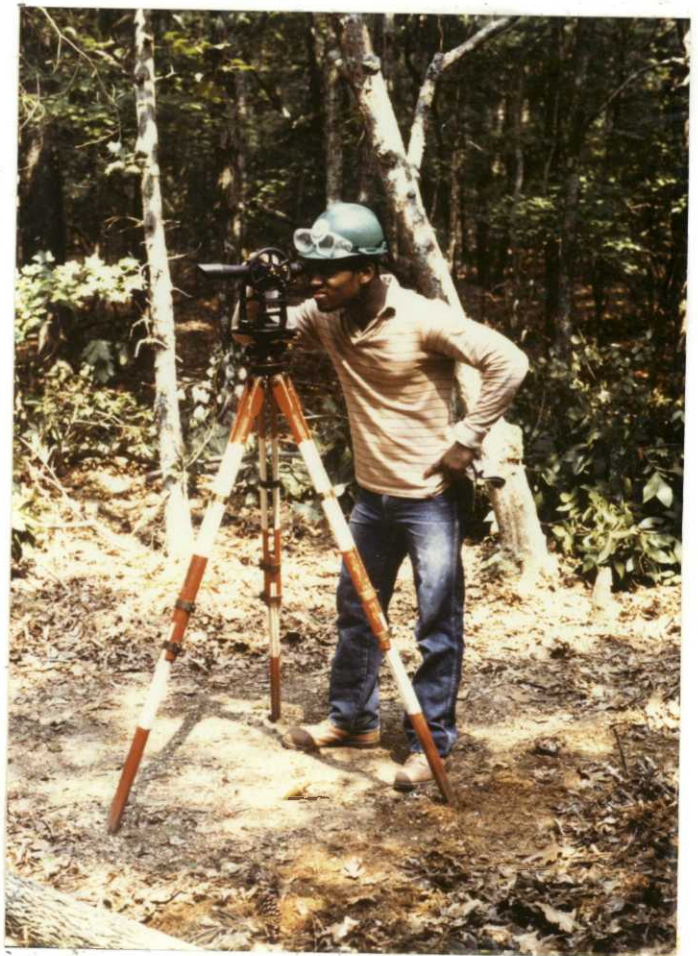
4. Volunteer Program.

The refuge operated for the first half of 1987 with only two volunteers, Rudy Cashwell and Harry Armistead. Rudy is employed by the College of William and Mary, Williamsburg, Virginia. He is employed by the college to do wildlife surveys, assists in setting up and manning bird banding stations, and functions as part of the peregrine falcon restoration team. Rudy's volunteer work at the refuge includes a variety of jobs but mainly he assists with wildlife surveys.



The YCC enrollees pictured are
from left to right
Cheryl Drew, Kimberly Gasperini, Sheila Stiles,
Leonard Nottingham, Leo Owens, Robert Lewis,
and Douglas Coburn, Camp Director

Edward Doggett
"We will all miss him dearly
and can truly say we've
benefitted by having known him."



LH

Harry Armistead is employed by Jefferson Medical University in Philadelphia, Pennsylvania as a librarian. Mr. Armistead also is Regional Editor of the Middle Atlantic Coast publication, "American Birds", and resides in Pennsylvania. He is a avid birder and often leads birding tours to the lower eastern shore. Harry assists the refuge by conducting bird watching tours and colonial nesting bird surveys on Fisherman Island.

It became obvious to the refuge staff that if we were going to open the doors of the visitor center/museum on weekends we were going to need the help of volunteers. During the month of July, a local newspaper reporter was asked to visit the refuge and do a story on the refuge's need for volunteers. The response to her article was better than anticipated. A core group of 14 people signed up.

The principle job we asked all the volunteers to undertake was to staff the visitor center on weekends. This would mean that for the first time since this building was dedicated in November 1985, it would be opened to the public on a regular basis. The enthusiasm of these volunteers were overwhelming; not only did they staff the visitors center/museum, but they conducted the routine maintenance of the floors, rest rooms, and displays. Other jobs undertaken by these people were nature trail construction, sign painting, landscaping, construction, and placement of bat boxes, and clerical help in the refuge office.

Approximately 300 hours labor were derived from our volunteers during 1987.

5. Funding.

A summary of funding at Eastern Shore of Virginia National Wildlife Refuge for fiscal years 1985, 1986 and 1987 is shown on the following page. Funding to operate Fisherman Island National Wildlife Refuge is included in these totals. The refuge was not funded prior to fiscal year 1985.

| <u>TYPE OF FUNDS</u> | <u>FISCAL YEAR</u> | | |
|------------------------------|--------------------|-----------|-----------|
| | <u>85</u> | <u>86</u> | <u>87</u> |
| Operations & Maintenance | 339000 | 277100 | 238650 |
| Residence Maintenance | 900 | 900 | 8600 |
| Contaminants/ARMM'S | 95999 | 21918 | 193430 |
| Redirected ARMM'S | - | 20000 | - |
| Youth Conservation Corps | - | 11000 | 13600 |
| Construction Completed 1987: | | | |
| Shop/Storage/Gasoline Pumps | | | 247931 |
| Flammables Building | | | 26457 |

6. Safety.

The over-all safety program at Eastern Shore of Virginia Refuge was something to be proud of for most of the year but we did have our tragic hours. During the first half of 1987 we had no employee injuries, no vehicle collisions, and several safety related accomplishments. One of these accomplishments came about when we decided to conduct a deer survey using a helicopter. This plan almost came to a halt when we learned that the closest OAS (Office of Aircraft Services) approved helicopter service was in Roanoke, Virginia. Flight time from Roanoke to the refuge was expected to take one hour. This pushed the expected cost of the survey from \$600 to \$1600. After several discussions with Clyde Bolin, Special Agent/Pilot for the U.S. Fish and Wildlife Service, Assistant Manager Hinds conducted a phone survey of all the refuges in the Norfolk area to determine what their needs for a helicopter service were. Based on this survey, a letter was written to Mr. Bolin asking him to request OAS to certify a helicopter service in the Norfolk area. On January 30th, notification was received that Atlantic Air Limited Helicopter Service, located at the Norfolk Virginia Airport, had been certified by OAS and was now approved for hire.

Another safety related project took place during the first week of the YCC camp. Assistant Manager Hinds presented an eight hour multimedia first aid course to the enrollees and Group Leader. This course was given to these young people not just to teach them first aid but to send a message that the refuge was committed to a good safety program.

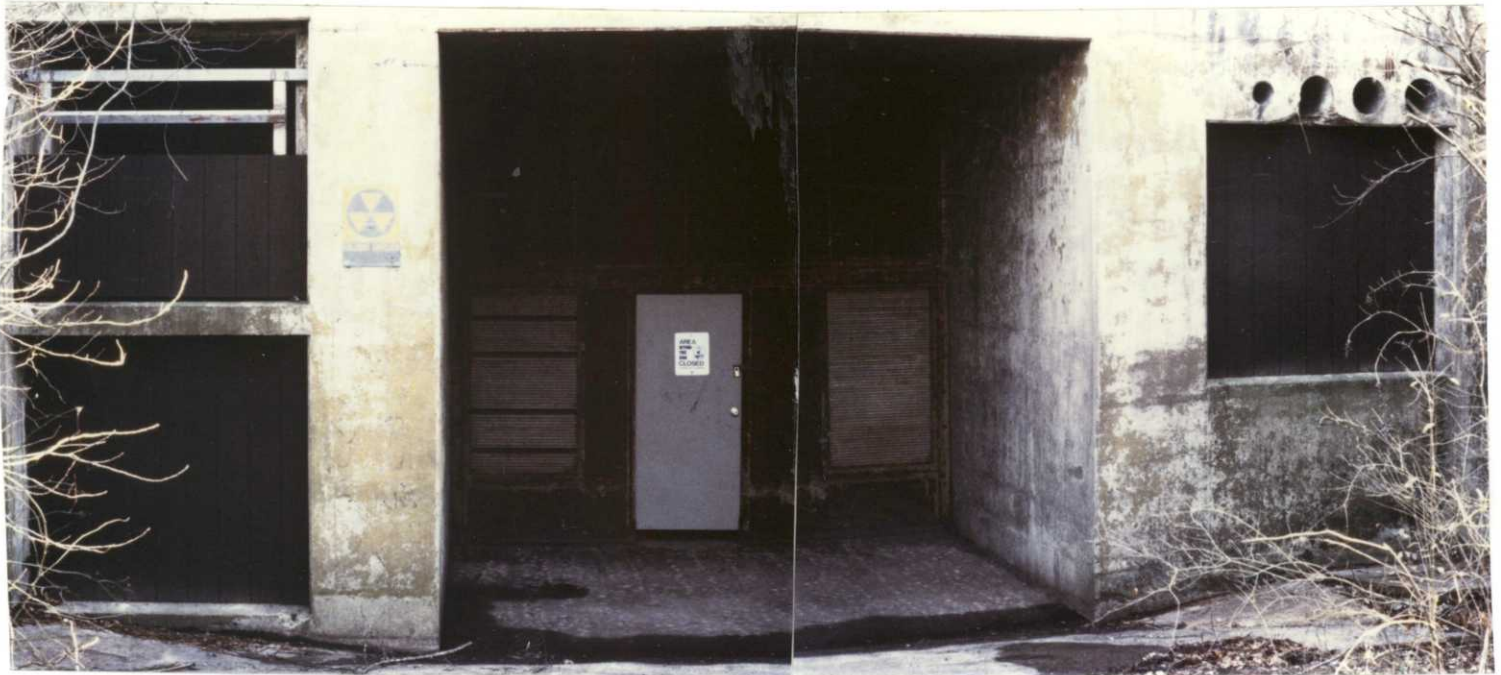
The first DI-134 was generated when the contractor who was removing houses from the refuge cut a corner too short and his trailer crashed into a hose house and fire plug. Restitution to the government was handled by the contractor who repaired the hydrant.

On August 10th an accident occurred that would affect us all deeply. While assisting Manager Hinds in a survey for dead dolphins Edward Lee Doggett, a YCC youth leader, drowned. Edward and two other enrollees were assisting Mr. Hinds in a beach survey for dead bottle nose dolphins. They saw what appeared to be a dead dolphin approximately 25 yards from shore. The enrollees waded out to the object and realized it was only a large stick. When attempting to return to shore the enrollees entered into deep water and panicked. One of the young men swam to shore, Manager Hinds was able to save another but Edward could not be found. The conclusion of the Board of Inquiry was that a job hazard safety analysis had not been conducted for this particular job. If the safety analysis had been completed then the following measures would have been taken: Personal flotation devices would have been a requirement, footwear commensurate with water operations would have been worn, the swimming abilities of the enrollees would have been known, and a radio would have accompanied the workers. This accident pointed out to all of us that our jobs, even the ones that are fun, can have a very tragic side to them.

One other incident occurred during the year. On October 30th, Manager Stairs found the electrical transformer to our new shop on fire. After cutting all power coming into the refuge he extinguished the fire. The cause of the fire was never determined but it is suspected that the transformer was faulty. Since there was a guarantee from the manufacturer of the transformer a new one was installed free of charge.

At the start of the new fiscal year refuge vehicles were taken to a local auto repair shop and a complete safety check, vehicle inspection, and tune-up was done to each. All safety deficiencies or needed repairs were completed by this contractor. To have the older refuge vehicles service checked is a necessary safety precaution.

Another safety related project undertaken this year was the closing off of the World War II Coastal Defense Bunkers on the refuge. These bunkers are man made caves that were built in the 1940's. Some people find the dark corridors, passageways, and rooms exciting areas to explore, sort of an eastern shore version of spelunking. Due to hazards inside these bunkers and the liability that the government would incur should someone get hurt. We decided to restrict access into these structures. Air shafts were sealed (See G-1 for further information), doors were hung and locked, and post and rail fences were erected to direct people through safe areas only. This project was completed in a little over two weeks with two bunkers on Eastern Shore of Virginia Refuge and one on Fisherman Island Refuge closed off.



Air vents and doorways were closed
on bunkers to stop unauthorized entry. LH
Note: Entrance gate for bats in upper left corner.

As a side note to this project: During the year we have had several visitors come to the refuge who are interested in the military history of the area. One such visitor went to the archives in Washington, D.C. and retrieved the blue prints for the World War II bunkers located on the refuge and copied them for us. Using these blue prints, we were able to screen the refuge area for possible hazards. One hazard we found was a 3000 gallon septic tank that was open at ground level. After closer inspection it was also found to be full of oil. As a temporary measure the tank has been covered and the Army Corps of Engineers called upon to determine how they are going to handle the oil removal process. During 1988 further inspections of this type will be conducted to see if more hazards exist.

7. Technical Assistance.

On May 28th and 29th, Assistant Manager Hinds met with Mr. Hume Dixon and his brother, farmers who live close to the refuge, to discuss wildlife management practices for their farm. Areas discussed were reduced mowing of field edges during nesting season and increased plantings of Crownvetch or Birdsfoot trefoil to product thicker nesting cover on dikes and road edges. Prescribed burning was discussed for a few pine stands, as was a green tree reservoir in a hardwood lowland. They have agreed to erect several wood duck boxes and see if they can have fiberglass predator guards commercially made by a local boat builder.

8. Other.

The refuge was host to a number of training functions for Region 5 personnel, and for a number of other agencies also. These included:

A) Law Enforcement Refresher Course - There were two 40 hour refresher sessions held for refuge officers, the first was March 8th through 13th, and the second course was held April 6th through the 10th. Nearly 100 officers took part in this annual training. All officers were requalified with handgun and shotgun; were taught additional hand to hand techniques; took part in the first physical fitness testing effort; participated in exercises relative to officer/adversary interaction and other information concerning drugs; worked with the U.S. Attorney or Magistrate on sobriety testing; and many other topics.

B) Heavy Equipment and Farm Tractor and Implement Training - Two sessions were held, one April 27th to 30th and the other May 1st through the 8th. Instructors included Louis Hinds and Robert Carpenter of Eastern Shore of Virginia Refuge, Steve Flanders of Montezuma Refuge and Edward Darlington of the Harrison Lake Fish Hatchery. Participants in the training came from Region 5 refuges, fish hatcheries and research stations. The heavy equipment course was rated by the trainees as "good to excellent"; they judged it helpful, not only for maintenance personnel but also to management.

Much of the equipment utilized during the training was trucked in from neighboring refuges and research stations. Managers and staffs of these facilities deserve a "thank you" for loaning their equipment for the training effort.

C) The Chesapeake Bay Bridge Tunnel Authority conducted a state approved basic police school using refuge facilities. This was a full 10 week session similar to our federal law enforcement training school in Glynco, Georgia, except there was considerably more effort placed upon physical fitness during the training period. They graduated 20 officers from 22 candidates. There were quite a number of these officers that do not work for the Chesapeake Bay Bridge Tunnel Authority, but for other municipalities such as; five officers from the Town of Chincoteague, one officer from the Town of Onancock, two officers from Accomac County Sheriff's Office and one officer from the Town of Cape Charles. The refuge was reimbursed at \$10.00 per day for the use of electricity and fuel for heat. The Chesapeake Bay Bridge Authority assumed all custodian and maintenance responsibilities. The Chesapeake Bay Bridge Tunnel Police did an excellent job in this training effort; we benefit by getting a number of new and excellent instructor types.

Students receive one-on-one
training from instructors.
LH 1987



The Heavy Equipment Training School LH 1987
assisted the refuge by removing concrete slabs
left behind by the house movers.

D) The firearms range saw considerable use from a wide range of public agencies. There were not too many weeks without use by some organization. They include:

1. U. S. Fish and Wildlife Service - Both refuge officers and special agents.
2. U. S. Coast Guard
3. Chesapeake Bay Bridge Tunnel Police
4. Northampton County Sheriff's Department
5. Federal Bureau of Investigation
6. Navy Seal Team(s)
7. Virginia State Police
8. Virginia Game Wardens
9. Other Eastern Shore Police Departments



The United States Coast Guard is the most frequent user of the firearms range.

LH 1987

F. HABITAT MANAGEMENT

1. General

The habitat management strategy of Eastern Shore of Virginia Refuge is to maintain existing habitat diversity and to apply hands-on management only when necessary. This management philosophy comes about more from nature of the land and the differing habitat types than from the wisdom or desires of the

managers. The refuge has eight different habitat types; beaches and dunes, salt marsh, fresh water ponds, shrub thickets, low open woodlands, maritime forest, grasslands, and agriculture lands. During 1987, through land purchases and management easements, the amount of habitat protected and managed by the refuge increased from 543 to 2,495 acres.²

In the following sections the reader will find a brief description of the habitat type, the number of acres added to or subtracted from it during 1987, and any management practices that were conducted for the year.

2. Wetlands.

The low salt marsh is the predominate habitat type on the refuge. The main plant species is saltmarsh cordgrass (Spartina alterniflora). During 1987 the amount of salt marsh administered by the refuge grew from 50 to 1,325 acres. Observation and protection were the only management techniques employed on this fragile habitat type.

The fresh water ponds found on the refuge are all man-made. These ponds are the only fresh water source for animals on the refuge during the dry periods of summer and early fall; for this reason we retain as much water as possible during the winter and spring months.

The acreage of fresh water ponds remained constant during 1987 at 3.5 acres.

3. Forests.

The refuge has two distinct forest habitat types; the low open woodland and the maritime forest.

The start of the low open woodland habitat lies just above sea level and for this reason the plants inhabiting this zone must be somewhat salt tolerant. Species such as sassafras (Sassafras albidum), black cherry (Prunus serotina), red cedar (Juniperus virginiana), loblolly pine (Pinus taeda), holly (Ilex opaca), and poison ivy (Rhus radicans) are common inhabitants of this habitat type. The soil is beach sand with a 2% to 50% slope, covered with four to six inches of pine needles. During 1987 approximately five additional acres of low open woodland were added to the refuge inventory bringing the total to 120 acres.

². These figures do not include Fisherman Island National Wildlife Refuge which is also administered by the staff of Eastern Shore of Virginia Refuge.

This is down 31 acres from the 1986 total and the difference is attributable to the reassignment of some low open woodland habitat to shrub thickets.

The other forest type is the maritime forest. This forest can be considered a disclimax habitat type dominated by oaks, hickories, and pine with flowering dogwood (Cornus florida) and holly as an understory. The soils found in this habitat type are sandy loam with a 0% to 2% slope. During 1987 there were no additional acres of maritime forest added to the refuge inventory.

In 1987 observation and protection were the only management practices employed on these two forest types.

Shrub thickets are transitional communities found landward of the dunal grasslands or salt marsh. Dominate species are wax myrtle (Myrica cerifera), bayberry (M. pennsylvanica), groundsel tree (Baccharis halmifolia), and marsh elder (Iva Frutescens). Herbaceous vegetation within the shrub community includes saltmeadow hay (Spartina patens), and poison ivy.

With the purchase of Skidmore Island the refuge obtained approximately 50 more acres of shrub thicket habitat bringing its total to 95 acres.

A small section, approximately .5 acre, of shrub thicket was cleared from the raptor banding site at Wise Point. This was the only management practice employed in this habitat type.

4. Croplands.

In 1987 the refuge continued with the development of its cooperative farming program. Our goal, for the year, was to formulate a good cropland management plan that would be acceptable to the service and the farmer. The initial step taken, was to involve the Soil Conservation Service (SCS) in the preparation of a Soil and Water Conservation Plan. The SCS office took into account refuge objectives, soil and water conservation, and local farming practices. The core of the plan centered on five specific parts; the division of the 77 acre Wise farm field into three, approximately, 22 acre fields, the rotation of crops through these fields, the planting of 2 acres of windbreaks, the development of nine acres of soil erosion filter strips and hedgerows, and the planting of six, 2 acre, food plots. In designing this plan the difficult part was picking the three crops for rotation. The considerations that had to jell together were wildlife food and cover needs, soil and moisture conditions, low pesticide use, and providing economic incentive for the farmer.

In our first plan corn, wheat, and clover were thought to be the ideal three crop rotation. Wheat would provide green browse for geese during winter months and give the farmer a good cash crop. The clover would stand for one year and fix nitrogen in the soil. It would also provide cover and some forage for wildlife. The corn crop would use the nitrogen fixed in the soil, yield some grain in the fields for migrating birds, and provide a second cash crop for the farmer. These crops were different enough that insect life cycles would be interrupted and there would be a reduced need for pesticides. After careful consideration the cooperative farmer felt that with the droughty nature of the soil and the low precipitation that has been plaguing the area during the summer months it would be hard to grow a good corn crop. He also pointed out that the corn market has been low and as a cash crop it would not pay him to plant it.

After several discussions with the farmer he felt he could grow soybeans in place of corn and have the economic incentive needed. Although replacing corn with soybean would not be the best for breaking insect life cycles the refuge would still meet its wildlife objectives and have a quality farmer working the land. With this in mind we approved the substation and with it the S&W Conservation Plan.



Wheat crop at harvest time. LH 1987
During the winter months this crop provides
green browse for geese and swans.

The SCS was very anxious to help us begin our new program but we had to wait until the wheat crop, that had been planted in the fall of 1986, was harvested. In July, after the crop was off the field, the SCS sent field technicians to lay out the hedgerows and soil erosion filter strips. These strips divided the Wise Farm field into three, 22 acre units (W-1, W-2, W-3). The cooperative farmer then planted these strips with the filter strip seed mixture recommended by the SCS office.

The farmer requested that he be allowed to plant short season soybeans in two of the fields following the harvest of the wheat. We approved his request since it would not interfere with the start of the crop rotation cycle and as an experiment to see how this crop would fair during the dry time of the year. Fields W-1 and W-3 were planted to soybean and W-2 was allowed to stand fallow. As summer and fall progressed the farmer realized that due to the lack of precipitation the beans would never mature and he decided to disk them under in October.

To enter into the three crops rotation cycle, during the month of October, the coop farmer asked if he could try a new type of planting technique for clover. This technique was called hydro-seeding and employed a three wheeled Terra-Gator that made a slurry solution of clover seed, fertilizer, and water and then sprayed it onto the ground. This technique is more commonly used further north and the SCS office was pleased that our farmer was willing to test it.



LH 1987

Terri-Gator being used to hydro-seed clover on farm fields.

Our approval was given to this trial planting technique and by December we could see small clover plants coming up in field W-1. Fields W-2 and W-3 were planted to wheat in November and they will provide green browse for geese during the winter.

5. Grasslands.

The refuge has approximately 115 acres of grasslands. Our management strategy for this habitat is to allow it to enter into a early field successional state. By doing this we increase the populations of prey species so that raptors can feed upon them. In late summer we mow strips through this cover in an effort to facilitate their hunting success. These strips are also used as night feeding and courtship areas for woodcock.

No additional grassland habitat was purchased during 1987.

6. Other Habitats.

The other major habitat type found on the refuge is the beach and dune system. During 1987 the amount of this habitat type, that is administered by the refuge, increased from approximately 30 to 650 acres. No habitat management except observation and protection were employed.

G. WILDLIFE

1. Wildlife Diversity.

One of the nice things about working on a small refuge is that you can become familiar with the different micro habitats that exist there. If it is found that some minor adjustments or improvements in a habitat can enhance wildlife diversity, you can elect to try it. That is what was done this past year with the old World War II Coastal Defense Bunkers found on the refuge. These bunkers are man-made caves built above the ground. As part of a safety effort to eliminate an "attractive nuisance" we began closing off the entranceways into these bunkers. One of our concerns was that in closing off the bunkers, we would also eliminate bats from over-wintering in these structures. As part of the project we decided to install an entrance gate that would pose a barrier to humans but allow access by the bats. Using a design found in Research Information Bulletin number 29-87 we installed angle iron bars across an air shaft opening leading into the bunker. This air shaft is high enough off the ground so that it will be difficult for the casual passer-by to reach the bat entrance (see photograph section E-6). If someone does climb up and try to enter we hope the angle iron bars will stop them.



LH 1987

Maintenance Worker Robert Carpenter
installing bat box on interior bunker wall



LH 1987

Completed bat box.

While we were working in these bunkers it was decided to install bat boxes. The reason for this is that the smooth concrete walls provide no clinging sites for bats. We felt that bat boxes would provide the necessary clinging sites needed as well as concealment and slightly elevated temperatures. Boxes were installed in three bunkers, two on Eastern Shore of Virginia Refuge and one on Fisherman Island.

3. Waterfowl

In the fall of 1986 the cooperative farmer planted winter wheat in the refuge's farm field. The goal was to provide green-browse for migrating geese and swans. The fields were unused by these birds until Mid-January when a snow storm struck the northern portions of the Delmarva Peninsula. With this areas covered in snow thousands of geese and swans moved into our area. For a two week period the refuge had approximately 2,000 Canada geese, 150 snow geese, and 25 whistling swans feeding on winter wheat. By the first of February the snow line was moving back up the peninsula and the birds along with it.



LH 1987

Geese and swans feeding
in winter wheat fields.

5. Shorebirds, Gulls, Terns, and Allied Species.

One of the most notable migrations through the refuge is that of the American woodcock. It is notable because of its timing and the numbers of birds that are encountered. In Mid-January, after a heavy snow storm struck the Delmarva Peninsula, large numbers of woodcock started arriving in lower Northampton county. On January 29th, a census was conducted on the refuge to determine to what extent the birds were using the refuge. The census was conducted along 1.5 miles of southward facing edge of various habitat types. A total of 85 woodcock were flushed during the thirty minute walk. Finding this large number of concentrated birds highlights the importance the refuge to this species.



LH 1987

American woodcock probing for
earthworms on refuge lawn.

In the fall of 1987 plans were laid for the continued census of the American woodcock using more standardized procedures. Our plans were to conduct weekly flight counts at fixed locations and to band birds while they were migrating through the area. The first surveys took place in November and December and they showed that a small migration of birds took place late in the month of November and then tapered off during December. No banding was conducted at this time. The results for January and February 1988 will be reported in the next narrative.

6. Raptors.

Eastern Shore of Virginia Refuge allows the College of William and Mary to operate two raptor banding stations. One is located at Wise Point, which is at the southern terminus of the Delmarva Peninsula, and the other is located on Fisherman Island. This activity is funded through a contract from the Commonwealth of Virginia Non-Game Division. This year the banders operated during the months of September and October and banded eight different species of hawks. (See G-16 for further details)

Osprey are the most common raptor found on and around the refuge during the summer months. During 1987 four nests on the refuge were known to have fledged eight young. This total does not include the birds found on Fisherman Island.

Barn owls have been found nesting in several of the old military buildings on station. In 1988 many of these buildings will be taken down as part of an Army Corps. of Engineer's site restoration project. Knowing that we would have a few displaced barn owls, we erected four nesting boxes for their use.

Maintenance Workers Loomis and Carpenter install barn owl boxes, as Mr. Scott assists at ground level.

LH 1987



8. Game Mammals

During 1987 the staff continued to gather health and population data on the white-tailed deer herd of the refuge. All deer killed by motor vehicles on Fisherman Island and within one mile of the refuge border were picked up.

Age, weight, and sex data were collected from each animal. The refuge also functioned as a deer check station for the State of Virginia. All hunters that were successful in killing a deer on adjacent county property were asked to check their deer at the refuge.



LH 1987

Bob Carpenter removes lower jaw,
from road killed deer, for aging purposes.

To obtain a better deer population estimate for both Eastern Shore of Virginia and Fisherman Island Refuges a helicopter deer census was conducted this year. In order to undertake this projects we had to first find a helicopter service that was approved by the Office of Aircraft Services (OAS)³ and then we needed the right weather conditions. Snow was considered an essential ingredient to our censusing effort. With snow on the ground the deer would be much more visible to our observers from the air. We felt that this would reduce the miss factor (the percentage of deer not seen by the observers) thereby making the census more accurate. On February 9th, both refuges received a light dusting of snow and we decided to do the survey the next day. The following morning we found that much of the snow had melted but was still covering the ground under the denser stands of vegetation. We considered postponing the flight due to the spotty snow cover but decided to go ahead since we might not get another snow storm.

³. See E-6, Safety, for further information

Once in the air we found the snow cover adequate for our needs. The vegetation on Fisherman Island offered very little vertical cover for deer and with the white snow and sand we found counting the deer fairly easy. On Eastern Shore of Virginia refuge the story was much different. The snow cover made little difference because in many places the vertical cover was so dense that we could not see the ground. After a few passes over Eastern Shore of Virginia Refuge the observers decided to cut the survey short.



LH 1987

A Bell Jet Ranger was used to conduct the deer survey. Cost was \$415 per hour.

A total of 27 deer were counted during the flight over Fisherman Island. The miss factor was put at 10% or three animals yielding a wintering population of 30 deer. This was about twice the number of deer that we thought were on the island. If we add to this number the 10 known mortalities that took place on the island we have a minimum post fawning population of 40 deer. The estimated carrying capacity for this 1500 acre island is considered to be 15 to 20 animals. We hope to initiate a deer hunt on the refuge within the next two years.

10. Other Resident Wildlife

Coyote numbers are increasing on the lower eastern shore. Adults and pups were seen and heard regularly on and adjacent to the refuge. This animal is a newcomer to the shore. For the first time the State of Virginia officially allowed the harvest of these animals during the 1987-88 hunting season.

16. Marking and Banding

Raptor banding was the main marking activity carried on at the refuge. This effort was coordinated by Dr. Mitchell Byrd under the conditions of a special use permit. Dr. Byrd's banding activities were at Eastern Shore of Virginia and Fisherman Island Refuges and are part of an ongoing study that he is conducting for the Commonwealth of Virginia. Dr. Byrd and his assistant Rudy Cashwell manned the Wise Point banding station on the mainland, while another assistant, Paul Baker, manned the Fisherman Island banding site.

Listed below are the total number of birds banded at each banding site.

| Species | Eastern Shore of VA. Refuge | Fisherman Island |
|---------------------------|--------------------------------|------------------|
| Broad-winged Hawk | 1 | 2 |
| Sharp-shinned Hawk | 286 | 60 |
| Cooper's Hawk | 32 | 30 |
| Northern Harrier | 10 | 8 |
| Red-tailed Hawk | 1 | 13 |
| Kestrels | 31 | 1 |
| Merlin | 206 | 5 |
| Peregrine Falcons | <u>13</u> | <u>0</u> |
| Total 1987 Raptor Banding | 580 | 119 |

Banders at the Wise Point station reported that they had a total of 113 sightings of peregrine falcons during their banding operations.

During 1987 the refuge officially received its Master banding permit from the Bird Banding Laboratory in Laurel, Maryland. Our first official bands were put on four barn owls and four ospreys, all of which were local birds raised on the refuge.

H. PUBLIC USE

1. General Use.

Public use at Eastern Shore of Virginia National Wildlife Refuge is growing as interested persons pass on the news that the refuge is in existence. Area residents, tourists, and other interested persons have found the refuge to be an excellent place. They enjoy our open spaces, walking our nature trail, conducting nature photography, bird watching, or they just relax and walk through our Visitor Contact Station.

Efforts by local officials to include the refuge as an attraction for the growing tourism industry have increased. The reason for this is that Northampton County has very few public recreational sites. Officials of the county would like the refuge to be part of well coordinated efforts to increase tourism in the area. To underscore their desire the Virginia Tourism Commission brought a bus load of professional tour and travel agents to the refuge to brief them on the many assets of the refuge. Their jobs were then to return to their various states and fit Northampton County into the schedule of vacation plans for their clients. The management staff here at the refuge has been keeping abreast of this issue. The refuge wants to part of positive community affairs but the balance between public use and wildlife management must be maintained.

Through the help of local newspapers and interested local residents, the refuge volunteer program got underway with 12 persons volunteering their time to keep the Visitors Contact Station open on the weekends between 1:00 and 5:00 P.M. By the end of September, the refuge had 18 volunteers. News releases were sent to announce the weekend openings, and occasionally a local artisan spent an afternoon demonstrating his or her talent to the public.

2. Outdoor Classroom Students.

The beginning of April brought many school groups requesting use of the refuge. Teachers who previously had been instructed by refuge staff gave environmental education classes concerning subjects such as bay, salt marsh, and woodland ecology.

Approximately 225 school students, from kindergarten to college age used the refuge during the year from April to June.

During the summer months, personnel from Norfolk Naval Air Station used the refuge as part of a summer program for enlisted personnel's children. Naval personnel were taught to prepare environment educational outings for the children.

Approximately 250 children and 25 enlisted naval personnel learned about the refuge environment and how to take care of the habitat for future generations.

3. Outdoor Classroom Teachers.

Northampton School officials met with refuge staff as part of their "back to school" preparations.

Included were superintendents, principals, assistant principals and counselors. Their purpose for the visit was to acquaint themselves with the refuge so they could advise teachers how to make the best use of refuge facilities for their ecology, biology and wildlife classes.

4. Interpretive Foot Trails.

To celebrate 1986 National Hunting and Fishing Day, the Eastern Shore of Virginia Refuge opened a one-half mile walking trail. For 1987, improvements were made on the trail by widening it to six foot, bordering both sides with landscaping timbers, laying a base of crushed clam shells, and then topping it with wood chips. Also started this year was an elevated observation platform that is being constructed on top of a World War II coastal defense bunker. When finished this platform will be approximately 50 feet above the salt marsh.



LH 1987

Maintenance Worker Jerry Loomis works
on stairway that leads to observation platform.

Located along the trail route are several sites of historic

Located along the trail route are several sites of historic interest. One such site is an old cemetery with some head stones that date back into the 1700's. Some of these graves were vaults constructed of brick. The cement between the bricks, and the bricks themselves, have become brittle with age and because of this the vaults have begun to collapse. John S. Wilson, Regional Historic Preservation Officer, agreed with our recommendation that the graves should be filled with sand and then covered with top soil. This job was completed in the fall.



LH 1987

Our wildlife trail passes this old cemetery.
One of those buried here was born in the mid-1700's.

6. Interpretive Exhibits and Demonstrations.

There have been several donations from local artisans to the refuge.

Thelma Peterson, an Eastern Shore artist, donated two of her prints to be hung in the Visitor Contact Station. Ms. Peterson's is known for her entry that won the Ducks Unlimited Contest in 1985. The Nature Conservancy has also contracted Thelma to paint the remaining Barrier Island Coast Guard Stations.

Mr. Louis Hollowell donated one of his paintings to the expanding refuge display.



LH 1987

Thelma Peterson presents two of her prints to Manager Stairs.

On September 10th, Dr. Robert Lippson, Author of "Life in Chesapeake Bay", added more specimens to our growing collection of marine life. Dr. Lippson is an adjunct professor of invertebrate zoology at Michigan State University. He and his students make a field trip yearly to Fisherman Island refuge to study marine life and collect specimens. One of the conditions set forth in the special use permit issued him is that he provide the refuge with cataloged specimens from each species he locates. Dr. Lippson has been very cooperative with this requirement and he and his students take pride in presenting their collection to the refuge.

7. Other Interpretive Programs.

Presentations explaining the mission of the U.S. Fish and Wildlife Service and the role Eastern Shore of Virginia National Wildlife Refuge plays in that mission were given to various clubs and organizations throughout the eastern shore. Clubs such as the Lions Club of Cape Charles and Onley, Virginia; The Woman's Extension Club of Onancock, and the Rotary Club of Cape Charles, Virginia have all requested and received a 20 minute presentation of the refuge.

A group of officials visited the refuge on November 13th to

A group of officials visited the refuge on November 13th to introduce a general concept of conservation on the Eastern Shore of Virginia by government and non-government agencies. This was achieved through a considerable number of small discussions with and between different agencies. The main purposes of the tour and discussions were: a) Creation of a state park on Virginia's Eastern Shore. b) Mutual conservation effort for the area's natural resources, for example, by The Nature Conservancy, U.S. Fish and Wildlife Service, Virginia State Park Service and Northampton County. c) Proposed new Visitor Centers and handling of expected tourism. d) Wise use of the areas natural resources. The following were in attendance: Congressmen Herbert Bateman and Owen Pickett and members of their staffs; U.S. Fish and Wildlife Service Director Frank Dunkle and Region 5's Director, Howard Larsen; Nature Conservancy Official, Greg Low; Virginia's Secretary for the Natural Resources of Virginia, John Daniel; Virginia's Commissioner of Game and Inland Fisheries, Jim Remington; State Delegate, Robert Bloxom; Northampton County Supervisor, Reade Belote; and Northampton County Administrator, Keith Bull; several Virginia state park personnel; state fish and game personnel and members of the press.



LH 1987

U.S. Fish and Wildlife Service Director
Frank Dunkle and Regional Director Howard Larsen
discuss issues of the day.

16. Other Non-Wildlife Oriented Recreation.

The Chesapeake Bay Bridge Tunnel Authority used refuge facilities for a nine-week basic police academy course. The training started September 21st and was completed on December 10th. The conference room was utilized as a classroom for the school. The refuge was reimbursed for the use of the facility.

The Department of Virginia State Police held an eight hour workshop for 40 to 50 officers utilizing the refuge and conference room.

17. Law Enforcement

Enforcement efforts for this year at both the Eastern Shore of Virginia and Fisherman Island refuges were aimed at an obvious problem, i.e., trespassing. As a newly established and growing refuge, we have addressed trespassing in a positive manner--through education, proper signing, and issuing warnings to first offenders. Results have been positive because we are relatively unknown to many travelers. These refuges are about to be discovered and the need for stronger action is foreseen.

The predominate violation on Fisherman Island and on a small sandy beach at Eastern Shore of Virginia was trespassing by boaters from Norfolk, Virginia Beach, and elsewhere. Their prime intent was to locate a secluded place to sunbathe, swim, picnic and turn dogs and children loose. The activities can cause a great deal of disturbance to nesting birds such as, terns, piping plover, and brown pelicans.

During the period from May through Mid-September, Eastern Shore of Virginia and Fisherman Island were patrolled by boat and/or 4-wheel drive vehicles. Persons found on the beaches were informed of refuge policy, the reason for it, and were asked to leave. No violation summons were issued. This effort required considerable extra on-duty time by the refuge manager and assistant, but the number of warnings given were greatly reduced from the preceding year.

Our law enforcement efforts in the future can be enhanced by: Better signing at both the mean low tide level mark and the refuge proper; an additional law enforcement officer; quick access to and from our boat regardless of tidal fluctuation; and in concert with the above; issuances of the Service's Violation Notice.

On July 15th, Paul Gladdys, Senior Resident Agent, conducted an eight hour workshop on arrest procedures as dictated by the U. S. Magistrate courts in the Tidewater area. In attendance were representatives from all the Tidewater refuges: Presquile, Chincoteague, Back Bay, Great Dismal Swamp, Mackay Island, and Eastern Shore of Virginia.

I. EQUIPMENT AND FACILITIES

1. New Construction.

Construction was completed on a 175' x 60' pre-engineered metal building with a fuel storage and distribution system. This building was designed to be part shop with indoor overhead storage and part open-bay storage. This project, total contract price \$247,931.30, included raising and grading existing roadways and parking areas, rehabilitation of the hot water heating system in building 97, electrical service to adjacent sites, and a mezzanine for overhead storage. The entire enclosed shop area can be heated. The building, erected by Matthews-Dean Company, Onancock, Virginia was turned over to us in late August. The interior is still under construction by refuge staff, and when it is completed it will provide separate metal and wood working areas.



(1)
New 175' by 60' metal shop building

LH 1987



(2)

LH 1987



(3)

LH 1987

Matthews-Dean Company was also awarded a contract to construct a 24' x 32' cement block building that will be utilized as a flammable materials storage site. It is located facing the open partition of the new metal shop building; cost was \$26,457.



UK 1987

Before the new shop and flammable storage buildings were built all maintenance was conducted from two buildings.



LH 1987

At completion of construction usable work and storage area grew three times.

Force account construction was initiated on the first of three loops of a proposed 1.3 mile nature trail. This loop runs adjacent to a World War II bunker, gun emplacements, salt marsh and through coastal woods/shrub habitat. The trail extends beyond an 18th century cemetery to a small salt marsh overlook.

A large overlook atop one of the gun emplacements was two-thirds finished at year's end. Approximately 2500 feet of trail is now usable by visitors. A great deal of work remains to complete the entire trail.

2. Rehabilitation.

Family Housing Unit No. 211 required a major overhaul when Refuge-South Biologist, Richard Sojda's office was located at the Eastern Shore of Virginia Refuge and he decided to live on station. The renovation consisted of insulating exterior walls and ceilings, replacing aluminum windows with thermo-insulated units, covering exterior with thermo-shield and vinyl siding, installing a septic tank and leach field, and enclosing the carport to provide, when complete, additional living space. Additionally, interior projects included the painting of all rooms, carpeting or vinyl-tiling all floors, replacement of kitchen sink and counters, and the replacement of other assorted fixtures after years of use. A large portion of the budgeted \$8,000 spent from 8610 quarters funds was in this building.

Landscape Renovation - The refuge inherited twenty-seven family houses from the military when the air base was transferred to the Fish and Wildlife Service. Of these, eleven have been sold for \$300-\$1,000 and removed from the refuge. These structures were built on concrete slabs, which basically were and still are unmovable, and therefore were left on site. Seven slabs were uprooted and buried during heavy equipment sessions. Sites were then seeded with fescue or millet. There is much work still to be completed.

Asbestos Survey - A contract was let to Hall-Kimbrell Environmental Services to perform a survey as to asbestos containing materials in nine buildings e.g., \$8,706.15. This is an expensive but required prerequisite before any attempt to rehabilitate or raze a building can be initiated. As was the case in several asbestos removal projects here, the surveying contractor did not discover significant quantities of the contaminated material. This missing data about materials has boosted the removal cost and caused shuffling with this fiscal year's budget process. An appropriate comment sometimes heard concerning contaminants removal/disposal is "A license to steal."



LH 1987

Before any of the 27 family houses were removed from the refuge.



LH 1987

After eleven of the houses were removed.

Asbestos Removal - Contracts were written to a primary contractor, Tidewater Insulation in the amount of \$74,000.00 for the actual removal of asbestos and to Interscience Research Inc., for \$24,537.00 to monitor the primary contractor and do testing. The primary contractor, acting under direction of the "monitor" removed undetected materials not originally called for in the contract, and the monitoring contractor did extensive testing not called for in their contract. Needless to say that this caused a contract/payment mess felt by all concerned. The actual removal is perhaps one-half complete and the remaining was put on hold near the end of 1987. Additional funding will be needed to finish this project.

Building 104 - Several force account projects at Building 104, which was renamed the "Conference Center", were completed this year. The work included insulation of the attic area, replacing windows with more energy efficient ones, insulation and application of Tl-11 to the exterior of the building, and painting and staining for weather protection. We hope to start septic tank and rest room work in fiscal year 1989.

The exterior of the conference hall was given a much needed face lift this summer. A layer of insulation was positioned on the walls and then Tl-11 siding was used. The YCC's then stained the building, yielding a much more attractive structure.



Before insulation, Tl-11 and staining. LH 1987



The Conference Hall after renovation.

LH 1987

3. Major Maintenance.

- a) Three 12' x 16' wood storage sheds were purchased and erected. They will serve part of the need each household has for storing seasonal items. There are still storage area shortages. Funding was by purchase order using 8610 receipts.
- b) A septic tank and leach field was installed by Bundick Well and Pump Company to serve Buildings 97 and 98. This system replaces a central sewer that was partly rehabilitated in fiscal year 1986 but is currently on-hold. The septic tank and distribution field was a much welcome addition to the maintenance area.
- c) Water and waste line repairs and testing was completed for Maintenance Buildings 97 and 98. The project brings drinking fountains, rest rooms and general water use back to this area of the refuge.
- d) Primary electrical service, e.g., 7300 volt lines were buried from near the southwest end of the shop/storage building to a pad mounted transformer near the firearms range. This transformer is to provide electricity for lighting, sound system, storage building, and future range improvements.

e) A turbine deep well pump from Well No. 1 was pulled and replaced with a submersible unit capable of pumping 20-30 gallons per minute to the water tower. The 70-80 foot drop tube was also replaced. The turbine pumping mechanism had extensive wear and wasn't worth repairing. This project was accomplished by Bundick Well and Pump Company.

f) Quarters 207 - An inoperable air conditioning unit, e.g., compressor, coils etc, was removed and replaced with a spare outside unit salvaged from one of our old military buildings. Units at Quarters 201 and 211 also required replacement parts of a less significant nature. Projects were accomplished by Brownlie Heating and Air Conditioning.

g) Furnace tune-up and repairs were required to steam and hot water units in Buildings 97 and 104. Considerable plumbing was required including installation of state mandated back-flow preventers to intake water lines. Some electrical rewiring was required to assure proper operation of these units. Work was done by Herbert Senn Company.

h) Building 113 - Storage and Display of Surplus Items. Although a long way from being complete, revamping of the interior of this building was started to facilitate the safe storage and display of items procured from surplus sources and stored for distribution to other stations and/or divisions for their use. Some non-supporting walls were dismantled to allow for erection of strong metal shelving units to hold and display items. Changes were accomplished by YCC staff. However, much additional revision is still needed.

4. Equipment Utilization and Replacement.

All vehicles in use at the refuge, except one, were acquired from other refuges or through other government surplus programs. Three such vehicles were transferred to Eastern Shore of Virginia and we, in turn, use our oldest as a trade-in; they usually quit running or have major problems prior to being removed from the fleet. This procedure will be used to keep an operating fleet on the station until we fit into the replacement scheme. Funds were set aside in fiscal year 1987 by the Regional Office for a small 4 x 4 pick-up. It will be nice to see a replacement, even in 1988.

Note: Hand-me-downs create a burden on the budget because of higher than normal repair and maintenance expense, and milage from these vehicles is usually in excess of new standards. However, it is a means to get newly established stations equipped.

Year End Funding - This provided us with funds to acquire the following equipment:

1) A Ford Model 555B diesel powered industrial type tractor with backhoe and front-end loader. It is equipped with cab, seasonal weather protection, extendible boom, and variable angle bucket attachment. This piece of equipment has been used extensively since it was delivered.



LH 1987

New Ford 555B Loader/Backhoe

2) A three-point hitch 88 inch flail mower.

3) A John Deere Lawn Tractor, 16 Hp diesel with a 50 inch mower deck.

The securing of excess property from military sources continued, but at a reduced volume. Much of the material now selected has some application to construction or rehabilitation around this and other refuges. We still must develop a better method to notify and distribute the excess materials we can secure. Special need requests from several refuges have been filled through surplus. Items of interest include:

1) Eastern Shore - 2 1/2 ton stake-body truck, 1972 model gasoline engine - for fire purposes.

2) Eastern Shore - 5 ton stake-body truck , 1973 model diesel engine - a replacement for a 1958 truck.

3) Eastern Shore - A 44 passenger bus - The smaller bus was transferred to Blackwater National Wildlife Refuge.

4) A paper value of \$567,059 was acquired and passed on through or utilized by this and other refuges in Regions 4 and 5. If real value estimate is 50% of above, it still adds up to quite a savings to the Service.

5. Communications Systems.

Prior to arrival of the southern zone biologist, a third telephone line was installed and all telephones were replaced with push-button four line capability Radio Shack Phone Systems. These systems should serve until we have a modern system in a new office facility.

Two new handi-talk radio units were purchased for placement in quarters 201 and 207. These units have direct connection to the refuge base station and give coverage during hours when the office is closed. This is important to week-end and law enforcement safety.

Repairs were completed to three portable radios transferred from Chincoteague National Wildlife Refuge. The remaining units are being retained for parts.

6. Computer Systems.

Near the end of fiscal year 1987, a computer system was purchased for our use. The computer and related accessories came from PC's Limited. This acquisition was coordinated by the Regional Office, so all refuges in Region 5 have like equipment. Sufficient funds remained to permit the purchase of computer furniture, a laser printer, and assorted software. Our equipment did not become operable within the calendar year, but just in time for the Narrative Report.

7. Energy Conservation.

Energy conservation is a prime concern whenever scheduling ARMM's projects, and it should continue to be emphasized. However, when one is considering a new or expanding refuge, it is necessary to realize that energy uses will increase, and it is wise to plan with this in mind.

J. OTHER ITEMS

3. Credits.

Credit for the Introduction; A, B, E2,6, F, G, go to Louis Hinds, Assistant Manager.

Credit for sections; C, D5, E5, H17, I, and Feedback go to Sherman Stairs, Refuge Manager.

Credit for sections; E, H1,2,3,4,6,7, J, and assembling the narrative go to Irene Morris, Secretary.

Credit for information on I go to Carlton Scott, Facilities Manager.

Credit for typing the narrative go to Louis Hinds, Sherman Stairs, and Irene Morris.

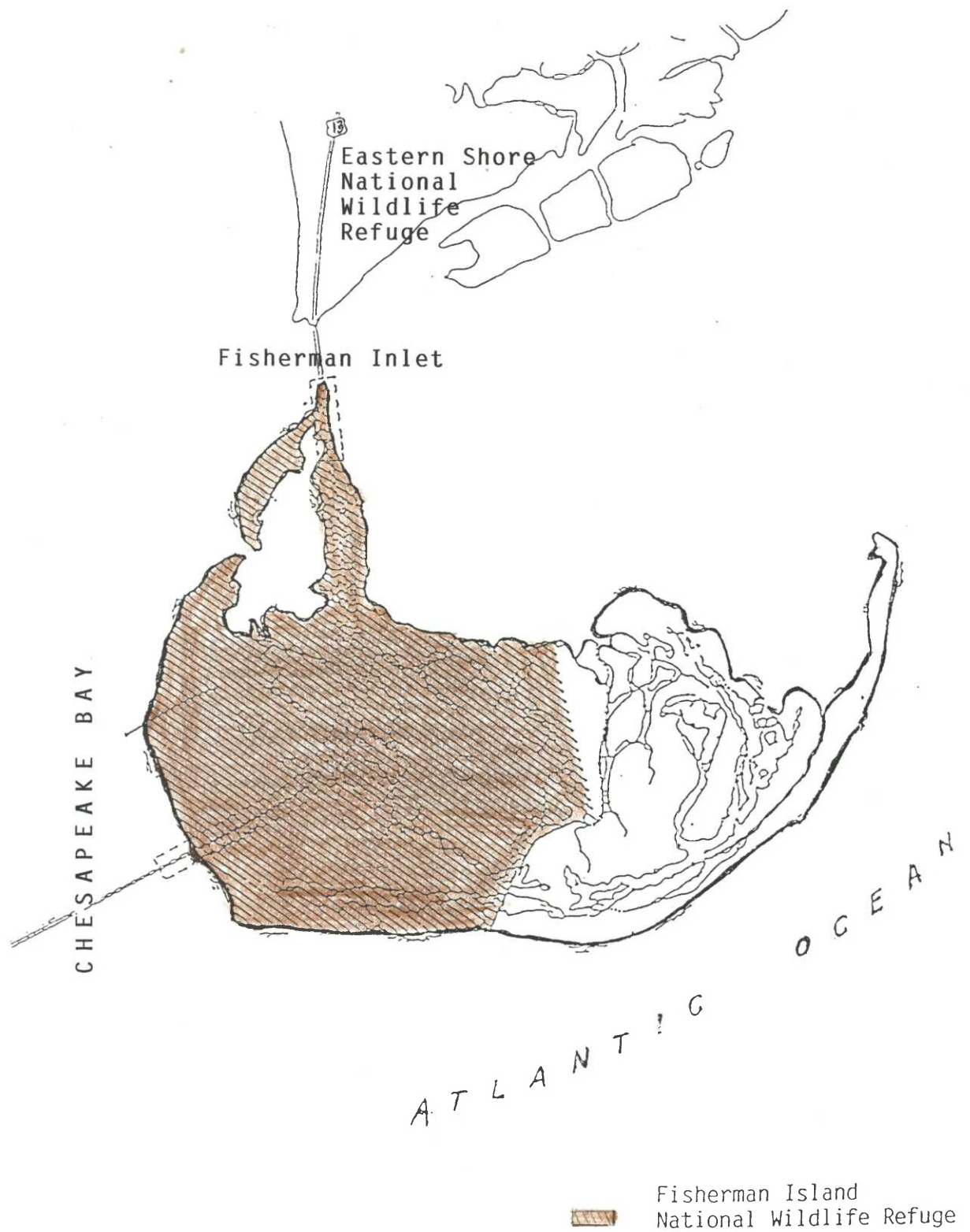
Photography credits to Louis Hinds.

K. FEEDBACK

It seems that computers have finally come to all field stations in Region 5 and should be on line within the next year. This will make a significant difference in the way we do business, but let us hope that someone doesn't believe it's an answer to all administrative problems. It isn't. Computers will help us in many work areas, but have and will create different kinds of problems. It will certainly improve the quality and quantity of written work from daily operations, speed information flow within defined areas and serve as our memory in a variety of ways. However, we hope it will not increase an already burdensome load of paperwork processes.

Of interest - Our current model is usable by just one person at a time and, although we try to share, there are more times than not where someone uses alternate methods. Good news, there is a solution; purchase a desk type unit that interfaces by diskette- and its not too expensive either.

FISHERMAN ISLAND NATIONAL WILDLIFE REFUGE



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INTRODUCTION

Fisherman Island National Wildlife Refuge is a barrier island located in Northampton County, Virginia and is situated at the southern tip of the Delmarva Peninsula. The refuge is approximately 1,000 acres which were declared excess property by the U.S. Navy in 1969 and transferred to the U.S. Fish and Wildlife Service. It serves as a breeding ground and nursery for shore and water birds that are found on the island in great numbers.

A. HIGHLIGHTS

During the month of January, contractors hired by the Army Corps of Engineers, began drilling test wells to sample for DDT contamination.

A deer survey was conducted by helicopter to determine the population.

Brown pelicans made their first attempt to nest on Fisherman Island.

Dr. John Weske, Research Assistant for the Smithsonian Institute conducted the annual Royal tern round-up and banding on Fisherman Island.

B. CLIMATIC CONDITIONS

Climatic conditions were similar to Eastern Shore of Virginia National Wildlife Refuge, located about one mile north. Storms and tides cause beach erosion for an ever changing shoreline.

D. PLANNING

5. Research and Investigations.

Fisherman Island NR87 - "Recruitment of Juvenile Summer Flounder, Paralichthy dentatus, to Virginia's Waters. 51650-40101.

Dr. Brenda Norcross and associates of Virginia Institute of Marine Sciences are attempting to document the recruitment of summer flounder, Paralichthy dentatus to Virginia's waters.

This is accomplished by field collection at sites on both seaside and bayside of the Eastern Shore. Summer flounder are fall-winter protracted spawners, so sampling was done bi-weekly from January through March. A report documenting this work is on file.

Fisherman Island NR87 - "October Bird Count" 51650-40133.

Henry T. Armistead, Middle Atlantic Coast Regional Editor of the publication "America Birds" and refuge volunteer. Mr. Armistead organized the October Bird Count on Fisherman Island. Bird count information was sent to Refuge Office and is kept on file.

Fisherman Island NR87 - "Avian Influenza" 51650-40124.

Dr. William J. L. Sladen, John Hopkins University School of Hygiene, collected carcasses to survey for avian influenza in dead or dying birds on the refuge. If published we have requested that material.

Fisherman Island NR87 - "Invertebrates and Fish" 51650-40121.

Dr. Robert L. Lippson, National Marine Fisheries Service led a group of students and faculty (Michigan State) studying estuarine ecology. The purpose is to collect marine invertebrates and fish and to study the various habitats. We continue to receive classified and preserved specimens along with publications appropriate for our area.

Fisherman Island NR87 - "Colonial Waterbird Survey-Annual" 51650-40109.

William Williams, representing the Society of Ornithology, along with several other volunteers, conducted the annual Colonial Waterbird Survey. This annual survey helps determine how successful colonial nesters have been. A report for 1986 was received.

Fisherman Island NR87 - "Marine Science Exhibits" 51650-40103.

W. Mark Swingle, Exhibits Staff Member of the Virginia Science Museum used the facility to collect shells and other objects commonly found washed onto the shore. These objects will be used for display in an exhibit. We have received duplicate classified samples of what they collected.

E. ADMINISTRATION

1. Personnel.

Fisherman Island is an unstaffed satellite and is under the administration of the Eastern Shore of Virginia National Wildlife Refuge.

2. Youth Programs.

YCC enrollees participated in corraling and banding just under 4,200 royal and sandwich terns on June 29th and July 20th. The banding operation was under the direction of Dr. John Weske of the Smithsonian Institute. See G.16.

4. Volunteer Program.

The second annual "Take Pride in America" clean-up of Fisherman Island beaches was held on September 12th. The clean-up was accomplished by members of the Tidewater Chapter of The Sierra Club. The clean-up started at 9:00 A.M. and ended approximately four hours later when one five-ton stake body truck and several pickup truck loads of trash were hauled away from the island.

The Sierra Club has made the Fisherman Island clean-up one of their annual projects and would like to include other organizations in the clean-up next year.

5. Funding.

Funding for law enforcement, ARMMS maintenance, surveys and resource problems were included with Eastern Shore of Virginia National Wildlife Refuge budget.

8. Other.

On March 12 and 13th, the U.S. Navy assisted Eastern Shore of Virginia Refuge with its tower removal project on Fisherman Island Refuge. During February of 1986, the Navy razed to the ground the seven old military towers on Fisherman Island.

The staff of Eastern Shore of Virginia Refuge found it dangerous to dismantle the towers even though the towers were on the ground. This year the Navy agreed to cut the towers in half and lay them on their sides by using explosive charges at key joints. The staff requested that as much usable metal as possible be saved for refuge reuse. During the two day operation, the Navy successfully cut-up four of the towers and promised to finish the other three by March of 1988.

LH 1987
Before: The Navy using explosive
charges to dismantle the towers.



LH 1987
After: The tower has been cut in half and laid on it's sides.
The Navy successfully cut-up four out of seven towers.

F. HABITAT MANAGEMENT

1. General.

Fisherman Island typifies the successional stages that naturally occur on barrier beach islands in this area. Intertidal marshes develop on shallow flats where wave action is not severe and are vegetated with saltmarsh, cordgrass (Spartina alterniflora). Irregularly inundated marshes are found along the perimeter of the uplands and are dominated by saltmeadow hay (S. patens), saltgrass (Dictichlis spicata) and black needle-rush (Juncus roemerianus). Beaches are found along shorelines with high wave energy and backed by low dune systems vegetated with herbaceous plants that can withstand the erosive forces of wind and salt spray. The fore-dunes are dominated by sea rocket (Cakile eduntula), Russian thistle (Salsola kali), seabeach orach (Atriplex arenaria), and American beachgrass (Ammophila breviligulata). Landward of the primary dunes, the dominant vegetation depends upon the frequency of inundation and includes herbs and grasses such as American beachgrass, panicgrass (Panicum spp.), sea oats (Uniola paniculata), sedges and rushes.

Shrub thickets are transitional communities found landward of the dune grasslands or high marshes. Dominant species are wax myrtle (Myrica cerifera), bayberry (M. pennsylvanica), groundsel tree (Baccharis halimifolia) and marsh elder (Iva frutescens). Herbaceous vegetation within the shrub communities includes saltmeadow hay and poison ivy (Rhus radicans).

As elevations increase and exposure to flooding and salt spray decrease, shrub communities succeed to a low open woodland of sassafras (Sassafras albidum) and black cherry (Prunus serotina).

The refuge is comprised of approximately 40 acres of beaches, 290 acres of dunes, 90 acres of shrub thickets, and 10 acres of low open woodland and 90 acres of tidal flats and brackish water ponds. There was not any habitat management conducted on Fisherman Island, except those of observation and protection of the wildlife.

G. WILDLIFE

1. Wildlife Diversity.

Fisherman Island is a growing barrier beach island. With this growth come a variety of resident and migratory wildlife. This island is unique in that there are few, if any, mammalian predators and with the lack of mammalian predators, avian wildlife abounds.

2. Endangered and/or Threatened Species.

No new management activities were conducted this year for endangered species. Periodic censusing were conducted for piping plover, but there were not any birds found. Peregrine falcons again took up residence in the hacking tower, but failed to produce any young. The only highlight for the year was that brown pelicans attempted to nest on the privately owned portion of Fisherman Island. This was the first nesting attempt ever recorded for this species in Virginia.



Brown pelicans on Fisherman Island.

LH 1987

Loggerhead sea turtles are known to have frequented the waters in and around the mouth of the Chesapeake Bay. Occasionally these turtles become entangled in fish nets and drown or become sick and float with the tide. In either case, many turtles are found washed up on Fisherman Island. During 1987, one Ridley and seven loggerhead turtles were found dead on the beaches. The largest found sea turtle measured 98 cm. long and 90.5 cm wide.

3. Waterfowl.

Waterfowl management activities on Fisherman Island were very low keyed during 1987. Population surveys are conducted by volunteers and staff. For the year of 1987, one Canada goose, one American widgeon, and two mallard broods were confirmed on the island.

The Christmas Bird Count headed up by Henry Armistead, Volunteer, confirmed the following bird count: 20 tundra swans, 150 snow geese, 1000 brant, 505 Canada geese, 225 American 33 mallards, and 700 other waterfowl of various species.

4. Marsh and Water Birds.

An important management function on Fisherman Island is to supply undisturbed habitat for herons, egrets, and allied species. The following are the estimates of breeding birds during 1987; these counts were conducted at two rookeries.

| Species | Number of Adults |
|----------------------------|------------------|
| Black-crowned Night Heron | 460 |
| Yellow-crowned Night Heron | 10 |
| Tri-colored Heron | 250 |
| Little Blue Heron | 25 |
| Cattle Egret | 90 |
| Great Egret | 216 |
| Snowy Egret | 204 |
| glossy Ibis | 170 |

5. Shorebirds, Gulls, Terns, and Allied Species.

The herring and great black-backed gull colony, located on the private portion of Fisherman Island continued to grow in size and number this year. During 1987 an estimated 500 adult herrings and 10 great black-backed gulls raised an estimated 400 young. This is double last years production and four times that of 1985. At the present rate of expansion, this colony will produce 3,200 young per year by 1990.



Royal and Sandwich Terns.

LH 1987

Limited predation of tern chicks by adult gulls has been documented on Fisherman Island. If as expected, the gull colony continues to grow adult gulls competing for available food, will begin predating more heavily on tern chicks. This in all likely would eliminate nesting by common terns and reduce the number of royal and sandwich terns produced. In the near future, it may become necessary to work with the State of Virginia and the landowner to reduce the number of nest gulls on the island so that the successful nesting of terns can continue.

Royal and sandwich terns again nested upon the privately owned portion of Fisherman Island. This year, unfortunately, intense wave action washed over the sand spit where the birds traditionally nested and forced the birds to move their colony within the fringe of the herring gull colony. Approximately 3,300 adult royal terns produced 4,200 young and 18 adult sandwich terns produced approximately 20 young.

6. Raptors.

Osprey are the predominate nesting species of raptors on the island. On May 4th, a nest survey were conducted and 14 active nests were found on an in the waters surrounding Fisherman Island. Estimated young osprey production were a conservative, 22 birds.

The first recorded nesting for a northern harrier was confirmed this year on Fisherman Island. Volunteer, Rudy Cashwell, watched an adult harrier carrying nest material into a stand of wax myrtle and saltmarsh cordgrass. A month later he and Assistant Manager, Louis Hinds, returned to the area and were able to locate the nest. Three young chicks were found within the nest at that time. Mr. Cashwell returned once more three to four weeks later to band the young and only one bird was present. Mr. Cashwell suspects that he was too late in returning to the nest and the other young had already fledged.



First recorded nesting for a northern harrier. LH 1987

8. Game Mammals.

The white-tailed deer herd management study continued this year. A helicopter survey was conducted on February 10th and a total of 27 deer were seen in a scattering over the 1500 acre island. This is approximately double the estimated carrying capacity. (See Eastern Shore of Virginia National Wildlife Refuge G.8 for further details.)

16. Marking and Banding.

The banding of royal and sandwich terns were conducted on June 29th and July 20th. A total of just under 4,200 birds were banded for both operations. This is approximately the same number of birds banded as the previous year. According to Dr. Weske, Research Assistant with the Smithsonian Institute of Science, Washington, D. C., 1986 was the best reproductive year he could remember for Fisherman Island royal terns. Based on this 1987 could be considered the second best.

The results of raptor banding conducted on Fisherman Island can be found in the Eastern Shore of Virginia portion of this narrative. See G.16.1

H. PUBLIC USE

1. General.

Fisherman Island National Wildlife Refuge is the southernmost of Virginia's barrier islands, and except on rare occasions, the public has been prohibited from its beaches for almost 50 years until under the leadership of U.S Fish and Wildlife Service, Back Bay National Wildlife Refuge started giving interpretive tours.

The Eastern Shore of Virginia Refuge staff has continued the practice which makes it possible for individuals to view the island from October 1st through March 31st. The staff guided tours are usually scheduled on Saturdays starting at 9:00 A.M. The tour is four miles in length and takes almost three to four hours to walk. The tour is to educate the public on the island's environment. School groups and research persons that are studying topics in relation to the island are granted access by Special Use Permit; they must be accompanied by a staff member or volunteer. The groups number from 20-25 individuals. On-site parking is limited to 10 vehicles. The refuge was closed from April 1st to September 30th to prevent disturbance to the shorebirds, herons and other birds during their nesting and other brood rearing periods.

2. Outdoor Classrooms - Students.

Forty 4-H Marine Science Students visited the island in August.

Charles Blem, Professor of Biology at Virginia Commonwealth University in Richmond, Virginia used Fisherman Island twice during the year, once in the Spring and again in the Fall to distinguish the varying ecology differences on the barrier island. Approximately 20 students were in attendance.

3. Outdoor Classrooms - Teachers.

Sheila Magula, Curriculum Specialist, from Virginia Beach City Public Schools, scheduled a workshop with the help from Refuge Staff Personnel to visit Fisherman Island with approximately 20 teachers from Virginia Beach for the purpose of increasing their knowledge about the significance and value of wildlife preserves.

Robert L. Lippson, Assistant Director for National Marine Fisheries Service in Oxford, Maryland used Fisherman Island to collect marine invertebrates and fish and also to study the various habitats of Fisherman Island. He lead a group of 10 students and faculty members from Michigan State University.

4. Interpretive Foot Trails.

The interest in wildlife interpretive walks at Fisherman Island continued as a priority in 1987. Groups such as: Tidewater Chapter of the Sierra Club, The Peninsula Nature and Science Center, Virginia Living Museum, Virginia Science Museum, and various birding enthusiasts toured the island to gain wildlife information. To honor requests from individuals or families, the Eastern Shore of Virginia National Wildlife Refuge took tour reservations and set up tours according to schedule precedent. In this way, it enabled individuals non-associated with a group to be able to gain insight into wildlife and its habitats. See E.1.

I. EQUIPMENT AND FACILITIES

8. Other.

Fisherman Island does not house refuge facilities or equipment at this time. Future plans call for development of limited facilities and equipment that will be used in wildlife management and law enforcement. Current activity is limited to removing parts of structures that have been razed.

J. OTHER ITEMS

3. Credits.

Fisherman Island Narrative was composed, written, typed, and edited by Louis Hinds, Sherman Stairs and Irene Morris.

K. FEEDBACK

1. Volunteer Program.

A volunteer program at Eastern Shore of Virginia National Wildlife Refuge was started this year. The group grew from four or five individuals to eighteen by fall of the year, and dropped back by several individuals over the winter. Volunteers were active in development of the nature trail, keeping the Visitor Contact Station open on weekends, making signs, clean-up, and a variety of other odd jobs at which they have expertise. The refuge staff can only speak highly about their contribution, however, it must be remembered that you do not get something for nothing. This effort, with our very small professional staff has taken time away from other projects. We hope those in a position of authority will allow us enough professional staff to make this "Take Pride in America" effort a continued success.

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Photography credits to Louis Hinds.

K. FEEDBACK

It seems that computers have finally come to all field stations in Region 5 and should be on line within the next year. This will make a significant difference in the way we do business, but let us hope that someone doesn't believe it's an answer to all administrative problems. It isn't. Computers will help us in many work areas, but have and will create different kinds of problems. It will certainly improve the quality and quantity of written work from daily operations, speed information flow within defined areas and serve as our memory in a variety of ways. However, we hope it will not increase an already burdensome load of paperwork processes.

Of interest - Our current model is usable by just one person at a time and, although we try to share, there are more times than not where someone uses alternate methods. Good news, there is a solution; purchase a desk type unit that interfaces by diskette- and its not too expensive either.