

PARKER RIVER NATIONAL WILDLIFE REFUGE

Newburyport, Massachusetts 01950

ANNUAL NARRATIVE REPORT

Calendar Year 1983

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

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PARKER RIVER NATIONAL WILDLIFE REFUGE

1983 ANNUAL NARRATIVE

Personnel

1. John L. Fillio, Refuge Manager, GS-13 PFT, transferred from Great Swamp NWR, Basking Ridge, N.J. effective 9/18/83.
2. Robert A. Zelle, Assistant Refuge Manager, GS-11 PFT
3. Douglas G. Spencer, Assistant Refuge Manager, GS-7 PFT transferred to Great Meadows NWR 2/20/83.
4. Louis S. Hinds, III, Assistant Refuge Manager, GS-9 PFT transferred from Eastern Neck NWR, Rock Hall, Maryland, effective 2/20/83.
5. Thomas J. Stubbs, Foreman, WS-9 PFT
6. Raoul J. DeSerres, Maintenance Mechanic, WG-10 PFT
7. Donald G. Grover, Visitor Assistance and Safety Specialist, GS-9 PFT.
8. William L. Papoulias, Visitor Protection and Control Specialist, GS-7 PFT, transferred to National Marine Fisheries Service, Gloucester, Mass. effective 2/8/83.
9. William C. Kent, Outdoor Recreation Planner, GS-9 PFT transferred from Okefenokee NWR, Folkston, Ga. effective 8/21/83.
10. Christian J. Schoppmeyer, Park Technician, GS-5 PFT, transferred from Division of LE-New York, effective 9/4/83.
11. Daniel S. Rines, Jr., Maintenance Worker, WG-7 PFT
12. Clara V. Bell, Clerk-Typist, GS-5 PPT
13. Helen K. Garrett, Clerk-Typist, GS-4 PPT
14. Paul Accomando, Biological Aid, GS-3 Temporary
15. Neil Courtney, Biological Aid, GS-3 Temporary
16. Kathleen Hawkes, Information Receptionist, GS-3 Temporary
17. Jeffrey DesLauriers, Biological Aid, GS-3 Temporary
18. Joann Raducha, Biological Science Student Trainee, GS-3.

Review and Approvals

<u>John L. Fillio</u>	<u>April 10, 1984</u>	<u>Thomas J. W. Andrews</u>	<u>5-30-84</u>
Submitted by	Date	Refuge Supervisor Review	Date

<u>Suzanne Meyer</u>	<u>6-7-84</u>
ARD-Wildlife Resources Review	Date





Left to right: Region 5 Biologist, Carl Ferguson; Assistant Manager Zelle; Manager Fillio; Assistant Manager Hinds.



Left to right: Refuge Clerks, Kay Garrett and Clara Bell.





Left to right: Park Technician Schoppmeyer;  
Visitor Assistance and Safety Specialist Grover;  
and Outdoor Recreation Planner Kent.



Left to right: Maintenance Worker Rines; Maintenance  
Mechanic DeSerres, and Foreman Stubbs.



Ms. Raducha, Student Trainee.



The 1983 Youth Conservation Corps enrollees and staff.

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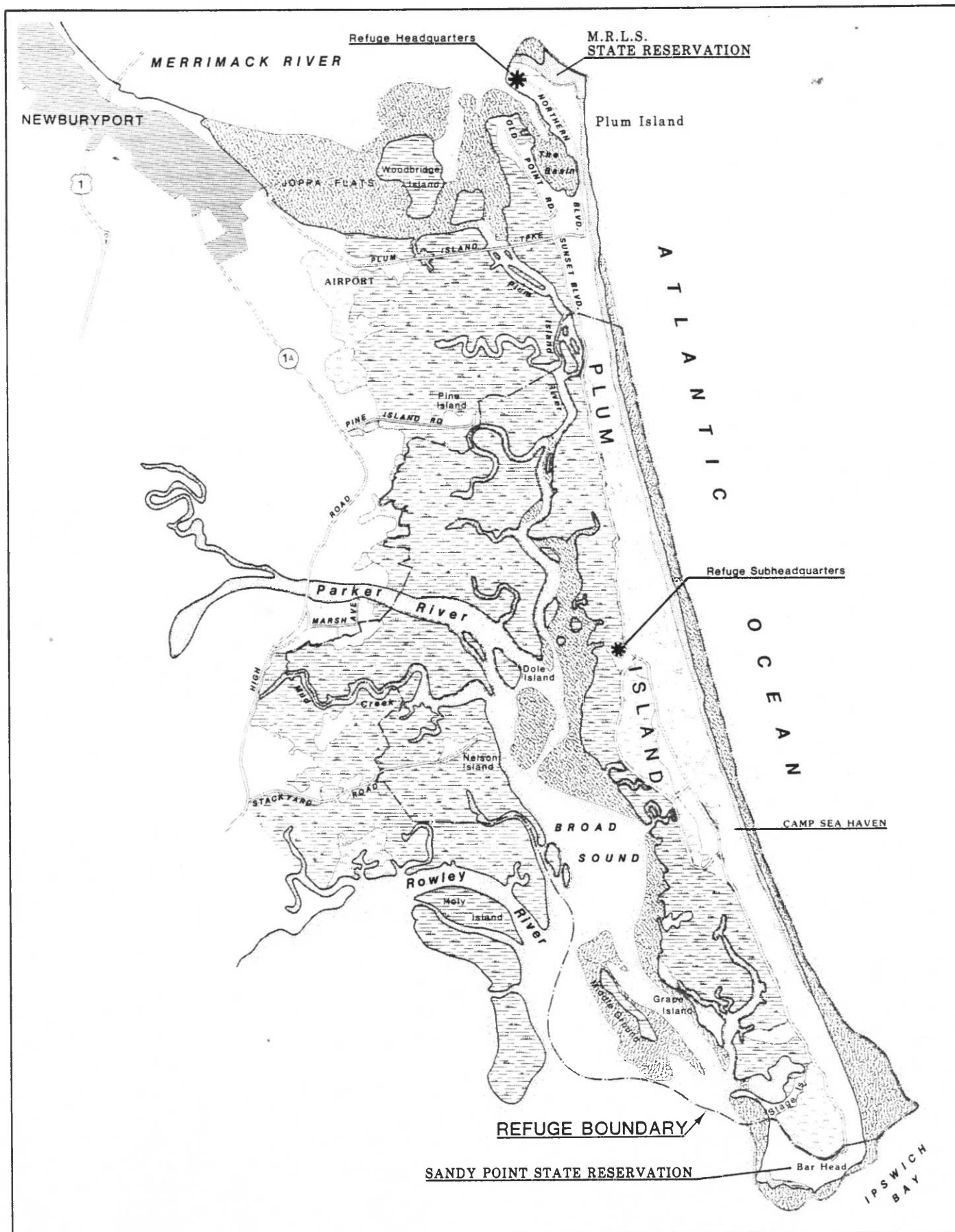
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U.S. DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
REGION FIVE  
Newton Corner, Massachusetts  
NOVEMBER 1983



**PARKER RIVER**  
NATIONAL WILDLIFE REFUGE  
Essex County, Massachusetts



#### A. HIGHLIGHTS

The Refuge Master Plan and Environmental Impact Statement was basically completed in late fall with an anticipated publication date in January 1984 (see Section D.1).

The refuge skeletal staff pattern gained considerable weight with the filling of four vacant positions during 1983 (see Section E.1).

Nearby Crane's Beach (Trustees of Reservations) low key Public Deer Hunt explodes in the media - cancelled at the 11th hour (see Section J.2).

A Canada goose die-off occurred in December, with lead poisoning the initial diagnosis (see Section G.17).

#### B. CLIMATIC CONDITIONS

Nineteen hundred eighty-three was the wettest and warmest in 113 years. Total precipitation was 63.07 inches of rain, and 39.97 inches of snow. Average rainfall was 43.48 inches, well below 1982 levels. November, March and April were the wettest months. Hottest day of the year was July 4 (94° F.), and the coldest was Christmas Day (-4° F.) and 2 days each in January and February. The year began warm, with late snows coming in two February storms. Spring rainfall was heavy (13 inches above normal) and, to the delight of law enforcement personnel, eight weekends had rainfall. Water levels in refuge impoundments were high, and we fought with the beavers to keep the control structures open. June, July, and August were hot and dry, and the National Weather Service reported it as the warmest in 113 years. Fall months were warm; but, by November and December, rains and cooler weather had returned.

	<u>Aver.Temp. (Hi/Lo)</u>		<u>Max/Min.Temp.</u>		<u>Precip. (Rain/Snow)</u>
January	32/16	°F.	54/-4	°F.	3.00/4.69 inches
February	35/17		53/-4		5.61/32.75
March	42/31		52/19		11.86/ -
April	53/39		77/30		7.65/ -
May	62/46		78/36		4.82/ -
June	75/55		91/42		1.23/ -
July	81/61		94/52		2.21/ -
August	78/60		92/48		2.67/ -
September	73/53		86/40		1.73/ -
October	56/39		78/26		4.09/ -
November	48/34		62/25		12.30/ -
Decmeber	34/18		51/-4		5.90/2.53
					63.07/39.97

### C. LAND ACQUISITION

#### 1. Fee Title

The refuge area remained at 4,650 acres, all in fee title.

### D. PLANNING

#### 1. Master Plan

The draft Refuge Master Plan and Environmental Impact Statement were available for public review and comment on March 2, 1983. A public hearing was held on March 30 for public comments on our proposed action.

The draft Environmental Impact Statement provided for a field office on the refuge with a main headquarters and wildlife interpretive center in downtown Newburyport. There was much opposition to any on-refuge administrative facilities expressed during the comment period on the draft EIS.

As a result of public and private interest group expressions of concern, the U. S. Fish and Wildlife Service decided in September to modify our proposed action. The final EIS and Master Plan Proposed Action will call for the Service to make a conscientious attempt to obtain an off-refuge site for the refuge headquarters and visitor contact station. If a feasible site cannot be obtained in five years, the Service will then pursue the location

of facilities on the refuge. The publication of the final EIS was in progress at the close of the calendar year.

## 2. Management Plan

The refuge Disease Contingency Plan was reviewed and updated as necessary in the spring of 1983.

## 3. Public Participation

Public participation concerned the refuge Master Plan in 1983. Many persons attended the March 30 public hearing for the Master Plan. Most of the vocal attendees got on their soap boxes and vented their disapproval of our Proposed Action.

## 4. Compliance With Environmental Mandates

The National Environmental Policy Act (NEPA) process was followed for the refuge master planning. Coordination was also maintained with the Commonwealth of Massachusetts for consistency with the State Coastal Zone Management Plan and the State's equivalent to the Federal EIS (MEPA).

Required permits for replacement of a rusted out water control structure on the refuge cross-dike were obtained. The U. S. Army Corps of Engineers approved the work under the criteria of a National Permit for this routine type of maintenance. The Chairman of the Rowley Conservation Commission looked at the site and provided a letter authorizing us to proceed without any need to file a Notice of Intent as could be required under the Massachusetts Wetlands Protection Act.

We have to touch base with the appropriate regulatory entities whenever we do anything that will be highly visible. All we have to do is move a little dirt somewhere and our "interested publics" will be making inquiries.

## 5. Research and Investigations

### Parker River NR-83-Beach Invertebrate Study - 53550-PR 14

This study is being conducted by Dr. Robert A. Croker, University of New Hampshire. The purpose of the study is to analyze possible factors influencing the abundance and distribution of invertebrates in sandy beaches. This study has been underway since 1978 with



no final results or publications to date. Data relating to temperature, salinity, sand grain characteristics, and population of the sand-burrowing crustacean, Haustorius canadensis, have been gathered on the refuge.

A final report was received at the end of 1983 acknowledging the completion of this study. Data collected from the study contributed to the completion of the following Ph.D. thesis: "Population Ecology and Production of the Sandy-Beach Amphipod, Haustorius canadensis (Crustacea: Haustoriidae)"; Donn, Theodore E. Jr. 1983; Ph.D. Thesis, University of New Hampshire, 101 pp.

#### Parker River NR-83 - Saltmarsh Ecology - 53550-PR-16

This is an ongoing research project of Dr. Ernest Ruber, Northeastern University, to gather basic information on life cycles in the salt marsh pools of the Parker River National Wildlife Refuge and to train graduate students in the technique of field research. Work by one student on copepod ecology has been completed and a Master's thesis is forthcoming.

### E. ADMINISTRATION

#### 1. Personnel

We operated through approximately three quarters of the calendar year with the Project Leader and two other permanent positions vacant. The following personnel changes occurred in 1983.

Effective January 8, Visitor Protection and Control Specialist William Papoulias transferred with a promotion to a position with the National Marine Fisheries Service.

February 20 was the effective date of transfer for Assistant Manager Douglas Spencer to the position of Assistant Manager at Great Meadows National Wildlife Refuge.

Louis Hinds, III, Assistant Manager at Eastern Neck NWR transferred to the Assistant Manager position at Parker River effective February 20. However, due to details relating to the development of a heavy equipment operators training course and difficulties related to moving from Maryland, he was off the station frequently during the year.

On August 21, William C. Kent entered on duty as our Outdoor Recreation Planner transferring from Okefenokee NWR.

Our vacant enforcement position was filled by Christian Schoppmeyer as Park Technician effective September 4.

On September 18, John L. Fillio entered on duty as the Project Leader, transferring from Great Swamp NWR in Basking Ridge, New Jersey.

Due to the several vacancies in staff, particularly those with enforcement authority, assistance was provided by various Special Agents throughout the busy summer use season. This assistance on weekends was much appreciated. There were several times during the summer when we just crossed our fingers and hoped people would not catch on to how limited our enforcement capability was.

A five-year comparison of on-board strength (numbers of people) follows:

	<u>Permanent</u>	<u>Temporary</u>
	<u>Full-time</u>	<u>Career Seasonal or Part-time</u>
FY 83	9	2
FY 82	7	4
FY 81	7	4
FY 80	7	6
FY 79	* 9	4

\*Due to PFT ceiling cuts, we had to refill two PFT positions as Career Seasonals in FY 79.

Effective in FY 1983, a career seasonal maintenance position and a career seasonal enforcement position were re-established as permanent full-time positions.



Assistant Manager Zelley received a Special Achievement Award for outstanding service while performing as Acting Manager for the period August 23, 1982 to September 18, 1983.



On December 8, Outdoor Recreation Planner William Kent received his 10-year service pin.



## 2. Youth Programs

Twenty enrollees were employed during the summer in the 1983 Youth Conservation Corps Program. A variety of work projects were carried out from litter control to building maintenance and trail construction.

Two group leaders were authorized to supervise the work of these enrollees. This is substantially less than in past years when a 20-enrollee camp was operated with up to four staff. To optimize utilization of work crews and provide adequate supervision, temporary entrance gate staff helped supervise some work crews with a YCC enrollee holding down the entrance gate position.

We were fortunate to have some older and more responsible YCC enrollees who could be utilized as youth leaders and be issued drivers' licenses. This helped in the logistics of distributing work crews and materials to various job sites.

The reduced YCC staff level also necessitated a slightly greater involvement of refuge maintenance staff. Our staff were particularly important in seeing that projects that involved boardwalk construction or masonry work were done correctly. The initial set-up of the project and periodic inspection during construction was provided.

## 4. Volunteers Programs

We had two volunteers during the year. One, Rebecca Riehl, was a high school student. The other, Jeffrey DesLauriers, was a college student.

Ms. Riehl conducted some wildlife census work during the period April 18 to June 3. The work helped us keep track of waterfowl numbers at a time of low staffing and unavailability of regular staff due to other assignments. Ms. Riehl's work was not only helpful to us, but qualified for the high school's assignment for biology students to work out some sort of special project.

Mr. DesLauriers volunteered his time during the summer to meet his college's requirement for work experience related to his major (Environmental Science). A total of 208 hours of volunteer service were provided in a variety of work: public use management, YCC assistance, waterfowl banding, and mowing.

We will continue to utilize volunteer services whenever the interest and availability of the volunteer coincides with our needs.

#### 5. Funding

Refuge funding for the past five years follows. Due to vacancies on the staff most of the year, some funds were unobligated to assist in potential end-of-year contingencies for the Region.

#### Annual Funding - Five Fiscal Years

<u>FY</u>	<u>1110</u>	<u>1210</u>	<u>1220</u>	<u>1240</u>	<u>Total</u>
FY 83					
Actually					
obligated		189,782	3,687	174,383	367,852
AWP'd		203,000	6,000	193,000	402,000
FY 82		200,000	6,000	178,000	384,000
FY 81		170,300	5,000	185,000	360,300
FY 80		142,000	7,000	184,000	333,000
FY 79	1,000	137,000	6,000	182,000	325,000

The above table displays annual work planned funds; however, actual operating costs in FY 83 were \$34,148.00 under budget, due primarily to several vacancies during most of the fiscal year.

#### 6. Safety

No lost-time accidents occurred in calendar year 1983. Payment of a workman's compensation claim for treatment of a back strain in 1982 dragged on through most of 1983. Maintenance Foreman Stubbs had strained his back in 1982 and incurred a medical bill of approximately \$50.00 for which a claim had been filed with the Office of Workman's Compensation. It probably cost the government more personnel time to make sure it was a justified claim than the bill itself.

We had a few accidents in 1983 involving visitors on the refuge. On June 14, an elderly visitor tripped while entering the refuge over the exit treadles, sustaining scratches and abrasions. On August 9, a counselor at Camp Sea Haven lost control of her Father's Jeep Wagoneer while traveling north on the graveled road surface. The vehicle apparently turned 180 degrees and rolled over. The driver sustained only scratches and was shaken up by

the experience. Fortunately, she had been wearing her seat belt.

A somewhat more unusual event occurred on November 10, when a visitor was bitten by a deer. We suspect a person or persons unknown released a tame fawn on the refuge. This deer was being fed an apple by the visitor when the accident occurred.

#### 8. Other Items

Acting Manager Zelley attended the annual Region 5 Project Leader's Meeting on January 18 and 19 at Newton Corner, Mass.

Refuge staff regularly attended meetings of the Sandy Point State Reservation Advisory Committee and the Essex County League of Sportsmen's Clubs during the year.

Assistant Manager Louis Hinds completed law enforcement refresher training at Richmond, Virginia the week of August 22-26.

During the year, Assistant Manager Louis Hinds was engaged in the development of a heavy equipment operator training course for the Department of the Interior. This necessitated trips to John Deere facilities in Illinois and Boise Interagency Fire Center during the year.

Also in December 1983, Assistant Manager Hinds was selected to assist the Regional Office in developing specifications for A-76 implementation.

Park Technician Schoppmeyer completed a 9-week course in basic law enforcement during the period October to December 1983.

The following amounts were distributed to towns, in which refuge land is located, under the Refuge Revenue Sharing Act for FY 83.

Newburyport	321.00
Newbury	36,823.00
Rowley	15,892.00
Ipswich	<u>26,867.00</u>
Total	79,903.00

## F. HABITAT MANAGEMENT

### 1. General

Management of any type was difficult this year due to personnel changes and climatic conditions. In a general way, though, it was an interesting year, with the critters we are managing for teaching us more about the habitat they live in.

### 2. Wetlands

Parker River contains approximately 260 acres of fresh to brackish water impoundments upon which all of our wetlands management is conducted. Water level management is very limited due to total dependence on precipitation as the only fresh water source.

North Pool (see Map) - During 1983, higher than normal amounts of precipitation (see B. Climatic Conditions) for February-April flooded the elevated boardwalk trail through the North Pool. This put the refuge in an unusual position of having to drain out excess fresh water. It so happens that the only beaver family found on the refuge lives in the North Pool. As most Refuge Managers can attest, drawdown was difficult. Suffice to say that the WG-7 assigned the task of keeping the water flowing, was devising means to eradicate the problem. In the end, persistence paid off and the water was drained down.

As summer progressed, the water in the North Pool was drained further in order to replace the old water control structure and pipe between this pool and the Bill Forward Pool (see I-2 Rehabilitation). The lowered water, coupled with a dry spell during August - October, allowed the refuge staff to mow approximately 80 acres of purple loosestrife and cattail. The resulting green browse foraging area, and open space after reflooding in December, attracted approximately 2,500 to 3,000 black ducks during the fall migration. A spin-off benefit from this management practice was the opportunity for wildlife observation that the visiting public was afforded during the month of December. Anywhere along the one-half-mile section of refuge road that paralleled the mowed area, the refuge visitor could stop his car and view hundreds of black ducks, mallards, green-winged teal, and Canada geese feeding within 40 to 75 yards of the car.

One other interesting fact was discovered during the summer draw-down period. The refuge beaver family relocated its lodge in the North Pool, from its southern location all the way to the north end. At that point, they proceeded to build a small dam, inside the impoundment, in the main ditch. Since there is no

water source flowing into the impoundment, we expected the beavers' efforts to be in vain - but they knew better. During one of the driest times of the year, they were able to back up 4 to 6 inches of water from a source unknown. Since part of our Master Plan deals with the development of deep water wells as a water source for the impoundments, a closer look for this unknown source should come about.

Bill Forward Pool - The Forward Pool received no special attention in 1983 other than drawdown to replace the water control structures and pipe between it and the North Pool. During this drawdown period, some mowing was accomplished and emergent vegetation encouraged. It was noted that the emergent vegetation that came up during the drawdown period was sparse and almost monotypic, unlike the other two impoundments. Due to the vegetation differences between the pools, several soil samples will be taken in calendar year 1984 in hopes of explaining the variation. (See Map.)

Stage Island Pool - see Map. Stage Island Pool went through a planned dewatering which started in March and proceeded through August. This phased drawdown was a departure from the past management practice of holding as much water as possible until August, then releasing it.

This decision to change our past water management practices was made after the staff noted the annually increasing loss of vegetation which served as brood and nesting cover. To reverse this trend and encourage emergent vegetation, the water was drawn down enough to expose the mud flats. A phased dewatering was used due to a fear that, if the pool was emptied suddenly, the available mud flats would be quickly invaded by purple loosestrife or phragmites. On the other hand, if the water was removed slowly, this would encourage other forms of vegetation to establish themselves and hopefully out-compete these pest plants.

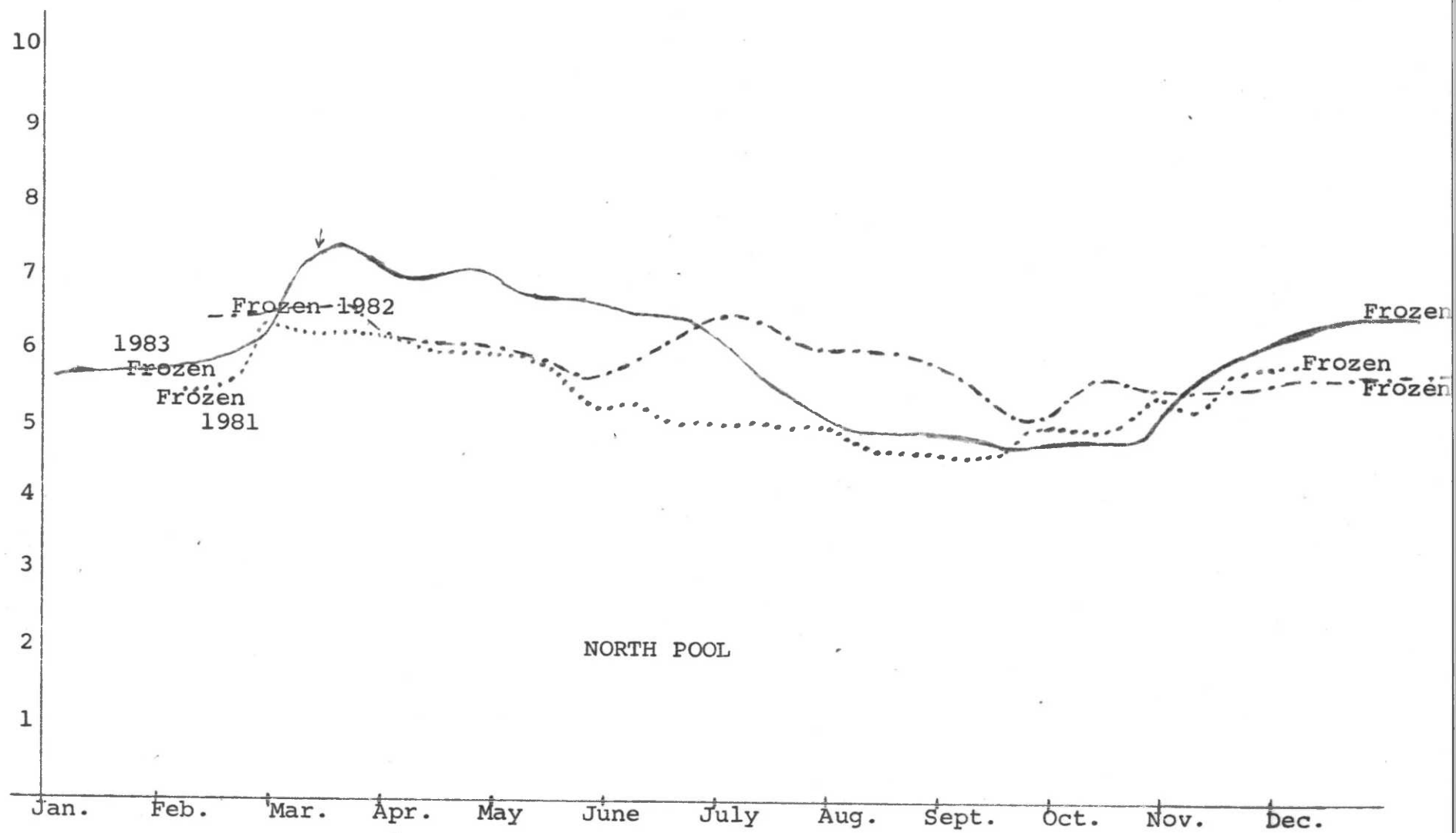
In the final analysis, we did encourage vigorous emergent vegetation growth that was enjoyed by many wildlife species (see photograph below).

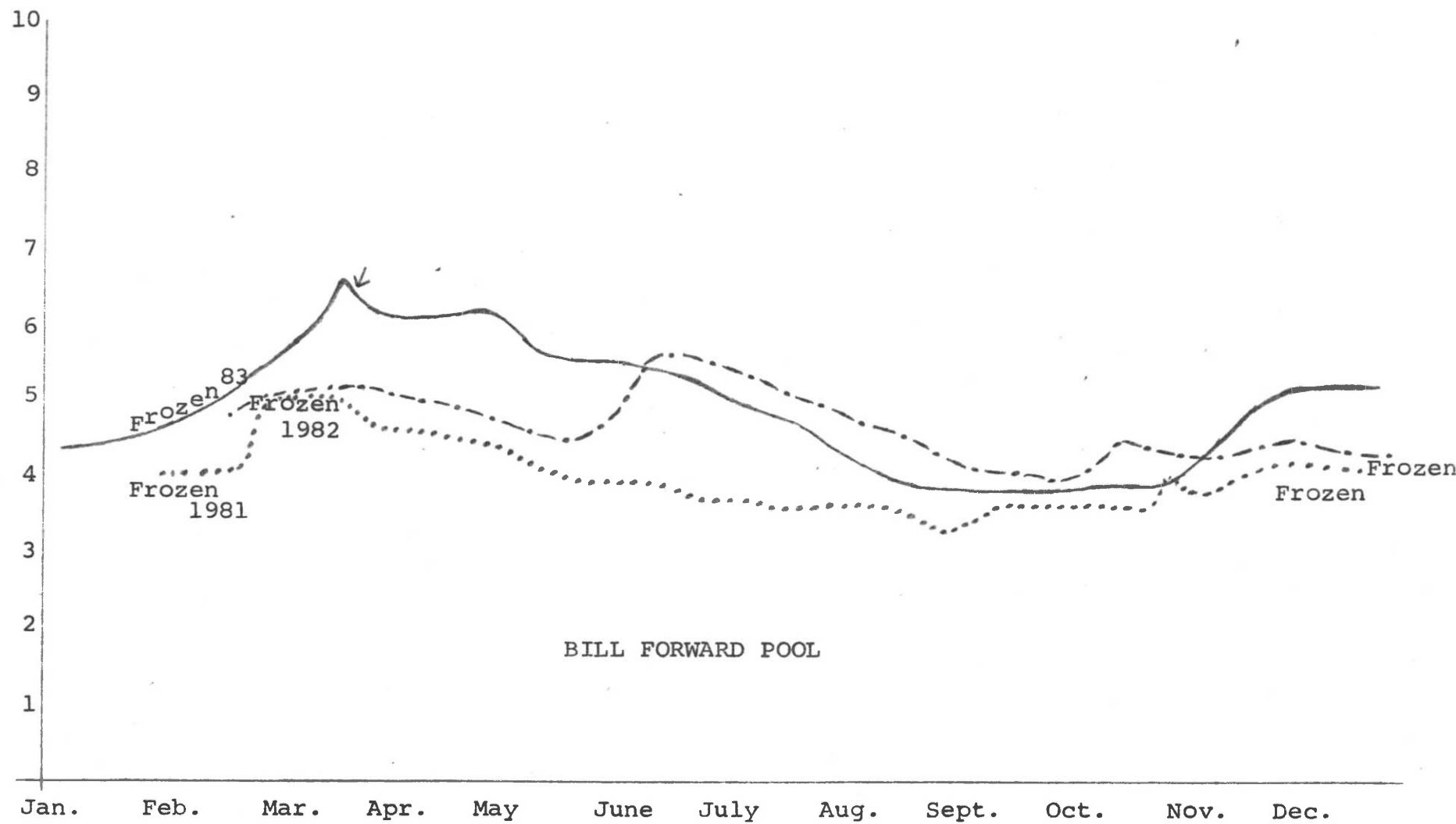


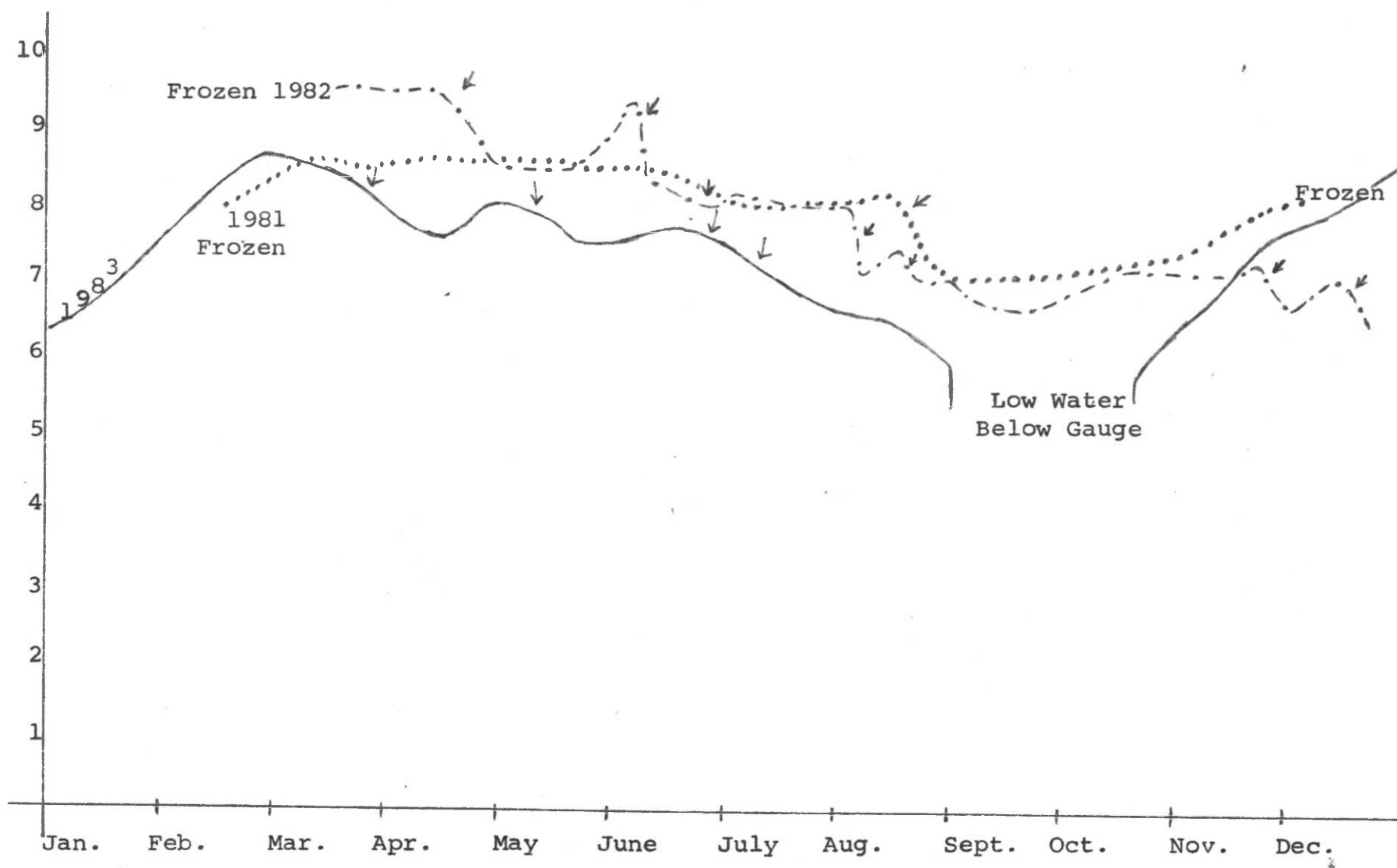
Stage Island Pool, Summer 1983.

An unexpected development came to light in December. While taking water gauge readings of this impoundment during mid-December, Assistant Manager Hinds noted several sick Canada geese. A closer search of the area produced a number of dead birds and, over the course of the next one-to-two month period, roughly 200 dead Canada geese were found. The cause of death, as determined by the Fish and Wildlife Health Lab in Madison, Wisconsin, was lead poisoning. To date, the source of the lead shot has not been determined but, because of overlap in the arrival of migrating Canada geese and the time it took to reflood the impoundment, there is a possibility that the birds picked up the shot in the pool itself. During calendar year 1984, bottom samplings will be undertaken in Stage Island Pool to determine if indeed it was the source of the lead shot. For further information of the lead shot poisoning, see section G-17.









STAGE ISLAND POOL

## 5. Grasslands

The upland fields at North and Forward Pools, Stage Island, Cross Farm Hill, and Nelson's Island (totaling 88 acres) were mowed to maintain them in mixed grasses and forbs as nesting cover and goose pasture. Two miles of the dike slopes were mowed to control invasion of trees and shrubs.

## 8. Haying

A Special Use Permit to cut twenty tons of salt hay was issued to a local farmer in 1983. A limited amount of salt hay removal results in increased feeding activity by various wading and shorebird species. Interest in the past for haying privileges on the refuge had been low, but increased demand for salt hay and livestock feed is renewing farmers' interest in the refuge salt hay.

## 9. Fire Management

Parker River's fire management program through the years has centered basically on control and extinguishment of all fires. During 1983, only one 2-acre fire was detected on the refuge and, with the aid of local fire departments, was quickly suppressed.

In the future, with a little public education on how fire can be a valuable wildlife management tool, we hope to do some prescribed burning of fields and impoundments.

## 10. Pest Control

The invasion of wetlands in the Northeast by purple loosestrife is a problem of great concern. Mowing during the period of flowering has helped to reduce the dominance of this weed where equipment operation is practical. No pesticides were used on the refuge in 1983.

Domestic dogs and cats constitute major animal pests on the refuge. Throughout the year, the refuge staff sights numerous dogs and cats roaming the refuge and, on many occasions, harassing wildlife. When the animals are caught, we most often impound them and/or contact and prosecute the owners for domestic animal trespass. Otherwise, the animals are turned over to the local dog officer.

## 12. Wilderness and Special Areas

The proposed Wilderness Area for Parker River Refuge is still a proposal. No further action was taken on it during 1982. Areas within the proposed area are currently treated as Wilderness in that no manmade alteration or development activity occurs.

### G. WILDLIFE

#### 1. Wildlife Diversity

Parker River National Wildlife Refuge, due to the very nature of its habitat, both managed and unmanaged, lends itself to a wide diversity of creatures: from harbor seals to whitetail deer, snowy owls to cliff swallows, striped bass to softshell clams. This diversity in wildlife attracts a wide range of user groups which, at times, tax both manpower and fiscal resources.

#### 2. Endangered and/or Threatened Species

During the spring and fall migration, peregrine falcons were seen occasionally by refuge visitors and staff. Bald eagles have been regularly observed during the winter, on wooded islands a few miles up the Merrimack River. One immature bald eagle was seen flying over the refuge on August 15.

Ospreys are also an occasional visitor to the refuge and, during the month of August, one was sighted over Broad Sound.

#### 3. Waterfowl

Total waterfowl use days for 1983 were 954,000; this was 19 percent lower than the 1982 figures. The drop in waterfowl use days coincided with the changing of the guard and is due somewhat to variations in survey techniques. Peak numbers of Canada geese, black ducks, and snow geese occurred during December.

Waterfowl production in 1983 was estimated at 900 birds; this was 23 percent lower than the previous year and, again, can be partially due to variations in survey techniques from past years. We did find, however, when checking wood duck boxes, that our production of wood ducks dropped to near zero because of starling competition.



#### 4. Marsh and Water Birds

A variety of these birds are commonly found on the refuge through spring and summer, consisting mostly of Snowy Egrets, Black-Crowned Night Herons, Great Blue and Green-Backed Herons, Glossy Ibis, and Cormorants.

The refuge has a nesting colony of Black-Crowned Night Herons near Cross Farm Hill. This nesting population was estimated at 65 pairs in 1983.

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

With a cool, wet spring, shorebirds did not arrive at the refuge until late April-early May. Shallow depressions or ponds that lie close to the road are favorite spots for the birding public to enjoy these species.

In 1982, least terns began appearing on the refuge on May 16th; this year, one week prior to that arrival date, a twine fence was erected. This fenced area extended in a North-South direction from 300 yards south of Lot #1 to Lot #3 (approximately one mile), then in an East-West direction from the mean high tide area to the refuge road. Our management was validated when, on May 16th, three least terns were again seen in the area. By summer's end, 50 least terns had fledged 25 young at the exit point from the beach, at Lot #2. Also found nesting within the fenced area was a piping plover that fledged 2 young.

Common Terns also nest on the refuge and nearby areas. The Common Terns are adapting to the extent that they are nesting on areas not usually used by the species in the past. Common Terns primarily nest on thatch that accumulates on the higher areas of the salt-marshes on and off the refuge. This species is also utilizing water fowl nesting structures in North Pool and Stage Island Pool. By early June, Common Terns had begun nesting in the impoundments and on the saltmarsh south of the "Knobbs" and saltmarsh southwest of Parking Lot #3.

On June 20, Woodbridge Island was checked for the number of nesting Common Terns. One hundred nests were observed, containing from 1 to 3 eggs per nest, with 3 being the most common. The majority of nests were constructed on reed mats at the high tide line, with a lesser number directly in the Spartina patens. From this survey, it was estimated that approximately 200 nesting pairs were using the island.

## 6. Raptors

Birds of prey are frequently observed during fall, winter, and spring. The peak numbers occur during October and November and then again during April, when the bulk of these species are in migration. The most frequently reported occurrences are Northern harriers, kestrels, rough-legged hawks, short-eared owls, and sharp-shinned hawks. Snowy owls have been regular visitors every winter during December through February. This year was no different, with the refuge hosting a peak population of 5 birds.

An extended visit by a Gyrfalcon in November again attracted hordes of birdwatchers to the refuge and gave our law enforcement officers plenty of practice in traffic control.

## 7. Other Migratory Birds

The refuge provides a considerable number of nesting boxes that are used almost exclusively by Tree Swallows. Tree Swallows, during late August-early September, will use the refuge as a staging area before their migration South. Thousands upon thousands of birds can be seen blanketing the refuge road or soaring above the sand dunes.

The refuge maintains a small Purple Martin population that inhabited 13 of the 15 martin boxes erected for their use.

## 8. Game Mammals

The refuge whitetail deer herd continues to increase each year. Efforts were initiated this year through a refuge management study to get a handle on the herd's size and its effect, if any, on the fragile dune vegetation. Evening road counts were run from late August through November, with the highest number recorded on October 20 - a total of 49 deer seen. Plans are underway for a more complete count to be done by helicopter in February 1984.

Cottontail rabbits are by far the most visible game mammal species on the refuge. The estimated population in September was between 1,500 and 2,000 animals. There is some concern among the staff that these critters may be having more impact on the refuge vegetation than the deer.

A positive benefit from all these rabbits is the number of hawks and owls that will over-winter on the refuge with this abundant food supply.

#### 10. Other Resident Wildlife

Ring-necked pheasants are common throughout the refuge. The males were especially conspicuous during the spring mating season.

#### 16. Marking and Banding

Post-season banding of black ducks was carried out during January and February. A total of 313 black ducks were banded using a Montezuma style confusion trap.



Pre-season banding was accomplished during the months of July and August, again using the Montezuma style confusion trap. A total of 270 Mallards, 205 Black Ducks, 3 Green-Winged Teal, and 1 Wood Duck was captured.

Using YCC help, a total of 76 local Canada geese and 23 hatching and after-hatching year birds were rounded up in the annual Goose Drive.

This Goose Drive is usually the first big project the enrollees work on as a group, and it helps to set the spirit for teamwork and cooperation throughout the summer.



YCC enrollees assisted refuge staff in pre-season banding of black ducks.

#### 17. Disease Prevention and Control

During late November 1983, Refuge staff noticed some Canada geese acting strangely - seemed to be reluctant to fly off when approached. During the following week, the number of geese exhibiting this unusual behavior increased to more than just a few birds.

On Monday, December 12, 1983, refuge staff conducted a search for sick or dead geese in the vicinity of Stage Island Pool. A total of 22 birds were either found dead or weak enough to hand-capture.

The National Wildlife Health Lab in Madison, Wisconsin was notified and symptoms observed (described to the lab) suggested lead poisoning as a possibility. Subsequently, nine carcasses were

packed and shipped to Madison for necropsy and analysis.

From December 12th through the 15th, a total of 109 birds (all Canada geese) were collected with specimens retained for analysis.

On December 16th, Ron Windingstad from the NWHL Madison arrived to investigate. Ron, assisted by refuge personnel, continued field searches and collected 44 additional geese. All carcasses were necropsied with 40 specimens preliminarily diagnosed as lead poisoning. Lead shot in gizzards ranged from 1-25 pellets. Ron returned to Madison with additional specimens/samples on December 19th.

The preliminary report on the initial nine birds sent to the NWHL was received on the 19th and indicated lead poisoning. Samples were to be further tested for lead levels/toxicity for confirmation.

Collections continued through January 5, 1984, resulting in a total of 194 geese found dead or sick.

A total of 61 birds were analyzed with 58 confirmed (lab analysis) as lead poisoning.

Interestingly - of the birds analyzed - 18 also had steel as well as lead shot in the gizzard; strongly suggesting the refuge itself as the source (for both) - as Parker River is the only location for steel shot in this area.

Bottom samples from the Stage Island Pool will be taken this spring - as well as field samples (goose browse area) to determine presence of lead shot.

The Sandy Point State Reservation immediately bounds the southern edge of the Stage Island Pool and goose browse fields. This reservation allows the use of lead shot for other than waterfowl and may have contributed, over the years, to a lead shot build-up in both the pool and fields. Further investigations will hopefully prove or disprove this theory.





One of many Canada geese which were found dead and dying during December 1983. Green stained vent is suggestive of lead poisoning.



Dead Canada geese were collected and buried during the die-off.

H. PUBLIC USE1. General

Below are reported wildlife-oriented public use figures for calendar year 1983:

	<u>No. Visitors</u>	<u>Activity Hours</u>
Self-Guided Trails (Non-Motor)	22,801	22,801
Visitor Contact Station	370,677	1,449
Self-Guided Int. Ex./Demo	24,934	2,284
Environ. Ed. - Students	7,485	26,803
- Teachers	800	3,340
General Waterfowl Hunting	619	2,786
Saltwater Fishing	7,593	44,943
Clamming, etc.	5,692	24,133
Recreation/Wildlife: Non-consump.		
Camping	1,806	3,616
Picnicking	26,051	13,051
Recreation/Wildlife-Wildlands Obs.		
Foot	240,466	480,934
Land Vehicles	347,739	175,456
Other (Cross-Country Ski, Snowshoe)	495	989
Photography	2,218	4,437
Total Visits	372,177	--

Total visitation was 17 percent higher than calendar year 1982; the increase was primarily due to better weather in late summer/early fall.

2.& 3. Outdoor Classrooms-Students and Teachers

Visits by elementary, high school, and college groups are very popular at Parker River Refuge. In 1983, May-June-October were the most attractive months for school groups. Generally, these groups use the Hellcat Swamp Interpretive Trail (see #4 below), the State-owned area at the south end of Plum Island, and Parking Lots #5, 6, and 7 beach areas. These groups must obtain a permit from refuge headquarters in advance. We restrict use to two groups a day, no more than 60 to a group, in order to reduce crowding in the areas mentioned above. If requested, a staff member (Assistant Manager in the past; now the Outdoor Recreation Planner) will provide an orientation talk about the refuge and

the Service. Only in special cases will the staff member stay with the group.



Staff/83

A serious study of their world.

In the 1970's, the refuge, in cooperation with Essex County Agricultural Extension Service, developed a series of lesson plans which had resulted from annual teacher workshops on the refuge. Due to the lack of an Outdoor Recreation Planner, these workshops have not been held in recent years, and the educational efforts on-refuge by local school systems have suffered. As a consequence, many of the visits by school groups deteriorate rapidly into beach parties. It is the intent of the present Outdoor Recreation Planner that the workshops be revived, the lesson plans reviewed and reprinted, and that school systems be informed as to the educational opportunities on the refuge.

#### 4. Interpretive Foot Trails

The 2-mile Hellcat Swamp Trail is interpreted via a trail brochure/numbered stops. The trail follows a route which traverses three of the five distinct physiographic features on Plum Island. A spur trail off the main boardwalk leads to an observation blind where many varieties of birds may be seen and photographed.

#### 6. Interpretive Exhibits/Demonstrations

Interpretive signs relating to the nesting activities of least terns were posted at parking lots bordering the nesting area. The signs were very beneficial and increased visitors' awareness of the terns' presence on the beach.

Parker River Refuge does not have any type of "formal" visitor contact station. Seasonal employees at the entrance gate provide limited informational services to the public. A bulletin board at Parking Lot #1 provides general information about the refuge and has fixed copies of station Bird List, Mammal/Amphibian/Reptile List and Refuge Regulations.

#### 8. Hunting

Parker River Refuge lies in the coastal zone as designated by the Commonwealth of Massachusetts. Waterfowl seasons in this zone were split this year: October 24-29 and November 18-January 20 (1984). Duck season ended on December 31, with Goose season ending in January. No black ducks (preferred bird of local hunters) could be taken December 8-17. The refuge allows hunting in three areas, each with a daily limit of hunters allowed. Youth hunters in the Young Waterfowlers Training Program (YWTP) are allowed to hunt only in a specially designated area on the Plum Island portion of the refuge. All of Plum Island and the refuge were a steel shot zone in 1983.

All hunters wishing to hunt on the refuge are required to take and pass a certification exam. The exam is an attempt to improve the awareness of hunters in regard to ethics, State and Federal regulations, and waterfowl identification. Hunters successfully completing the "open-book" exam are certified for either one year or five years, depending on specifically weighted questions.



In 1983, 698 examination packets were sent out. Two hundred thirty-five people did not respond; 295 were certified for five years; 125 for one year, and 43 failed to pass.

A total of 38 youth hunters completed the YWTP this year. A tabulation of hunt results follows:

YWTP - 1983

<u>Date</u>	<u># Hunters</u>	<u>Birds Taken</u>	<u># Shots Fired</u>
10/29/83	24*	14	226
11/19/83	14	7	138

\*One hunter did not turn in report sheet.

Average Success/Shots:	<u>10/29/83</u>	<u>11/19/83</u>
	0.58 Birds/Hunter	0.50
	9.4 Shots/Hunter	9.85
	19.0 Shots/Birds Taken	19.7

<u>Species Harvested</u>	<u>10/29/83</u>	<u>11/19/83</u>
Canada Goose	7	4
Snow Goose	-	1
Black Duck	4	1
Mallard	2	1
Wood Duck	1	-

The Young Waterfowlers Training Program (YWTP) is managed through a committee composed of representatives from various sportsmen's clubs. Youths eligible to participate are identified from graduates of State-approved hunter safety courses.



The YWTP committee members contact the youths to determine if they would be interested in participating in the program. The sponsoring sportsmen's clubs provide instructors to accompany the youth hunter on the refuge and firearm qualification at a skeet or trap range. Knowledgeable hunters and refuge staff provide classroom instruction about various topics related to waterfowl hunting, such as waterfowl identification, Federal, State, and refuge regulations, use of decoys, use of retrievers, types of firearms and ammunition, and clothing and gear. This instruction is provided usually on the last Sunday in September at the Danvers Fish and Game Club. Following the classroom instruction, the youths and hunt instructors who have not previously assisted in the program must take and pass the refuge hunter certification exam to participate in the refuge hunts in October. Youth hunt instructors who already have a valid refuge hunter certification do not have to take the exam in order to accompany a youth hunter on the hunt.



Staff/83

Zelley giving pre-hunt instructions to youth hunters and instructors.

## 9. Fishing

Surf fishing is a popular recreational activity on the refuge, and anyone may walk onto the beach and fish during daylight hours any time of the year. Permits are required for vehicle access to the beach, or for walk-on fishing at night. This use is restricted to May 1 through October 31.

In 1983, 1,558 permits were issued. This is a 10 percent increase over 1982, and breaks down to 984 walk-ons, 511 24-hr. drive-on's; and 63 72-hr. drive-ons. These numbers reflect an increase in the drive-on permits, but a decrease in walk-ons. Figures vary year to year, but show a general increase over recent years. The fact that no fees are charged for these permits, while other areas do charge for similar permits, probably has a great deal to do with the increasing demand for permits. We will be taking a closer look at this situation in 1984, with an eye toward possibly charging a recreation user fee in the future.

The tidal flats are utilized by both commercial and recreational clam diggers to harvest clams and sea worms. A refuge permit is required for access across the marshes to the clam flats. The permit is free of charge, and is issued after the individual obtains a Town clamming permit.

## 11. Wildlife Observation

Wildlife observation opportunities are excellent at Parker River Refuge. Visitors traveling along the refuge road may see waterfowl, shorebirds, song birds, raptors, and ring-necked pheasants. Birding is a primary activity for many refuge visitors. Deer are quite common along the roadsides in fall and winter; fox, beaver, skunk and other smaller mammals are frequently seen. Beachgoers are continually exposed to gulls, sandpipers and other shorebirds. Visitors taking the walking trails may also see reptiles and amphibians.



Kent/10/83

Family using observation deck on Hellcat Swamp Trail.

In order to maintain these opportunities during the warmer months (when beach use is the primary activity for most visitors), two parking areas are restricted from beach access.

#### 12. Other Wildlife-Oriented Recreation

The Colonial Retriever Club held a sanctioned field trial on April 17 at Nelson's Island. There were 39 participants.

#### 14. Picnicking

Wildlife-oriented picnicking occurs incidentally from birders, fishermen, and some school groups.

Non-wildlife-oriented picnicking occurs primarily in spring and summer. Groups on beach outings are required to use Parking Lot #1 where restroom facilities are available. Most other non-wildlife picnicking occurs on other beach areas by families; small cooking fires are allowed, below the base line of the dunes.

### 15. Off-Road Vehicling

Four-wheel-drive off-road-vehicles are allowed only in connection with the surf fishing program. Restrictions on this use minimize adverse impacts. These vehicles are restricted to a specific daytime parking area from Memorial Day through Labor Day and may drive the beach only from 6:00 p.m. to 8:00 a.m. At other times when these vehicles are allowed, they may utilize the entire refuge beach.

### 17. Law Enforcement

Nineteen hundred eighty-three was a very busy and interesting year for enforcement, in spite of the continued vacancy of one law enforcement position for the majority of the year.

Violations were up 27 percent in 1983 (432 cases) over 1982's total of 322 cases. This increase in violations may be attributed to Region 5 Special Agents being rotated through the refuge on weekends/holidays to assist refuge officers with law enforcement duties.

Major developments - Three major developments occurred in the law enforcement section during 1983:

In early February, the F.O.C. (Forfeiture of Collateral) system was reorganized and streamlined, where all Violation Notices will now be processed through the Central Violations Bureau, U.S. District Court, Brooklyn, N.Y. This procedure was implemented in hopes of expediting administrative paperwork and reducing the caseload for many of the local U.S. Magistrates' offices. A computer printout is received monthly by Parker River NWR, indicating current dispositions of pending cases.

Early in September, after nearly a year without a second full-time law enforcement officer, Christian Schoppmeyer entered on duty. Chris transferred from the USFWS Newark, N.J. Law Enforcement Office, where he was a Wildlife Inspector for three years, regulating the importation and exportation of protected and endangered wildlife. Chris attended the 10-week basic Land Management Law Enforcement Course at the Federal Law Enforcement Training Center (FLETC) in Glynnco, Ga. between October and December, returning in time to work the end of the Massachusetts waterfowl season.

Late in September, the Law Enforcement Division phased out the Case Disposition Reporting System and introduced the Law Enforcement Management and Information System (LEMIS). The computer system has not been without its problems. Continued meetings with the Senior Resident Agent's office in Boston, Mass. have proved beneficial and we anticipate having all pending refuge cases entered into the LEMIS system by late in the spring of 1984.

**Interagency Cooperation** - The Parker River NWR has maintained an excellent working relationship with many Federal, State, and local agencies. Of particular importance is our relationship with the local police departments (Newburyport, Newbury, Rowley, and Ipswich) since there are numerous occasions when we require their assistance in arrests and investigations.

During certain times of the year, our working relations are extensive with the Mass. Department of Environmental Management, Natural Resource Officers. During the fall, it is not uncommon to see Mass. Natural Resource Officers and Refuge Officers conducting joint waterfowl enforcement patrols.

On the Federal level, as part of Law Enforcement responsibilities, we work closely with the U.S. Magistrates, Attorneys, and Clerks of Court offices in Boston, Mass.

We also plan to work closely with the U. S. Coast Guard, Merrimack River Station, early next spring in the formulation of a Search and Rescue Plan for the Parker River Refuge.

To a lesser extent, we have had contact with the U.S. Customs Service, U.S. Drug Enforcement Agency, and the U.S. Marshal's Service.

**Analysis of Statistics** - In an effort to determine the effectiveness of the law enforcement section at Parker River NWR and analyze trends in the types of violations occurring, the information provided on the 1983 Field Information Reports (USFWS Form 3-960) was tabulated and constructed into tables revealing the following information:

Table #1 is a breakdown of the enforcement actions occurring at Parker River National Wildlife Refuge by the month. The table clearly indicates our busiest period was between May and November 1983. After examining previous annual narratives for 78-82,



this period of greatest activity is indicative of the past five years, possibly starting or ending one month earlier/later, depending on the weather. As stated earlier, 1983 citations were up 27 percent over the 1982 total.

Table #2 is a comparative analysis of Public Use versus Natural Resource violations for the period 1981 thru 1983. The criteria used for establishing these two categories was:

- all violations in the Natural Resource category consisted of waterfowl hunting, saltwater fishing and environmental cases (i.e. litter, dune destruction);
- all Public Use violations were categorized as all other violations recorded (i.e. disorderly conduct (narcotics), alcohol, nudism, special permit (violations)).

As predicted, a three-year average suggests that 8 out of 10 violations can be attributed to Public Use. This is a good indicator of the pressure exerted on the refuge's Natural Resources by the visiting public.

Table #3 is a comparative analysis of the 1982 and 1983 violations for Parker River National Wildlife Refuge. As stated earlier, the most notable increase in violations occurred in the category: Possession of Controlled Substances - 34 cases in 1982 and 123 cases in 1983. It is also worth noting that the number of waterfowl violations were way down (38 in 1982; 6 in 1983) even though enforcement patrols were intensified in the fall of 1983. In discussions with Massachusetts Natural Resource Officers, U.S. Fish and Wildlife Service Special Agents, and other Refuge Officers stationed at Parker River NWR, the general consensus is that there appeared to be greater compliance by waterfowl hunters in 1983.

The issuance of town parking summonses by Refuge Officers increased in 1983 and will continue to increase in 1984, in an effort to provide maximum safety for the visiting public.



Table #1: Monthly Breakdown Of Violations And Enforcement  
Actions for 1983

<u>Month</u>	<u>C.V.B. # Cases</u>	<u>Written Warnings</u>	<u>*Verbal Warnings</u>	<u>Cases Turned Over To Other Agencies</u>
January	1	0	0	4
February	0	1	0	5
March	10	2	1	10
April	9	1	2	10
May	27	2	5	4
June	37	3	0	3
July	18	2	0	5
August	32	6	1	0
September	43	2	0	0
October	39	2	2	0
November	14	1	1	0
December	<u>8</u>	<u>2</u>	<u>1</u>	<u>0</u>
GRAND TOTAL	238	24	13	41

Parking Tickets Issued (Town) 1983:

Ipswich	93
Rowley	3
Newbury	<u>51</u>
Total	147

\*Indicates verbal warnings recorded on Field Information Reports, U.S. FWS Form 3-960.

TOTAL ENFORCEMENT ACTIONS RECORDED FOR 1983 - 463

Table #2: Breakdown Of Public Use vs. Natural Resource Violations 1981 through 1983

1981 + Public Use Violations	569	(91%)
* Natural Resource Violations	53	( 9%)
1982 + Public Use Violations	243	(86%)
* Natural Resource Violations	41	(14%)
1983 + Public Use Violations	419	(98%)
* Natural Resource Violations	7	( 2%)

Note: The criteria for establishing (+) Public Use Violations was all violations other than waterfowl hunting, saltwater fishing and environmental (i.e. litter and dune destruction) which are categorized as Natural Resource violations (\*).

Table #3: Comparative Analysis of 1982 and 1983 Violations

<u>Categories</u>	<u>1982</u>	<u>1983</u>
<u>Gen. Public Use Violations</u>		
Poss. Alcoholic Beverages	80	80
Minors Poss. Alcohol Bev.	1	11
Low Flying Aircraft	0	1
Trespass on Refuge	24	26
MV Trespass	Included in Trespass on Refuge Category	
Domestic Animal Trespass	11	3
Disorderly Conduct (Non-narcotic)	2	0
Nudism	7	2
Possession of Fireworks	1	0
Illegal Poss/Removal of Fishing Gear	3	1
Careless Use of Firearm	0	1
Illegal Possession of Handgun	2	0
Possession of Dangerous Weapon	1	2
Attempted Suicide	1	0
Assault	1	0
MV Violations	116	176
Poss. Controlled Substances	34	123
Sub-total	284	426
Hunting	38	6
TOTAL	322	432 (27% Increase)

# I. EQUIPMENT AND FACILITIES

## 2. Rehabilitation

The metal culvert and concrete water control structure on the Cross Dike (between North and South Pools, originally built in 1952) was replaced in September. Cost for this Force Account work was:

140 ft. x 2 ft. diam. @ \$16/ft.	=	\$2,240
Concrete, lumber, fill, etc.	=	500
Labor	=	<u>1,700</u>
		\$4,440

YCC enrollees replaced approximately 1,100 linear feet of elevated boardwalk on the Hellcat Swamp Trail, as well as repaired some rotted sections which rest on the ground.

YCC's also reroofed their administration building at Subheadquarters, and painted the exterior of Refuge Headquarters.

## 3. Major Maintenance

Crushed gravel (1,900 cu.yds.) was spread and graded on the refuge road. Cost was \$5.25/yard, delivered to the Subheadquarters site.

## 4. Equipment Utilization and Replacement

A 1977 Chevy Van was transferred to the refuge from CGS (Boston) in June. It is primarily used in the YCC Program.

An old airboat and trailer were transferred to Back Bay NWR.

The 1979 airboat/trailer was temporarily transferred in October to Brigantine NWR.

An Aquasport fiberglass boat (19' 6") with trailer was transferred to the refuge from the Division of Law Enforcement in October.

A Sears and Roebuck electric welder was transferred to the Mass. Division of Excess Property.

A 1952 Dodge M-37 was transferred to Connecticut SAFSP, Weathersfield, Connecticut.

An all-terrain Honda 110, in need of repair, was transferred to Great Meadows NWR.



The replacement of an old section of our marsh loop boardwalk was a timely improvement for the Hellcat Swamp Interpretive Trail.

A Model 701/H-11 snowplow was transferred to the Mass. Division of Excess Property.

A 1967 Ford truck and a 1974 Chevy truck were sold on excess for \$800 and \$439.50, respectively.

5. Communication Systems

Two high frequency radios were purchased and installed in the two patrol jeeps for communications with the Newburyport Police Department.

J. OTHER ITEMS

1. Cooperative Programs

The Special Use Permit for the operation of Camp Sea Haven was renewed for one year. The Cerebral Palsy Foundation of Greater Boston operates this summer camp each year on the refuge. The campers are handicapped, mostly wheelchair-bound individuals.

The intent of the organization in operating this special camp is admirable; however, they often operate on an apparently "shoestring budget" and safety and health standards have been marginal in the past. Generally, the operation of the camp went well in 1983 and we hope they can continue similarly in 1984.

A Special Use Permit was issued to the Massachusetts Department of Environmental Quality Engineering to allow the location of an air quality monitoring facility at the refuge headquarters area.

2. Items of Interest

The nearby Crane Memorial Reservation and Crane Wildlife Refuge are properties of the Trustees of Reservations, a charitable corporation founded in 1891 to preserve for public purposes "beautiful and historic places and tracts of land" within the Commonwealth of Massachusetts.

Crane's Beach, as it is most commonly referred to, is an area of 1,400 acres located approximately a mile south of Parker River Refuge.

The resident white-tailed deer population had grown to such numbers as to pose a management problem not unlike many other areas where nearby human development and activities have eliminated natural controls. An added twist to the situation is the recent appearance of the deer tick Ixodes dammini and its accompanying Lyme disease carried by the tick and transmittible to humans.

Thus, in cooperation with the Massachusetts Division of Fisheries and Wildlife, the Harvard University School of Public Health, and the University of Massachusetts Department of Forestry and Wildlife, a management program was developed. This program included a controlled public deer hunt to reduce the overpopulation of deer, and consequently reduced the tick/Lyme disease probability. The deer hunt was scheduled to begin on Monday, November 28, 1983. The following news release, issued by the Trustees of Reservations on Sunday, November 27th, summarizes what happened.





14 Adams Street  
Ipswich, Massachusetts  
01936  
Telephone  
617-698-2066

NEWS - RELEASE IMMEDIATELY

Faced with a small number of demonstrators and protesters who threatened to physically interfere with hunters seeking access to the property and who vowed to subject themselves to personal danger by walking about the property during the hunt, The Trustees of Reservations today (Sunday, November 27, 1983) reluctantly cancelled the controlled deer hunt scheduled to begin tomorrow at the Richard T. Crane, Jr. Memorial Reservation, Ipswich.

"We cancelled the hunt," said Gordon Abbott, Jr., Director of The Trustees of Reservations, "because we are worried about public safety and how these methods of protest could end up with someone getting hurt.

"As resource managers, we are still enormously concerned about the problems of the deer herd at the Crane Reservation which has exceeded the carrying capacity of its habitat resulting in animal starvation and overbrowsing of vegetation which controls erosion and anchors the beach itself.

"And we have an equal concern about how to reduce the number of deer ticks and the spread of Lyme disease.

"Research showed that the controlled hunt would have helped resolve these problems," Abbott explained. "But, if it is to be met with such threats of physical confrontation," he continued, "we shall have to seek other ways to deal with both biological and public health issues. They will not go away.

"Although we have received a number of thoughtful comments, no one involved with the protests has yet proposed a reasonable and workable solution. Perhaps the cancellation of the hunt will provide an opportunity for new ideas

to be presented. The Trustees of Reservations will be happy to work with any professionally qualified organization willing to present a responsible alternative program to control the overpopulation of white-tailed deer at the Crane Reservation."

The hunt at the Crane Reservation was to be administered by the Massachusetts Divisions of Fisheries and Wildlife. Medical and research information about the deer tick is being collected by Harvard University's School of Public Health.

### 3. Credits

Written by:	Sections A., J-2, K:	John L. Fillio
	Sections B, C, H, I:	William C. Kent
	Sections D, E. J-1:	Robert A. Zelley
	Sections F, G:	Louis S. Hinds, III
	Section H-17:	Christian Schoppmeyer
Typed by:	Clara V. Bell	

### K. FEEDBACK

Calendar year 1983 was a year of re-staffing Parker River as all vacancies were finally filled by the end of September. For more than a year, the remaining staff, typical of the kind of people in the Fish and Wildlife Service, took on the extra burden and responsibilities and kept Parker River a viable operating refuge. Some people, faced with difficult times merely keep pace - not this group, they just kept working harder. Hats off to Al Zelley, Doug Spencer, Clara Bell, Kay Garrett, Don Grover, Tom Stubbs, Woody DeSerres, and Dan Rines - for keeping the refuge going until reinforcements arrived.

December 1983, Parker River experiences a die-off of Canada geese. The National Wildlife Health Lab in Madison, Wisconsin is notified on December 12th, and specimens were shipped. Lab necropsies were performed on the 14th, and a field biologist arrived at Parker River on the 16th.

This has been my first experience in dealing so directly with the NWHL - and I must say: the response, the professionalism, and the thoroughness of this effort was outstanding. Many thanks to Dr. Locke, Biologist Ron Windingstad, and the others at the Lab who helped us find out what was happening, and so quickly.

POND ISLAND NATIONAL WILDLIFE REFUGE

1983 ANNUAL NARRATIVE

### A. HIGHLIGHTS

A visit by the former Refuge Manager in late June of 1983 provided verification of significant eider nesting activity.



Aerial View - Pond Island NWR.

### C. LAND ACQUISITION

#### 1. Fee Title

This 10-acre, treeless, rock-base island was acquired by transfer from the U. S. Coast Guard in 1973. There is no active acquisition program at Pond Island.

The Town of Popham Beach received \$62.00 under the Refuge Revenue Sharing Act for fiscal year 1982.

## 2. Easements

At the refuge's inception on March 29, 1973, the U. S. Coast Guard reserved the right to maintain an existing navigational light tower and fog signal as follows:

1. Retain in fee approximately 676 square feet of land to house the existing light tower and fog signal device.
2. Retain a 20-foot right-of-way over the path of the underground power control cable which extends from the light structure to the island's shoreline.
3. Retain the right of ingress and egress from the one landing area on the island to the retained facilities for service and maintenance.

## E. ADMINISTRATION

### 1. Personnel

No personnel are assigned to Pond Island NWR. The refuge staff tries to visit the island at least once annually.

### 5. Funding

No specific funding is provided to Pond Island NWR. Administrative costs of this satellite are absorbed within the Parker River NWR budget.

## F. HABITAT MANAGEMENT

This rocky island does not lend itself to any habitat management practices other than protection as a National Wildlife Refuge.

## G. WILDLIFE

On June 26, 1983, Pond Island was visited by George Gavutis, former Parker River Refuge Manager, and Maurice Mills, Assistant Manager, Rachel Carson NWR. During this visit, numerous eider



nests were found. It was estimated that 500 to 1,000 ducklings had hatched from this refuge. Previously, we had seen some indication of eider nesting, but nothing very significant.

The major breeding species on Pond Island continues to be herring gulls. These birds nest throughout the island on rocky ledges.

#### H. PUBLIC USE

The island above the high tide line is not open to the public during the nesting season, March 1 to July 31; however, environmental education, nature study, and photography opportunities are available to the public from August 1st through February 28th, during daylight hours.

Access to the island is only possible by boat and there is only one location on the island shoreline where boats can safely land. Public use is mostly limited to a few fishermen when the striped bass and bluefish are running.

#### J. OTHER ITEMS

##### 3. Credits

Written by:	Robert A. Zelle
Edited by:	John L. Fillio
Typed by:	Clara V. Bell

THACHER ISLAND NATIONAL WILDLIFE REFUGE

1983 ANNUAL NARRATIVE

### A. HIGHLIGHTS

The Thacher Island Association provided trips to the island for weekend visitors during the summer of 1983.



North Light Tower - Thacher Island NWR.

### C. LAND ACQUISITION

#### 1. Fee Title

The 22-acre portion of Thacher Island comprising the refuge was acquired by transfer from the U. S. Coast Guard on July 25, 1972. The property includes a deactivated granite lighthouse.

The Town of Rockport received \$95.00 in Refuge Revenue Sharing Act funds.

#### E. ADMINISTRATION

Thacher Island NWR is administered with Parker River NWR funds and staff. No visits were made by refuge personnel in 1983.

#### G. WILDLIFE

The island is primarily utilized as a nesting and resting site for herring gulls and great black-backed gulls.

Historically, as recently as 1954, Thacher Island provided nesting habitat for 200 pairs of common terns.

#### H. PUBLIC USE

When the refuge was acquired in 1972 by the U. S. Fish and Wildlife Service, no public use was permitted on the refuge. At that time, the U. S. Coast Guard still kept personnel on the island and public use was not desirable from the standpoint of the hazardous nature of boat access to this rocky island and concerns about theft or vandalism.

In 1981, a local private citizens organization, The Thacher Island Association, was formed to generate public interest and support for the preservation of the island's historical and natural assets. The U. S. Coast Guard had automated the navigational beacon on the island and the station was unmanned. The U. S. Coast Guard is currently leasing the use of the buildings and equipment on the island to the Town of Rockport. Through this arrangement, the Thacher Island Association is maintaining a caretaker on the island. The caretaker lives in one of the houses formerly occupied by Coast Guard personnel.

The Thacher Island Association is hoping to generate sufficient appreciation of the value of the island to encourage its preservation by private donation. During 1983, the Thacher Island Association provided boat trips to the island for the public. Activities consisted of walking around the island and picnicking.

# I. EQUIPMENT AND FACILITIES

The granite light tower on the refuge portion of the island is deteriorated due to past vandalism and lack of maintenance. The Thacher Island Association may generate more local interest in the protection and restoration of this structure.

## J. OTHER ITEMS

### 3. Credits

Written by:	Robert A. Zelley
Edited by:	John L. Fillio
Typed by:	Clara V. Bell



MONOMOY NATIONAL WILDLIFE REFUGE

1983 ANNUAL NARRATIVE

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K. FEEDBACK

Nothing to report.

### A. HIGHLIGHTS

Common terns had some minimal success this year in raising young. A significant change has been some dispersion of the tern colony into other vacant habitat.

### B. CLIMATIC CONDITIONS

The following are average temperatures and monthly precipitation totals from the period April through August when there were personnel on duty at this satellite refuge.

<u>Month</u>	<u>Average Temp. °F.</u>	<u>Total Precipitation (Inches)</u>
April	45.2	8.64
May	52.2	5.05
June	60.5	2.91
July	70.0	1.51
August	68.5	5.79

### C. LAND ACQUISITION

#### 1. Fee Title

Monomoy NWR comprises a total of 2,702 acres. Land acquisition is complete. The Town of Chatham received \$7,505.00 in refuge revenue sharing funds covering fiscal year 1983.

#### 3. Other

Permits and the amount of \$2.50 fee for the use of private cabins on the refuge were collected as usual. However, it was apparent that only two of these cabins continue to be used. One of these cabins has been rendered unusable by drifting sand and encroaching surf action.



Eldridge Camp - Apparently unused in 1983.

#### D. PLANNING

##### 3. Public Participation

An informational meeting of refuge and Massachusetts Audubon Society staff with the Chatham Conservation Commission, the general public, and local press was held to report on the results of the 1982 tern conservation work and our planned activities in 1983.

At various times during the summer, reporters met with the seasonal personnel to follow the course of our activities.

Some rumors and misunderstandings arose in 1982 because we had not kept the public and, particularly, the local Conservation Commission informed early on about our management activity. Public relations went very well in 1983 since those most concerned with our work were adequately informed.

##### 5. Research and Investigations

Within the scope of the memorandum of understanding between the Service and the Massachusetts Audubon Society, Mass. Audubon's scientific staff collected data relating to tern and gull productivity and mortality. Results are included in a report prepared by Dr. John Fitch, Mass. Audubon, which is in the refuge files. Excerpted data from this report is included in appropriate parts of Section G of this report.



Permission was provided for researchers to collect specimens and data on Monomoy in 1983. Dr. Ian Nisbet, who has carried out research in the past on tern colonies at Monomoy, gathered some follow-up information in 1983. Non-viable tern eggs were collected for pesticide residue analysis. Previously-banded adults were trapped to gather information relating to age and time of nesting. Ms. Erma J. Fisk was permitted to band laughing gull and herring gull chicks on Monomoy. Dr. Nisbet banded tern chicks on North Monomoy.

Dr. Charles Seymour was permitted to live-trap small mammals as part of Harvard University's survey of the distribution of the deer tick.

Dr. S. Allen Counter, Harvard University, collected 24 herring gull eggs, 20 herring gull and black-backed gull young.

#### E. ADMINISTRATION

##### 1. Personnel

The Monomoy National Wildlife Refuge was staffed from April through mid-September by John Lortie, who was employed as an Assistant Manager on a temporary appointment.

Parker River Refuge Staff made frequent trips during the spring and summer to assist with refuge management activities.

##### 2. Youth Programs

The Parker River Youth Conservation Corps worked on projects at Monomoy July 26-29. Work accomplishments are discussed in Section I.

##### 5. Funding

Monomoy operations are funded from the Parker River Refuge budget.

Operating costs at Monomoy in 1983 were as follows:

	<u>1210</u>	<u>1240</u>	<u>Total</u>
Salaries-Temporary	\$ 4,745.00	\$ 2,354.00	\$ 7,100.00
Salaries-Permanent (Parker River Staff Time)	6,827.00	200.00	7,027.00
Non-Salary Costs (Utilities, supplies, etc.)	5,883.00	517.00	6,400.00
	<hr/>	<hr/>	<hr/>
	\$17,455.00	\$ 3,071.00	\$20,527.00

#### 6. Safety

No accidents occurred in 1983. Considering the potential for hazardous boating conditions around Monomoy, safety is a high priority. It helps to have an employee who is experienced in the handling of small craft under adverse conditions.

#### 8. Other Items

On August 18, Acting Manager Zelle and Assistant Manager Lortie met with Mr. Fred Mohrman, Counselor for the House Interior Committee on Appropriations and Mr. Keith Williams, Bureau of Land Management, accompanied by their wives. A brief tour of the refuge was provided by boat to the North Island and Inward Point.

### F. HABITAT MANAGEMENT

#### 12. Wilderness and Special Areas

The insular portions of the Monomoy National Wildlife Refuge, comprising about 2,600 acres, is managed as a National Wilderness Area.

### G. WILDLIFE

#### 2. Endangered and/or Threatened Species

Peregrine falcons and bald eagles were observed on Monomoy during the year. One peregrine falcon was present during the first half of May. This bird's presence caused some agitation

among the herring gulls that were on territory.

On May 6, a Mississippi Kite was among a large number of hawks observed flying over Morris Island. The bird was witnessed by several knowledgeable birders that day.

An immature bald eagle with a U.S. FWS band and a plastic leg band (No. Ell) was observed on the refuge by several visitors during late August and early September. This bird was hacked in the Chesapeake Bay. Some late summer gull control was accomplished by this eagle which was observed feeding on herring and great black-back gulls.

An osprey was also observed during the summer. Nest platforms have been erected on off-refuge areas by local conservationists but no nesting has occurred.

### 3. Waterfowl

A variety of waterfowl utilizes fresh water ponds on the South Island during spring and summer. The most common species are Canada geese, black ducks, gadwall, green-winged teal, and ruddy ducks.

Thousands of sea ducks normally winter in offshore waters around Monomoy. White-winged scoter, surf scoter, American scoter, and oldsquaws are common. Common eider winter in flocks of several thousands during December and January.

### 4. Marsh and Water Birds

Double-crested cormorants are common throughout the summer. Great cormorants were observed during the spring.

Snowy egrets and black-crowned night herons nest on the South Island. An estimated 82 pairs of snowy egrets and 40 pairs of black-crowned night herons were nesting in 1983.

A pair of glossy ibis were on the area during 1983 but no nesting was confirmed.

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

The exposed flats around the refuge provide feeding and resting areas for an abundance of shorebirds.

Very large populations of herring gulls and great black-backed gulls nest on Monomoy. The last complete nesting population census was done in 1981, with an estimated 17,000 to 18,000 nesting pairs of herring gulls and great black-backed gulls.

Gull harassment was carried out on the North Island of Monomoy to prevent encroachment by gulls into the common tern nesting area. Harassment by shooting, cracker shells, and Zon guns was carried out from early April through May. Nest and egg destruction, some shooting, and cracker shell harassment continued through the gull nesting season.

Three large scale nest destruction operations were carried out on May 20, June 13, and July 1. The purpose was to prevent breeding success and possibly stimulate some abandonment of the area by the large gulls. The phased nest destruction operations were successful in preventing much breeding success; however, there was no clear indication that any reduction in the nesting population was achieved.

Harassment activities since 1981 have been effective in preventing gulls from taking over tern nesting areas on the North Island.

During each of the three nest destruction operations, a count of gull nests was made. Results are tabulated below:

Herring and Black-backed Gull Nest Counts in 1983

<u>Date</u>	<u>Herring Gulls</u>	<u>Black-Backed Gulls</u>	<u>Total Nests With Eggs</u>	<u>Empty Nests</u>
May 20	357	96	453	580
June 13	772	128	900	319
July 1	668	8	676	127

The nesting population of herring gulls and great black-backed gulls has remained at about 1,000 nesting pairs over the past four years.

A total of 47 herring gulls and 19 great black-backed gulls were killed during 1983. This is substantially fewer than the approximately 300 gulls which were shot during 1981 and 1982. The reduced kill is due largely to increased wariness of the gulls and a reduced period of harassment. Most gulls were

shot during April and May, before egg laying and incubation had begun. Egg and nest destruction was a primary harassment technique later in the season (during June and July).

The laughing gull population increased in 1983. The nesting population was estimated at 900 pairs in 1983 which is an increase of 300 pairs over the 1982 population.

The laughing gulls nested adjacent to an area of nesting terns in 1983. Some predation of tern eggs in territories adjacent to the laughing gull colony was documented by Massachusetts Audubon and refuge personnel in 1983.

A rare species of gull on the East Coast, a black-headed gull, was observed during May in association with the laughing gulls. This European species probably drifted over to this hemisphere accidentally. European birds occasionally are blown off course over the Atlantic and wind up on the North American Coast.

The nesting population of common terns was estimated at 1,284 pairs. Tern fledging success in 1983 was estimated at about 100 birds fledged. Compared to the two previous years when success was essentially zero, this result is encouraging; however, several factors continue to contribute to egg and chick mortality. Success and mortality, as determined from Massachusetts Audubon survey work in 1983, are summarized in the following tables.

Summary of sources of confirmed common tern egg mortality on North Monomoy in 1983:

<u>Sources of Mortality</u>	<u>Number of Eggs</u>	<u>Percent of Eggs</u>
Abandoned/Infertile	35	29.4
Predation total	84	70.6
Herring gulls	6	5.0
Laughing gulls	37	31.1
Black-crowned night herons	3	2.5
Predator unknown	38	31.9
Totals	119	100.0

Summary of sources of confirmed common tern chick mortality  
on North Monomoy in 1983:

<u>Sources of Mortality</u>	<u>Number of Eggs</u>	<u>Percent of Chicks</u>
Exposure	31	41.9
Predation total	43	58.1
Ants	26	35.1
Short-eared owls	10	13.5
Meadow voles	2	2.7
Predator unknown	5	6.7
Totals	74	100.0

Predation by black-crowned nightherons and short-eared owls was not as significant in 1983 as in 1982. Exposure was a significant cause of chick mortality. Tern chicks that were being reared on low areas surrounded by saltmarsh were drowned or chilled by flooding during higher than normal tides in June.



Common tern nesting at Monomoy.



Other nesting birds of interest in 1983 included willets and oystercatchers. At least seven pairs of willets and twelve pairs of oystercatchers nested on the North Island.

Three pairs of piping plovers also nested on the refuge in 1983.

#### 6. Raptors

Peregrine falcons and bald eagle use was discussed previously under Endangered Species.

A large flight of hawks was observed by several knowledgeable birders on May 6. Over 23 broadwinged hawks, 5 kestrels, Cooper's hawk, and an adult Mississippi kite were counted.

A barn owl was using a nest box briefly during the spring but no nesting occurred.

Most common raptors throughout the summer were marsh hawks, kestrels, and short-eared owls. No short-eared owls nested near the tern colony in 1983; however, one unpaired bird was present on the North Island throughout the tern nesting season. Great horned owl activity was only observed on Morris Island. No evidence of great horned owl predation on terns was found during this year. Short-eared owl predation of terns occurred, but to a lesser extent than in 1982.

Short-eared owl food habits were studied by Massachusetts Audubon in 1983 from collected owl pellets. Prey species consisted almost entirely of meadow voles and white-footed mice. Common tern chicks were found in 9.73 percent of pellets that were collected during June on the North Island. Other unusual prey items consisted of the remains of one Wilson's storm petrel and eight Leach's storm petrels.

#### 7. Other Migratory Birds

Barn swallows attempted to nest at the old lightkeeper's house; however, the nests were destroyed by person or persons unknown before young had fledged.

A rare occurrence was documented about mid-June when Denver Holt, Mass. Audubon Biologist, and Blair Nikula, an avid birder, found a brown-chested martin at the lighthouse on Monomoy. How

this South American bird got here is unknown. Its compass must have malfunctioned.

#### 8. Game Mammals

Monomoy is inhabited by white-tailed deer. The population is estimated at about 20, based on incidental observations during the year.

Muskrats occur throughout the refuge near fresh water ponds and also in the sand dunes some distance from any fresh water.

Cottontail rabbits are very common around the Morris Island part of the refuge.

#### 9. Marine Mammals

Harbor seals are common in the area of Inward Point during winter and spring. The sand beach in this area is commonly used as a hauling out site for the seals. Up to a hundred seals have been observed in this area.

#### 10. Other Resident Wildlife

Bob-white quail and ring-necked pheasants occur on the Morris Island part of the refuge.

Meadow voles are common and provide an important food source for birds of prey.

Common amphibians and reptiles are the Fowler's toads and garter snakes.

#### 15. Animal Control

The only animal control work was the killing of herring gulls and black-backed gulls as discussed in Part 5 of this section.

#### 16. Marking and Banding

Dr. Ian Nisbet banded tern chicks on Monomoy in conjunction with some follow-up observations from previous research activity.

Ms. Erma J. Fisk, who worked with Dr. Nisbet for many years, also banded laughing gulls on Monomoy in 1983.

## H. PUBLIC USE

### 1. General

Much of the public use management for Monomoy NWR is directed at reducing conflicts between public entry and use on the Morris Island part of the refuge and the private residential association, the Quittneset Association. Most of Morris Island is subdivided and developed as affluent private housing. Only a small 7-car parking lot is available for visitor use at the refuge field office. Many visitors park on the town-owned causeway connecting Morris Island to the mainland and walk across a beach grass area to the refuge boundary.

### 2. Outdoor Classrooms - Students

Assistant Manager Lortie met with local school classes on June 2nd and June 3rd. The refuge management program and wildlife values and geologic history relating to Monomoy were discussed.

### 6. Interpretive Exhibits/Demonstrations

A limited amount of informational leaflets are provided at the refuge office on a seasonal, intermittent basis.

### 9. Fishing

Saltwater fishing is a popular activity on the refuge during the year. Several fishermen are usually found at Morris Island every night during the spring and summer months.

### 11. Wildlife Observation

The tidal flats around Monomoy are very attractive to a variety of migratory birds. Various birding clubs travel to the refuge to observe its birdlife. A local boatman has been providing boat transportation for a fee to visit Monomoy. Also, in 1983, the Wellfleet Mass. Audubon Sanctuary provided chartered boat

transport to the island for wildlife observation.

These chartered boat groups were advised of closed areas, landing points, and routes of travel that would not disturb the nesting colonies or interfere with management activities.

A permit was required to visit the North Island from April through July. This requirement was used to be sure visitors to this area would know where a boat could be landed and which parts of the island were closed to entry to prevent wildlife disturbance.

The bird nesting areas were posted as closed to public entry. A specific landing point was designated by an orange sign on a post. An access corridor near the south margin of the buffer zone was marked by orange-painted stakes to provide foot access to shorebird observation areas on the west side of the island.

#### 12. Other Wildlife-Oriented Recreation

A few groups are occasionally issued special use permits to camp overnight on Monomoy. These permits are issued on a case-by-case basis to groups who have an environmental awareness purpose in their visit. One permit request was granted in 1983 for a scout troop which was led by one of the cabin permittees on the island.

We are careful in how camping requests are handled so as to prevent the evolution of a "tent city" atmosphere with associated litter or other abuse on South Island.

#### 14. Picnicking

No picnicking per se is documented on the refuge; however, most visitors to the refuge for the day bring along a lunch and this activity occurs as part of their outing.

#### 16. Other Non-Wildlife-Oriented Recreation

This use consists primarily of sunbathing by visitors to the refuge at Morris Island and on Monomoy Island.

## 17. Law Enforcement

Our law enforcement activity is very limited at Monomoy. The main limitations are lack of presence by staff with enforcement authority and the fact that the station is only staffed seasonally. Most infractions of refuge regulations are encountered by our seasonal staff in the course of other duties.

When violations were encountered, visitors were so advised verbally. Usually, this was the extent of public use regulations enforcement. Two written warnings were sent to individuals for illegal parking.

Common types of public use regulations offenses would be: unleashed dogs, illegal parking, and unauthorized overnight camping.

### I. EQUIPMENT AND FACILITIES

#### 4. Equipment Utilization and Replacement

The 16-foot aluminum skiff that we have used for the two years at Monomoy developed a serious leaking problem about mid-June. The rivets had been replaced or tightened the previous winter and stress points reinforced; however, this was apparently inadequate for the sometimes rough seas around Monomoy. When it was no longer possible to leave this boat on a mooring overnight without it filling with water, it was taken out of service.

The 16-foot Boston Whaler at Parker River Refuge was used to continue operations at Monomoy for the remainder of the summer season.

A 19-foot Aquasport inboard/outboard power boat was transferred from the Division of Law Enforcement in the fall of the year. This boat will be used at Monomoy during the 1984 season.

The Parker River Youth Conservation Corps set up a spike camp at Monomoy Refuge July 26 to July 29. The remains of two cabins which had been burned the previous spring were cleaned up and buried near the historic lighthouse. These cabins had been acquired as part of the process of implementing the Wilderness status of the refuge. The site is now restored to a more pristine appearance with only the historic lighthouse as a remaining symbol of past human use of the area.

The YCC's also repaired the walkway to the beach at Morris Island and added a handrail to the trail.

## J. OTHER ITEMS

### 1. Cooperative Programs

The Massachusetts Audubon Society worked with us again in 1983 at Monomoy under terms of a Memorandum of Agreement. This cooperation has assisted us in the conduct of gull harassment activities and, particularly, in the gathering of population, productivity, and other biological data regarding factors affecting tern nesting success.

Mr. Denver Holt was employed by Mass. Audubon in 1983 to work at Monomoy with Assistant Manager Lortie. This cooperative arrangement has made it possible to do much more survey work on basic biological parameters of the tern, gull, owl, and night heron populations than could be accomplished by just our single employee.

### 2. Items of Interest

The old Monomoy Lighthouse was visited by Service personnel on two occasions in 1983 to determine the scope of work necessary to stabilize this National Historic Site.



Historic Monomoy Light.



On January 25, Acting Manager Zelle, Foreman Stubbs, Charles Olsen, Region 6 Engineering, and Joe Williams, Region 5 RO Planner, visited the lighthouse site by helicopter. The condition of the light tower and adjacent building were noted and stabilization needs to be identified.

On April 22, Acting Manager Zelle traveled to the South Island of Monomoy with Joe Williams and Greg Rowlett, Region 6 Historian, to look at the Monomoy light tower and lightkeeper's house. Final recommendations for stabilization of these structures have been developed. State Historic Preservation Office concurrence is pending.

### 3. Credits

Written by:	Robert A. Zelle
Edited by:	John L. Fillio
Typed by:	Clara V. Bell

NANTUCKET ISLAND NATIONAL WILDLIFE REFUGE

1983 ANNUAL NARRATIVE

### A. HIGHLIGHTS

No visits were made to Nantucket National Wildlife Refuge by staff in 1983.

The Trustees of Reservations continued to manage public use on this area in accordance with a Memorandum of Understanding.



Aerial View - Great Point. Nantucket NWR comprises 40 acres at the tip of the point.

### C. LAND ACQUISITION

#### 1. Fee Title

This 40-acre beach/dune complex, called Great Point, was acquired by transfer from the U. S. Coast Guard in 1975. There is no active acquisition program at Nantucket Island.

The Town of Nantucket received \$112.00 under the Refuge Revenue Sharing Act for fiscal year 1982.

## 2. Easements

At the refuge's inception in 1975, the U. S. Coast Guard reserved the right to maintain an existing navigational light tower.

### E. ADMINISTRATION

#### 1. Personnel

No personnel are assigned to Nantucket Island NWR. The refuge staff tries to visit the island at least once annually. Since 1975, the refuge has been managed for the Fish and Wildlife Service by the Trustees of Reservations who also manage the Coscata-Coatue Wildlife Refuge, a property held by the Nantucket Conservation Foundation. The two adjacent, private wildlife areas total about 1,600 acres.

#### 5. Funding

No specific funding is provided to Nantucket Island NWR. Administration costs of this satellite are absorbed by the Parker River NWR budget.

### F. HABITAT MANAGEMENT

The refuge consists of coastal sand dune habitat with low shrub vegetation and shifting sands. There are numerous old ORV trails throughout the refuge which are being restored by designating specific routes of travel.

### G. WILDLIFE

The waters around Nantucket Island are an important wintering area for common eider, scoter, oldsquaw, scaup, and other diving duck species.

Herring and great black-backed gulls use the refuge year-round. Common and least terns nest on the private wildlife areas but not on the refuge. Arctic and roseate terns may also be seen in the area during the summer, even though terns have not been nesting at Great Point (another name for the refuge) in recent years as they had in the past.

Gray and harbor seals use the refuge in the winter months.

#### H. PUBLIC USE

Wildlife-oriented public use of the refuge is primarily surf fishing, beachcombing, and hiking. Access is by four-wheel-drive vehicle, foot, or boat. Vehicle access is controlled by means of permits issued by the Trustees of Reservations. On the three areas, there is a system of controlled use marked, "Over-Sand Routes," or roadways within the dune areas. Vehicles are required to stay on these marked routes.

Most of the non-wildlife-oriented recreation consists of four-wheel-drive vehicle use of the beaches for other activities, such as swimming, sunbathing, and sightseeing.

#### J. OTHER ITEMS

##### 3. Credits

Written by:	Robert A. Zelle
Edited by:	John L. Fillio
Typed by:	Clara V. Bell

NOMAN'S LAND ISLAND NATIONAL WILDLIFE REFUGE

1983 ANNUAL NARRATIVE



## A. HIGHLIGHTS

This was the first full year in which this refuge was assigned an organization code placing it as a satellite refuge under Parker River National Wildlife Refuge.

Liaison with the Department of the Navy will continue to be maintained through Edward Ladd, Wildlife Assistance, Hadley, Massachusetts.

## C. LAND ACQUISITION

### 3. Other

This 620-acre island is owned by the U. S. Department of Defense and serves as a practice bombing range.

The U. S. Fish and Wildlife Service cooperates with the Department of the Navy in providing technical assistance relating to wildlife management.

## E. ADMINISTRATION

### 1. Personnel

No staff are employed at this refuge. Mr. Edward Ladd, Wildlife Biologist, Wildlife Assistance, Hadley, Mass., serves as the U. S. Fish and Wildlife Service liaison with the Navy regarding wildlife-related matters.

## G. WILDLIFE

Four trips were made by Mr. Ladd during 1983 to Noman's Land Island. Since this is a restricted area, all trips are provided by Navy helicopter from the South Weymouth Naval Air Station.

The following information about wildlife populations is essentially based on observations from these trips which were made: April 25; May 26-27; July 7; and October 20, 1983.

### 3. Waterfowl

Canada geese nest on the island. During a visit in May, a total of 60 adult and 24 juvenile Canada geese were located.

Other waterfowl species observed during visits to the area include black ducks and mallards.

### 4. Marsh and Water Birds

A black-crowned night heron colony, consisting of approximately 80 birds, nested on the island in 1983.

Snowy egrets and green herons were observed on the area, but no nesting was reported in 1983.

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

Nesting gull populations were estimated at about 1,000 to 1,200 herring gulls and 50 to 75 pairs of great black-backed gulls.

Several species of terns occur on the island. In 1983, common terns were estimated at 100-150 nesting pairs. Three roseate terns, two Arctic terns, and one least tern were observed in July.

### 6. Raptors

Most raptors were observed during an October visit. Species observed included marsh hawks, red-tail hawk, and a Cooper's hawk.

### 7. Other Migratory Birds

Flickers, song sparrows, field sparrows, and crows and Northern three-toed woodpeckers were species noted during an October 1983 visit.

## H. PUBLIC USE

Since this area is used as a practice bombing and gunning range, no public entry is allowed.

J. OTHER ITEMS3. Credits

Information relative to wildlife populations was provided from trip reports by Edward Ladd, Wildlife Assistance, Hadley, Mass.

Written by: Robert A. Zelley

Edited by: John L. Fillio

Typed by: Clara V. Bell