

C.O.

GREAT MEADOWS NATIONAL WILDLIFE REFUGE  
Concord, Massachusetts

ANNUAL NARRATIVE REPORT  
Calendar Year 1977

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



#### Permanent Personnel

1. Linda K. Gintoli	Refuge Manager
2. Robert A. Zelle	Asst. Refuge Manager (Transferred 7/16/77)
3. Thomas A. Goettel	Asst. Refuge Manager (EOD 9/14/77)
4. Daryle R. Lons	Refuge Manager (Trainee) (EOD 9/21/77)
5. Christine E. Tougas	Public Use Specialist (EOD 11/7/77)
6. Harry E. Sears	Maintenanceman
7. Eleanor B. Norton	Refuge Clerk

#### Temporary Personnel

Seth E. Mott	Biological Technician (EOD 5/8/77 to 10/21/77)
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#### Review and Approvals

<u>Linda K. Gintoli</u>	<u>5/24/78</u>
Submitted by	Date
<u>Sperry Atwell</u>	<u>5/24/78</u>
Area Office	Date

<u>Howard D. Woon</u>	<u>JUN 19 1978</u>
Great Meadows N. W. Refuge	Date
Refuge	
Regional Office	

<u>Oxbow National Wildlife Refuge</u>	<u>Monomoy National Wildlife Refuge</u>
Complex Office	Complex Office



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## NARRATIVE REPORT

### Great Meadows National Wildlife Refuge

Calendar Year 1977

#### I. GENERAL

##### A. Introduction

The Great Meadows National Wildlife Refuge is located in Middlesex County 15 air miles west of downtown Boston. The refuge is composed of two large tracts of predominantly river floodplain flows 17 miles of the Concord and Sudbury Rivers.

##### B. Climatic and Habitat Conditions

A strange year.....Like the rest of the East Coast, we too suffered from abnormally cold weather and high snows during the winter. January was exceptionally hard on us with approximately 40 inches of snow falling. The refuge impoundments were frozen over from the first of December through mid-February. Then with the thawing temperatures of March, the Concord River overtopped the refuge impoundments for the majority of the month causing substantial damage to the dikes.

Late spring and summer brought an extremely hot dry season. This nearly dried out the lower pool which, provides ideal conditions for an exceptional crop of millet, which acts as an efficient means of curtailing the American Lotus. The drought also encouraged the annual summer algae bloom of the upper pool and a die-off of hundreds of bullheads during the first week of July.

An unusual amount of precipitation in September and early October brought the water level of the lower pool back up to a desired level during the fall migration period. The upper pool never dropped in level due to the one million gallons a day of effluent entering from the Concord Treatment Plant. In addition to the annual summer algae bloom, an unexpected algae bloom occurred in mid-late September in the upper pool. This occurred probably because the Concord Plant was being rehabilitated and had only one of the nine settling beds functioning at the time.

### C. Land Acquisition

#### 1. Fee Title

No land was officially acquired in the past calendar year. Acquisition of the proposed refuge property is only 68% complete. The total refuge area still comprises 2751.7 acres. With acquisition incomplete, there are still the frustrations of trespass and law enforcement problems due to the numerous private in-holdings interspersed within refuge property.

In the latter part of 1976, a property owner in part within the proposed refuge boundary filed for bankruptcy. During the past year much negotiating was taken place with him over the price for his 250 acres of marsh and farm land. The Town of Wayland is very interested in the Fish and Wildlife Service acquiring the land to prevent a condominium developer from purchasing it. Hopefully, a definite agreement will occur in the next few months since BLHP monies are available.

A second parcel of land, directly across the river in Sudbury has become available. A life-tenure interest has been held in this twenty-one acres of land for many years now. The owner of the property wishes to sell his remaining interests due to his age and allergies to the horses he raises. The property, which should be available shortly, will enable the refuge to complete its major BLHP projects, including a headquarters complex with a Visitor Contact Station, staff housing, and an additional dike system.

#### 2. Easements

Nothing to report.

#### 3. Other

Nothing to report.

### D. System Status

#### 1. Objectives

As it has been for the last couple of years, a major concern in the Refuge's objectives is it's Environmental Education Program. Much work in this area was again performed during the year. Great Meadows Refuge hosted three environmental workshops for teachers this past year with over 60



teachers from area schools attended. Many of these teachers have since, returned to the refuge with their classes giving talks on bird and plant identification and wildlife management. There has been a concern that all the work done in environmental education would be for naught if the past funding trends continued. However, things are looking brighter with the BLHP bringing a public use specialist position to our refuge along with extra funding.

As in the past the majority of the staff's time was spent in the always burdensome administrative paperwork and maintenance of the facilities readily in the public's eye. The newly enacted YACC program, along with the Refuge Manager (Trainee) and Public Use Specialist positions recently added to our staff, will hopefully bring an alleviation to some of our old problems next year. With the increase in manpower we should be able to do much more law enforcement activity including the enforcement of hunting and trespass violations on both Great Meadows and Monomoy Refuges. Maintenance of buildings, observation tower, trails, signs and vehicles should all be improved in this upcoming year.

## 2. Funding

The following charts should readily impart the refuges funding pattern.

Consumer Price Index\* and Percent Change from 1970  
(1967 = 100)

<u>YEAR</u>	<u>C.P.I.</u>	<u>% Change</u>	<u>% Cumulative from 1970</u>
1970	116.3		
1971	121.3	4.3%	
1972	125.3	3.3%	7.7%
1973	133.1	6.2%	14.4%
1974	147.7	11.0%	27.0%
1975	161.2	9.1%	38.6%
1976	173.2	4.8%	43.4%
1977**	184.2	10.0%	53.4%

\* "Monthly Labor Review"      October 1976

Table 22, Pg 89

\*\* Only includes first quarter of 1977

<u>Fiscal Year</u>	<u>FY Allocation</u>	<u>Permanent Salaries</u>	<u>Operating Funds (difference)</u>	<u>Percent Change from 1970</u>
70	51,200	30,290	20,910	
71	52,000	29,265	22,735	8.7%
72	55,000	36,059	18,941	-9.4%
73	63,000	35,292	27,708	32.5%
74	94,000	51,951	42,049	101.1%
75	69,000	34,822	34,178	63.5%
76*	76,000	57,590	18,410	-12.0%
77	72,000	56,468	15,532	-25.7%
78	117,000	80,775	36,225	73.2%

\*Includes Transition Quarter

\*\*Plus \$14,000 for rehabilitation  
See following chart

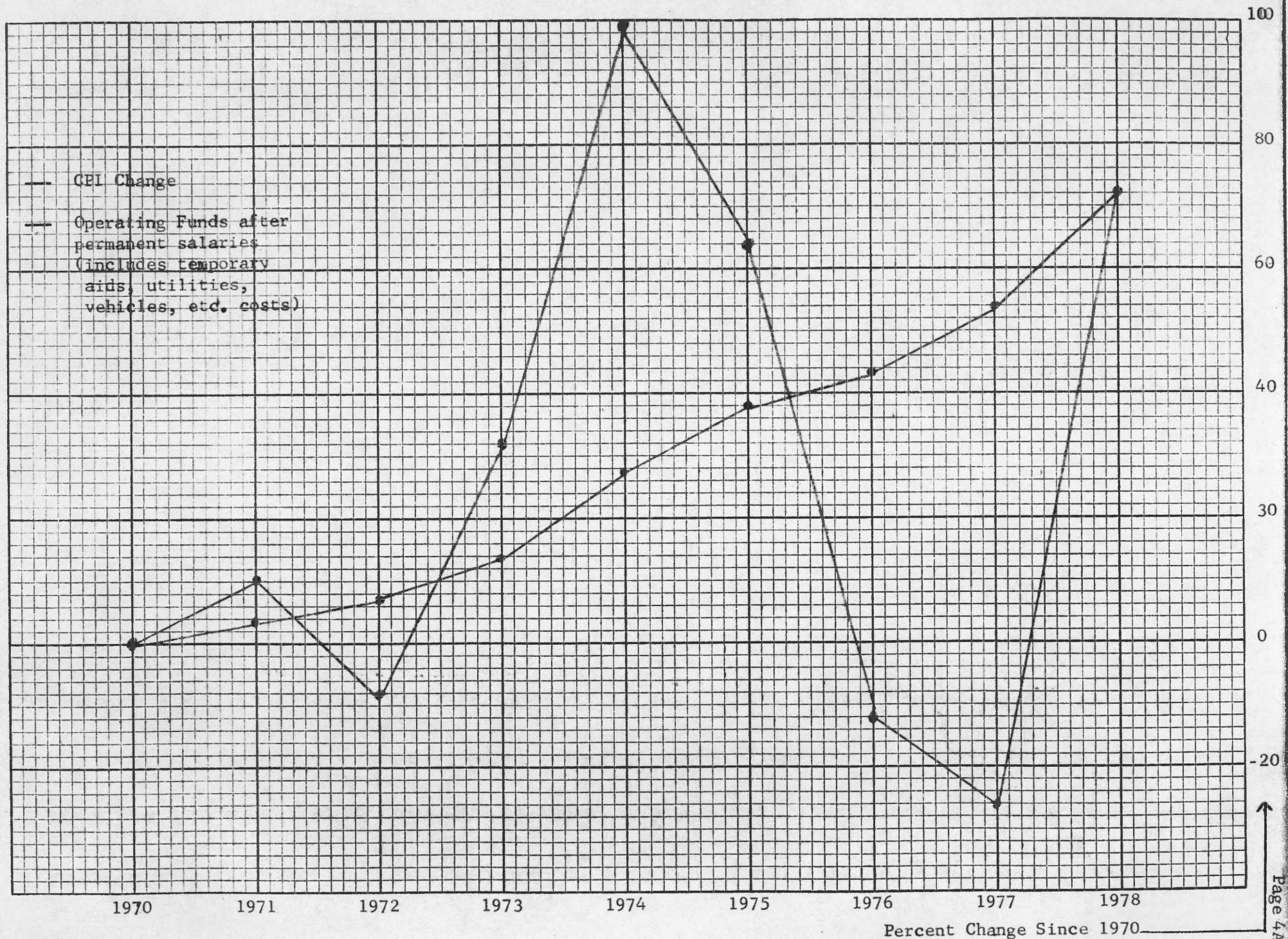
### 3. BLHP

After passage of the Bicentennial Land Heritage Program Great Meadows, like all refuges, has spent an inordinant amount of staff time in planning. We found it particularly difficult to complete Annual Work Plans since this is the first year in the past five that we have had monies in excess of our fixed costs. Additions already made possible by BLHP are a new boat for Monomoy Refuge and two additional staff members. The engineering process has gotten underway for a dike system in Bedford. If all goes well the Great Meadows will have an office and shop on the refuge, staff housing, two visitor contact stations, a dike system in Sudbury, and a dike in Wayland. Needless to say, if the staff here sees only an office and shop constructed, we would be elated.

## II. CONSTRUCTION AND MAINTENANCE

### A. Construction

No significant construction occurred on the refuge during the past year. However, planning operations for the proposed YACC Camp Headquarters were started. The refuge took bids from several local contractors for a pole building which was scheduled to be built in December. However, due to some problems with YACC recruitment, the building will now be erected in late spring of the upcoming year.





### B. Maintenance

No money was available this year to be spent on the reparation of the low level dikes of the refuge pools. Every spring the flooding of the Concord River erodes large portions of the dikes. This year no gravel was purchased and the dikes deterioration is expected to reach an impassable condition next spring. The only salvation for the dikes will be the small area rip-rapped by our YCC crew during the summer. Another one-half mile must be rip-rapped before the dike will be protected. The entrance road was graded several times; however, we are down to the bone and little improvement can be made.

Litter cleanup, wood duck box servicing, snow plowing, boundary posting, gate reparation, etc. all take up an immense portion of the refuge personnel's time. The only aggravating maintenance, however, is that caused by vandalism. The overhead door of the YCC's camp building, entrance gate post, and numerous signs all had to be repaired due to vandalism, not to mention the constant mischief occurring in the comfort stations.

### C. Wildfire

Nothing to report.

## III. HABITAT MANAGEMENT

### A. Croplands

The last eighty acres of previously cooperatively farmed land was put into permanent grasses during the past year. There will be no more cooperative farming agreements on the refuge in the future. It is felt that these meadows will be more beneficial to the refuge uplands because they will provide a more natural and diverse habitat than cooperatively farmed monocultures.

### B. Grasslands

Other than returning previously farmed lands back into permanent grasslands, there is no active manipulation of grasslands on the refuge at the present time. Future plans are to mow at three to five year intervals in order to maintain the open field community.

C. Wetlands

With the dry late spring and summer, the water levels were lowered to such a degree that only several shallow small pools of water were present in the lower refuge impoundment. This provided excellent conditions for the emergence of an incredibly vast millet crop. Approximately 75% of the lower pool was covered in millet. Maintenceman Sears had feared the ducks would have to walk south this fall.



Although no active attempt was made this year to control the recurring problem of the encroachment of American Lotus in the refuge pools, the extensive crop of millet did crowd out a fairly good percentage of the Lotus that had been previously present in the pools during late spring. Without the millet growth we could be sure of the Lotus patch increasing beyond its present 50 acres.



For the past decade or so there has been much concern and study on the problem of controlling Purple Loosestrife. The blooming of this plant in late summer literally turns the floodplains of the Concord and Sudbury Rivers purple. Various methods of controls have been tried, ranging from chemical pesticides to the actual physical pulling and burning of it. However, no control was exercised this year on the refuge due to the combination of the lack of manpower caused by the transferring of Asst. Manager Zelle and the unsuccessful past attempts of controlling it with approved pesticides.

D. Forestlands

A minor amount of timber stand improvement was carried out by the YCC camp this summer. In addition to the enrollees learning about forest management, the refuge got an extra benefit by clearing out overhanging limbs that were threatening a power line in the Concord Unit.

E. Other Habitat

Nothing to report.

F. Wilderness and Special Areas

The "Two Brothers Rock" location was submitted for listing in the National Register of Historic Sites late last year by the refuge. However, it was turned down for listing this spring.

G. Easements for Waterfowl Management

Nothing to report.

#### IV. WILDLIFE

A. Threatened Species

Although no known nesting occurs on the refuge, several ospreys were observed on various parts of the refuge during the spring, summer and fall months. The ospreys provided hours of pleasure to our many visitors.

## B. Migratory Birds

### 1. Waterfowl

The majority of waterfowl management that is practiced on the refuge is directed towards the enhancement of the wood duck. All wood duck boxes were serviced early this year and fifty new boxes were constructed for future use.

We had a fairly successful year with fourteen boxes being used and thirteen being successful. 176 ducklings were produced which is about a 50% increase over last year and about the same as in 1974 and 1975.

Mallards and Black Ducks, which are our other primary nesting species, had a lower than average production year; however, the refuge pools received very heavy use during the fall migration from Green-winged and Blue-winged Teal, Gadwalls, American Widgeon and Black Ducks.

Preseason banding was again done by State personnel with assistance from the refuge staff. There were several problems this year in connection with the banding program. With the dry summer, the lower pool was almost unnavigable with the airboat. The abundance of millet caused a problem in baiting the ducks into traps. Then to top it off, the airboat broke down and prematurely ended the banding operation in early August. Needless to say we did not meet our annual work plan's preseason banding quota of Wood Ducks and Black Ducks. However, even without considering the above difficulties we ran into with the actual banding program, we feel the quotas were out of line with present populations.

There is a resident population of approximate 500 Canada Geese on the Concord and Sudbury Rivers. With the abundance of food in the area, these geese no longer migrate. During the heavy freeze-up of last winter they did laterally migrate to Cape Cod and Boston Harbor for short periods of time. Spring and fall brought the usual use of our refuge pools as a resting place to many Canada Geese.

Unusual Sightings: A pair of Snow Geese were sighted by refuge personnel in late October in the midst of a flock of Canada Geese.



## 2. Marsh and Water Birds

Quite a variety of marsh and water birds are seen on the refuge during all but the winter months. Among the most interesting of these birds are the various herons and egrets. Admittedly the numbers of these birds are low but they can be observed quite easily in the refuge pools during August and September. Pleasant unusual sightings of this type included both the American Egret and the Snowy Egret.

The most bountiful species of this category are the Sora and Virginia Rail. Although these birds are plentiful in number, they are rather shy and are not as readily observed as the herons and egrets.

A Glossy Ibis was observed on the refuge for the third consecutive year but we still have no evidence of its nesting in the area. Hopefully, it is and it can be substantiated in the next year.

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

Killdeer, Least Sandpipers, Semipalmated Sandpipers and Herring Gulls are the most commonly occurring birds of this type on the refuge. Unusual sightings occurring this year were a Common Tern observed in early September and a Sanderling sighted in mid-July.

## 4. Raptors

Twelve species were observed on the refuge at various times of the year. A female Marsh Hawk and several ospreys provided endless hours of enjoyment to our birders during the summer and fall months. Unusual sightings included a Snowy Owl sighted in December by refuge personnel.

## C. Mammals and Non-Migratory Birds and Others

### 1. Game Mammals

Gray squirrels and cottontail rabbits are our primary game species occurring on the refuge. White-tailed deer are

occasionally reported but the dog problem and other problems associated with increasing urbanization deter any substantial deer population from occurring on the refuge.

There is a widely distributed population of muskrats on the refuge occurring along the river and also in the refuge pools. There seems to be an increase in their numbers from last year as evidenced by the increase in the number of houses in the refuge pools and along the river.

## 2. Other Mammals

Raccoons, skunks, opossum, and red fox all occur commonly on the refuge. Although these nocturnal animals are not readily observed, the inordinately high numbers of highway deaths in the area substantiate their abundance.

## 3. Resident Birds

Pheasant and ruffed grouse are the most visible resident birds that are present on the refuge. However, neither are very numerous and are usually observed only in the Sudbury Unit.

## 4. Other Animal Life

The Blanding's Turtle can be observed during the summer months basking on the banks of the impoundment dikes. The turtle is fairly common on the refuge but lives only in very selective isolated areas. It has only been observed in three areas of Massachusetts. The primary population of this species occurs in the north-central United States.

Fish populations within the impoundments are always considered insignificant due to the dominance of carp and bullheads. Each summer is characterized by a die-off of these species due to the low oxygen content of the waters. This year brought added alarm to the refuge visitors as the bullheads exhibited some rather colorful fungal growths just prior to dying.



## V. INTERPRETATION AND RECREATION

### A. Information and Interpretation

#### 1. On-Refuge

Three teacher workshops were held in April, May, and September of this past year. They were very successful with more than sixty area teachers participating. Programs were presented on a variety of subjects such as bird and plant identification, wildlife management, ponding and art in nature. Many of these teachers have since returned with their classes, passing along the information received in the workshops.



Refuge personnel met with Mr. Ferrel Graham in April of this year for an orientation tour of the refuge. Mr. Graham was working on an assignment for the National Geographic Society. Later in August Laura and Bill Riley toured Great Meadows and Monomoy to gather information for a book they are preparing on National Wildlife Refuges.

Permit Inspectors from the Waltham Office of the U.S. Army Corps of Engineers toured the refuge in May in order to become familiar with an example of an inland wetland. The jurisdiction of the Corps has expanded to include other wetlands beyond the navigable waters.

A Boston television evening news show (WHDH-TV) taped a discussion of the steel shot controversy on October 7th at Great Meadows. It was filmed from the observation tower with spokesmen for the Massachusetts Fish and Wildlife Department and sportsmen's organizations being represented. Refuge personnel were disappointed when WHDH did not show any interest in allowing Bob Smith, from the Washington office, to present the Fish and Wildlife Services' findings on this heated controversy.

## 2. Off-Refuge

Manager Gintoli attended a meeting in the Regional office on January 25 with Concord Town officials to discuss the discharging of effluent into the Great Meadows pools. Although the town was hesitant to commit themselves to agreement for a pipeline to the river, a degree of communication was established. The refuge is anticipating a resolution to this long standing problem in the near future. A second follow-up meeting was held in the refuge office on August 11th only to find little has been done by the Town. At the time of this writing the Town officials have still not agreed that their effluent is doing any harm to the refuge.

One beneficial act that did come out of all these meetings between the Town, refuge, Sierra Club and State was the forced deactivation of the towns septage pit bordering the refuge. The town is now obliged to haul it away to a neighboring town for proper treatment.

Assistant Manager Zelley participated in a Career Day at Lexington High School in March. Approximately 500 students received information regarding preparation and opportunity for employment with the U.S. Fish and Wildlife Service.



Refuge Manager Gintoli and the assistant managers have attended the quarterly meetings of the Mass. Environmental Education Society. This society was founded in January of 1975 in the Great Meadows office with 12 E.E. agencies participating. Approximately 300 people from across the state are now members of this organization.

Manager Gintoli and Manager (Trainee) Lons attended a MAPC SuAsCo Basin public meeting in November. The purpose of this meeting was to air the feelings of the various townspeople regarding proposed solutions to the water quality control project. The 208 studies are being carried out nation wide with the hope of bringing all waterways to a swimable and fishable condition by 1983.

Public Use Specialist Tougas presented on November 17-19 an exhibit at a Holiday Trade Fair held by the local Kiwani's Club at the Concord Armory.

## B. Recreation

### 1. Wildlife Oriented

During the summer months, recreation on the refuge is nearly 100% wildlife oriented. Wildlife observation and identification, photography, etc. are much enjoyed during this season. With the coming of winter, the percentage of recreation shifts towards non-wildlife oriented activities. There is no hunting, fishing, or trapping allowed on the refuge although they all occur on the river and on inholdings and bordering lands of the refuge. Our very irregular refuge boundaries do present a problem in respect to confrontations between bird watchers and consumptive-oriented sportsmen over these confusing boundaries. Such problems will continue to exist until all proposed lands are finally acquired by the refuge.

### 2. Non-Wildlife Oriented

Cross-country skiing, ice skating, hiking and snowshoeing are the only authorized non-wildlife oriented forms of recreation on Great Meadows. We often get complaints from disgruntled cross-country skiers when the access road is plowed after a nice snowfall. The most serious management problem we have with such activities occurring on the refuge is that the high number of participants cause a serious parking problem. Cars parked along the road or private

property draw legitimate complaints from the refuge neighbors. To help control the weekend overcrowding the two new BLHP positions now enable the refuge to have the area manned during weekends when public use peaks.

C. Enforcement

With the installment of the silent security system in the shop and the YCC headquarters in 1976, some of the vandalism problem, in respect to building break-ins and thefts, was alleviated in 1977. An attempt was made in October to break in to the YCC camp building. Unfortunately, the would-be burglars, after breaking through a panel in the overhead door, saw the wiring and fled before the Concord police arrived.

However, the rest of the vandalism problems still persist regularly. Drinking parties occur regularly during the summer at the Heard Pond unit parking lot and at the Concord parking lot. Weekend duty was performed randomly by Manager Gintoli and Asst. Manager Zelley in order to curb the frequency of the teenagers' activities.



Pictured above are the remnant ashes of the "airboat" given to the refuge by the Massachusetts Fish and Wildlife in 1975. It was found torched on the first weekend of November.

Several random hunter checks during the migratory bird hunting season proved very beneficial. With a few violations being issued early in the season, the word spread quickly among hunters that enforcement was again being carried out in the area. We would like to give our sincerest thanks to Senior Resident Agent Chris Graham for his invaluable aid in carrying out our hunting enforcement program this year.

#### VI. OTHER ITEMS

##### A. Field Investigations

The Massachusetts Division of Fisheries and Wildlife have been conducting a wood duck population study over the past years. The formal study was concluded in calendar year 1975. The Massachusetts Division of Fisheries and Wildlife continued banding and nesting surveys, however, in accordance with a special use permit. The following page contains a chart which is a summary of wood duck production within the refuge pools through 1977.



## UPPER MARSH

## LOWER MARSH

YEAR	Nest Starts	Successful Nests	Ducklings Hatched	Boxes Available	Nest Starts	Successful Nests	Ducklings Hatched	Boxes Available	Adj 1 River Boxes Nest Starts
1977	3	3	40	11	11	10	136	18	No Date
1976	5	5	65	11	7	4	41	19	No Date
1975	6	6	63	12	11	9	102	19	1
1974	5	4	38	15	11	8	101	16	8
1973	0	0	0	20	2	2	21	15	12
1972	3	2	28	29	5	4	30	32	3
1971	5	3	25	29	3	3	34	33	2
1970	2	2	20	29	4	3	24	33	1
1969	12	12	130	27	1	1	9	18	No Date
1968	11	10	140	24	8	5	48	27	No Date
1967	14	13	153	51	16	10	106	50	No Date
1966	23	20	128	50	20	16	201	50	No Date
1965	16	15	174	50	19	18	216	50	No Date
1964	19	18	186	49	19	15	188	50	No Date
1963	18	15	154	50	22	13	114	50	No Date

1973 - Year of big algae bloom

1968 big ice storm reduced number of boxes in half  
 Buttricks property has picked up a couple of Great  
 Meadows birds in last few years

B. Cooperative Programs

1. Youth Conservation Corps Program

Great Meadows' initiation to the YCC program was an extremely pleasant experience, both for the refuge personnel and the YCC personnel. At the end of the summer program, all the participants agreed that it was a very positive experience while learning about the natural environment and simultaneously increasing their self-discipline and other self-improvements. The program was not only beneficial in respect to the youths but also towards the physical improvement of the refuge. We would like to thank the corps-members and the staff for several important projects that they undertook. Some of the projects carried out by the YCC were: the crucial rip-rapping of sensitive segments of the dike, maintenance of foot paths, painting the shop-office building at Monomoy Refuge, construction of a boat launch on the Concord Unit, cutting of brush along the dikes, construction of a canoe landing, and the cleaning up of trash and the comfort station.





## 2. Young Adult Conservation Corp

The YACC program was initiated in the latter months of the year with the first corps members starting work in late November. The large amount of time spent by refuge personnel in preparation for the program has already been compensated for with only the first months achievements of the YACC crew. Refuge personnel are excited over this "supply" of manpower and are looking forward to the completion of projects which could not be accomplished by the younger YCCers.



## 3. Energy Conservation Workshop in Cooperation With the National Park Service

The National Recreation and Parks Association (NRPA) is in the process of developing an educational program for park, refuge, and hatchery visitors in which energy conservation and its association with nature and wildlife will be emphasized. This NRPA contract is jointly funded by the Fish and Wildlife Service and the National Park Service. A 2-day workshop was held in September at Minuteman National Park. Refuge personnel met with the advisory committee of NRPA along with Minuteman personnel and other National Park Service/Fish and Wildlife Service employees from Washington. The workshop served as a means of increasing communication between NRPA, FWS and NPS on issues concerning the educational program.



### C. Items of Interest

Refuge Manager Gintoli attended the U.S. Department of Treasury Law Enforcement Training School in Glynco, Georgia during the last two weeks of March.

Assistant Manager Goettel attended the Civil Service Commission's Supervisory Training Course in Laurel, Maryland during the last week of October.

Public Use Specialist Tougas attended an Interpretation and Recreation meeting at Chincoteague Refuge during the first week of December.



Assistant Manager Zelle transferred to Parker River Refuge on July 16. The refuge surely missed his helping hand during a very busy summer. Other personnel actions during the past year include--Seth Mott entered on duty on May 8th as a Biological Aid, GS-5, principally assigned to Monomoy Refuge, and was terminated on October 21st. However, he again entered on duty as the work leader for the YACC crew on November 28th. Assistant Manager, Tom Goettel, entered on duty September 12 as a GS-5 and was promoted to a GS 7 on November 6th. Daryle Lons entered on duty as a Refuge Manager (Trainee), GS-5, on September 26th. Christine Tougas entered on duty as a Public Use Specialist, GS-7, on November 7th. The refuge management position was upgraded to GS-11 during the year--this was a long overdue personnel action.

In accordance with Revenue Sharing Act, checks in the amounts of \$9,761.51, \$1,031.86, and \$549.34 were presented to the respective treasurers of Middlesex, Barnstable, and Worcester Counties.

Special thanks are extended to Refuge Manager (Trainee) Lons for drafting this report after only two months of duty and leaving only the minor final editing for Manager Gintoli. Thanks are extended to Chris Tougas and Tom Goettel for their assistance, and, of course, to Ellie Norton for her patient typing.

Towards the end of the year, Manager Linda Gintoli accepted a position of Assistant Refuge Manager (Recreation Specialist) at Kenai National Moose Range in Alaska. Technically this personnel action should be presented in next year's narrative but because she leaves the first week of January, 1978 the whole staff wishes to thank Linda at this time for her outstanding performance at the refuge. Her experties and guidance will be missed by all and we wish her the very best at Kenai.

D. Safety

Monthly safety meetings were conducted and safety was included in job discussions with the seasonal employees, YCC and YACC corpsmembers. The only accident during 1977 was the fracturing of a YCC corpsmember's finger.

MONOMOY NATIONAL WILDLIFE REFUGE



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## NARRATIVE REPORT

### Monomoy National Wildlife Refuge

Calendar Year 1977

#### I. GENERAL

##### A. Introduction

Established in 1944 and administered through Great Meadows National Wildlife Refuge, Monomoy National Wildlife Refuge is located about 100 miles southeast of Boston at the 'elbow' of Cape Cod. The refuge includes Monomoy Island, which is an eight-mile-long coastal island, and a small area of beach on Morris Island. Refuge structures include a former Coast Guard building on Morris Island and a light and lighthouse on Monomoy Island.



##### B. Climatic and Habitat Conditions

Typically moderate summer and winter temperatures, due to the ocean's proximity, are usually marked by severe storms in November and December. Severe January and February weather conditions caused some starvations of canada geese, brant and black ducks on Monomoy Island and Pleasant Bay during this past year.



A natural process of beach erosion is occurring along the southeast side of Morris Island. To date almost all of the refuge beach frontage on the eastern portion of Morris Island has been washed away. Concerned residents on adjacent private property pondered over a solution to this problem for some time. In November they finally got together to lower costs and increase efficiency and cooperatively hire a contractor to install a barrier made with large experimental sandbags that an M.I.T. Sea Grant study is currently researching. The sandbags now extend along the low tide mark of the refuge boundary. We are hopeful the rebuilding of refuge beach front will occur enabling public access at all times to the southern portion of Morris Island.



#### C. Land Acquisition

The Fish and Wildlife Service initiated condemnation to acquire four acres of inholdings owned by the Massachusetts Audubon Society, Watson J. Small and Howland B. Jones.

John Manson, a camp permittee on Monomoy, died early in the year. His family removed all private belongings and vacated the property in the spring. The Manson building is still standing but it will be destroyed as soon as we are relieved of accountability.

D. System Status

Monomoy Refuge should be considered out of-line with objectives set in 1971. The wilderness designation of Monomoy Island enabled the complex to gradually reduce the cost of wildlife management. However, reducing the refuge's operating budget has also reduced capabilities for enforcement and the control of undesirable public use activities. Unauthorized or undesirable activities such as camping, picnicking, illegal hunting, etc. may be expected to continue to increase until personnel with law enforcement authority can be stationed there to implement some control over the situation. For further discussion on the system status of the Great Meadows/Monomoy complex, see Great Meadows narrative.

II. CONSTRUCTION AND MAINTENANCE

A. Construction

None

B. Maintenance

An inactive camp's remains were buried on Monomoy Island; also the refuge headquarters on Morris Island and refuge signs were painted this summer by YCC members.





The fence on the east face of Morris Island was replaced, many old fence posts were removed from Monomoy Island and the military surplus M-37 4x4 was repainted by Bio Tech Aide Seth Mott.

C. Wildfire

Nothing to report.

III. HABITAT MANAGEMENT

No habitat management is conducted on Monomoy Refuge. Except for the Morris Island unit, it is all a National Wilderness Area.

IV. WILDLIFE

A. Endangered and/or Threatened Species

A dead osprey was found washed up on the beach of Monomoy Island in May. The carcass was too badly decomposed to determine cause of death.

An immature bald eagle was reported in September.

Peregrine falcons were sighted four times in October by Bio Tech Aide Seth Mott.

Two leatherback sea turtles were found washed up on Monomoy Island in August by refuge personnel. They were found partially decomposed with their heads apparently smashed.

B. Migratory Birds

1. Waterfowl

Freshwater marshes occurring on the south end of the island provided nesting habitat for Black Ducks, Green-wing Teal, a few Gadwalls and Canada Geese this year. Shovelers, Blue-winged Teal, Pintails, Ruddy Ducks and



American Widgeon also commonly use the island during spring and fall migrations. Monomoy Island also is an important winter feeding area for Common Eiders, Old Squaw, and Scoters.

Monomoy is a well known wintering area for brant. In recent years their winter numbers have increased to several thousands. Last winter's extreme cold froze all of Pleasant Bay, and most of Nantucket Sound and Cape Cod Bay. As a result brant and geese began to starve. Minimal feeding activities by Massachusetts Fish and Wildlife and Audubon brought little relief but good publicity. As a point of interest, those birds autopsied by the Service's Wildlife Disease Lab revealed high levels of lead poisoning.

## 2. Marsh and Water Birds

The saltmarsh and freshwater areas on the island host the usual variety of rails, herons and egrets. There was a nesting colony of Black-crowned Night Herons this year for the first time in recent years.

Double-crested Cormorants and a few European Comorants are usually observed off-shore around the island during the fall.

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

Monomoy Island harbors the last major nesting colony of Common Terns, Roseate Terns and Arctic Terns in Massachusetts. As at other northeastern areas, gull populations on the island keep expanding while tern population seem to keep dwindling. The Massachusetts Audubon Society continued its study on the tern colony at the north end of the island. Their final report indicates that the tern colony's population was slightly lower than in 1976. Breeding success was extremely high for the Common and Roseate Terns even though predation caused substantial damage for the first time since 1913. It is interesting to note that a major portion of the predation was believed to have been by a single black-crowned night heron. Unfortunately the 11 pairs of nesting Arctic Terns raised no young to fledgling stage due to predation and nests being washed out by high tides.

Unusual Sighting: Refuge personnel sighted a Curlew Sandpiper in August.

C. Mammals and Non-Migrating Birds and Others

A few white-tail deer and muskrats are the only mammals inhabiting Monomoy Island.

V. INTERPRETATION AND RECREATION

A. Information and Interpretation

The refuge, still being managed in a caretaker level of operation, has little interpretive worth being carried out. However, during the summer months, Seth Mott, Bio Tech Aide, did manage the visitor permit system, provided information to the public and led a tour of the island for some National Park Service employees.

Friction still exists between residents of Morris Island and the U.S. Fish and Wildlife Service over the right of public access to the refuge. On the way to the Morris Island headquarters there are signs stating that the road is a private drive for residents only. In the past, this has discouraged a majority of visitors from entering the Morris Island unit of the refuge. In December, the Solicitor's Office suggested condemnation of the right-of-way. If finalized, this will clear up much of the problem.

B. Recreation

The Morris Island beach is tremendously popular for surf fishing when the blues and stripers are in. During the summer months, visitors may purchase a shellfish license from the local clam warden if they wish to take part in the popular activity of clamming.

Birdwarching is the dominant form of recreation on Monomoy Island throughout the year. However, the south end of the island is a favorite landing spot for boating enthusiasts.



C. Enforcement

Unleashed dogs present the most obvious problem on Morris Island. These dogs belong both to residents of Morris Island and visitors.

Illegal camping occurs on Monomoy Island. Campers come in and build fires and leave litter with little concern that it is a National Wilderness Area. Little can be done in enforcing this problem until a full-time man with law enforcement authority is stationed permanently at the refuge.

Several more instances of low-flying aircraft were reported again this year. However, to date no legal actions against these pilots have occurred.

VI. OTHER ITEMS

A. Field Investigations

Ian Nesbit of the Massachusetts Audubon Society has continued to monitor the nesting of the tern colonies on Monomoy in conjunction with his annual banding program (discussed in Section IV, Part 3).

B. Cooperative Programs

A special use permit was issued in 1976 to Ms. Barbara Waters of the Barnstable Cooperative Extension Service for use of the Morris Island office during the winter of 1976 and early spring of 1977 by classes studying marine ecology. This agreement with the Cooperative Extension Service was extended for the winter of 1977 and the spring of 1978.

C. Items of Interest

At long last..., a new 18 foot Chrysler tri-hull boat arrived in early November to be used at Monomoy Refuge in the future. It was desperately needed at Monomoy where breakers off the island have aged many former and current refuge personnel while using the small Boston Whaler.

The fall of 1977 was the first hunting season for steel shot to be mandatory within Pleasant Bay to waterfowlers. Beyond the usual gripes the program appeared to be finally well accepted by the local sportsmen.

D. Safety

See Great Meadows National Wildlife Refuge report.

OXBOW NATIONAL WILDLIFE REFUGE



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## NARRATIVE REPORT

### Oxbow National Wildlife Refuge

Calendar Year 1977

#### I. GENERAL

##### A. Introduction

Oxbow Refuge was established in 1974 by transfer of 662 acres from the Department of Defense. The refuge was formerly a part of Fort Devens and is still used for access to training areas on the post for armor and artillery units. As its name implies, several natural oxbows have been formed from the meandering of the highly polluted Nashua River over the years.

##### B. Climatic and Habitat Conditions

The refuge consists of primarily wet woodlands with several small ponds in various stages of succession scattered throughout.

##### C. Land Acquisition

No acquisition has occurred beyond the original 662 acres of the refuge. However, the old motor pool area, an exclusion within the refuge boundaries, has been deserted by the military. There apparently is some confusion as to ownership of this area as Fort Devens personnel thought it was included in the original transfer. At the time of this writing the refuge has no indication as to ownership.

##### D. System Status

This refuge is under the administration of Great Meadows National Wildlife Refuge. Operations are presently at caretaker level. The only development planned for BLHP is rehabilitation of the road running along the eastern boundary of the refuge.

The Annual Work Plan called for a hunting program on Oxbow to be initiated during 1977, in cooperation with Fort Devens and Massachusetts Department of Fish and Wildlife personnel. This was accomplished and all connected with the area are pleased with the program.

## II. CONSTRUCTION AND MAINTENANCE

The YCC camp picked up litter during the summer and the hunting area was posted in October. This was the only maintenance work carried out by the refuge during 1977.

The dirt road running through the refuge has deteriorated to a nearly impassable condition from the traffic of tanks and other military vehicles from Fort Devens. Because of the roads poor condition during the fall, hunters were required to park at the north end of the refuge and walk in. The long hike presented little problems and perhaps enhanced the hunting. If the refuge cannot maintain the road, consideration should be given to have the Fort reroute its vehicles and have the road closed off permanently. If accomplished, visitors would park at the north or south end and walk in.

## III. HABITAT MANAGEMENT

No habitat management is conducted by refuge personnel at present. The wildlife management specialists employed by Fort Devens to manage their lands have installed and checked wood duck nesting boxes supplied by the refuge.

## IV. WILDLIFE

### A. Endangered and Threatened Species

Nothing to report.



B. Migratory Birds

The refuge hosts several hundred mallards, black ducks, wood ducks, and teal during spring and fall migrations. Woodcock stop over and utilize clearings in the wet woodland areas extensively.

C. Mammals, Non-Migratory Birds, and Others

High white-tailed deer populations on Oxbow are attested to by the numerous tracks seen along the trails and river banks. Otter, muskrat, raccoon, skunk, opossum, and squirrel are also obvious by their tracks and droppings.

Ruffed grouse numbers were exceptionally high during the fall. There were a few hunters, this writer included, who can boast of some of the finest grouse hunting they have ever seen. The high grouse population seemed to be indicative of what was observed throughout Massachusetts.

V. INTERPRETATION AND RECREATION

There presently exists no interpretive programs for Oxbow Refuge. Because the refuge is located further away from metropolitan Boston and access is through Fort Devens, there is very little public use demand on the refuge. This works to the advantage of those birders and other outdoor enthusiasts who enjoy the quiet and tranquility of the area when the Great Meadows is swamped with people.

Even the hunting season saw few crowds. The area was not stocked with pheasants and only small upland game hunting was permitted. Therefore, only a limited number of hunters were attracted to the area. The following chart outlines the very successful year the few hunters did enjoy during the season of October 10 through November 30, 1977.



<u>Species</u>	<u>Known Killed</u>	<u>Crippled</u>	<u>Totals</u>
Pheasant	8	2	10
Woodcock	59	2	61
Grouse	12	1	13
Grey Squirrel	18	1	19
Snowshoe Hare	0	0	0
Cottontail	8	0	8
Raccoon	<u>1</u>	<u>0</u>	<u>1</u>
TOTALS	106	6	112 kills

Number of hunter use days --- 479

Success Rate --- 23.4%

One violation was reported during the hunting season when a party of hunters failed to check-out at the Rod and Gun Club. The situation was straightened out when the missing permits showed up on a shelf of the check station.

#### VI. OTHER ITEMS

Numerous requests have come to the attention of the refuge for cutting firewood. Although denied it is very apparent that an increasing number of people are burning wood as fuel costs continue to increase in New England.