

Preliminary National Wetlands Inventory Report
on Massachusetts' Wetland Acreage

by

Ralph W. Tiner
Regional Wetland Coordinator
U.S. Fish and Wildlife Service
Fish and Wildlife Enhancement
Region 5
Newton Corner, MA 02158

September 1992

INTRODUCTION

The purpose of this report is to present the preliminary findings of the U.S. Fish and Wildlife Service's wetlands inventory of the State of Massachusetts. This work was part of the Service's National Wetlands Inventory Project (NWI).

The NWI is conducting an inventory of the Nation's wetlands. It is producing information on the characteristics and extent of U.S. wetlands for resource planning, decision-making, and other purposes. The focus of the NWI is on producing detailed wetland maps. These maps are prepared by utilizing remote sensing techniques and conducting field investigations. To date, wetland mapping has been completed for 61% of the lower 48 states, 18% of Alaska, and all of Hawaii. In the Northeast, wetland mapping has been completed in eleven states (CT, DE, MD, MA, NH, NJ, PA, RI, VT, VA and WV). Upon completion of mapping, the NWI may compile wetland acreage summaries and produce a state wetland report, depending on available funding. A detailed state wetland report for Massachusetts may be published in the future when funds become available. Since the state report will not be available for some time, this preliminary report on wetland acreage was prepared to present the statistical results of the NWI for Massachusetts.

METHODS

Wetland acreage data for Massachusetts was compiled from the NWI maps by personnel of the Department of Forestry and Wildlife Management at the University of Massachusetts-Amherst. A Numonics digital read-out planimeter was employed to area measure wetland polygons shown on the maps. Acreage data were collected by wetland type for each county and statewide totals were tabulated. The effective date of the wetlands inventory is 1975-77 - the period of the aerial photography used to prepare the NWI maps.

RESULTS

Massachusetts had nearly 590,000 acres (920 square miles) of wetlands in the mid 1970s. This total represents about twelve percent of the state's land area.¹ Almost 80 percent of the state's wetland resource was palustrine wetland (Table 1). Palustrine forested wetlands predominated, accounting for nearly 330,000 acres or roughly 71 percent of the state's palustrine wetlands and 56 percent of the state's entire wetland resource. Twenty percent of the state's wetlands was tidal wetland (i.e., marine and estuarine wetlands). Estuarine emergent wetlands (i.e., salt and brackish marshes) were the dominant tidal wetland type, accounting for nearly 48,000 acres and representing nearly 40 percent of these wetlands. Tidal flats were almost as abundant as the estuarine marshes, totaling about 43,500 acres and representing about 37 percent of the state's tidal wetlands.

Table 2 summarizes wetland acreage data for each county. Plymouth County has the most wetland acreage with nearly 97,500 acres. Worcester County, the state's largest county, was second in wetland acreage. Suffolk County, which includes the city of Boston, had the least amount of wetland.

¹ Based on a state land surface area of 7,824 square miles as reported in The World Almanac & Book of Facts 1992 published by Pharos Books, New York.

Worcester County had the most acreage of palustrine wetlands, with nearly 94,000 acres. Plymouth County was second in abundance with nearly 76,000 acres, followed by Bristol and Middlesex Counties with about 62,000 acres and 58,500 acres, respectively.

Barnstable County had the highest acreage of intertidal wetlands (20,416 acres of marine wetlands and 23,114 acres of estuarine wetland), representing about 37 percent of the state's tidal wetlands. Estuarine wetlands were most abundant in Barnstable, Essex, and Plymouth Counties, respectively.

Taking the county's land surface area into account, the percentage of each county that is represented by wetland was calculated (Table 3). Nantucket County had about 36 percent of its land area occupied by wetlands. Counties with 20 percent or more coverage by wetlands included Plymouth, Barnstable, Bristol, and Essex Counties.

REFERENCES

- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, Washington, DC. FWS/OBS-79/31. 103 pp.

Table 1. Massachusetts wetland acreage by type based on the U.S. Fish and Wildlife Service's National Wetlands Inventory. Wetlands are classified according to Cowardin and others (1979).

| <u>Wetland Type</u> | <u>Acreage</u> |
|---|----------------|
| Marine Wetlands | |
| Beach/Bar | 23,382 |
| Intertidal Flat | 14,304 |
| Rocky Shore and Aquatic Bed | 1,048 |
| <hr/> | <hr/> |
| Total | 38,734 |
| Estuarine Wetlands | |
| Emergent (includes 71 acres of Scrub-Shrub) | 47,706 |
| Intertidal Flat | 29,224 |
| Beach/Bar | 2,215 |
| Other Estuarine | 123 |
| <hr/> | <hr/> |
| Total | 79,268 |
| Palustrine Wetlands | |
| Open Water and Aquatic Bed (Pond) | 23,165 |
| Emergent | 24,351 |
| Deciduous Forested | 300,281 |
| Evergreen Forested | 27,573 |
| Dead Forested (mostly beaver-modified) | 2,979 |
| Deciduous Scrub-Shrub | 72,206 |
| Evergreen Scrub-Shrub | 2,726 |
| Farmed (cranberry bog) | 14,193 |
| Other Palustrine | 124 |
| <hr/> | <hr/> |
| Total | 467,598 |
| Lacustrine Wetlands | |
| Aquatic Bed | 2,448 |
| Emergent | 1,291 |
| Other | 489 |
| <hr/> | <hr/> |
| Total | 4,228 |
| Riverine Wetlands | 43 |
| <hr/> | <hr/> |
| STATE TOTAL | 589,871 |

Table 2. County wetland acreage summaries for Massachusetts based on NWI mapping.

| COUNTY | Marine Wetlands (acres) | Estuarine Wetlands (acres) | Palustrine Wetlands (acres) | Lacustrine Wetlands (acres) | Riverine Wetlands (acres) | Total Wetland (acres) |
|---------------|-------------------------|----------------------------|-----------------------------|-----------------------------|---------------------------|-----------------------|
| Barnstable | 20,416 | 23,114 | 15,218 | 50 | -- | 58,798 |
| Berkshire | -- | -- | 29,261 | 620 | 2 | 29,883 |
| Bristol | 1,430 | 6,664 | 62,082 | 300 | -- | 70,476 |
| Dukes | 1,391 | 2,013 | 2,949 | 51 | -- | 6,404 |
| Essex | 3,959 | 22,763 | 41,927 | 86 | -- | 68,735 |
| Franklin | -- | -- | 16,020 | 445 | 31 | 16,496 |
| Hampden | -- | -- | 21,492 | 90 | -- | 21,582 |
| Hampshire | -- | -- | 17,292 | 277 | 10 | 17,579 |
| Middlesex | -- | -- | 58,552 | 349 | -- | 58,901 |
| Nantucket | 6,625 | 1,094 | 3,068 | -- | -- | 10,787 |
| Norfolk | 54 | 3,470 | 29,552 | 101 | -- | 33,177 |
| Plymouth | 3,703 | 17,614 | 75,745 | 375 | -- | 97,437 |
| Suffolk | 1,156 | 2,536 | 578 | -- | -- | 4,270 |
| Worcester | -- | -- | 93,862 | 1,484 | -- | 95,346 |
| TOTALS | 38,734 | 79,268 | 467,598 | 4,228 | 43 | 589,871 |

Table 3. Percentage of each Massachusetts county represented by wetlands based on NWI mapping.

| <u>County</u> | <u>% of County Occupied by Wetlands</u> |
|---------------|---|
| Barnstable | 23 |
| Berkshire | 5 |
| Bristol | 20 |
| Dukes | 10 |
| Essex | 22 |
| Franklin | 4 |
| Hampden | 6 |
| Hampshire | 5 |
| Middlesex | 11 |
| Nantucket | 36 |
| Norfolk | 13 |
| Plymouth | 23 |
| Suffolk | 12 |
| Worcester | 10 |