



MASSACHUSETTS

"It takes many partners to restore our wetlands..." reads the newsletter of the Massachusetts Wetlands Restoration Program. Since 1994, the U.S. Fish and Wildlife Service and its Partners for Fish and Wildlife Program has worked with this State agency and many other organizations and individuals to restore wetlands and other important fish and wildlife habitats in Massachusetts. But there's more work to be done.

Introduction and General Description

Massachusetts has lost 20 percent of its wetlands that were in existence at the time of European settlement. Of the approximately 48,000 acres of coastal saltmarsh remaining, about 8,000 acres are considered degraded by human activity. Riparian buffer zones along streams, wetlands and rivers have been eliminated due to "farming to the edge," and hedgerow habitat has been lost because of consolidation of small fields into larger ones.

Early in the last century, nearly 80 percent of land cover was in non-wooded herbaceous habitat. Now Massachusetts is almost 75 percent forested, resulting in loss

of cover vital to grassland-dependent migratory birds. Non-native invasive plant species have spread rapidly into coastal and freshwater wetland habitats as well as upland habitats, replacing native species.

With a Little Help From Our Friends

Since the early 1990's, the Partners for Fish and Wildlife Program in Massachusetts has worked with many agencies, organizations, and individual landowners to restore fish and wildlife habitat, including coastal wetlands, riparian habitats, grasslands and endangered species habitats. A recent multi-agency effort to remove unnecessary dams has given the program an additional opportunity to partner with others

to restore instream anadromous fish habitat.

The Partners Program has partnered with The Trustees of Reservations since 1995 to restore globally rare coastal habitats such as sandplain grasslands, maritime heathlands, and frost-bottoms on Martha's Vineyard (in geological terms a terminal moraine formed by retreat of continental glaciers).

Some 30 rare animals and 11 plants have been recorded on Trustees property, including the federally threatened piping plover, Northeastern beach tiger beetle and the endangered sandplain gerardia. Habitat restoration is accomplished by activities such as mowing, cutting, clearing and prescribed burning.

On Cape Cod and southeastern Massachusetts, the Partners Program has partnered with the Natural Resources Conservation Service and the Cape Cod Conservation District to restore native anadromous fish habitat by rehabilitating fishways and removing dams, benefiting populations of river herring.

Along with the Massachusetts Wetlands Restoration Program, the first such State wetlands restoration program in the country, the Partners Program is helping to restore hundreds of acres of coastal



Restored grassland, Yarmouth, Massachusetts. USFWS photo.

saltmarsh adversely impacted by grid ditching, filling, diking, road construction and other human activity.

Conservation Strategies

Coastal Saltmarsh

Projects have been completed along all portions of the Massachusetts coastline, including the North Shore, South Shore, Buzzards Bay, and Cape Cod areas. Typical Partners Program costs run about \$1,000 to \$1,500 per acre of saltmarsh restored.

In 1994, Massachusetts was the first State to formally initiate a wetlands restoration program. Part of the strategy was to form the *Partnership to Restore Massachusetts Wetlands*, a coalition of State and Federal agencies, non-profits, individuals and businesses interested in restoring wetlands. At that time a State-Federal agreement under the Coastal America Partnership was created. The U.S. Fish and Wildlife Service is a signatory to that agreement.

The purpose of the Partnership is to form a strong constituency for wetland restoration and to encourage communication and collaboration among those engaged in wetland restoration. The Partners Program has been a part of this effort from the beginning, and continues to help fund and promote coastal saltmarsh restoration projects.

Some of these coastal restoration projects include Integrated Marsh Management, which consists of restoring saltmarsh, grid-ditched for mosquito control in the 1930's, by plugging ditches, removing fill



material, controlling invasive plants and returning original hydrology to the saltmarsh. Other types of restoration include removing undersized or plugged culverts and installing adequately sized culverts to allow full tidal flushing to saltmarshes impaired by road construction.

Grasslands

The Partners Program has partnered with county conservation districts and private conservation groups such as The Nature Conservancy and The Trustees of Reservations to help restore vital grassland habitats through various techniques such as mowing, cutting, and controlled burning. The cost of grassland restoration ranges from \$100 to \$500 per acre.

Although Massachusetts was once mostly covered with non-woody herbaceous plants due to farming activity, these areas have now become mostly forested, resulting in a dramatic loss of grassland nesting migratory birds such as the bobolink and eastern meadowlark. Invasive plant species such as multiflora rose have taken over

many grasslands. Other specialized habitats such as sandplain grasslands located on Martha's Vineyard have been lost due to development and habitat succession.

Anadromous Fish

The Partners Program has helped restore and rehabilitate a number of fishways on coastal streams on Cape Cod. In Plymouth, home of Plymouth Rock, the Partners Program is partnering with the town and many other agencies to rehabilitate a fishway and remove a dam. Costs associated with anadromous fish restoration can range anywhere from \$10,000 to \$40,000 per site, depending on the structure and repair work involved.

When European colonists came to Massachusetts, they found Native Americans using fish as fertilizer. Most likely these were river herring, anadromous fish that make their way up most coastal streams to spawn in freshwater ponds. After several hundred years of development, including construction of hydroelectric power facilities, many of these streams need fish passage facilities to overcome the obstacles posed by dams and diversions.

Partners

Natural Resources Conservation Service
Farm Service Agency
National Fish and Wildlife Foundation
Environmental Protection Agency
National Marine Fisheries Service
U.S. Army Corps of Engineers
Coastal America
Massachusetts Wetlands Restoration Program
Massachusetts Coastal Zone Management
Massachusetts Division of Marine Fisheries
Massachusetts Division of Fisheries and Wildlife
University of Massachusetts
Massachusetts Bays Program
Buzzards Bay Program
Northeast Massachusetts Mosquito Control and Wetlands Management District
Norfolk County Mosquito Control Project
Plymouth County Mosquito Control Project
Franklin Conservation District
Cape Cod Conservation District
Town of Marion
Town of Tisbury
Town of Yarmouth
Town of Bourne
Town of Essex

Town of Ipswich
City of Northampton
City of Gloucester
City of Winthrop
Town of Arlington
The Nature Conservancy
The Trustees of Reservations
Ducks Unlimited
Essex County Sportsmen's Association
Easton Natural Resources Trust
Dartmouth Natural Resources Trust

Accomplishments

- 400 acres of wetlands habitat restored or improved.
- 100 acres of upland habitat restored
- 1,500 acres of beaver-created wetlands conserved/protected.
- Fishway facilities on 6 streams restored/rehabilitated.
- More than 7 miles of riparian buffers restored.

Future Needs

Hundreds of tidal restrictions and wetlands in need of restoration have been identified through inventories of coastal wetlands on the Massachusetts North Shore, South Shore, Buzzards Bay, and Cape Cod. Restoration opportunities throughout the State include:

- 3,000 acres of restorable wetlands in coastal areas of Massachusetts
- 500 miles of restorable streams and buffers
- 1,000 acres of sandplain grassland/savannah habitat
- 2,500 acres of native grassland
- 3,000 dams in Massachusetts, many of which no longer serve a useful purpose, could be removed to restore native fish habitat.
- More than 100 existing fish passage facilities on Massachusetts coastal streams need repair or rehabilitation.



This fishway on the Mashpee River restored alewife and blue-backed herring access to spawning sites in Mashpee Pond, upstream of a barrier dam. USFWS photo.

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