

Restoring the Herring to



Adamsville Pond Westport, MA



A Message From Massachusetts Environmental Affairs Secretary Bob Durand

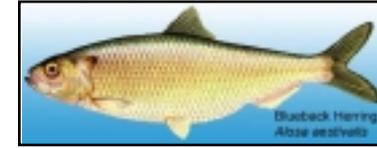
The Commonwealth of Massachusetts is committed to restoring impaired wetlands and protecting the biodiversity of our environment. There are no projects that better combine these two goals than the restoration of anadromous fish species like herring shad, and Atlantic salmon, to the rivers and streams of Massachusetts.

In Buzzards Bay, several herring run restoration projects have already been completed. Herring are a vital part of both freshwater and coastal food chains. In this brochure, we describe how a new fish ladder came to be installed at Adamsville Pond, in the Town of Westport. This new aluminum ladder replaces one destroyed by a flood, and it was installed in time for the 2002 fish migration.

This project was realized because of a commitment and partnership between the Buzzards Bay Project National Estuary Program (within the Massachusetts Office of Coastal Zone Management), the Town of Westport, the landowner, the Fish America Foundation, the Massachusetts Division of Marine Fisheries, and the USDA Natural Resources Conservation Service. I applaud this collaborative state, local, federal, and private effort, and the team that brought this project to fruition. It is my hope this project will serve as a model and inspire similar initiatives around the Commonwealth.

WHAT ARE HERRING?

River herring such as alewives and bluebacks are a common fish found along the eastern coast of North America. These herring are anadromous, meaning they live primarily in salt water, but migrate upstream to freshwater lakes and ponds to spawn. The upstream



migration begins in the spring when the air temperature climbs higher than that of the surround-

ing ocean (between 50-57° Fahrenheit). Most river herring return to the same waters in which they were hatched, possibly using their sense of smell as a guide. In Massachusetts, the “running” of the herring lasts slightly over two months, from late March to early June.

Once the herring reach their pond destination, the females deposit an average of 60,000 to 100,000 eggs depending on the size of the individual. After fertilization by the males, the eggs sink to the pond bottom, attaching to stones or submerged vegetation. While the adult herring return to the ocean, the fertilized eggs develop quickly, hatching within a month's time.

Throughout the summer, the young alewives continue to grow in the pond. In the early fall, when the juveniles are two to four inches long, they leave the pond and migrate to the sea. Less than one percent of the fertilized eggs survive to make the fall migration. By the following spring, the surviving fish have grown to a length of six to eight inches.



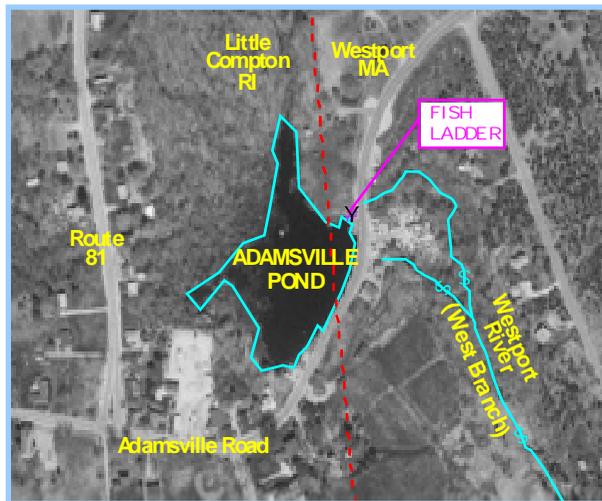
River herring during migration

ARE HERRING IMPORTANT?

Historically, herring and other anadromous fish were plentiful in New England and provided an inexpensive source of protein for the colonists. These fish were harvested during the “spring run” and were either smoked or preserved in brine. In time, other uses for the fish were developed; fish oils for paint, cosmetics and medicine, fish waste for livestock feed and fertilizer, and bait in lobster and crab traps.

Although these historic uses for herring are not as viable today, herring are highly valued and actively sought for recreational fishing bait. They also play an important role in the ecology of the marine, estuarine and freshwater systems that they inhabit. This role is chiefly as a prey species for important food and game fish species as well as for a wide variety of coastal birds such as eagles, ospreys, herons and the currently endangered roseate tern. The largest colony of roseate terns in North America resides in Buzzards Bay.

Today, many of the herring runs in Buzzards Bay support only a fraction of their estimated historical populations. Reduced herring populations can be caused by a number of factors including physical obstructions to migration, over-fishing, poor water quality, or inadequate spawning habitat. Of these, physical constraints in the form of dams, culverts, and other water control structures are by far the greatest impediment to herring migration in Buzzards Bay rivers.



Aerial photograph of Adamsville Pond

HERRING IN ADAMSVILLE POND

Adamsville Pond, also known as Greys Mill Pond, is an impounded fresh water body. Water from the pond flows from the dam to the West Branch of the Westport River. Since 1675, water from the pond has been utilized to operate nearby Grey’s Grist Mill. The owners of the mill have been actively involved with maintaining herring access to the pond.

During the early spring, herring (primarily alewives) can be seen running up the Westport River. The ultimate goal of the herring is to reach their spawning grounds of Adamsville Pond. The dam, however, prevents the fish from moving upstream into the pond. To remedy this, the assistance of a fish ladder is required.

In the past, at least two fish ladders have been built to assist herring in reaching Adamsville Pond. Remnants of the first ladder, which was constructed of stone, can still be seen along the north side of the dam. In 1995, with assistance from the Massachusetts Division of Marine Fisheries, the Town of Westport installed a wooden ladder along the south side of the dam and brook.



The old wooden ladder before its destruction

Up until the spring of 2001, herring used the ladder during spring migration. On March 31 of that year, more than seven inches of rain fell on the pond, causing it to flood. The wooden ladder was dislodged and floated down the river. The destruction of the ladder initiated a local effort to save the herring. Using nets, volunteers captured some of the herring and transported them into Adamsville pond.

To maintain the yearly migration of herring into Adamsville Pond, the Town of Westport needed to install another fish ladder. In consultation with the Massachusetts Division of Marine Fisheries, the National Marine Fisheries Service, and the USDA Natural Resources Conservation Service (NRCS), the Town of Westport decided to replace the wooden ladder with an aluminum steep pass ladder.



The new aluminum steep-pass fish ladder

A typical fish ladder creates a series of steps and pools (weir-pool design) allowing the fish to move up gradually. The new Adamsville ladder, however, is a more advanced design using a complex baffling system. The baffles reduce flow velocity and allow the herring to pass into the spawning area quickly and with less effort.

Utilizing local volunteer labor and assistance from the Westport Public Works Department and Shellfish Warden, the ladder was installed in the winter of 2002 in advance of the spring herring migration.

How can you help?

To measure the effectiveness of the fish ladder, the Westport Fishermen’s Association and other volunteers will provide data on the herring using the fish ladder. Several times a week during the spring run, volunteers will count the number of herring and record other significant data (date, time, weather conditions, etc.). If you would like to help in counting fish please contact the Westport Selectmen’s Office or Fish Commissioner’s Office at (508) 636-1003.

WHAT IS THE BUZZARDS BAY PROJECT?

The Buzzards Bay Project (BBP), established in 1985, is one of 28 National Estuary Programs in the United States. The BBP is a unit of the Massachusetts Office of Coastal Zone Management and receives funding from the U.S. Environmental Protection Agency. The mission of the BBP is to provide technical assistance and funding opportunities to municipalities surrounding the Bay to facilitate implementation of the recommendations contained in the Buzzards Bay Comprehensive Conservation Management Plan (CCMP). The CCMP, which was completed by the BBP in 1991, outlines research conclusions and management strategies for the protection and restoration of water quality and living resources in the Bay and its surrounding 432 square mile watershed.

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