

State and Federal Wildlife Officials Work With Local Partners to Restore Shad in Charles River

Officials plan to stock the Charles River waterway with 3 million shad larvae this summer.

WALTHAM – Friday, June 29, 2012 – Officials from the Massachusetts Department of Fish and Game's (DFG) Division of Marine Fisheries (DMF) and the U.S. Fish and Wildlife Service (USFWS) released tens of thousands of American shad larvae into the Charles River in Waltham today as part of a multi-year effort to restore native shad populations in Massachusetts' rivers.

Once abundant in larger river systems such as the Charles, Connecticut, Merrimack, and Neponset, American shad populations have decreased over the last century in Massachusetts waterways due to construction of dams, water pollution, and overfishing. Water quality improvements, construction of fish passage facilities, and regulation of fishing have resulted in the recent restoration of shad in the Connecticut and Merrimack River systems. State and federal agencies are now working to reintroduce shad into the Charles River.

"We are optimistic for the future of the restoration effort given that we are already seeing the return of adult American shad into the Charles River," said DFG Commissioner Mary Griffin. "We are grateful for the support of the U.S. Fish and Wildlife Service and partnership with non-profit environmental organizations such as the Charles River Watershed Association in our effort."

The goal of the American Shad Propagation Project is to restore viable populations of American shad to the Charles River and create a local sport fishery. The project is a long-term collaborative effort between the DFG's Division of Marine Fisheries and the USFWS Central New England Fishery Resources Office. It includes the development of a shad larvae stocking program in conjunction with fish passage improvements.

"The Service continues to work with the Commonwealth of Massachusetts, non-government organizations and other state partners throughout New England to enhance American shad and river herring populations and we continue to see positive results," said USFWS Northeast Regional Director Wendi Weber. "This spring, sampling efforts have documented hatchery origin shad returning to the Charles River and their numbers are expected to increase in coming years given hatchery production success and increased stocking in the river."

The larvae stocking program is modeled after successful programs implemented for restoring shad to the tributaries of Chesapeake Bay. In the Massachusetts program, adult shad migrating upriver to spawn are obtained from the Merrimack River, where the shad population has rebounded over the past several decades – likely due to water quality improvements and the construction of more efficient fish passage structures on hydropower dams.

"I think history will show that those organizations and people who made significant contributions to the restoration of the environment in these first years of the 21st Century made a real difference," said Charles River Watershed Association Executive Director Bob Zimmerman. "We're making significant strides on the Charles, and the release of this iconic fish is a great case in point."

The Charles River is the primary target for restoration of shad in Massachusetts due to the availability of spawning and rearing habitat, functioning fishways, and the historical significance of shad in the system. The partners hope to restore an adult population of about 30,000 in the Charles River.

In the last six years, wildlife officials have taken adult American shad from the Essex Dam fish lift on the Merrimack

River and transported them to the two USFWS hatcheries in Nashua, N.H. and North Attleboro. The adult shad are spawned in tanks and the resulting larvae that hatch are marked with oxytetracycline (OTC), an FDA approved antibiotic that marks bony structures, before being transported to the Charles River. The process of marking with OTC is implemented so that returning adult American shad can be sampled and their otoliths, bony structures analogous to ear bones that aide fish in equilibrium, can be removed and examined for the presence of the OTC mark, which fluoresces under ultraviolet light. The combined efforts of the two hatcheries have resulted in the release of an estimated 13 million marked shad larvae into the Charles River in Waltham beginning in 2006.

In 2010, DMF biologists began looking for adult shad returning to the Charles River in the fishway at Watertown but did not find any. Sampling continued in the fishway at Watertown in 2011 and 2012, however, biologists from both DMF and USFWS also began using an electrofishing technique to sample for adult shad. This technique uses a boat to supply an electric current to the water which stuns nearby fish thus allowing them to be sampled. Electrofishing in both the 2011 and 2012 seasons has been successful with more than 50 percent of adult shad sampled having a hatchery OTC mark on their otoliths. The majority of the marked adult shad in 2012 are 6-year-old fish, indicating that they came from the first year of stocking in 2006. This finding is promising and sampling in upcoming years should yield larger numbers of adults from the estimated 13 million larvae stocked to date.

The Charles River Watershed Association (CRWA) has assisted USFWS and DMF in the American shad restoration efforts by monitoring the Charles River prior to release events to help project fish survival rates, and following release events to document habitat conditions. CRWA has also worked to repair and maintain fish passage along the Charles - especially fish ladders at dams - so adult shad are able to return to the river to spawn. CRWA's mission involves continually promoting a clean Charles River which will be able to support a healthy shad population.

The Department of Fish and Game (DFG) is responsible for promoting the conservation and enjoyment of the Commonwealth's natural resources. DFG carries out this mission through land protection and wildlife habitat management, management of inland and marine fish and wildlife species, and ecological restoration of fresh water, salt water, and terrestrial habitats. DFG promotes enjoyment of the Massachusetts environment through outdoor skills workshops, fishing festivals and other educational programs, and by enhancing access to the Commonwealth's rivers, lakes, and coastal waters.

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