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

WALTHAM - June 29, 2011 - Officials representing Department of Fish and Game (DFG), its Division of Marine Fisheries (DMF), and the U.S. Fish and Wildlife Service (USFWS) released American shad fry into the Charles River in Waltham today as part of a multi-year effort to restore native shad populations into Massachusetts' rivers. Officials are stocking a total of 3 million shad fry into the river this spring and early summer.
Once abundant in Massachusetts' larger river systems such as the Charles, Connecticut, Merrimack, and Neponset, American shad populations have decreased over the last century in all Massachusetts rivers 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, and state and federal agencies are now working to reintroduce shad into the Charles River.

"We hope the small numbers of adult American shad we have seen for the first time return to the Charles River are the harbinger of restoring this species to its native spawning habitat in this urban 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 to restore shad in the Charles River."

The goal of the American shad propagation project is to restore viable populations of American shad to the Charles and Neponset Rivers and create local sport fisheries. 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 fry stocking program in conjunction with fish passage improvements.

"The U.S. Fish and Wildlife Service have a long-term partnership with the Commonwealth of Massachusetts and non-profit partners to enhance American shad and other migratory fish populations in the Charles River, and we are starting to see results," said Marvin Moriarty, USFWS Northeast Regional Director. "Anadromous fish are returning in record numbers this year. This puts us one step closer to an American shad population level that supports recreational fishing and in turn boosts the local economy."

The fry stocking program is modeled after successful programs implemented for restoring shad to the tributaries of the Chesapeake Bay. Adult shad, migrating upriver to spawn, that are used for the Massachusetts program 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.

"For me, the true measure of our resolve to repair the damage we've done is moments like these, when we celebrate the recovering Charles with the release of Shad to a river they once called home, and can now again," said Bob Zimmerman of the Charles River Watershed Association.

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 five years, adult American shad have been taken from the Essex Dam fish lift on the Merrimack River and transported to the two USFWS hatcheries in Nashua, N.H. and North Attleboro. The adult shad spawned in tanks and the resulting fry that were hatched were 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 9.8 million marked shad fry into the Charles River in Waltham beginning in 2006.

In 2010, DMF biologists began looking for adult shad returning to the Charles River but did not find any returning fish. So far this year, DMF and USFWS biologists have positively identified the first returning adult shad in the Charles River. DMF and USFWS have identified two adult shad through fish surveys conducted through an electroshocking technique, which stuns the fish long enough to allow them to be counted. Staff has seen another four adults that they were unable to capture. The otoliths from the two captured adult shad will be extracted and examined for the presence of OTC marks to determine whether the fish originated from one of the USFWS hatcheries.

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 enjoyment and conservation of the Commonwealth's natural resources. DFG carries out this mission through land preservation and wildlife habitat management, management of inland and marine fish and game species, and enforcement of the Massachusetts Endangered Species Act. 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 lakes and ponds.