



**NEWTON
CONSERVATORS**

SUMMER ISSUE

NEWSLETTER

Newton's land trust working to preserve open space since 1961

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The Great Dam at Watertown

By Elisabeth Cianciola, Aquatic Scientist, Charles River Watershed Association (CRWA)



PHOTO: COURTESY OF CWRA

Watertown Dam from the southern bank of the Charles River looking upstream, May 31, 2011

The practice of damming the Charles River has a rich history that begins at the site of today's Watertown Dam. A fish weir was constructed here in 1632, not far above what was then the head-of-tide on the Charles River. One century later, historical records indicate that upstream watershed residents complained that the Watertown Dam impeded fish passage, and mill operators were ordered not to replace the stones at the dam until May 1st.

By 1814, a new dam with a fishway was constructed here. In the following years, various industries including grist mills, a fulling mill, a sawmill, a cotton mill, a foundry, the paper mill that manufactured the first paper bag, and even Bakers Chocolate Company established their roots around the Watertown Dam. In response to damages incurred to the existing dam in 1955 as a result of Hurricane Diane, the 8'-high, 180'-long concrete dam we have today was built in 1966. The Denil fish ladder was added in 1972.

Despite the colorful history of the Great Dam, one thing hasn't changed: upstream

watershed residents and environmental advocates continue to complain that the dam impedes fish passage. While the Charles River has a healthy run of river herring, with more than 300,000 fish returning to the Charles to spawn every spring, video monitoring and acoustic tagging studies performed by the Massachusetts Division of Marine Fisheries indicate that the fish ladder passes very few male American shad and no female American shad.

Female American shad are the largest fish that would use a fish pass at the Watertown



PHOTO: COURTESY OF CWRA

Massachusetts Department of Fish and Game Division of Marine Fisheries cleans the fish ladder at the Watertown Dam, May 28, 2010

Continued on page 2

...The Great Dam at Watertown continued from page 1

Dam, and the low water level in the pool at the bottom of the existing fish ladder deters them from attempting the summit. American shad were quite plentiful on the Charles, providing a source of food for humans and wildlife alike, until the construction of new dams and the degradation of water quality began to stress the population in the mid-1800s. Fewer than 100 American shad now return to the Charles to spawn each spring.



River herring found in the fish ladder at the Watertown Dam, May 28, 2010

infrastructure by unleashing the water stored in the impoundment. As such, the Massachusetts Department of Conservation and Recreation (DCR), the dam owner, is required to have the dam inspected every five years.

Structures such as the footbridge immediately upstream from the dam and the Bridge Street road crossing farther upstream would likely become destabilized if the dam failed. Because the dam no longer serves the purpose of powering mills, this is a good time to evaluate any purpose the dam may be able to serve, such as providing flood control, before it needs to be replaced due to its age.

To explore the possibility of removing the Watertown Dam, CRWA submitted an application to the Massachusetts

Department of Fish and Game Division of Ecological Restoration's Priority Project Program in 2016. Because our application was approved, the Division of Ecological Restoration staff will provide their dam removal expertise to assist CRWA and DCR in gathering data regarding the dam's impact on the river and identifying potential challenges and opportunities associated with removing the dam through a feasibility study.

Like most historic dams across New England, it will be important to determine the composition of sediment in the impoundment behind the dam and to develop a sediment management plan that ensures that any undesirable contaminants, such as lead and copper, will not cause harm to fish and other wildlife in the river as a result of removing the dam. However, in addition to improving fish passage and protecting public safety by removing a potential hazard, removing the Watertown Dam could improve recreational fishing and boating opportunities and improve flood storage in the river's floodplain.

Although CRWA and DER already laid the groundwork for a feasibility study by working with Stantec Consulting Services to conduct a site reconnaissance study in 2011, large infrastructure projects such as dam removals take years to plan and execute. CRWA appreciates the support that the Newton Conservation Commission provided in the 1970s to advocate that the nearby Bemis Dam not be reconstructed after it was breached, in order to provide fish passage. We look forward to collaborating with partners in Newton and other Charles River watershed communities to continue to improve fish passage in the future.

Please come to a talk co-sponsored by the Newton Conservators and Charles River Watershed Association: Studying the Watertown Dam, November 9th, 7:00 PM - 9:00 PM at the Newton Free Library. ■

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