



Project Title: Restoring fish passage, riverine processes, and in-stream habitat in the Mill River, Taunton, MA

Headline Title (2-5 words): Taunton Mill River Restoration

Brief Summary (Abstract): This project will restore riverine processes and fish passage for river herring and American eel along the Mill River in Taunton, MA through the removal of three obsolete dams, and installation of fish passage at a fourth dam. Associated work to improve management of stormwater using green infrastructure practices will improve water quality and quantity issues in the newly restored river.

Project Location: Taunton, MA

Partners: MA Division of Ecological Restoration, MA Division of Marine Fisheries, Southeastern Regional Planning and Economic Development District (SRPEDD), City of Taunton, National Oceanic and Atmospheric Administration (NOAA), US Fish and Wildlife Service, American Rivers, Save The Bay/Restore America's Estuaries, Taunton River Watershed Alliance, Massachusetts Audubon Society, Massachusetts Environmental Trust, dam owners; Horsley-Witten Group, Bridgewater State University

Background:

The Nemasket River, a tributary to the Taunton River in southeast Massachusetts, hosts one of the largest river herring (blueback herring and alewife) runs in the region, but river herring runs are declining in many other rivers throughout their range. Water quality, climate change, and climate variability were listed as threats to river herring in the recent listing determination for these species, however, dams and other barriers were ranked as the most significant threat. As of 2012, the Mill River, also a tributary to the Taunton, had four dams that blocked fish passage and natural riverine processes. A project was planned to remove these barriers to allow river herring to reach critical upstream spawning habitat, alleviating some of the existing stress on these species from habitat fragmentation and other pressures.

Dam removal has many environmental benefits, including improved water quality, restoration of natural sediment and nutrient transport regimes, aquatic habitat improvement, aquatic species passage, creation of wetlands, and increased floodplain connectivity. Dam removal also improves the resiliency of the local communities to increasing precipitation and extreme events by removing the risk of dam failure during floods, and restoring the flood capacity of the natural floodplains.

The Mill River and other Taunton tributaries suffer from stormwater pollution, an issue that is likely to increase with continued development and increased precipitation. Improved infiltration and treatment of stormwater through green infrastructure practices will improve water quantity (reducing erosive peak flows, improving summer base flows) and water quality in the restored river habitat, which will also reduce stress on river herring and other aquatic species.



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Project Goals: The main goals of this project are to remove three dams along the Mill River and provide fish passage at the fourth dam in order to 1) restore riverine processes and ecosystem functions, such as flood storage, 2) improve passage for river herring and American eel, and 3) improve the resiliency of surrounding communities by eliminating the risk of dam failure. Water quantity and quality will be improved by increased use of green infrastructure practices in stormwater management.

Strategy Goals Implemented:

Goal 1, Strategy 1.3, Action 1.3.2 Restore degraded habitats as appropriate to support a diversity of species assemblages and ecosystem structure and function. Action 1.3.5 Develop programs to encourage resilience through restoration of habitat features that provide natural buffers.

Goal 2, Strategy 2.1, Action 2.1.8: Utilize the principles of ecosystem-based management and green infrastructure.

Goal 7, Strategy 7.1, Action 7.1.9: Identify options for redesign and removal of existing structures or barriers where there is the greatest potential to restore natural processes. Action 7.2.7: Reduce impacts of impervious surfaces and stormwater runoff in urban areas to improve water quality, groundwater recharge, and hydrologic function.

Climate Impacts Addressed:

Changes in timing, form, and quantity of precipitation; Changes in the frequency and magnitude of extreme events

Existing stressors on fish, wildlife, and plants- habitat fragmentation, loss, and degradation

Status of Project Implementation (Timeline, Milestones, Next Steps):

2011: Taunton Mill River Park opened with bioretention stormwater management feature

2012: Hopewell Mills dam removed

2013: Fishway installed at Morey's Bridge Dam

2013: Whittenton Dam removed

2014: continued work to support use of green infrastructure to manage stormwater in watershed

2015: West Britannia Dam removal scheduled

Project Outcomes:

Removal of the three dams and installation of a fish ladder at the fourth dam will open 30 miles of habitat for river herring and restore important riverine processes such as sediment movement, nutrient processing, and temperature regulation. Removal of the dams will also increase the resiliency of local



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communities by eliminating the risk of floods caused by dam failure, and by improving the flood storage capacity of floodplains. Projects that demonstrate stormwater management through green infrastructure practices, as well as support of enabling conditions for green infrastructure (policies, funding, education), will improve water quality and water quantity conditions in the newly reopened habitat.

Funding Sources: NOAA, FWS, MA Division of Ecological Restoration, The Nature Conservancy, American Rivers, Massachusetts Environmental Trust

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Photos/Attachments:

Photo/Figure Credits (do we have permission to print):



Photo credit: Cathy Bozek TNC



Suggested Photo Caption: The Whittenton Dam blocked fish passage along the Mill River for over 100 years. The obsolete dam almost failed during storms in 2005, leading officials to declare a state of emergency.



Photo Credit: Beth Lambert DER

The Whittenton dam was removed and the floodplain restored in 2013.