

## FISHWAYS & THE RETURN OF THE HERRING

By Ellen Knight<sup>1</sup>

On Town Day in 2017, a ribbon-cutting ceremony for the new fish ladder at the Converse Bridge was held. Since the earlier addition of a fish ladder to the Mystic Dam, the herring had been returning, making the voyage home to spawn, their numbers raising hopes they would return to their former abundance all the way up the Mystic River Valley. And along with them has come evidence that a revival of the ecosystem is occurring.



The spring herring run is one of nature's wonders. The fish, both alewives and blueback herring, spend most of their time in the Atlantic's salt water. In the spring, they make their way up to fresh water to spawn. After laying their eggs, they return to the ocean. When the eggs hatch, the young stay until the late summer or early fall and then go to the ocean. When old enough to spawn, they return to where they began life.

Or they try to, if they can survive manmade problems, including dams they cannot pass. In 2012, a fish ladder was added to the dam at the Mystic Lakes, resulting not only in their ability to reach a spawning area in the Upper Mystic Lake but also in thousands getting jammed up at Winchester's Center Falls Dam as they attempted to extend their journey northward.

In 2015, when the DPW opened up the flood gate for them, they scooted up, and some made their way to Horn Pond. But the flood gate could not simply be left open for them, since the purpose of the valve is to drain the pond. Plans were thus developed for the installation of a fish ladder, to open the way for them to extend their run through Winchester to Horn Pond and other points north.

The fish ladder at Main Street was made possible first by a decision to design the second new flood gate at the dam, installed in 2013, so as to permit the addition of a fish ladder. Following water quality testing, the Division of Marine Fisheries then gave the green light to the project. Then a funding source was identified when the fish ladder was included among the other improvements connected with the Industri-Plex Superfund Site in Woburn.

Having the fish return in the Aberjona and Horn Pond after the many years that dams have blocked their progress is important not just for the fish but for the ecosystem, resident John Kilborn, legal counsel for the Environmental Protection Agency, told a group townspeople at a program held at the Unitarian Church in April of 2016.

Herring, Kilborn said, are foundation or keystone fish. They are forage fish, a crucial part of the ocean food web, consuming plankton before being eaten by other animals, not only larger fish in the ocean but also small birds of prey. More herring in the Aberjona can lead to more species of birds in the area, some of which have already been spotted, including herons and bald eagles.

The fish ladder at the Mystic Lakes Dam made a great difference to the herring run. Prior to its installation, there was a community effort to scoop the fish and hoist them over the dam. The herring count in 2012 (when monitoring by the Mystic River Valley Association began) resulted in an estimated herring run of 198,932. In 2015 it was 477,827.

## **HISTORY REPEATING ITSELF**

The new fish ladder at the Mystic Lakes is not the first, far from it. Nor is the fish ladder at Main Street unprecedented.

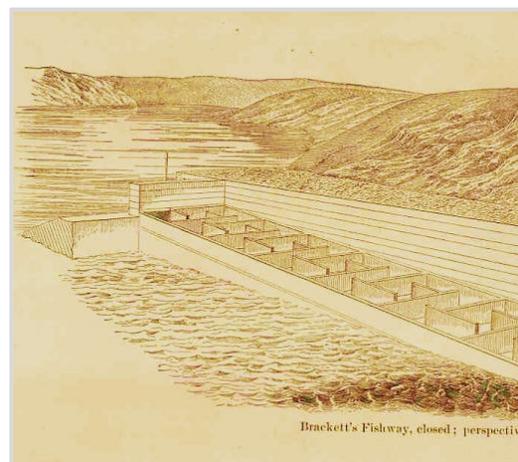
For centuries, many and various pieces of legislation have been enacted and many steps taken to protect the fish and the fishing industry in Massachusetts.

When the dam in the Mystic Lake was constructed in 1864 to create a reservoir for Charlestown, it was fitted with a wooden fishway (or ladder). That proving inoperative, the Charlestown Water Commissioners built a granite fish ladder over their dam. Within a year it had been altered and further modifications were recommended. Again in 1870, a new fishway was adopted, and yet again in 1873, as the quest to build a better fishway continued.

That pursuit involved Winchester's own Edward Brackett, an original member of Winchester's Committee for the Preservation of Fish before appointment in 1869 to the State Commissioners on Inland Fisheries and Game. His fish ladder, patented in 1872, found favor in many communities and was commended by the federal Commission of Fish and Fisheries.

Fishways were also constructed at the mill dams on Horn Pond Brook and the Aberjona River. Keeping them open was one duty of the local Committee for the Preservation of Fish. The Town of Winchester, incorporated in 1850, was empowered to elect a fish committee in 1861, when acts of 1789 as to destruction of fish in the Mystic River within Cambridge, Charlestown, and Medford and of 1816 as to fishing in Woburn were extended to Winchester and its waters influent to the Mystic River.

The Committee reported in 1865 that the public was generally cooperative in keeping the fishways open at the various mill dams along the river and brook, with one notable exception. In



*The Brackett Fishway*

1864, the manager of the Fibrilla Flax Mills, operating in a building near Bacon Street, would close up the fishway which the Committee had constructed at the dam by the mill whenever he wanted the water to power his mill wheel. Not satisfied with his response to their appeals, the Committee turned for help to the Commissioners of the Charlestown Water Works.

On May 7, 1864, the superintendent of the Water Works took two kegs of gunpowder and some men to the Aberjona River. The kegs, each containing 25 pounds of powder, were placed under the woodwork and ignited by means of a water fuse, leaving a clear passage left for the fish.

Keeping all the fishways open resulted in “a very marked increase in the number of alewives and other fish up the Mystic River, and into the streams of this town,” the Committee reported in 1865. “Thousands of barrels of alewives, together with quite a number of shad, thus found access to our waters which otherwise would have been kept out, and great numbers were taken by the inhabitants of this town, and made use of for food and other purposes.”

After a fish ladder was built at the Main Street dam during 1871, the Committee wrote that the alewives “swarmed in our waters last spring, and in some small brooks leading into Wedge Pond even crowded each other out of water and tried to make the last part of their annual run on wet grass, rather than stop short of their objective point.”

In 1872, the Commissioners on Inland Fisheries and Game of Massachusetts reported that, following the construction of various fishways in the state, “the alewives have increased almost beyond calculation, ascending the river in the spring by millions, and, in narrow places, often so plenty as to crowd each other out upon the banks.”

But, while fish ladders helped the fish population grow, there were other problems to sustaining and increasing their numbers. “The merciless manner in which the ponds were fished” was one. In 1867, an act was passed suspending the right to take alewives or shad from Mystic river or its tributaries, or from Mystic pond, for a period of five years. This also aided efforts to propagate other fish, including bass and salmon, in the waterways. Laws were also enacted to regulate fishing, and eventually permits were required.

Nevertheless, all the efforts to preserve and propagate fish, however successful initially, were undone by pollution. The destruction of “no inconsiderable number of the small fry” due to “the increasing impurities of the water” was noted in 1872. Before the end of the century, pollution was so horrible that the Upper Mystic Lake was abandoned as a source of drinking water and the fish had been so destroyed that the committee for their preservation disbanded.

In 1914-1915, when the new semi-circular dam was built at Main Street, its design did not include a fish ladder. Consideration of the fish was not even mentioned in the landscape engineer's report.



*Center Falls Dam*

In 1920, the Division of Fisheries and Game issued a report on the dismal state of affairs for the alewives. At the locks at West Medford, "it is almost impossible for alewives to pass even at high tide, so that few fish reach the Mystic Lakes for spawning. Between the Mystic Lakes is a dam equipped with a wooden Brackett fishway of little use, since the water level is not sufficiently high to afford flowage.

Above the Mystic Lakes the Aberjona River is polluted north of Winchester from several sources, and obstructed by the dam at Whitney's Mill Pond, an elaborate concrete structure in the form of a semicircle."

After over a century's worth of programs to improve the river, although challenges remain with the quality of the Mystic/Aberjona water, the whole situation with the herring appears to be turning around, hopefully with more lasting success than that experienced in the 19<sup>th</sup> century.

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<sup>1</sup> This article © 2021 by the author is a revision of an earlier article by author Ellen Knight published in the *Daily Times Chronicle* on May 11, 2016, as well as her report on the Aberjona River for the town's Flood Mitigation Team. This revision supersedes all previous articles.