

Let's see what we have learned about our fish ladder. Choose the appropriate answers:

1. [An anadromous fish \(finish the sentence\):](#)

- a. is a migratory fish
- b. needs fresh water to spawn but spends most of its adult life in salt water
- c. is also known as an alewife or a river herring
- d. all of the above

2. [What purpose does our fish ladder have?](#)

- a. it's a ladder for people to climb over
- b. it's a way for fish to get up and over the dam
- c. it's only used in the winter months
- d. it has no purpose, but it looks good

3. [Approximately how long will it take to restore the migratory fish run?](#)

- a. 6-10 years
- b. when the river herring are 3 years old
- c. in the spring
- d. forever

4. [The first dam on the Kickemuit River was a tide mill dam \(which answer doesn't apply\):](#)

- a. the mill was used to grind grain and corn
- b. the dam and mill were built in the late 1700s
- c. it prevented the fish from getting to the fresh water to spawn
- d. the tide provided the energy to operate the mill

5. [What is the importance of our fish ladder?](#)

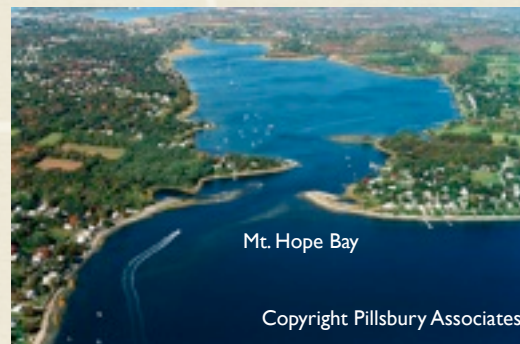
- a. it helps to improve the fresh water and marine ecosystem
- b. it provides vital forage for sport fish like blue fish and striped bass, as well as, for predator birds, like osprey, heron, & cormorants.
- c. it will increase the survival rate of the anadromous fish species
- d. all of the above

[Answers:](#)

1. d 2. b 3. a 4. c 5. d



Aerial views of the Kickemuit River & Mt. Hope Bay
Towns of Warren & Bristol - Rhode Island



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RI Rivers Council



KICKEMUIT RIVER FISH LADDER



Our river, at its source, is fresh water. For many years it has provided drinking water to our towns. Below the dam which forms our reservoir, it becomes salt water from the Mt. Hope Bay where the influence of the tides changes the fresh water to salt water. This is where we boat, clam, crab, fish, and swim.

So what's so important about our river and why do we have a fish ladder?

The History of the Kickemuit River Fish Ladder and the Anadromous fish

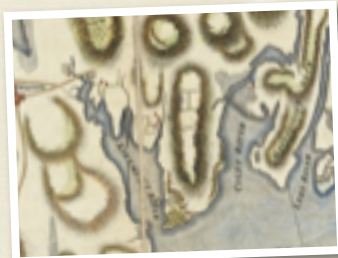
Native Americans, such as the Pokanokets and their ancestors, valued the Kickemuit River as a rich resource for food. The native people would spear, fish, or net the migrating fish as they moved to or from their fresh water spawning grounds. When the English colonists arrived in the 17th century they too harvested the fish during the seasonal runs, using them for food and fertilizer for their fields.

In the mid 1700s, the settlers determined they could capture the tidal energy of the river and use that natural force to operate small mills for grinding corn, grain, and sawing wood. To do this, dams were constructed of wood, stone, and earth to harness the river's flow for the mills' waterwheels. The Kickemuit River was supporting its own mill by the 1770s, a grist mill owned by Smith Bowen and Samuel Perce on the east bank of the river just north of Child Street. This was a tide mill with a moveable gate in its dam that opened to allow the tides waters to flow upstream and then closed when the tide turned. Unlike larger rivers elsewhere in the state, whose dams prevented fish migration, this regular opening of the dam gate preserved the Kickemuit fish runs.

In 1882, a private company, the Bristol and Warren Waterworks Company was established. The company acquired the mill dam and extended it across the river to create a reservoir as a source of fresh water for the towns of Warren and Bristol. Now, for the first time, the dam created a solid barrier to the river's flow. The new dam kept saltwater from flowing upstream into the fresh water reservoir. Pumps, in the new waterworks pump house, would deliver drinking water via pipes throughout Warren and Bristol. While the benefit of the new waterworks was great, the new dam significantly impeded the Kickemuit fish run. The Kickemuit reservoir remained a major water supply for the waterworks company and continues to serve its successor, the public Bristol County Water Authority.

The new fish ladder provides migrating fish with a renewed opportunity for spawning grounds with the goal being to restore the fish run to the river for the benefit of the river, its ecosystem, and the anadromous fish species.

THE AMAZING ANADROMOUS FISH



Map of the Kickemuit from 1777 showing the location of the tide mill dam.



Illustration by Robert Golder- courtesy of RI DEM

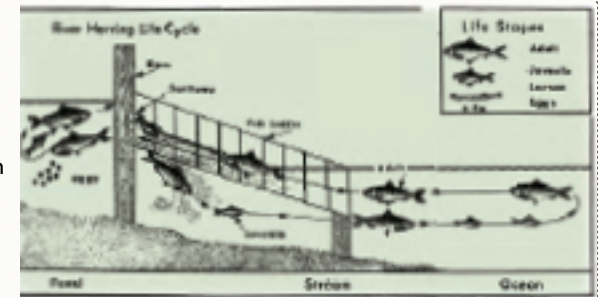
Alewife- River Herring



Kickemuit River Fish Ladder & Dam.

LIFE CYCLE

Adult river herring, also known as alewives and anadromous fish, need fresh water to lay their eggs, yet they live most of their lives in salt water and only come to the fresh water for those select warmer months in New England when it is time to spawn. In the Kickemuit River they must climb the denil fish ladder to make that transition from salt to fresh water. Once in the reservoir, the females drop their eggs. The males then fertilize the eggs whereby larvae hatch and by summer's end juveniles are ready to make their first trip over the dam to the sea beginning the cycle of migration. Approximately 3-4 years later, the same fish will find their way from the open sea back to the Kickemuit where they will now spawn and the cycle will begin again.



Artists credit...

MIGRATION

To reestablish river herring back to the river, the RI Department of Environmental Management (RI DEM) Fish and Wildlife Division stocks the reservoir with approximately 1000 young adults each spring. It is estimated that it will take 6-10 years for the fish population to be established and restoration to be considered complete whereby stocking will end. Be sure to look for these amazing fish as they enter our river in the spring thru the narrows from the Mt. Hope Bay and move up the salt water Kickemuit river towards the fresh water portion and the dam. If you are lucky you will see them pool in the tide waters as they gather to choose their moment to enter the fish ladder. The fresh water river herring are a protected species now and it is illegal to catch them.



River Herring in migration.

CONSTRUCTION OF THE FISH LADDER

Over 15 different organizations, non-profit, local, state, and federal, helped fund the design and construction of this denil fish ladder. It took many years of dedicated hard work on the part of concerned citizens to coordinate and in 2001 the project was approved to go forward. The fish ladder was completed in 2006 and the first fish stocking took place that next spring.



Construction of the denil fish ladder- setting the concrete forms



Divers worked in the water to construct portions of the ladder