

## Town Brook Herring Run - Frequently Asked Questions

**What fish are being counted?** Alewife (*Alosa pseudoharagus*) and Blueback Herring (*Alosa aestivalis*). Both are anadromous fish, meaning they spawn in freshwater and mature in saltwater. Contrarily, catadromous fish spawn in saltwater and mature in freshwater. American Eels, also found in Town Brook, are the only catadromous fish in North America and we collect data on those too!

**Where are the fish going?** Both species are heading upstream toward Billington Sea to spawn (reproduce). Some fish will stop before Billington if they find a suitable spawning location. Alewife prefer standing water such as ponds and steady pools, and Blueback Herring prefer to spawn in moving river waters- over 90% of the Town Brook run is Alewife.

**How far is the migration?** From the ocean to Billington Sea is approximately 1.67 miles, which compared to other runs around the state is a relatively short migration.

**Where did the fish come from?** Both species overwinter off-shore in the Atlantic Ocean. Their range extends from Nova Scotia to Florida.

**When does the run start?** Historically, fish appear in the stream in steady numbers usually around the second week of April. "Scout" fish (fish that basically run upstream early to check it out) have shown up as early as the first week of March! These dates change every year so there's no way to predict their arrival, but on average since 2008 the first herring shows up March 24<sup>th</sup>.

**Can you tell Alewife and Blueback apart?** No. While there may be slight size and pigmentation differences between the two, nothing external can concretely determine the species. The only way to tell requires culling the fish and examining it internally. The state will take small samples from runs across Massachusetts and cull them to understand population sexual densities.

**Can I fish for Alewife and Blueback?** No. In order address declining population numbers, a state-wide moratorium on the possession or sale of river herring in Massachusetts was placed in 2006. The state takes poaching of river herring very seriously, and the penalties for violating this moratorium are severe. Interrupting the migration in any way is illegal, even if catching a herring while fishing is unintentional. For this reason we discourage people from fishing in Town Brook during the migration.

**Why are fish hesitant about exiting the culvert?** River herring are sensitive to light changes as they can perceive overhead shadows as avian predators. Moving from a dark culvert to the brighter outdoor sunlight causes them to pause and assess for threats before entering the pond.

**Why are some just swimming in circle in the pond?** Some may be waiting to school- there is safety in numbers for these fish so they may exit the culvert and wait for a group of others before continuing the migration. They also just expended a lot of energy moving through the fish ladder and are just taking a little rest!

**What do river herring eat?** Primarily plankton and other tiny invertebrates. However, during the migration they're so focused on spawning, they're not interested in eating!

**How old are the migrating fish?** The average age of a first-year spawning fish is 3-4 years. Maximum life expectancy is 10 years, but most will live to 7 or 8 years and spawn multiple times.

**Do river herring die after they spawn?** Some will just by chance, but as a species, no! They will out-migrate throughout the summer and fall and will come back annually for several years to spawn again. Some fish have been known to spawn up to 6 times!

**What makes the river herring know it's time to go upstream?** From what we understand, they are triggered by water temperature. We've noticed that once Town Brook hits around 54°F, they start to move upstream. However, there are times where they don't run when that water is warm enough, or they move when the water is colder, so this is still just a hypothesis.

**Do river herring return to the same stream they were born in?** For the most part yes, but there is recent research suggesting fish will stray a bit into other coastal streams if necessary. It is still mostly unknown how the fish know how to navigate to their natal stream organically, but it's amazing!

**Why are river herring populations in decline?** There are numerous reasons, but pollution, commercial bycatch, and dams are the primary reasons. Dams create blockages that do not allow fish to reach suitable spawning habitat which has led to our Department removing 5 on Town Brook!

**Why protect river herring?** River herring are a primary food source for dozens of animals: osprey, eagles, herons, cormorants, terns, striped bass, bluefish, tuna, trout, small mouth bass, pickerel, whales, seals, raccoons, foxes, mink, and otter, just to name a few! Protection of a primary food source is imperative to protect the animals that depend on them. Because so many animals utilize them, they virtually tie riverine, freshwater, and marine ecosystems together, providing nutrients and creating healthy watersheds.

**What is a fish ladder?** A fish ladder is an engineered structure built solely to help anadromous fish migrate above a river blockage such as a dam and allows the dam to stay in place. Our ladder is called an "Alaska Steeppass Ladder" and is approximately 65 feet long. The ladder uses baffles to slow water velocity coming down and making passable for the fish. Fish must use quick bursts of energy to get through the sloped portions of the ladder before entering waiting pools where they rest before continuing the migration.

**Why is the water brown?** Sometimes sediment comes downstream after rain or snow events, but it's relatively uncommon that a lot is stirred up. Otherwise, the river is actually clear, but the waters of Town Brook have a naturally occurring (safe) high iron content, and it stains the rocks and substrate at the bottom of the river a copper color.

**Why is there a backup below the dam?** Imagine a days-long traffic jam. Here, the river goes from approximately 27 feet wide to a 24 inch wide fish ladder; this constriction creates a massive queue below the ladder. Eventually they'll get their turn.

**How many more dams must they get around?** Jenney Grist Mill is the only one, and we're working on addressing it with a nature-like bypass at the end of 2025! The Town has removed 5 dams on Town Brook since 2003- Billington Street, Off Billington Street, Plymco, Water Street, and most recently Newfield Street.

**Where are there other runs?** River herring runs are found all over the east coast! Massachusetts has over 100 runs in 48 municipalities, and river herring have been seen in 6 rivers in Plymouth alone- Town Brook (monitored), Bartlett Brook (monitored), Eel River, Red Brook (monitored in Wareham), Monument River (monitored in Bourne), and Agawam River (monitored in Wareham)