

Town Brook Herring Count Instructions

Location:

Spring Lane, across from the Jenney Grist Mill and Gillis Family Tavern

**Timeline:**

Typically, the last week of March through first week of June (subject to change based on preliminary data collected from other rivers in the area.)

Counting Blocks:

Seven days a week throughout the duration of the run.

Three counting periods per day: 7am-11am, 11am-3pm, 3pm-7pm

Location:

Jenney Pond by the Plimoth Grist Mill (6 Spring Lane, Plymouth, MA 02360). Adjacent to the headwall of the pond is a yellow siltation boom that creates a surface debris barrier between the headwall and the shoreline. Inside the boom is a gray metal box that contains our motion activated underwater camera. It is here that the counts take place. Please park in the lot nearby as we need to leave the pull-off by the Grist Mill open for buses and delivery trucks.

What to Expect at the Counting Site:

You'll notice a large gray metal box attached to the concrete headwall at the counting location. This is a camera box that takes short videos of the fish exiting the culvert for a research project conducted in conjunction with the MA Department of Marine Fisheries (DMF), and NOAA. Fish exit the headwall, swim over a large white panel within the steel camera structure, then through the enclosed camera box. This white panel is what you'll be focusing on, and where you'll see the fish. As the fish swim over the panel, you will see them just below the surface of the water. During times the water is cloudy, or during low-light periods, they'll at the very least create a color contrast against the board, and that's what you will count. The water here is only about 12" deep so seeing the fish typically is not difficult.



Depending on the weather, time of the season, or time of day, you may not see any fish at all during your count. That's ok! Data showing zero fish is just as important as a count with 400. We start the counting effort early in the season to ensure we can pinpoint the exact date the herring returned. Many early season counts will be zeroes, but this is by design, so stick with it!

Counting Methodology:

Counts take 10 minutes. They are conducted 7 days a week, regardless of the weather. We ask that you do not start your count at the same time every day. Rather, if you're interested in counting around 11am, on one day count at 11:00, the next day 11:03, then 11:05, 11:01, etc. The staggering and randomizing of start times helps to give a better overall idea of the run size during that period.

Over the 10 minutes of your count, you'll be visually counting individual herring as they cross over the white counting board inside the camera box, and into Jenney Pond. In order for the fish to be included in your data, it needs to completely cross the board and not return back downstream into the culvert they just exited. Once a fish completely crosses the board, GREAT!- that's 1. Repeat this process for 10 minutes, then that's it- you're done! You do not have to count for the entire 4 hours- just for 10 minutes within that 4 hour block of time!

Additionally, we must leave 10 minutes between counts or the data may be discarded. If you arrive and someone is counting, please wait 10 minutes after the conclusion of their count before beginning yours; counts conducted by two volunteers cannot overlap- this is just part of the algorithm requirements to ensure we get an accurate population count at the conclusion of the season.

There is no need to be able to identify the species as it exits the culvert as the only species exiting will be Alewife (*Alosa pseudoharengus*) and Blueback Herring (*Alosa aestivalis*), known colloquially as 'river herring'- both are target species for this study. Sometimes a trout may hang out in the camera box looking to grab some lunch- that's okay, just ignore it!

Some of these fish will shoot out of the culvert like a rocket so keep a sharp eye!

Tally Counters:

We highly recommend using some sort of tally counter as many volunteers over the years have reported 400, 500, and even 600 fish coming through in 10 minutes! That's *a lot*, and very difficult to keep track of without a tally counter. We have several tally counters available to borrow in our office on the 1st floor of Town Hall, 26 Court Street, Plymouth, MA 02360. These need to be signed out and returned at the end of the run. There are also several smart phone tally counter apps that can be downloaded that will assist.

Data Form:

Counters will need to fill out the attached form when collecting data. Below explains each column of the counting form:

Date – Date of the day you conducted the count

Name – Name of the volunteer conducting the count

Start Time (24hr) – When you began the count*

End Time (24hr) – When your count ended*

*Note: times are recorded in 24 hour form (i.e. 9:30am = 0930, 2:35pm = 1435, etc.)

Count – The number of fish counted in the 10 minute period

Water Temp – Water temperature recorded in degrees Celsius

Air Temp – Air temperature recorded in degrees Celsius

*Note: an air and water thermometer is mounted on the right side of the headwall.

Wx* – An abbreviation for “Weather”. Record the number indicating the weather at the time of your count. The corresponding number system is located at the top of the form.

Comments – Write any comments you may have that could be useful when interpreting the data, such as the water levels being low or high, if you noticed something constricting flow, or if there is a blockage slowing fish passage. Filling this field is not required.

I can send you the form digitally, and we have hard copies available in our office.

Frequently Asked Questions:

Inevitably, you'll have visitors to the area stop and ask what you're doing. We certainly want you to help educate the public as to the importance of your data collection, however, keep an eye on the run- we don't want a quick fish to sneak by! We have an FAQ sheet available to prepare you for some of the questions the public will ask, so please feel free to read through it.

Turning in Data:

Please hold your data until the end of the season. If you record your counts on paper, you may drop the sheets off at our office on the 1st floor of Town Hall, 26 Court Street, Plymouth, MA 02360. If you're recording everything digitally, you may send your data to ncristofori@plymouth-ma.gov. An email will be sent towards the end of the run reminding volunteers to turn in their counting data.

Thank you for volunteering your time! The data collected since 2008 by volunteers have directly contributed to our Department receiving grant money to help remove dams and restore riverine habitat along Town Brook. The importance of this data cannot be overstated, and without tireless volunteers like yourself, these projects simply would not be possible.

We ask that you please dress for the weather and are careful when conducting your counts, as there is no guardrail along the headwall of the exit culvert (but that will be addressed in the coming years). Please contact our department if you have any questions or concerns:

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