



June-July 2024 update from the FishPass Team. Future updates will be provided monthly. Please distribute the update as you see fit.

NOTE: A time-lapse camera has now been installed to capture FishPass construction progress. Check it out [here](#).

Construction:

- The Grand Traverse Band of Ottawa and Chippewa Indian’s (GTB) application for \$11.9M has been recommended for funding from the National Oceanic and Atmospheric Administration (NOAA) for land acquisition and protection as well as Lower Boardman-Ottaway River restoration in association with FishPass. NOAA funding will be used at FishPass to install over two thousand native live-stake plantings along the 400-ft long bypass channel as well as efforts to restore and rejuvenate instream habitat features supporting coastal resiliency. Furthermore, GTB elders and youth will work closely with GLFC to ensure that Anishinaabek culture (past and present) is reflected in broader education and placemaking elements associated with FishPass/Giigook man-jowag. This funding will also support the creation of a new Public Engagement Officer position, which will serve as the point-of-contact for all visitors (including external researchers, media, school programs, tour groups, and the general public) to FishPass and will assist in the implementation of the FishPass Outreach and Education Plan.
- Site signage including informational signs and pedestrian wayfinding signs have been installed around the project perimeter. Informational signs contain a QR code for the public to use and access the latest updates on FishPass construction.
- The contractor completed installation of all vibration and settlement monitoring instruments prior to the installation of sheet piling.
- Construction activity at FishPass will increase in August with the installation of a temporary sheet pile cofferdam. The cofferdam will allow all construction work to be accomplished safely and under dry conditions. The first phase of construction requires steel sheet pile to be installed down the centerline of the river to isolate the south bank from ~200 ft downstream of Cass Rd. Bridge to ~100 ft upstream of Union St. Bridge (See **Figure 1**). During this time, the new dam spillway and bypass channel will be installed and the existing fish ladder and auxiliary spillway will be demolished. Sheet pile installation will occur, not continuously, between August and October. Heavy construction activities will be restricted to weekdays only, between 8 am and 5 pm.

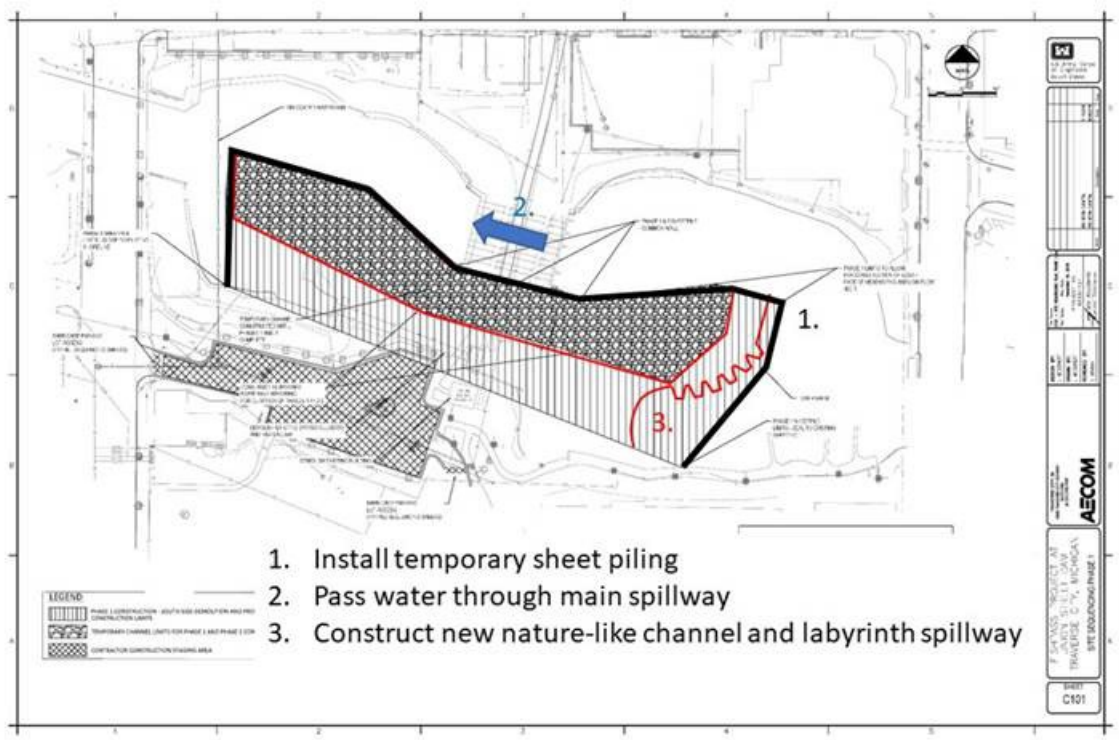


Figure 1. Phase 1 steel sheet pile cofferdam plans. Black line indicates the approximate location of the sheet pile wall.

Research/Assessment:

- Sethu Jagadeesan, Jordan Leh, Jonathon Gregory, and Dr. Jesse Eickholt (Central Michigan University) and Dr. Daniel Zielinski (GLFC) published a research article as part of the 3rd International Conference on Computing and Machine Intelligence entitled “Evaluating the effectiveness of an object detection pipeline to support surveillance of unintended passage”. The paper introduces a new method for monitoring fish, specifically to detect when they jump out of the water. The machine learning model was found to accurately find and locate fish within video recordings made during operation of the DNR weir in 2022 and 2023. The model proved effective in detecting fish jumps, showing promise for real-time monitoring. This study offers a new, efficient approach to fish surveillance that will be applied as an early warning system to monitor for potential unintended fish passage at FishPass. The article is available upon request.
- A research team led by FishPass Science Team members (Dr. Daniel Zielinski – Great Lakes Fishery Commission, Dr. Ana Silva – Norwegian Institute for Nature Research, and Dr. Andrew Goodwin – U.S. Army Engineer Research and Development Center) conducted a systematic literature review to collect and compile the breadth of available knowledge on different alternative methods for modeling fish movement near infrastructure (like FishPass) and past migratory barriers. In the recently published paper entitled “Advancements in Riverine Fish Movement Modeling: Bridging Environmental Complexity and Fish Behavior”, the team reported that despite the lack of consistency in modelling framework, all 38 reviewed models imposed some combination of the following response behaviors: to flow direction (i.e., rheotaxis), flow velocity magnitude, turbulence, depth, and memory/experience of the individual. Through the review, the team also identified

knowledge gaps and areas requiring further attention and development, providing a roadmap for research priorities and technical development of agent-based models for fish migratory movement that can help inform FishPass research and optimization of selective fish passage. The article is available for free at <https://www.tandfonline.com/doi/full/10.1080/23308249.2024.2374964>.

- July 2024 – Staff from the GLFC, GTB, and U.S. Geological Survey (USGS) retrieved, downloaded, collected, and re-deployed acoustic fish telemetry receivers used for the *Determining Connectivity Between the Boardman River, Grand Traverse Bay, and Lake Michigan Proper in Support of FishPass* project (**Figure 2**). Note that some of the receivers that were previously deployed in the Boardman/Ottaway River estuary have now been removed as that portion of the project data collection is now complete (See **Figure 2**). Staff from the USGS and U.S. Fish and Wildlife Service (USFWS) retrieved, downloaded, deployed and re-deployed acoustic receivers in outlying areas of Grand Traverse Bay and Lake Michigan. These receivers are part of the **GLATOS** network and support numerous ongoing projects including those specific to FishPass.

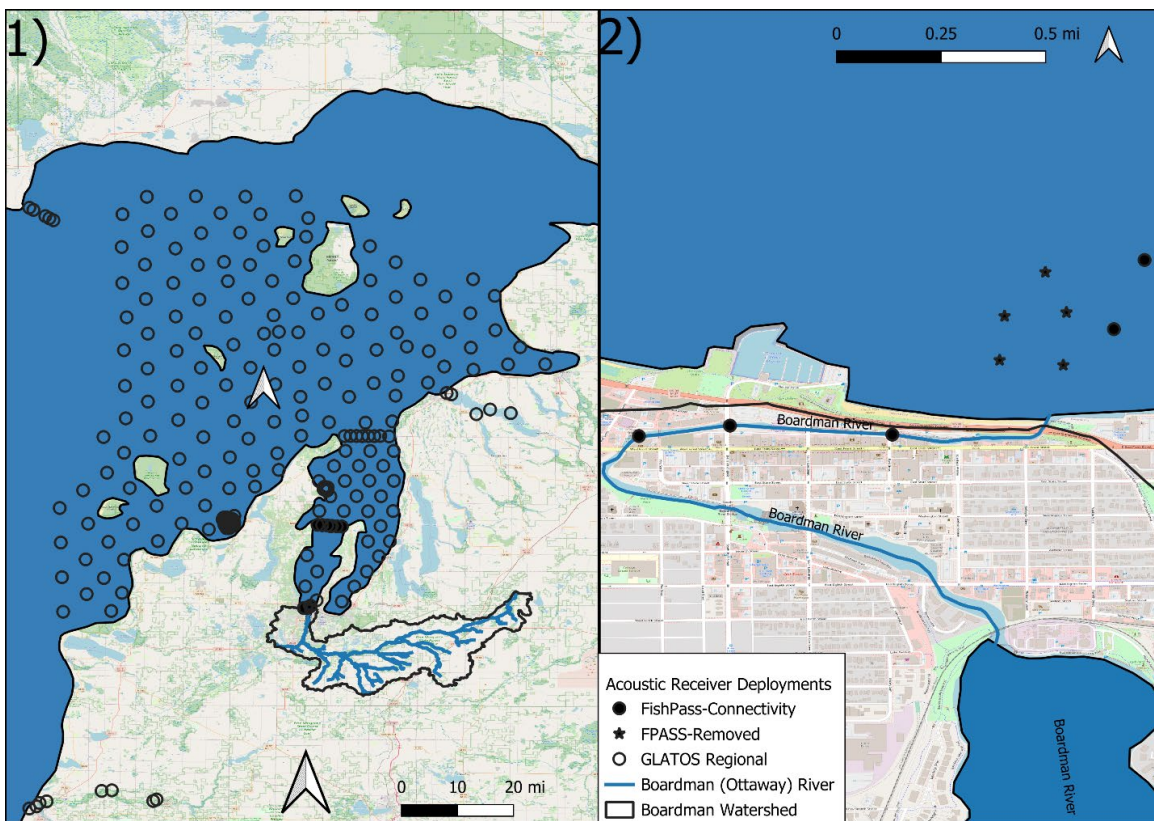


Figure 1. Current acoustic receiver deployment in the Boardman/Ottaway River and Lake Michigan with insets of 1) the regional GLATOS receiver network and; 2) the lower Boardman/Ottaway River. Filled symbols indicate FishPass funded project receivers and open circles represent those deployed by collaborating agencies. Note the previously seasonal connectivity receivers (stars) in the Boardman River Estuary were removed on 18 & 24 June 2024.

- 16 July 2024 – Staff from the GLFC, GTB, Conservation Resource Alliance, and Grand Traverse Conservation District conducted a two-pass electrofishing survey at the Forks long-

term monitoring site. As part of this work, the team counted and measured all fish captured and estimated population numbers of brook and brown trout and a pooled estimate of slimy and mottled sculpins (**Table 1**).

Table 1. Number of fishes captured (n), mean length and weight, adjusted Lincoln-Peterson population estimate of abundance and density for brook, brown trout, and a pooled estimate for slimy and mottled sculpins at the Forks long-term monitoring site 16 July 2024.

Species	n	Mean (SE) Total Length (in.)	Mean (SE) Weight (lbs.)	Pop. (95% CI)	Est. (95% CI)	Acres	Fish/ Acre	Lbs./ Acre
black bullhead	1	4.8*						
brook trout	75	3.5 (0.3)	0.03 (0.01)	122 201)	(88-	0.76	160.7	4.50
brown trout	14	5.7 (0.3)	0.16 (0.02)	184 231)	(152-	0.76	242.4	37.75
Eastern blacknose dace	8	2.3 (0.2)						
Northern brook lamprey	3	5.3 (0.2)						
pumpkinseed sunfish	19	4.1*						
sculpin mixed species	1	2.5 (0.05)	0.01 (0.0005)	609 1310)	(385-	0.76	801.9	6.69

*Denotes a sample size of one

- 25 July 2024 – GLFC and GTB staff completed the second scheduled “quarterly” index electrofishing survey in the lower Boardman/Ottaway River (below Union St. Dam). These surveys are conducted to understand the seasonal diversity and abundance of fish species inhabiting the Boardman/Ottaway River (**Table 2**).

Table 2. Average length and number of fish (n) sampled during electrofishing in the lower Boardman/Ottaway River on 25 July 2024.

Species	n	Ave. Length (in.)
brown trout	7	13.8
common white sucker	47	10.8
rainbow trout	6	21.2
rock bass	7	6.6
smallmouth bass	2	5.8
yellow perch	9	5.9