

FishPass Monthly Update



Dear partners:

On behalf of the FishPass team, I am pleased to provide an update from June-July 2024. 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.

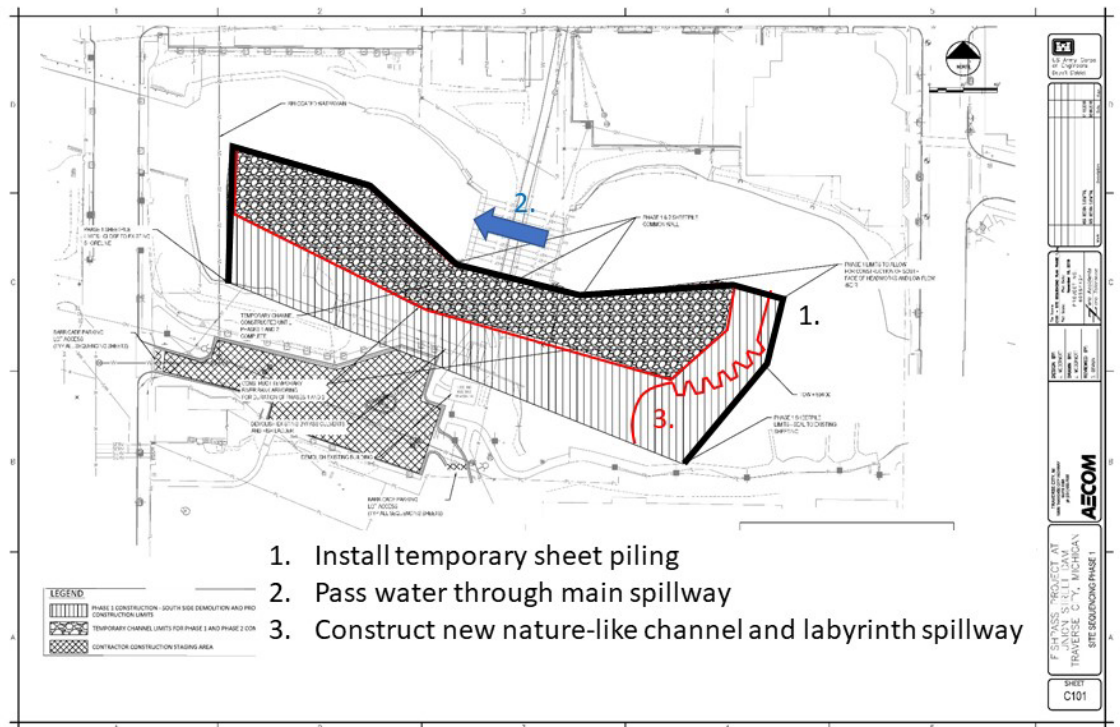


Figure 1. Phase 1 steel sheet pile cofferdam plans. Black line indicates the approximate location of the sheet pile wall.

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.

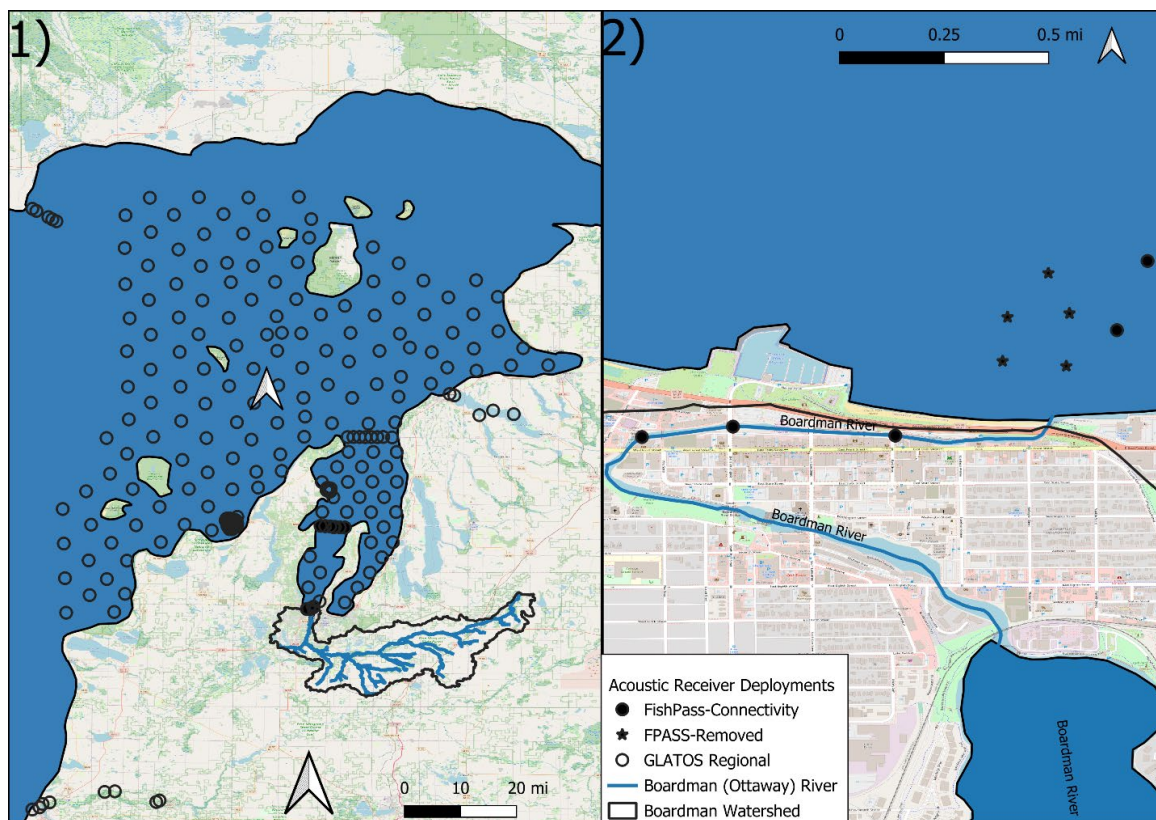


Figure 1. Current acoustic receiver deployment in the Boardman/Ottaway River and Lake Michigan with insets of 1) the regional GLATOS receiver network and; 2) the lower Boardman/Ottaway River. Filled symbols indicate FishPass funded project receivers and open circles represent those deployed by collaborating 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. 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 (88-201)	0.76	160.7	4.50
brown trout	148	5.7 (0.3)	0.16 (0.02)	184 (152-231)	0.76	242.4	37.75
Eastern blacknose dace	3	2.3 (0.2)					
Northern brook lamprey	19	5.3 (0.2)					
pumpkinseed sunfish	1	4.1*					
sculpin mixed species	182	2.5 (0.05)	0.01 (0.0005)	609 (385-1310)	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

Outreach:

- 1 June 2024 – Reid Swanson (GLFC) provided an educational presentation on the concept, design, and research of FishPass at the annual meeting of the Paul H. Young chapter of Trout Unlimited at Camp Wa Wa on the AuSable River.
- June 5 – Leah Bagdon McCallum participated in Traverse Connect's Economic Strategy Session II: Outdoor Recreation as an Economic Driver panel discussion about the value and

impact of outdoor recreation - specifically related to freshwater - and the opportunities that FishPass presents for paddlers and anglers on the Boardman/Ottaway River.

- June 11 – Leah Bagdon McCallum joined leadership from the Freshwater Research and Innovation Center in hosting MSU's Water Alliance - exploring ways for the University, and other higher education partners, to be a part of the region's growing freshwater research opportunities.
- 20 June 2024 – Dan Zielinski (GLFC) presented on the FishPass project at the Community Development Coalition's Speaker Series Luncheon.
- 16 July 2024 – Dan Zielinski (GLFC) presented on the FishPass project at the Rotary Charity Noon Luncheon Series.

Upcoming:

- 08 August 2024 – Dan Zielinski (GLFC) will present on FishPass at the Trout Unlimited – Adams Chapter General Membership Meeting.
- 14 August 2024 – Project team members from the GLFC, GTB, and The City of Traverse City will provide a tour and overview of the FishPass and Boardman River Restoration projects to students at the Au Sable Institute.

In the News:

- Michigan's 2025 budget includes \$1M for Traverse City's FishPass project (9&10 News, 02 July 2024): <https://www.9and10news.com/2024/07/02/michigans-2025-budget-includes-1m-for-traverse-citys-fishpass-project/>
- \$1M included in 2025 state budget for FishPass Project in Traverse City (UpNorthLive, 02 July 2024): <https://upnorthlive.com/news/local/1m-included-in-2025-state-budget-for-fishpass-project-in-traverse-city>
- John Damoose helps give good fish a pass in Traverse City (Soo Leader, 04 July 2024): <https://www.sooleader.com/local-news/john-damoose-helps-give-good-fish-a-pass-in-traverse-city-9174434>
- Traverse City's Top Five Priorities (The Northern Express, 06 July 2024): <https://www.northernexpress.com/news/feature/traverse-citys-top-five-priorities/>
- Fresh, July 9, 2024: Hundred Years' Worth of Sediment Floods Blue Earth River After Minnesota Partial Dam Failure (Circle of Blue, 09 July 2024): <https://www.circleofblue.org/2024/fresh-great-lakes/fresh-july-9-2024-hundred-years-worth-of-sediment-floods-blue-earth-river-after-minnesota-partial-dam-failure/>
- A Brief History of FishPass (The Ticker, 15 July 2024): <https://www.traverseticker.com/news/a-brief-history-of-fishpass/>
- MSU leads project hailed as 'Holy Grail' of invasive species control (MSU Today, 31 July, 2024): <https://msutoday.msu.edu/news/2024/msu-leads-project-hailed-as-holy-grail-of-invasive-species-control>



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