

# Tracking Smallmouth Bass in Lake Erie

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*Second article in a two-part series.*

[In Part 1 of this series](#) (*The Hook*, Feb. 2025), we discussed historic studies of Lake Erie's Smallmouth Bass using jaw tags and angler reports; we also discussed how we now have the technology to implant transmitters, allowing us to determine where the fish are year-round and without angler reports. In Part 2, we'll get into *why* we are tagging bass, the status of these projects, and what we've learned so far.

## *Why Tag Bass?*

Just as it was in the 1990s, fisheries managers need to understand Smallmouth Bass movement to best manage their populations. Bass harvest is no longer a large issue: Ohio's Lake Erie anglers only harvest around 3,000 Smallmouth Bass per year, a tiny fraction of the ~100,000 we were keeping in the late 1990s. We now care more about catch-and-release and tournament effects on the population. If bass don't move much throughout their lifespan, we might expect high-profile fishing spots (like the Bass islands) to experience greater catch-and-release mortality; in a low-movement scenario, these fish might not be replaced by fish moving in. Smallmouth Bass caught in a tournament and weighed-in 15+ miles away may not return to their original capture location, effectively being harvested from their source population. On the flip side, if bass regularly make long distance movements, these fish might repopulate heavily fished areas and might be able to return to capture locations, but we also might consider whether they move across management boundaries (i.e., into Ontario waters). We also lack a basic understanding of Smallmouth Bass movements in large lakes – do they make seasonal migrations? Do some fish migrate into tributaries to spawn, as steelhead are known to do?

## *Lake Movements of Smallmouth Bass*

We partnered with Ohio Sea Grant and the Great Lakes Acoustic Telemetry Observation System ([GLATOS](#)) to tag over 200 Smallmouth Bass with acoustic transmitters. We tagged fish near the Bass islands, Kelleys Island, and in Lorian, Ashtabula, and Fairport harbors during 2023–2024 (Figure 1). Bass were captured using boat electrofishing or angling during the spawning season (April–May). We chose a diversity of locations and capture techniques to gain insight about how Smallmouth behave as a population – the Western Basin is rocky, shallow, and has many reefs compared to the deeper, more uniform habitat offered in the Central Basin. Multiple capture methods will allow us to compare movements between fish “personalities”: both the more aggressive fish that tend to bite on lures and the potentially less aggressive individuals who do not. Half of the tagged bass were caught using boat electrofishing, and volunteer bass anglers helped catch the other half (Figure 2).

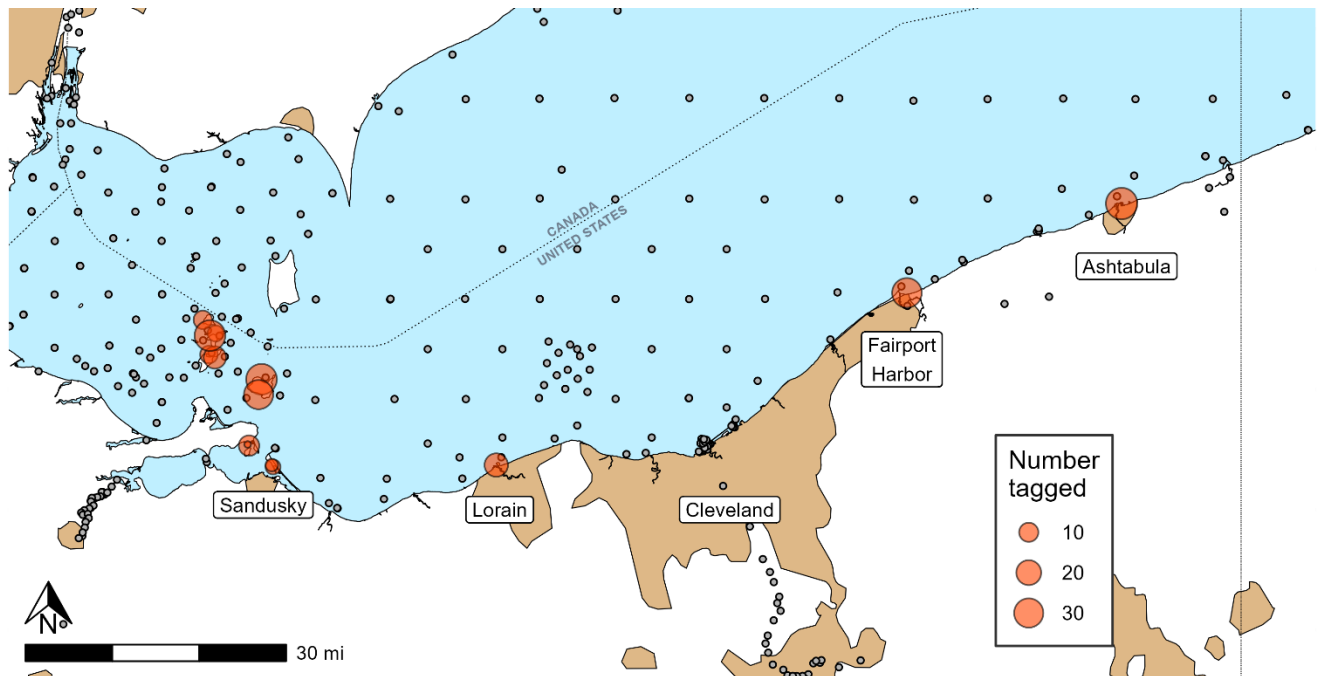


Figure 1. Map of Lake Erie showing locations where Smallmouth Bass were tagged (orange circles) and locations of acoustic receivers (grey dots).

While this project has just begun, we have already learned some about Smallmouth Bass movements in Lake Erie. Most of the fish we tagged aren't making long-distance movements, generally staying within 5–10 miles of where they were captured and released. Fish are also not moving much during the winter – the greatest movement rates occur when fish are likely moving to their spawning locations in April, followed by movement to overwintering spots in September and October. Bass around the islands tend to stay nearshore but often move around, across, and in between the islands, while bass tagged in the Central Basin harbors stick within ~10 miles of shore in shallow water (less than 60 feet). However, we have also observed some surprising movements. One Fairport-Harbor-tagged fish swam all the way across the lake to the north shore and back in August 2023. One Smallmouth that was tagged near North Bass Island moved all the way up the Detroit River to Lake St. Clair and back... twice! This one individual moved a total of 483 miles in 1 ½ years. Migrations like this are surprising for lake-dwelling Smallmouth. [An animation depicting bass movements](#) is available on the GLATOS project page. While these long-distance movements are impressive, the general tendency to not move may mean that



Figure 2. Volunteer angler Grant Gallagher (left), biologist Brian Schmidt (middle) and angler Gregg Gallagher (right) fishing for Smallmouth to tag off Kelleys Island.

localized overfishing is possible and tournament displacement is more important than we currently understand.

### *Tributary Movements of Smallmouth Bass*

We also tagged 60 Smallmouth Bass during Spring 2023, 30 each in the Grand River and Conneaut Creek. The fish were tagged in collaboration with the University of Wisconsin – Stevens Point, Wisconsin DNR, and Purdue University, with the goal of learning more about possible lake-running, migratory Smallmouth Bass in the Great Lakes. After one full spawning season, we can confirm that many of these fish are indeed lake-run Smallmouth Bass! Around 75% of these tagged fish migrated into Lake Erie in the summer and overwintered there. Around half of the tagged fish were detected moving back into the rivers in Spring 2024. [An animation of these migrations can be found on Youtube.](#)

The transmitters in both projects are good for about three years, so we will continue to learn about bass movements and migrations through 2027. If you have questions, please don't hesitate to email me ([Zachary.slagle@dnr.ohio.gov](mailto:Zachary.slagle@dnr.ohio.gov)). Thanks for reading and stay tuned for more data to come.