

Fish on the move: Meet the migratory fishes of Medway Creek

From late April to mid-May, a field team led by Drs. Yolanda Morbey, Tim Hain, and Bryan Neff conducted fish sampling in Medway Creek right here on Western's campus! With the help of Ethan Singh, Steven Chen (Western Undergraduate Summer Research Interns), and Kevin Adeli (grad student) from the Neff Lab, fish were sampled from the mouth of Medway Creek to Westminster Bridge (see map below). The field team was aiming to capture migratory fish that use Medway Creek as spawning habitat. The ultimate goal of this project is to validate the use of environmental DNA ([eDNA](#)) to monitor fish migration.



Map and image of field work site. Sampling was conducted in Medway Creek between the two red lines. Imagery ©2024 Airbus, Maxar Technologies, Map data ©2024 Google. Photo taken by Yolanda Morbey.

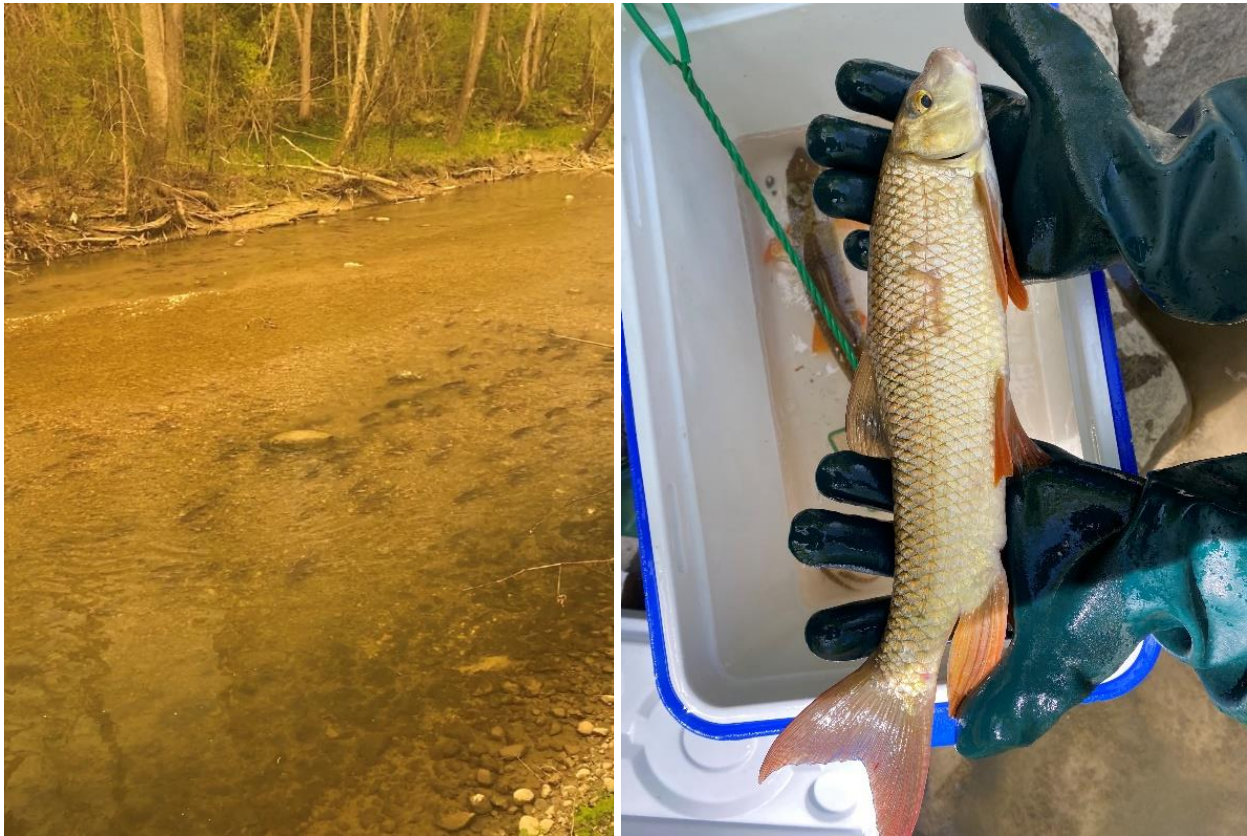
Medway Creek is a tributary of the Deshkaan-ziibi (Thames River) and is situated on the traditional territories of the Anishinaabek, Haudenosaunee, Lūnaapéewak, and Chonnonton Nations, on lands connected with the London Township and Sombra Treaties of 1796 and the Dish with One Spoon Covenant Wampum. This project was funded by the [2024 Western Sustainable Impact Fund](#). Fish sampling was approved by the Ontario Ministry of Natural Resources (collection permit #1105480), Department of Fisheries and Oceans Canada (SARA permit 24-PCAA-00007), and Western University Animal Care Committee (AUP 2022-061).

The team used a fish capture technique known as backpack electrofishing which uses electricity to non-lethally stun fish so that they can be easily captured (see photos below).



Field crew using backpack electrofishing to capture fish in Medway Creek. Team members from left to right: Ethan Singh, Steven Chen, Kevin Adeli, Tim Hain. Photos taken by Yolanda Morbey (also a member of field team).

Altogether, the field team captured and released fish from a total of 5 species which the Upper Thames River Conservation Authority ([UTRCA](#)) has identified as a migrant in Medway Creek. From most to least abundant, the migratory species captured were shorthead redhorse (*Moxostoma macrolepidotum*), golden redhorse (*M. erythrurum*), silver redhorse (*M. anisurum*), quillback (*Carpionodes cyprinus*), and white sucker (*Catostomus commersonii*; only one juvenile). Large multi-species spawning aggregations were observed among the redhorse species consisting of hundreds of individuals (see photo below)!



Large multi-species spawning aggregation of redhorse species (*Moxostoma* spp.) and a captured shorthead redhorse.

From small darters and minnows to large suckers and gars, the field team captured a total of 12 other non-migratory species (for a total of 17 fish species altogether), demonstrating the wide diversity of fish that live on Western's campus!

In addition to electrofishing sampling, the field team collected water samples periodically throughout the field season. Future work will use molecular techniques to validate the ability of eDNA methods to detect the migratory fish that were captured from the creek.



A few species of fish captured while backpack electrofishing in Medway Creek. Top left: longnose gar (*Lepisosteus osseus*), top right: rainbow darter (*Etheostoma caeruleum*), bottom left: quillback (*Carpoides cyprinus*), and bottom right: northern hog sucker (*Hypentelium nigricans*).

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Kevin is an MSc. candidate in the Neff Lab at Western University. Kevin is currently studying the health and conservation of salmonids in the Laurentian Great Lakes, but is broadly interested in fish and fisheries ecology.