

RESTORING NATIVE FISH MIGRATIONS WHILE CONTROLLING INVASIVE SPECIES: AN OPTIMIZATION APPROACH TO SUPPORT DECISION-MAKING

The U-M Water Center engages researchers, practitioners, policymakers, and non-profit groups with the goal of supporting, integrating, and improving current and future restoration and protection efforts.

The grants program is an important part of the Water Center's efforts to enhance restoration and protection activities by engaging exceptional multi-sector teams in advancing evaluation and assessment of restoration projects.

FOR MORE INFORMATION

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PROJECT SUMMARY

Fish and fisheries in the Great Lakes benefit enormously from access to productive spawning grounds in tributary rivers. Currently, access to a large majority of the Great Lakes watershed is blocked by dams and road crossings. These barriers also serve to limit the spread of certain invasive species such as sea lamprey and round goby. Rising political will and funding to remove barriers provide an opportunity to restore tributary connections, but the management community lacks a consistent framework for selecting projects that maximize benefits to native fishes while minimizing costs of removals and subsequent species invasions.

The project team will build on previous work that involved mapping tributary barriers throughout the Great Lakes and developing a computer model to identify the optimal set of barrier removals given a specified budget.

With funding from the U-M Water Center, the team will further refine its barrier removal model by accounting for the spatial variation in the diversity of native migratory fish species that could benefit from barrier removal, landscape impacts on tributary habitat condition, improved estimates of barrier removal costs and potential for round goby invasion. By accounting for all of these factors in a transparent and objective way across the Great Lakes basin, the improved model will fill the need of agencies and nongovernmental organizations for a decision-support tool to identify cost-effective barrier removals that can boost fisheries without jeopardizing control of invasive species.

