

Impacts and drivers of round goby invasion in Great Lakes tributaries



CORE QUESTION:

How do ecological stressors affect a river or stream's vulnerability to aquatic invasive species?

TRIBUTARIES AT RISK

Rivers and streams linked to the Great Lakes serve as nursery and spawning habitat for many fish species. Unfortunately, these tributaries also provide channels for aquatic invasive species to move into inland waters.

The round goby, in particular, is growing more common in Great Lakes inland waters. Originally carried from central Eurasia in freighter ballast water, the goby has been found in all five Great Lakes since the 1990s. The goby competes with native Great Lakes and inland fish for food and gobbles up eggs of important game and conservation species, such as lake trout, lake sturgeon, walleye, and smallmouth bass. Stressors such as habitat loss, prior invasions, high nutrient levels, or pollution may leave tributaries more vulnerable to colonization by round goby and other invaders. Tributaries in built environments have elevated stressors that might contribute to invasion risk.

CONNECTING THE DOTS

Corey Krabbenhoft, a doctoral student at Wayne State University, will investigate these connections, quantifying ecological stressors in seven Michigan rivers and gauging the relative impact of invasion by round goby. The seven tributaries — Stony Creek and the Au Sable, Clinton,

Muskegon, Ocqueoc, Rouge, and Rifle rivers — represent a range of water qualities, physical characteristics, land uses, and human population densities. By working with watershed councils, Krabbenhoft can leverage long-term water quality data sets and monitoring efforts.

Krabbenhoft's work can help watershed councils and other stream managers identify high-risk tributaries for targeted invasive species prevention, monitoring, and removal. Her partnership with the watershed councils will also help raise public awareness of aquatic invasive species and the threat they pose to inland waters.

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