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## MICHIGAN'S BOARDMAN RIVER SELECTED AS SITE FOR MAJOR FISH PASSAGE, INVASIVE SPECIES TECHNOLOGY PROJECT

### *Lessons from the project could have regional, national, and global implications*

**Ann Arbor, MI**—A consortium of fishery management and research institutions has selected Michigan's Boardman River as the site for a first-of-its-kind project to develop and evaluate the effectiveness of technologies to pass desirable fish around river barriers while simultaneously blocking harmful species, most notably the destructive sea lamprey. The ten-year project, led by the bi-national Great Lakes Fishery Commission, will take place at the Boardman River's Union Street Dam, located in Traverse City, Michigan. The initiative has gained widespread attention, as lessons learned may be applied to other rivers and optimized to create selective bi-directional fish passage at new sites. The Traverse City Commission unanimously endorsed the technology demonstration and evaluation project during its meeting on September 6<sup>th</sup>, 2016.

The Great Lakes Basin contains hundreds of thousands of barriers, some dating to the beginning of European settlement in the region. Although the basin's dams often serve industrial, recreational, aesthetic, and ecological purposes, they also block fish access to streams. Many Great Lakes fish move up streams at some point in their life to live, feed, and reproduce. Barriers segment and disrupt natural stream ecological functions, which affect aquatic species and inhibit fish movement while undermining sound fishery management. However, barriers also play an essential role in protecting fish from harmful invasive species and fish disease. Sea lampreys, a noxious, destructive pest, for instance, are denied access to tens of thousands of miles of prime spawning habitat by effective barriers. In fact, without barriers to block sea lampreys, the \$7 billion Great Lakes fishery would not exist as we know it today. The Great Lakes are not alone in coping with the legacy of barriers, as managers globally struggle with rehabilitating fisheries in disconnected river ecosystems while managing around invasive species.

"One of the major fishery management challenges of our time is to find ways to allow desirable fish to pass barriers while denying passage to harmful species like sea lamprey," said Commission chair David Ullrich. "This project will bring together the best minds, the best fishery managers, and the best engineers to identify promising technologies, test those technologies in a real-world setting, and evaluate whether those technologies can be applied elsewhere. If we are successful, we will demonstrate that we can simultaneously pass desirable fish and block harmful species, melding for the first time those two primary fishery management objectives."

The project itself will involve a steering committee of fishery experts and engineers who will identify potential technologies and then modify Traverse City's Union Street Dam to demonstrate whether the technologies successfully pass desirable fish while also blocking undesirable species. The intent is to construct one or more channels in association with the existing dam site so that a suite of tools and technologies can be integrated for fish passage and invasive species control. For instance, natural alarm cues or pheromones could be used to guide fish toward passage devices or to guide sea lampreys into traps. Computer recognition of fish species could be used to automatically sort different species, passing those that should be passed and blocking those that

should not. Tools already under development in the Great Lakes region could be used, though the steering committee will also scour the globe for other potential technologies.

“Traverse City’s Union Street Dam, near the mouth of the Boardman River, was selected as this project’s site for a variety of reasons, not the least of which is because the project aligns with existing restoration objectives,” said Gary Whelan, Michigan Department of Natural Resources – Fisheries Division Program Manager.

“Several dams have already been removed on the Boardman River, and further connectivity to Lake Michigan is a major goal.” Scott Heintzleman, Central Lake Michigan Unit Manager, Michigan Department of Natural Resources added: “The Boardman River is excellent habitat for many of our prized species such as brook trout, lake sturgeon, and walleye, just to name a few. It is also prime sea lamprey habitat. The Union Street Dam does block sea lampreys effectively, though its fish ladder is poor in passing desirable fish.”

Frank Dituri, Ecologist for the Grand Traverse Band and Chairman of the Boardman River Dams Implementation Team, added: “The Grand Traverse Band of Ottawa and Chippewa Indians has been a proud partner in the process of restoring the Boardman River. It is exciting to think that this river, which is tremendously important to the Tribe, could usher in a new era in fishery management.”

Marty Colburn, City Manager of Traverse City added: “The City of Traverse City has been pursuing making improvements at Union Dam. This partnership has the opportunity for a constructive multi-agency solution for numerous environmental concerns inclusive of the fishery and invasive species issues.”

Lieutenant Colonel Dennis Sugrue, Commander, Detroit District of the Army Corps of Engineers, said: “This project is a model of how federal, state, tribal, and local leadership can combine resources and work to a shared goal of habitat and wildlife protection and restoration. This project has a regional benefit, as its outcomes may be applied across the Great Lakes on various other restoration projects.”

“The U.S. Geological Survey is proud to provide scientific support for this important endeavor,” said Russ Strach, director of the USGS Great Lakes Science Center. “Our scientists have spent more than two decades collaborating with partners to develop novel strategies to help facilitate fish passage and control invasive species. We are eager to apply our expertise in this demonstration, which holds great promise for enhancing fisheries management and species restoration in the Great Lakes basin.”

Ullrich warned that while success is not guaranteed, the potential benefits warrant the effort: “We are blazing new ground here, and we are well aware that things might not go as planned. We might learn that sorting a variety of fish species automatically is simply beyond our technological capabilities or that tools and methods are only applicable to certain rivers. A sea lamprey treatment might be necessary on the Boardman River if sea lampreys pass along with desirable fish. But the project’s potential payoff is tremendous. If we are successful, we will generate new science and technology that we will use in the Great Lakes and export globally. We will have new tools at our disposal to manage fisheries and stop invasive species. And we will achieve real fishery restoration results that will improve the resource for generations to come. My colleagues and I cannot be more excited about the possibilities.”

Ullrich concluded: “The project is a true partnership among many agencies, thus leveraging resources and aligning fishery management objectives.” In addition to the Great Lakes Fishery Commission and the city of Traverse City, partners include the Michigan Department of Natural Resources, the Grand Traverse Band of Ottawa and Chippewa Indians, the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the U.S. Geological Survey, Fisheries and Oceans Canada, Michigan State University, the University of Guelph, the Ontario Ministry of Natural Resources and Forestry, and the State of New York.

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