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## GLATOS GOES GLOBAL

### *The Great Lakes Acoustic Telemetry Observation System partners with the Ocean Tracking Network to expand fish tracking capabilities*

**ANN ARBOR, MI**— A global biological aquatic observation system that links the oceans with fresh- and inland-water systems has been created with the partnering of the [Great Lakes Acoustic Telemetry Observation System](#) (GLATOS) and the [Ocean Tracking Network](#) (OTN). This new network will improve fishery management, fishery restoration, and invasive species control.

The Great Lakes Fishery Commission, with funding support from the Great Lakes Restoration Initiative, created GLATOS to study behaviors of important species throughout the Great Lakes with a vast regional network of underwater receivers that allows researchers to track fish movement, behavior, and interactions. The OTN is a globally expansive aquatic research and technology development platform headquartered in Halifax, Nova Scotia.

Acoustic telemetry technology, an innovative approach to advance the protection and recovery of fishes, has gained massive traction all over the world during the last decade. Acoustic telemetry tracking consists of a tag surgically implanted into a fish, receivers placed in strategic locations on lakebeds or the ocean floor, and the analysis of acquired data. Like the GPS on a car, acoustic telemetry allows scientists and fishery managers to track individual fish and learn critical information about such things as prime spawning locations for key native fishes and the movement of invasive species like sea lamprey.

Until the Great Lakes Restoration Initiative, the Great Lakes did not have an acoustic telemetry network; managers were deprived of crucial information that would have informed decisions around species restoration, habitat protection, sea lamprey control, and harvest levels.

The current GLATOS network consists of more than 500 receivers and more than 4,000 tagged fish of 30 different species. To date, more than 135 million “pings” (when a receiver detects a tag) have been recorded. Each ping is a data point, and each data point provides valuable insight to improve fishery management efforts in the Great Lakes. Research projects vary in scope and have provided important information to fishery managers about native species, such as lake trout, sturgeon, and walleye, and betrayed the whereabouts of invasive species, like the noxious sea lamprey.

A list of telemetry projects and a map of the location of receivers is available on the interactive GLATOS website at <http://data.glos.us/glatos>.

The OTN network—a \$168-million collaborative headquartered at Dalhousie University in Halifax, Nova Scotia—spans the globe and documents the movements and survival of tagged marine animals ranging from sharks to eels. More than 90 species have been tracked by OTN scientists, with over 100-million records housed in OTN’s Data Warehouse.

## GREAT LAKES FISHERY COMMISSION

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“Through this new, collaborative relationship, the GLATOS database will become an official Ocean Tracking Network ‘Partner Node,’ meaning GLATOS’s regionally expansive network will be integrated with the broader OTN network,” said Dr. Robert Hecky, chair of the Great Lakes Fishery Commission. “The integration of the GLATOS network with OTN creates a truly global biological aquatic observation system that links the oceans with fresh- and inland-water systems.”

Hecky added: “GLATOS will operate as an autonomous acoustic telemetry database within the Ocean Tracking Network. This exciting partnership means GLATOS scientists can acquire and share data via a broader network of receivers, share equipment such as acoustic receivers, and gain technical benefits from joining a larger community of scientists with an array of expertise. It also means, for the first time, Great Lakes science will be integrated with global research on fish behavior. This partnership was only possible because of investments from the Great Lakes Restoration Initiative.”

Dr. Charles Krueger of Michigan State University’s Center for Systems Integration and Sustainability, director of GLATOS and lead scientist, said: “Because GLATOS and OTN use compatible tracking equipment and methods, fish movement detections on any receiver within the OTN network can now be accessed by Great Lakes scientists, and vice versa. This information sharing is important, as some Great Lakes fish, such as imperiled American eels and valuable salmonid species, may roam beyond the shores of the lakes to the Atlantic Ocean via the St. Lawrence River and other routes. These fish movements previously could not be detected by only the regional GLATOS network. With the partnership between OTN and GLATOS, migratory fish can be tracked at a much broader geographic scales.”

“The Fishery Commission is using Great Lakes Restoration Initiative funding for a telemetry system that will help to improve our understanding of fish populations in the Great Lakes and to control invasive species,” said U.S. EPA Region 5 Administrator/Great Lakes National Program Manager Dr. Susan Hedman. “This innovative project will also connect scientists in the Great Lakes region with aquatic researchers around the world through the Ocean Tracking Network.”

Krueger added: “GLATOS scientists will now have greater opportunities for sharing equipment and leveraging funding. GLATOS scientists will also be able to take advantage of OTN’s extensive data management infrastructure. With millions of data points recorded by the GLATOS network every year, access to OTN data management tools will have significant implications for the researchers and the potential applicability of this work.”

For more information about GLATOS, visit <http://data.glos.us/glatos>. For more information about the Ocean Tracking Network, visit [oceantrackingnetwork.org](http://oceantrackingnetwork.org). For more information about the Great Lakes Restoration Initiative, visit <http://greatlakesrestoration.us>.

