



News Release

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FISH POPULATIONS MAKE A COMEBACK IN CHICAGO AREA WATERWAY SYSTEM

New Research Shows Conservation and Advocacy Efforts Are Enabling Healthier Waterways

CHICAGO – New research [published today in *Urban Ecosystems*](#) documents growing fish populations within the Chicago Area Waterway System, which includes the Chicago River and Calumet River systems. Published by researchers from [Shedd Aquarium](#) and the [Metropolitan Water Reclamation District of Greater Chicago](#) (MWRD), the study shows a gradual increase in both the total number of fishes and fish species, including native species, in Chicago's waterways; further, the number of invasive species has declined. Results indicate that local Chicago waterways are more ecologically productive and conducive to aquatic life and less degraded than they once were. The study follows decades of management and policy actions, which resulted from the Chicago community's persistent efforts to improve the river's health, as it serves as an economic, recreational and cultural asset for the city of Chicago.

"Many organizations across the Chicago area have been working hard to help the water that runs through our city rebound after decades of pollution and mistreatment," said [Dr. Austin Happel](#), research biologist at Shedd Aquarium and lead author of the study. "Now, we have data that shows us that restoration and advocacy efforts are benefitting the Chicago Area Waterway System and bringing back aquatic species that are essential to healthy ecosystems and thus healthy natural resources."

The study represents the first comprehensive assessment of fish assemblage data since monitoring began in the 1970s by the MWRD. Compared to the 1980s, researchers observed increases to species richness and abundance with more native species in the waterways. Since 2001, a total of 19 new species were captured, of which only one (mosquitofish, *Gambusia*) was considered invasive. The study reports the most commonly caught fish species were common carp (*Cyprinus carpio*), gizzard shad (*Dorosoma cepedianum*), largemouth bass (*Micropterus salmoides*), goldfish (*Carassius auratus*), bluegill (*Lepomis macrochirus*) and green sunfish (*Lepomis cyanellus*). While rare native fishes such as mimic shiner (*Notropis volucellus*), tadpole madtom (*Noturus gyrinus*), threadfin shad (*Dorosoma petenense*) and white crappie (*Pomoxis annularis*) have returned, invasive species such as common carp, goldfish and oriental weatherfish (*Misgurnus anguillicaudatus*) remain since their introduction decades ago.

"The MWRD began constructing local waterways more than 120 years ago for the purpose of reversing the flow of the water to protect the public health, provide drainage for the Chicago region, and convey wastewater. Our predecessors never envisioned the Chicago Area Waterway System turning into a public amenity that could spark thriving habitats for aquatic life and stimulate our economy," said [Kari K. Steele](#), president of the

Metropolitan Water Reclamation District of Greater Chicago. “Due to advancements in the MWRD’s water treatment operations, our Tunnel and Reservoir Plan and other initiatives, and most importantly, community-wide support for clean water, our river is filled with a variety of fish species. Thank you to our research partners at the Shedd Aquarium and our staff at the MWRD for helping to document this incredible progress in fish population and positive story about improved water quality.”

Electrofishing sampling of fish assemblages in the Chicago Area Waterway System began in 1974 by the MWRD, coinciding with the enactment of the Clean Water Act, which seeks to improve water quality and support fishable waterways. Since the beginning of monitoring fish populations in 1974, the number of different fish species has skyrocketed from 10 to 77, including 60 that have been counted since 2000.

The MWRD began their fully expanded, comprehensive sampling program in 1985, which provided the data for the study. At each sampling location, the length, weight and species of fish were recorded before being returned to the water. The vast dataset, consisting of 456 sampling events of 53,917 fish from 58 species, was analyzed by Happel of Shedd Aquarium to assess and describe long-term changes in the Chicago Area Waterway System fish communities.

“Documenting increases in fish populations in the Chicago Area Waterway System is a positive sign for these vital waterways, which are a core economic and environmental asset for Chicago and surrounding suburbs,” said Dustin Gallagher, associate aquatic biologist at the Metropolitan Water Reclamation District and co-author of the study. “Preserving the integrity of these waterways not only protects our shared natural spaces, but also the large bodies of water it connects to, including Lake Michigan, which Chicagoans depends on for safe drinking water.”

While comparisons to a pristine, pre-modified Chicago Area Waterway System are unavailable, enhancements towards larger, more diverse fish assemblages with more native species in the system have been documented since the 1980s. The study notes that much of this is due to improved stewardship and policy actions such as wastewater management, pollution reduction and improved quality of underwater habitat. Using these data, stakeholders can advance science-based policy solutions to make the waterways in Chicago fishable; solutions include the expansion of underwater habitats, reduction of barriers, sustainable waterfront development, ongoing water quality protection and pollution prevention policy.

“The fruits of public-private partnerships, such as this study published by Shedd Aquarium and the Metropolitan Water Reclamation District, provide an avenue for advocates, researchers and policy makers to work together to advance innovative, science-based policy solutions for seemingly intractable problems, like urban river pollution,” said [Andrea Densham](#), senior director of conservation policy and advocacy at Shedd Aquarium. “Pairing high-quality research with important policy tools—like the Clean Water Act, which has substantially reduced pollution over the past 45 years, along with federal funding, such as the Great Lakes Restoration Initiative—improves once-polluted and damaged aquatic habitat, increases biodiversity and re-establishes vibrant homes for our native aquatic wildlife. Together, we can restore urban spaces into wild places for all to explore.”

The Chicago Area Waterway System consists of 78 miles of modified waterways, 75% of which is man-made. Physical alterations such as channels, dams and levees are known to negatively impact fish communities by disrupting flows and reducing physical habitat. Further human disturbances, such as urban and industrial pollutants, reduce ecosystem function and biodiversity by degrading water quality.

In May 2020, Shedd Aquarium and MWRD researchers documented how removal of dams can help improve connectivity between Illinois water systems. After tagging several largemouth bass in the North Branch Canal of the Chicago River in 2019, one tagged bass [made a 20-river-mile journey](#) from the Chicago River to the Skokie River, before being caught and released by an Illinois angler. The fish’s movement comes after the removal of a 2018 dam, which would have impeded the fish’s journey to the Skokie River.

The North Branch Canal has been the focus of recent river conservation efforts to add more habitat to the Chicago River and welcome back aquatic life. Since 2017, Chicago non-profit Urban Rivers began installing floating habitats on the North Branch Canal and teamed up with Shedd Aquarium in 2018 to continue to add to the “[Wild Mile](#)”—the first mile-long floating eco-park on the Chicago River. The man-made floating habitats or islands seek to improve the water quality of the canal and the river downstream and make a less trafficked section of the river serve as an oasis for wildlife.

The aquarium is studying the presence of fish spawning around the islands to document how the islands are helping create habitats for local species. In 2019, Happel documented at least 10 species of fish spawning around the islands by collecting samples of larval fish (tiny baby fish) at night.

Individuals can contribute to ongoing studies of the Chicago River by joining Shedd Aquarium for its seasonal Kayak for Conservation program, during which participants paddle the North Branch Canal of the Chicago River, document the presence of wildlife above the water’s surface or through underwater fish traps, and contribute to a litter removal study. Registration is available online at www.sheddaquarium.org/kayak.

To read the published research study, “*Chicago’s fish assemblage over ~30 years – more fish and more natives*,” visit <https://link.springer.com/article/10.1007/s11252-020-01020-3>.

For more information about Shedd Aquarium’s research on the Chicago River, visit [Shedd’s website here](#).

VISUALS: Photos taken during MWRD fish sampling are available for download here: https://www.dropbox.com/sh/1tzpgn2u4gu03v6/AAB_8D1mldmxCzoDyOZSpRJ6a?dl=0
Photo credit: ©MWRD

Photos of Shedd Aquarium’s research on the Chicago River are available for download here: <https://personal.filesanywhere.com/fs/v.aspx?v=8e6a688e5a656db1a4a7>
Photo credit: ©Shedd Aquarium

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About Shedd Aquarium

The John G. Shedd Aquarium in Chicago sparks compassion, curiosity and conservation for the aquatic animal world. Home to 32,000 aquatic animals representing 1,500 species of fishes, reptiles, amphibians, invertebrates, birds and mammals from waters around the globe, Shedd is a recognized leader in animal care, conservation education and research. An accredited member of the Association of Zoos & Aquariums (AZA), Shedd is an affiliate of the Smithsonian Institute and is supported by the people of Chicago, the State of Illinois and the Chicago Park District. www.sheddaquarium.org

About the Metropolitan Water Reclamation District of Greater Chicago

Established in 1889, the Metropolitan Water Reclamation District of Greater Chicago (MWRD) is an award-winning, special purpose government agency responsible for wastewater treatment and stormwater management in Cook County, Illinois. Learn more at mwrdd.org.