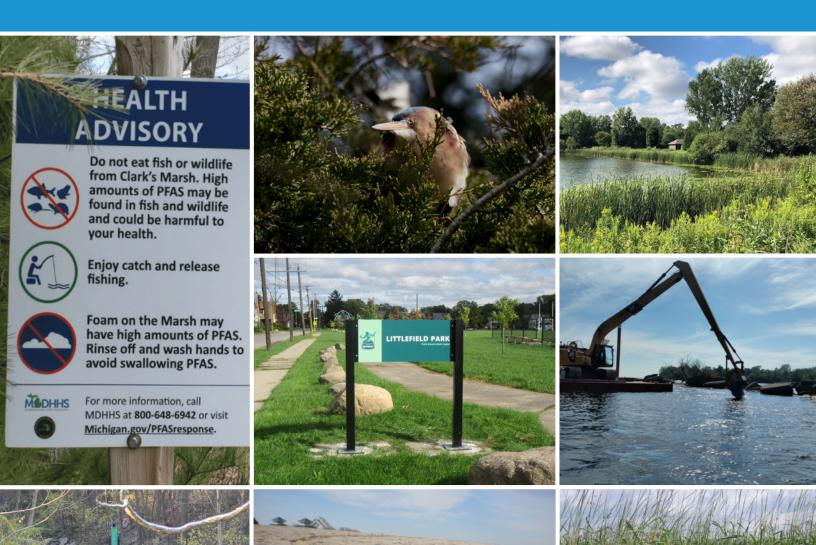


# Great Lakes Restoration Projects Producing Results for People, Communities

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## Great Lakes Restoration Projects Producing Results for People, Communities

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Federal investments to restore and protect the Great Lakes are producing results for communities around the eight-state region of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin. The Great Lakes Restoration Initiative (GLRI) has supported thousands of projects since it first began in 2010. This federal program has seen plenty of successes, including delisting of 6 of the 26 U.S. Areas of Concern, the region's most polluted harbors and rivers. These improvements have not only recovered ecosystems, but also bettered the health of communities and wildlife, developed local economies, and helped communities prepare for the impacts of climate change.

Projects like those in this booklet have had a tremendous impact on communities in the Great Lakes region, but serious threats remain, underscoring the need for sustained and ongoing federal investment in restoring and maintaining waterways that are safe and healthy for all. We look forward to working with members of Congress to support work to protect and restore the Great Lakes and all who call this region home.



Since 2004, the Healing Our Waters-Great Lakes Coalition has been harnessing the collective power of more than 175 groups representing millions of people, whose common goal is to restore and protect the Great Lakes. Learn more at HealthyLakes.org or follow us on Twitter @HealthyLakes.

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## Protecting People from Toxic Fish in Illinois

Analysis of fish from Lake Michigan for toxic PFOS will aid in more accurate fish consumption advisories, protecting human health.

Increased attention is being paid to PFAS—a class of toxic forever chemicals—that are linked to serious health impacts, including cancer, increased cholesterol levels, increased risk for thyroid disease, low infant birth weights, reduced response to vaccines, liver and kidney toxicity, and pregnancy-induced hypertension.

In June of 2022, the EPA announced there is effectively no safe exposure to one specific PFAS chemical, Perflurocatane Sulfonate, commonly known as PFOS. PFOS contamination primarily comes from factories that manufactured or used the chemicals and locations where they were used as firefighting foams, such as airports and military bases. The chemicals are also abundant in everyday

objects, because they're used to make items non-stick, such as in kitchenware, or water-, oil-, or stain-resistant, in clothing and food wrapping, for example.

In late 2022, a study published in the Environmental Research Journal found that toxic PFAS chemicals are widely detected in freshwater fish across the U.S., and consuming a single fish from the Great Lakes is equivalent to drinking a month's worth of water contaminated with high levels of PFAS. This is particularly concerning for people who rely on fish for a significant portion of their diet, such as Indigenous Peoples, some immigrant populations, and low-income communities.

Because PFOS bind to fish tissue and can't be cooked or trimmed out, fish consumption advisories are the only way to inform people about possible dangers and to keep people safe from PFOS contamination in fish. With grant funding from the Great Lakes Restoration Initiative (GLRI), the Illinois Environmental Protection Agency (IEPA) will be able to purchase lab equipment to examine fish tissue samples

from Lake Michigan for PFOS concentration. The IEPA will compare results to the Great Lakes Consortium for Fish Consumption Advisories' PFOS Guidelines, posting fish consumption advisories, as needed. The project also includes an outreach and engagement element, with the IEPA planning to inform consumers of the risks and benefits associated with consuming fish taken from the sampled areas of Lake Michigan.

**COST:** \$350,000

**KEY PARTNERS:** U.S. EPA, Illinois EPA, Illinois Department of Agriculture, Illinois Department of Natural Resources, Illinois Department of Public Health

**RESOURCE CHALLENGES ADDRESSED:** Tracking of fish contamination, safeguarding human health, issuing more accurate fish consumption advisories



With lab equipment purchased with GLRI funds, the Illinois EPA will be better prepared to analyze fish tissue from Lake Michigan and post fish consumption advisories, as needed. The photo above shows one such advisory in Michigan due to PFAS contamination. Credit: Jennifer Hill

**RESULTS AND ACCOMPLISHMENTS:** The analysis of fish tissue for toxic PFOS contamination will allow the Illinois EPA to provide anglers with more accurate fish consumption advisories, warning them of potential danger, and helping to keep communities safe from these toxic chemicals.

## Community Engagement, Collaboration Restores Wetland Habitat in Calumet Region

Restoring wetlands in northwest Indiana helps reverse loss of vulnerable marsh birds, supports clean water and engages the community in the area's beautification.

The Calumet region—spanning Indiana, Illinois and Michigan, including the southern shore of Lake Michigan—has a long history as a vast wetland system, home to a rich tapestry of biodiversity. It is an important coastal wetland of the Great Lakes that vulnerable marsh birds rely on, and its health can help the community adapt to rapid fluctuations in lake water levels.

But when development spread south and east from Chicago in the late 1800s, industry began the long, slow work of decimating the region's wetland habitats and the wildlife dependent on them. Until the 1990s, a diversity of wetland birds remained, but as the region further transformed into an industrial corridor, the area's delicate ecosystem was disturbed. Development disrupted the marshes' natural water level fluctuations, leading to a dramatic decline in habitat quality and increase in invasive species. By the 2010s, marsh birds disappeared from many sites they used to frequent and the region saw significant biodiversity loss.

Despite the habitat loss and degradation, the Calumet region remains a major stopover for migratory birds who depend on the area to rest and breed.

Recognizing the need to restore this crucial habitat, various organizations have partnered to make an impact over the last several years. They continue to see great success.

The decades-long trend of marsh bird population declines are stabilizing, and several species are breeding more in newly restored wetlands.

The Great Lakes Restoration Initiative has funded several restoration projects in this important region. The \$100,000 in funding for this particular project allowed The Wetlands Initiative (TWI) and partners to restore a floodplain corridor along the west branch of the Little Calumet River in northwest Indiana. Over the three-year project, TWI has managed invasive species on 142 acres, restored hydrologic wetland function and collaborated with local community groups on connected community beautification efforts to expand the conservation impact of the project.



Marsh birds like the Least Bittern will benefit from the restoration of wetlands in Indiana. Credit: David Gomez

**COST:** \$100,000

**KEY PARTNERS:** The Wetlands Initiative, local communities

**RESOURCE CHALLENGES ADDRESSED:** Habitat degradation, loss of biodiversity, invasive species.

**RESULTS AND ACCOMPLISHMENTS:** Restoring 142 acres of wetlands in northwest Indiana is helping to restore habitat, support wildlife, including vulnerable marsh birds, mitigate flooding, and engage the community.

## Mitigating Invasive Species and Restoring an Urban Tree Canopy DETROIT, MICHIGAN

Planting over 200 trees is cooling neighborhoods thereby protecting public health, as well as soaking up rain water to mitigate flooding in communities.

Approximately 30 million ash trees have been destroyed by the invasive emerald ash borer in southeast Michigan since the insect's 2002 discovery in Detroit. Since then, the non-native bug with no natural predators has spread to five Canadian provinces and at least 35 U.S. states, causing the deaths of hundreds of millions of ash trees. The U.S. Forest Service, among many others, considers the emerald ash borer to be the most destructive and costly invasive forest insect in North America, with damages estimated in the tens of billions of dollars and climbing.

"For the city of Detroit, we lost over a million trees from the Emerald Ash Borer," says Lionel Bradford, president and executive director of The Greening of Detroit, a local nonprofit and environmental group. The lack of trees can be devastating for local communities. Summer temperatures tend to be higher in urban areas with little to no tree canopy—the so-called heat-island effect—which can impact the health of



The community of Littlefield has come together with The Greening of Detroit to plant a variety of trees throughout the community, improving tree equity and offsetting the chances of a single species wipeout like what occurred due to the Emerald Ash Borer. Credit: City of Detroit

communities. The lack of trees also can lead to more runoff pollution and flooding.

Littlefield is a community in Detroit in dire need of trees, according to American Forests, a national organization that evaluates neighborhoods across the country, as to whether there are enough trees in a community for everyone to experience the health, economic and climate benefits that trees provide. Many low-income communities often lack green space. Littlefield is a community primarily comprised of People of Color, has an 82% poverty rate, and a 22% unemployment rate.

But Littlefield has found strength as a community. The Littlefield Community Association partnered with The Greening of Detroit to help restore the community—and part of that is through the planting of trees.

Federal investments through the Great Lakes Restoration Initiative are accelerating the planting of trees that provide benefits to people, wildlife, and water quality. In 2022, over 300 volunteers participated in a tree-planting project in Detroit's Littlefield neighborhood. In total, 200 trees made up of 13 recommended species were planted in the neighborhood to offset the chances of another single species wipeout due to an invasive species like the emerald ash borer.

"Having a park that was just devastated by emerald ash borer as Littlefield was, and being able to begin restoring the canopy there, and putting those trees in the ground, working with partners to do that, I think it's important because that's the model," says Bradford. "It shows the entire model of how you really build tree equity by engaging the community, pulling folks together, and it, in essence, builds neighborhoods."

**COST:** \$130,000

KEY PARTNERS: USDA Forest Service, The City of Detroit, The Greening of Detroit, Littlefield Community Association, Grand River Block Club, Noble Elementary School, local residents, various corporate and private partners

**RESOURCE CHALLENGES ADDRESSED:** Loss of habitat, runoff pollution, flooding

TYPES OF JOBS SUPPORTED: Community Engagement Outreach Coordinator, Detroit Conservation Corps workers, Green Corps workers

**RESULTS AND ACCOMPLISHMENTS:** Planting 200 trees of different species is helping to reduce flooding and runoff pollution, while preventing the chance that an invasive species like the emerald ash borer will destroy the city's tree canopy.

## Building Green Infrastructure for the Protection of Ecosystems and Communities GRAND MARAIS, MINNESOTA

Restoring natural areas with native plants will help the city of Grand Marais absorb storm water and reduce flooding and runoff pollution into Lake Superior.

Lake Superior's water is so clear, it's almost entirely devoid of plant nutrients and other suspended material. As such, even slight changes are conspicuous. When the town of Grand Marais on the Superior coast realized their stormwater runoff was polluting the lake, they noticed and took action. "The people living on Lake Superior—it's not lost on them that they live next to this pristine body of water," says Philip Larson, conservation technician for Cook County Soil and Water Conservation District. "They want to protect their water," he says. "People rally behind it."

When rain falls on an urban environment, even a small one like Grand Marais (population: 1,337), it collects a lot of junk as gravity tugs it down to sea level. Oil from streets, bacteria from pet waste, fertilizer from lawns, sediment from soil eroding away—they all get washed down the storm drain along with the rain.

In Grand Marais, a city whose name means "Great Marsh," most stormwater doesn't drain directly into Lake Superior—it gets naturally filtered through creeks and retention ponds first. But climate change has brought more rain and snow melt than the creeks and ponds can handle, so stormwater overflow is now polluting the Great Lake of Superior.

Using funds from the Great Lakes Restoration Initiative, construction will begin this spring on updating part of the city's green stormwater infrastructure, whereby natural features such as wetlands, trees, and riparian habitat capture and retain water, reducing flooding and filtering pollutants. The city will be enlarging one of the main stormwater ponds, one that collects water from 150 acres of the surrounding watershed, to handle the more frequent 100-year storms the city is now seeing. They'll also be stabilizing its creek bed with indigenous plants like red-osier dogwood, nanny berry, and various species of local willow shrubs to better hold the soil and slow the rolling waters of the storm, greatly reducing erosion and, ultimately, sediment pollution in the lake.

**COST:** \$291,065



Stormwater ponds like the one pictured above manage stormwater runoff by holding excess water during heavy storms, which allow pollutants to settle at the bottom and greatly reduce incidences of flooding. Credit: City of Blaine, Minnesota

KEY PARTNERS: City of Grand Marais, Cook County Soil and Water Conservation District, Minnesota Pollution Control Agency, Minnesota Board of Water and Soil Resources, Minnesota Department of Natural Resources, Minnesota State Historic Preservation Office, National Oceanic and Atmospheric Administration, US Army Corps of Engineers, Environmental Protection Agency, Great Lakes Restoration Initiative, private partners including the Duluth Archaeology Center, Crawford Excavating, MSA Professional Services, and community members

**RESOURCE CHALLENGES ADDRESSED:** Stormwater management, including record precipitation overloading current system; invasive plant species unable to hold soil; soil erosion around streams; and sediment and pollutants entering Lake Superior, especially near drinking water intake and recreation area.

**TYPES OF JOBS SUPPORTED:** Construction, landscaping, engineering, scientific research and investigation; government jobs related to this environmental protection program

**RESULTS AND ACCOMPLISHMENTS:** This construction will result in enlarging one of the main stormwater ponds and stabilizing the creek bed with indigenous plants. These efforts will remove sediment and chemical pollutants from over 10 million gallons of water annually.

## **Aquatic Habitat Helps Lake Ontario Fishery**

JEFFERSON COUNTY, NEW YORK

Building spawning beds in two Lake Ontario bays are helping native fish species as well as threatened lake sturgeon recover.

Lake Ontario is a bi-national resource that millions of people depend on for their drinking water, health, recreation, and quality of life. The lake contains rich biodiversity, including many species of prey and predator fish that underpin a robust recreational fishery that supports the regional outdoor economy. Two notable species include walleye, a prized sportfish, and lake sturgeon, a prehistoric fish that is a good indicator of ecosystem health.

Unfortunately, since European settlement, the Lake Ontario fishery had been subject to a host of threats, including invasive species, overfishing, and habitat degradation. The lake's sturgeon, as in the other Great Lakes, had been in steep decline until fisheries managers in the late 1900s started working to bring the species back.

Federal investments from the Great Lakes Restoration Initiative are helping in the recovery of threatened lake sturgeon and several other fish species in eastern Ontario, where two spawning beds have been constructed in the Black River, an important tributary to Lake Ontario in the state of New York. The Black River's swift-moving waters

provide prime fish spawning habitat for fish, including walleye and lake sturgeon. In addition, two spawning reefs were constructed in nearby Chaumont Bay, which supports one of the last remaining spawning populations of lake whitefish and cisco, a prey fish, in the New York waters of Lake Ontario. GLRI funds supported the design and building of the spawning grounds.

"These efforts," said Gian Dodici, a fish and wildlife biologist at the U.S. Fish and Wildlife Service's New York Field Office, in a release announcing the completion of the projects, "are key for sustaining healthy populations of fish species, and they provide benefits to communities by supporting an economically important fishery."

**COST:** \$750,000

**KEY PARTNERS:** U.S. Fish and Wildlife Service, New York State Department of Environmental Conservation, U.S. Geological Survey

**RESOURCE CHALLENGES ADDRESSED:** Habitat loss, species diversity

**TYPES OF JOBS SUPPORTED:** Biologists, engineers, and construction jobs

**RESULTS AND ACCOMPLISHMENTS:** The four fish habitat structures will help support the Lake Ontario fishery, including the state of New York's lake sturgeon recovery plan and ongoing fish stocking programs.



Construction crews work to create fish spawning beds in the Black River, a tributary to Lake Ontario, which will benefit walleye, a sportfish, and threatened lake sturgeon. Credit: U.S. Fish and Wildlife Service



Submerging habitat in Ontario's Chaumont Bay will help lake whitefish and cisco, a prey fish. Credit: U.S. Geological Survey

## Removing Impediments and Impervious Surfaces to Benefit Fish and People

EUCLID CREEK SPILLWAY AT EUCLID CREEK WATERSHED IN CLEVELAND, OHIO

AND THE CUYAHOGA RIVER AREA OF CONCERN

Removing impervious surfaces and impediments to fish passage in Euclid Creek will contribute to improving the local ecosystem, removing the Cuyahoga River as toxic hotspot, and restoring Lake Erie.

As early as 1922, the Euclid Creek Watershed, near Cleveland, caught the attention of scientists due to its raw sewage contamination, which caused high concentrations of disease-causing bacteria like fecal coliform. Decades of industrial pollution and sewage overflows during large rain events heavily impaired the watershed and Lake Erie and led to excessive organic matter, as well as high levels of both

nutrients and disease-causing bacteria. To this day, beaches are sometimes closed to swimmers.

The Euclid Creek Spillway is also part of the Cuyahoga Area of Concern—one of the Great Lakes region's 43 most contaminated sites, as established in 1987 between the U.S. and Canada's Great Lakes Water Quality Agreement.

Now, with funding from the Great Lakes Restoration Initiative (GLRI), the Euclid Creek Spillway will be able to see some improvements. Currently, the project is in the design phase, which will determine the best way to remove impediments to fish passage and impervious surfaces—hard surfaces like asphalt that prevent or hinder the infiltration of water into the ground. After that, the partners aim to request further GLRI funds to fund the necessary construction work.

"We don't own these streams, but we have responsibility for them," said Frank Greenland, director of watershed programs for the Northeast Ohio Regional Sewer District. "These federal programs are important to get these projects off the ground and get our streams restored."

COST: \$400,000

**KEY PARTNERS:** U.S. Army Corps of Engineers, Northeast Ohio Regional Sewer District, U.S. EPA Great Lakes National Program Office

**RESOURCE CHALLENGES ADDRESSED:** Loss of fish and wildlife habitat, degradation of fish and wildlife population, degradation of benthos, water quality, recreation



The removal of impediments to fish passage, such as dams, will allow for fish to more easily pass through Euclid Creek. This work has already happened in various parts of the Cuyahoga, including Baldwin Creek, pictured above. Credit: Soil and Water Conservation District

**RESULTS AND ACCOMPLISHMENTS:** GLRI funding is helping chart a roadmap to restore three miles of fishery access and 1,000 linear feet of riparian habitat along Euclid Creek, restoring the ecosystem and helping remove the Cuyahoga River Area of Concern as a toxic hot-spot.

## **Litter Traps Help Protect Water Headed to Lake Erie**

**GARRISON RUN, ERIE, PENNSYLVANIA** 

Funding to install two trash collection devices prevents 700 to 4,000 pounds of trash annually from reaching Presque Isle Bay and Lake Erie.

A critical asset to the region, Lake Erie provides clean drinking water to 11 million people and is home to half of the fish in all of the Great Lakes. For the health and safety of people and wildlife, it's crucial that the water is clean and free of debris. That's why, in October 2021, the Great Lakes Restoration Initiative (GLRI) granted \$309,300 to the city of Erie, Pennsylvania, to help clean up Garrison Run, a heavily polluted tributary to Presque Isle Bay and Lake Erie.

Thanks to the Trash-Free Waters Grant under the GLRI, the city was able to install two types of collection devices to remove floating and submerged trash from the stream. Combined, the traps prevent 700 pounds to 4,000 pounds of trash per year from reaching the bay and Lake Erie.

The project protects about 16,780 acres of Presque Isle Bay surface water area and 61,000 feet of shoreline. Ultimately, large-scale litter devices help protect our drinking water as well as native aquatic and terrestrial species important to the Great Lakes.

"Lake Erie is our region's greatest asset," said Erie's Mayor Joseph V. Schember. "Keeping trash and other debris from entering the lake helps present and future generations as well as local wildlife have cleaner water to thrive and grow."

**COST:** \$309,300

**KEY PARTNERS:** City of Erie, Pennsylvania

**RESOURCE CHALLENGES ADDRESSED:** Trash contamination of waterways and lakes

**RESULTS AND ACCOMPLISHMENTS:** The City of Erie is able to protect roughly 16,780 acres of surface water area and 61,000 feet of shoreline by installing large-scale litter traps that prevents 700 pounds to 4,000 pounds of trash from reaching Presque Isle Bay and Lake Erie each year.



Trash collection devices will help prevent hundreds of pounds of trash from entering Lake Erie. The photo above shows marine debris at Maumee Bay State Park on Lake Erie. Credit: NOAA Marine Debris Program

## Building Up Tribal Capacity for Natural Resource Management LAC COURTE OREILLES BAND OF LAKE SUPERIOR CHIPPEWA INDIANS OF WISCONSIN

Building up the Lac Courte Oreilles Band's capacity for natural resource management aids in monitoring and conserving culturally important native species such as wild rice, and promotes community awareness and education around the Great Lakes ecosystem.

Just over a century ago, the Lac Courte Oreilles Tribe lived off the land as they had for generations: spearing ogaa—walleye—in shallow waters at night during spring spawning and gently harvesting manoomin—wild rice—from canoes day after day in the fall. Walleye and wild rice are two of three staple Ojibwe foods found in northern Wisconsin. "There was maple sugar, walleye, and wild rice," says Melissa Lewis, wetland specialist of the Lac Courte Oreilles Conservation Department and Tribal member. "If you have those three things, you knew you weren't dying of starvation," she chuckles wryly.

Then, in 1921, despite vehement protestations from the Tribe, the federal government approved a dam along the Chippewa River. The resulting impoundment flooded their village, a gravesite, and the plentiful *manoomin* beds. And though the people of the village moved and recovered, the wild rice beds never did.

For decades, tribal members traveled miles off-reservation to harvest *manoomin*. "When we started the wild rice program, it was to try to build our rice beds back up within the reservation so our community members didn't have to travel very far to get to them," Lewis says. Now, they monitor 10 beds: 260 acres on-reservation and 985 acres off-reservation. According to Lewis, all the beds are currently viable, but it may be some time yet before they become a sustainable food source for the Tribe. "They can't sustain a large harvest at this moment," she says. "Eventually, they'll be able to get there—at least we hope, depending on climate change."

In the last year, thanks to increased funding from the Great Lakes Restoration Initiative, Lewis and her team were able to spend hundreds of hours monitoring the *manoomin* beds: checking for fungal growth; measuring water quality, sediment, and biomass; sending samples off for laboratory analysis. The funds have allowed Tribal conservation staff to host meetings, attend trainings, and host workshops at schools around their community.



Manoomin—wild rice—is a culturally important food to the Lac Courte Oreilles Band of Lake Superior Chippewa and members are working to restore beds that were damaged by damming. Credit: Wisconsin Wetlands Association

GLRI funding has helped address some conservation needs, but not all. Lewis dreams of a day when the now three-person Conservation Department is fully staffed. She knows what it would look like, too. "We would have two people in each of the major programs," she says without hesitation. "Two in wetlands, two in forestry, two in wildlife, two in water resources."

**COST:** \$60,868

KEY PARTNERS: Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin, Lac Courte Oreilles Conservation Department, Lac Courte Oreilles Fish Hatchery, Bureau of Indian Affairs, Lac Courte Oreilles Ojibwe School, Lac Courte Oreilles Ojibwe University.

**RESOURCE CHALLENGES ADDRESSED:** Lack of conservation capacity, lack of access to staff training

**TYPES OF JOBS SUPPORTED:** Water resource technicians, wetland specialists, wetland technicians

**RESULTS AND ACCOMPLISHMENTS:** Increased capacity at the conservation department has allowed staff to develop and maintain wild rice beds, attend trainings and meetings, and share knowledge with the local community.



