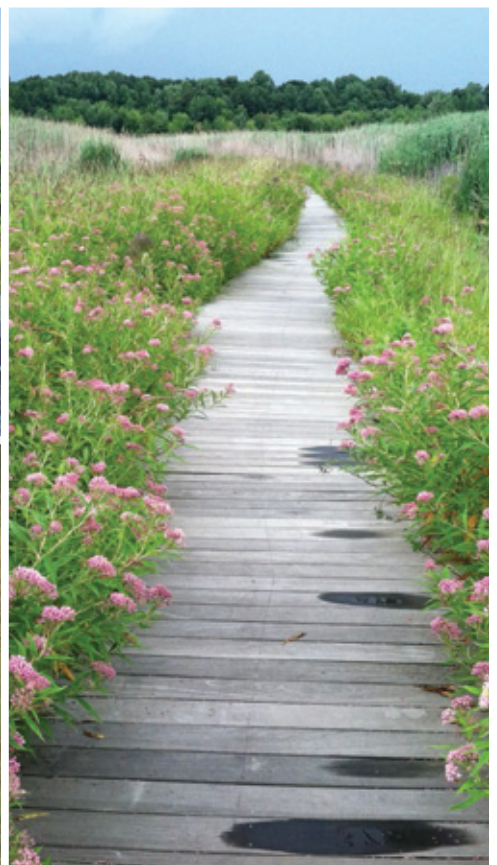


# Cleveland Great Lakes Restoration Projects Producing Results for People, Communities



Cleveland Great Lakes Restoration Projects  
Producing Results for People, Communities

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More than 120 organizations representing millions of people are uniting to restore one of America's greatest natural wonders—the Great Lakes. The coalition seeks to stop sewage contamination, shut the door on invasive species, and restore wetlands and other damaged habitat, each of which is an essential component of restoring the health of the Great Lakes. For more information, contact:

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# Cleveland Projects Producing Results

The Great Lakes are a wonder of the world. More than 30 million people rely on the Lakes for their drinking water, and millions more benefit from the commerce and businesses that depend on them. The waters known as the Sweetwater Seas have helped shape the identity of the region, from the cities and businesses that grew up along its coasts to the people who now call the region home.

Over the past several decades, Lake Erie has been at the center of the national effort to restore the Great Lakes and other U.S. waters. Once declared “dead,” Lake Erie was brought back to life—thanks to passage of landmark environmental legislation and a federal infusion of funds to help communities around the country modernize their sewers. Decades later, Lake Erie now supports a world-class walleye fishery and generates millions of dollars in tourism and recreation.

Despite progress, however, Lake Erie continues to be threatened by toxic contaminants from old industrial properties and faces growing problems from invasive species and polluted runoff that degrades water quality and harms habitat.

As this report shows, citizens, government agencies, local communities, private businesses and non-profit organizations are working together to make a difference in Cleveland because they recognize that restoration work is crucial to improving the environment and economy. They understand the importance of programs like the Great Lakes Restoration Initiative. They know that Great Lakes restoration projects provide some of the best returns on the dollar in the federal budget.

This report provides a snapshot of restoration projects that are tackling urgent problems in greater Cleveland and northeast Ohio. Communities are turning piles of industrial waste into wetlands and fish habitat; transforming vacant or underutilized urban lands into parks; removing old dams to reconnect fish habitat; cleaning up debris from the harbor that threatens public health. The results are inspiring: Rare birds are returning to a lake-side marsh. People are fishing. Water quality is improving.

These local Cleveland projects show what is possible when the nation invests in Great Lakes restoration and can serve as models for other communities. It is important that restoration work continue, because much work remains across the region. Now is not the time to cut back on the nation’s commitment to restoring the Great Lakes. If restoration efforts stall, the problems will only get worse and more costly to fix.

Investing in Great Lakes restoration protects drinking water, safeguards public health, creates jobs and upholds the quality of life for millions of people. It’s time for federal public officials to act to protect this iconic resource now and for generations to come.

# Project Curbs Storm Run-off at Area High School

## Tinker's Creek Tributary Restoration

CLEVELAND, OHIO



*A tributary to Tinker's Creek is channelized and disconnected to its floodplain. Restoration work will improve water quality and reduce sedimentation. (Photo courtesy of Biohabitats, Inc.)*

### PROJECT SUMMARY

A tributary restoration project on the grounds of a high school southeast of Cleveland will reduce the dangers of flooding, improve water quality, and create an area to be used as an outdoor amphitheater.

### APPROXIMATE COST OF PROJECT

\$700,000

### RESOURCE CHALLENGE

A small, unnamed tributary near the Ohio Turnpike runs through the grounds of Hudson High School, about 25 miles southeast of Cleveland. Despite its meager size, the tributary is vital to the proper functioning of the larger ecosystem.

It flows into Tinker's Creek and ultimately drains into Lake Erie. Many years ago, the area was farmland, and the tributary was channelized and disconnected from its floodplain for use as a farming ditch.

Then, as farmland gave way to urbanization, the area's hydrology changed again, sending greater flows of storm water down the tributary, increasing the danger of flooding downstream. Faster flows of water meant nutrients and pollution could not be filtered as effectively. Its banks became increasingly eroded, sending more sediment downstream to degrade river bottom habitat for macroinvertebrates and fish.

After years of planning, a coalition is restoring the tributary. The project will reconnect the stream to its floodplain, restore habitat, improve water quality, reduce the amount of storm water that's discharged downstream, and enhance the school's environmental curriculum.

### KEY PARTNERS

City of Hudson, Hudson High School, Cuyahoga County Board of Health, and Ohio EPA. Ohio EPA awarded \$398,000 in federal Clean Water Act funding. The city of Hudson contributed \$250,000. The board of health provided nearly \$20,000. And the school district contributed personnel and other in-kind services worth nearly \$90,000.

### TYPES OF JOBS CREATED

Construction, engineering, landscaping, and biologists and ecologists.

### RESULTS AND ACCOMPLISHMENTS

Restoration work is scheduled to finish in October 2012. The project is expected to provide storage for an estimated two million gallons of storm water, all without flooding nearby streets or properties. An outdoor amphitheater is being created to provide an outdoor classroom for the school.

High school students have a chance to see the restoration project from start to finish. They participated in designing the concept for the project. They went outside to learn about stream habitats and they will be involved in monitoring the tributary after the project wraps up.

### WEBSITE

<http://hhslandlab.edublogs.org/>

# Neighbors Work to Reduce Run-off

## West Creek Neighborhood Stormwater Initiative

CLEVELAND, OHIO

*Storm water runs from an outfall pipe at the top of the bluff, scouring a channel down to West Creek. (Photo courtesy of Cleveland Metroparks)*



### PROJECT SUMMARY

Residents of two streets in a Cleveland suburb are installing rain barrels and rain gardens to reduce storm water impacts—and to inspire other neighbors to take simple steps to eliminate a major stressor facing the watershed and Lake Erie.

### HIGHLIGHT OR INNOVATION

The project works at a neighborhood scale to chip away at a big challenge facing the ecosystem.

### APPROXIMATE COST OF PROJECT

\$400,000

### RESOURCE CHALLENGE

Development in the City of Parma has taken a toll on West Creek, a tributary to Lake Erie.

Impervious surfaces cover about 65 percent of West Creek's watershed. Rain water runs off roofs, down driveways and into the drainage pipes. There's little organic material in lawns to soak it up. Like many cities, the City of Parma has storm drains that empty into West Creek. The storm water carries excess nutrients and chemicals from lawn fertilizer, and oils and grease from

pavement, all of which hurts water quality in the creek. And the intense volume of the storm water that follows heavy rains scours the banks of the creek, harming habitat and exacerbating erosion downstream. Solving the problem requires the participation of individual residents who live in the city.



*An example of a rain garden that will be planted on two streets in a Cleveland suburb. (Photo courtesy of Cleveland Metroparks)*

### KEY PARTNERS

The West Creek Neighborhood Stormwater Stewardship Initiative is funded by \$290,000 from the Great Lakes Restoration Initiative. The initiative is a collaborative project of

Cleveland Metroparks, West Creek Preservation Committee, the city of Parma and the Northeast Ohio Regional Sewer District.

### TYPES OF JOBS CREATED

Construction, design and landscaping, and a part-time steward at the West Creek Preservation Committee.

### RESULTS AND ACCOMPLISHMENTS

This autumn, the homes will receive rain barrels and rain gardens will be installed along tree lawns. About 30 homes are participating. The project will support the participation of 180 homes.

Rain barrels reduce the intensity of storm water that enters the creek. The rain gardens also should soak up storm water and help filter pollutants.

The program will also save residents money. With the Northeast Ohio Regional Sewer District planning to assess a storm water fee starting in January, residents who engage in stewardship practices such as these will be eligible for a credit.



# Dam Removal Improves Water Quality, Fish Habitat in Urban Stream

## Euclid Creek Dam Removal

EUCLID, OHIO



*The Euclid Creek dam was an impediment to fish passage before its removal.*

### PROJECT SUMMARY

Federal Great Lakes restoration funds removed an old dam from Euclid Creek, which allowed for the return of fish and other aquatic life to the waterway. The project increased recreational fishing opportunities and improved water quality, helping the creek to meet water quality standards.



*The removal of the dam has provided fish with new habitat and increased recreational fishing opportunities.*

### DESCRIPTION

The Euclid Creek East Branch Dam in Cuyahoga County, Ohio, was removed in December 2010. The project restored the natural stream flow to a portion of Euclid Creek for the first time in 80 years. The dam was the first of six targeted for removal as part of a watershed restoration plan.

### APPROXIMATE COST OF PROJECT

\$526,585 (funded through the U.S. Fish and Wildlife Service)

### RESOURCE CHALLENGES ADDRESSED

The Euclid Creek East Branch Dam was located on the East Branch of Euclid Creek, a heavily industrialized tributary to Lake Erie that is affected by urban runoff and habitat degradation. The project removed a low-head dam that was constructed in the early 1930s to impound water for swimming at a YMCA camp. The original pool behind the dam was completely filled with sediment and the dam no longer served any purpose. The structure was an impediment to fish migration upstream from the main branch of Euclid Creek.

### KEY PARTNERS (PUBLIC AND PRIVATE)

Ohio Department of Natural Resources, City of Euclid, Cleveland Metroparks, Cuyahoga County Engineer, Cuyahoga Soil and Water Conservation District, Ohio Environmental Protection Agency, Northeast Ohio Regional Sewer District, Friends of Euclid Creek

### TYPES OF JOBS CREATED

The project created 38 jobs. 20 people worked on design, surveying, field administration and construction services; 11 people worked on the construction portion of the project; and 7 worked on replanting the shoreline after the dam removal was complete.

### RESULTS AND ACCOMPLISHMENTS

Removing the dam and abutments restored the natural flow to 500 linear feet of Euclid Creek upstream of the dam and allowed fish and other aquatic life in the creek's main branch to reach waters in the East Branch. The result: New habitat for fish and other aquatic life and increased recreational fishing opportunities. The improved water quality also will help Euclid Creek meet Ohio's water quality standards.

### WEB SITE

[http://www.cuyahogawcd.org/euclidcreekfiles/EC\\_EastBranchDamRemoval.htm](http://www.cuyahogawcd.org/euclidcreekfiles/EC_EastBranchDamRemoval.htm)

# Industrial Clean-up Restores Habitat, Water Quality

## Black River Restoration

CLEVELAND, OHIO



*Steel waste towers 50 to 70 feet above the banks of the Black River near Lake Erie before the cleanup. (Photo courtesy of the City of Lorain)*

### PROJECT SUMMARY

The City of Lorain and its state and federal partners have removed more than 1 million cubic yards of steel waste along the Lower Black River, improving water quality and habitat for fish and other wildlife.

### APPROXIMATE COST OF PROJECT

\$12 million

### HIGHLIGHT OR INNOVATION

In the city of Lorain, abandoned steel slag is being recycled as the project shows how even a site heavily impacted by industry can be reclaimed.

### RESOURCE CHALLENGE

For decades, the Black River powered the city of Lorain's industrial economy. But the pollutants dumped into the Lake Erie tributary degraded its ecological functioning so severely it became known as the "River of Fish Tumors." After many of the factories closed, however, Lorain viewed a healthy river as a key to its economic rebirth.

In 2007, Lorain obtained 300 acres along a 1.5-mile stretch of the river from a defunct steel-making operation. The city set about restoring the area, turning to photographs from the turn of the 20th Century as a guide to its natural topography. The job was massive. Steel-making waste called slag

towered 80 feet above a portion of the river and leached metals into the water. Invasive species had taken hold. Habitat for birds, fish and other aquatic organisms had long since been severely impacted.



*The 1.5-mile stretch of the river was restored to a natural state. (Photo courtesy of the City of Lorain)*

### KEY PARTNERS

The U.S. Environmental Protection Agency and the Ohio EPA provided \$6.3 million in funding from the American Recovery and Reinvestment Act to tackle the site of the slag piles. Funding for other restoration activities came from the Great Lakes Restoration Initiative through the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration. Local partners included the city of Lorain, Lorain Port Authority, Lorain County, Lorain Metro Parks and the Lorain County General Health District.

### RESULTS AND ACCOMPLISHMENTS

By 2011, the project had removed more than 1 million cubic yards of steel waste. Where the slag once stood, native shrubs and trees are taking root in a variety of habitats in the floodplain. Anecdotal evidence shows newly-created pools and fish shelves—areas of stone and rubble in the river where fish can find refuge and forage—improved fish populations. More fish shelves and additional habitat restoration is continuing. All told, about 200 acres along the river are being restored and preserved.

### WEBSITE

<http://www.lorainblackriver.com/>



# Dam Removals to Revive Creek, Help State-Threatened Fish

## Baldwin Creek Dam Removal

CLEVELAND, OHIO



*One of the three dams on Baldwin Creek that will be removed. (Photo courtesy the Cuyahoga Soil & Water Conservation District)*

### PROJECT SUMMARY

Three dams spanning Baldwin Creek in Berea, Ohio, will be removed to improve water quality, restore habitat and allow recovering populations of fish to recolonize a mile-long portion of the creek, including the state-threatened Bigmouth Shiner. The project begins this autumn.

### APPROXIMATE COST OF PROJECT

\$500,000

### RESOURCE CHALLENGE

Development has severely altered Baldwin Creek, which runs through the City of Berea and into the East Branch of the Rocky River, which empties into Lake Erie. The creek was moved, channeled and coerced from its historic creek bed.

Today, some of the challenges facing the creek have been resolved; water quality, for instance, has improved, largely thanks to improvements in the treatment of waste water. Populations of macroinvertebrates also have recovered.

But large disparities exist in the quality of fish communities upstream and downstream of the dams. Four low-head dams impede the passage of fish in the lowermost mile of Baldwin Creek, impacting the state-threatened Bigmouth Shiner. Meanwhile, the dams also contribute to problems with sedimentation in the river, which harms habitat.

In 2001, local officials began forging plans to remove the dams to improve the ecology of the creek. The dams are no longer required. They are in poor condition—two of them have been breached and another collects debris, which contributes to flooding. Removing the dams also saves the city of Berea money from ongoing maintenance.

### KEY PARTNERS

The Cuyahoga Soil & Water Conservation District, working with the city of Berea, received funding from the Great Lakes Restoration Initiative through a \$150,000 subgrant from the Ohio EPA's Surface Water Improvement Fund. About \$340,000 in funding was obtained through the Northeast Ohio Regional Sewer District and Ohio EPA's Water Resource Restoration Sponsorship Program. Cleveland Metroparks and the Rocky River Watershed Council also worked to support the project.

### TYPES OF JOBS CREATED

Design, engineering and construction services.

### RESULTS AND ACCOMPLISHMENTS

Three of the dams are slated to be removed in September and October 2012. (The fourth dam is scheduled to be removed in a separate project in 2013.) The project also will stabilize some sections of the creek bank and install riffles and rock placements. Planners believe the dam removal and other ongoing efforts will be another significant step in improving the ecological health of the watershed.

### WEBSITE

<http://www.cuyahogaswcd.org/PDFs/BaldwinCreekWRRSPproposal0911.pdf>

# Comeback Continues for Iconic River

## Cuyahoga River Fish Restoration Project

CLEVELAND, OHIO



*The site of an abandoned marina will become lake marsh habitat for fish.  
(Photo courtesy of Cuyahoga River RAP)*

### PROJECT SUMMARY

As part of the long-term effort that's bringing the Cuyahoga River back to life, work began in late July to create habitat for fish, restore wetlands and improve public access to the river. The 11-acre site is located on the Scranton Peninsula on the Cuyahoga River shipping channel, which is the final six miles of the river before it empties into Lake Erie. The project is anticipated to lead to a healthier and more diverse population of fish in the river and lake, another visible sign of the area's rebirth.

### APPROXIMATE COST OF PROJECT

\$8 million, including site acquisition

### HIGHLIGHT OR INNOVATION

The Cuyahoga River shipping channel is significantly altered and presents significant challenges for restoration. The project creates rest stops for migrating fish – essentially pockets of habitat and fish nursery areas.

### RESOURCE CHALLENGE

To aid navigation in the shipping channel, steel bulkheads were driven into the sediment of the Cuyahoga River years ago. Now rusty and deteriorating, the bulkheads separate the river from its banks and corridor, creating a steel bathtub. There's little in the way of natural features, such as rocks and crevices, which fish and their food require to survive. The water quality is severely impacted. The channel contains very low levels of dissolved oxygen.

Previous efforts to improve the river have reduced the amount of toxic chemicals and sewage entering the area's waterways—and fish populations began returning to Lake Erie. But the lack of habitat in the shipping channel hampers the migration of fish from Lake Erie to spawning areas upstream.

In one portion of the site, most of an abandoned marina will be demolished, but some boat slips will be repurposed to create a 2-acre slice of lake marsh habitat for fish. Fish habitat will be created by cutting away several sections of steel bulkhead and adding natural features, such as rock refuges. In other areas, the bulkhead cannot be removed, so slits will be cut that are small enough to allow larval fish to reach newly created pools along the river banks while blocking larger predators. The river banks and terrestrial areas will be restored through the remediation of some contamination and planting of new vegetation.

### KEY PARTNERS

The City of Cleveland, Ohio Canal Corridor, Cleveland Metroparks, Cuyahoga River RAP and Cuyahoga County Public Works. The Trust for Public Lands and Ohio Canal Corridor acquired the Scranton Peninsula site in 2010 – thanks to \$3.1 million from the Clean Ohio Fund and \$1.7 million from Cuyahoga County. The restoration project received \$3 million in funding from the Great Lakes Restoration Initiative. The U.S. Fish and Wildlife Service contributed \$250,000.

### TYPES OF JOBS CREATED

Primarily construction related, but also ongoing jobs to monitor and maintain the aquatic and wetland habitats.

### RESULTS AND ACCOMPLISHMENTS

At the end of July, several hundred people attended a groundbreaking ceremony to celebrate the start of restoration work. All of the work is planned to finish in 2014. In addition to the ecological benefits, the project will also allow public access to the river

The property will be used to expand the Ohio & Erie Canal Towpath Trail, a greenway with a walking and bicycling trail that stretches more than 80 miles.

### WEBSITE

<http://www.crcpo.org/>

# Vessels Remove Debris to Protect Health of People, Wildlife

## Urban Waterways Debris Removal Project

CLEVELAND, OHIO

### PROJECT SUMMARY

This autumn, two custom-designed vessels will ply the shores of Lake Erie and its tributaries around Cleveland to scoop up and remove floating debris and trash, improving the aesthetics of the waters and reducing the harm to wildlife.

*Tree limbs, tires, plastic bottles and other trash washed into Cleveland's waterways during heavy rains threaten wildlife and human health. (Photo courtesy of Cleveland-Cuyahoga County Port Authority)*



*An artist's rendition shows Flotsam (left) and Jetsam working as a team to clear floating debris from the waterway. (Photo courtesy of Cleveland-Cuyahoga County Port Authority)*

### HIGHLIGHT OR INNOVATION

The two 25-foot-long vessels—named Flotsam and Jetsam—are specially designed for the challenges of Cleveland's waterfront, where larger clean-up vessels cannot reach debris that pools along its tight corners. The two new vessels solve that problem by being smaller and more maneuverable—scooping and transporting trash to the shore. The vessels are also helpful in handling debris that can be contaminated from combined sewer overflows. They could be the answer to similar problems facing other old, industrial waterfronts with tight confines.

### APPROXIMATE COST OF PROJECT

\$425,000

### RESOURCE CHALLENGE

Even as water quality improves and wildlife shows signs of returning, floating debris and trash had been a problem with no quick fixes. When it rains, plastics, bottles, needles, condoms and anything else tossed on the streets gets flushed into the storm drains. Some storm drains spill their contents directly into the city's waterways. Others merge with sewer pipes and lead to treatment plants. But this poses another problem. Heavy rains can overwhelm the capacity of the plants. To prevent flooding, the mixture of trash-laden storm water and human waste gets diverted directly into the waterways.

Once in the waterways, the material gets bound up in wooden debris—such as tree limbs and bark—that float downstream from the upper Cuyahoga River and its tributaries. Then, in the Cuyahoga River Ship Canal and the North Coast Harbor, currents and wind push the debris into large piles or mats that float against the bulkheads.

Along with being unsightly, the debris entangles birds. At times, non-swimming birds will misjudge the stability of the debris piles, riding them until they slip into the waters and drown. Eventually, some of the debris ends up on beaches, where it poses a risk to wildlife and humans.

Floating debris is one factor that placed the Cuyahoga River on a U.S. Environmental Protection Agency watch list. The Northeast Ohio Regional Sewer District studied the problem more than 10 years ago and took steps to install nets to block the material from entering the waterways at certain outfall pipes. But nets cannot be installed at every outfall pipe.

### KEY PARTNERS

The Cuyahoga River Community Planning Organization and Cleveland-Cuyahoga County Port Authority worked together to obtain \$425,000 in funding for the project from the Great Lakes Restoration Initiative.

### TYPES OF JOBS CREATED

About 20 jobs associated with the design and construction of the vessels. The project will create five to six permanent jobs for boat chiefs, equipment operators and deck hands. (Vessel crews will be assigned to other tasks during the off-season.)

### RESULTS AND ACCOMPLISHMENTS

The two vessels are being built in Wisconsin and are expected to begin operating in Cleveland in September. The Cleveland-Cuyahoga County Port Authority estimates Flotsam and Jetsam will be busy removing 400 to 800 cubic yards of debris each year.



# Marsh Restoration Paves Way for Return of Native Wildflowers, Birds

## Restoration of Mentor Marsh

CLEVELAND, OHIO



*Pink swamp milkweed, a native flower, growing along the boardwalk Mentor Marsh. (Courtesy of The Cleveland Museum of Natural History)*

### PROJECT SUMMARY

Restoration efforts are helping control the invasive weed Phragmites, and allowing native plants and wildlife to return, including bald eagles.

### DESCRIPTION

Mentor Marsh is one of the largest examples of a natural marsh and wetland along Lake Erie. Efforts to protect the marsh began in the 1960s. In 1971, the marsh became one of the first State Nature Preserves in Ohio.

At 850 acres, the marsh provides critical spawning habitat for Lake Erie fish and serves as an important stop for migratory birds. The marsh is home to 12 state-listed endangered or threatened species. Most of the marsh is managed by the Cleveland Museum of Natural History, which is fighting back against the invasive strain of reed known as Phragmites.

Continual maintenance and restoration efforts have removed Phragmites and transformed several acres around the Wake Robin boardwalk. Today, visitors can stroll the boardwalk, enjoy native wildflowers and spot several rare birds that have returned. More than 200 species of birds have been sighted in the marsh, including the return of bald eagles in 2010.

### APPROXIMATE COST OF PROJECT

Stewardship activities cost about \$10,000 annually.

### HIGHLIGHT OR INNOVATION

Intensive efforts to clear Phragmites and restore wetlands have allowed native plants to return, attracting rare birds, such as the American bittern, Virginia rail, Nelson's sharp-tailed sparrow and LeConte's sparrow.

### RESOURCE CHALLENGE

Mentor Marsh has changed significantly because of human activities. Before 1959, the area largely had been a swamp forest. Then the forest began dying rapidly. Salt from a mining operation and landfill was blamed for leaching into the water. Only a remnant of the swamp forest survives, though it is being preserved as an important source of seeds for future restoration efforts.

The salty water is tolerated by the invasive Phragmites, which quickly established itself as the dominant vegetation in the marsh. By 1979, the Phragmites had crowded out native plants. The dense invasive plant is persistent and difficult to control. Since Phragmites exploded across the marsh, fire has swept the marsh nine times, with the stands of the invasive plant providing a large source of fuel.

### KEY PARTNERS

The Cleveland Museum of Natural History maintains Mentor Marsh. Key partners in the preservation of the marsh included the state of Ohio, city of Mentor, and many local individuals.

### TYPES OF JOBS CREATED

Ongoing restoration work supports the jobs of naturalists as well as contractors who apply herbicide.

### RESULTS AND ACCOMPLISHMENTS

Restoration efforts are controlling the invasive Phragmites and allowing native species to return.

### WEBSITE

<http://www.cmnh.org/site/Conservation/NaturalAreas/Map/MentorMarsh.aspx>

# Massive Cleanup Transforms Lower Ashtabula River

## Ashtabula River Cleanup and Habitat Restoration

ASHTABULA, OHIO

### PROJECT SUMMARY

A sediment cleanup and habitat restoration project have restored the lower two miles of the Ashtabula River and advanced efforts to get it de-listed as a Great Lakes Area of Concern.



*Severe pollution in the lower Ashtabula River prompted health officials to warn anglers to limit their consumption of fish from those waters. (Photo courtesy of U.S. Environmental Protection Agency)*

### DESCRIPTION

The Ashtabula River is one of Ohio's most significant rivers, a biologically rich tributary of Lake Erie that supports 88 fish species. Decades of unregulated industrial and municipal waste discharges blanketed the last two miles of the river with a layer of toxic mud that contaminated aquatic life and disrupted navigation. The lower river was declared a Great Lakes Area of Concern in 1985 and the Ohio Department of Health posted signs in 1997 warning anglers to limit their consumption of fish caught in that stretch of the river. The Ashtabula River RAP/Partnership in 1988 began working to bring about a cleanup of the beleaguered river.

Severe pollution in the lower Ashtabula River prompted health officials to warn anglers to limit their consumption of fish from those waters.



*Cleaning up the lower river has made it a more attractive place for boaters and anglers. (Photo courtesy of U.S. Environmental Protection Agency)*

### APPROXIMATE COST OF PROJECT

\$61.5 million, \$1.5 million of which came from the Great Lakes Restoration Initiative

### RESOURCE CHALLENGES ADDRESSED

Contaminated sediments, loss of fish and wildlife habitat, contaminated fish, and shoals that prevented ships from reaching parts of the harbor.

### KEY PARTNERS (PUBLIC AND PRIVATE)

The Ashtabula River RAP/Partnership; the U.S. Environmental Protection Agency, which provided \$30 million for the cleanup; the Ashtabula Port Authority, which contributed \$23 million; the Ohio Environmental Protection Agency, which contributed \$7 million; and the U.S. Army Corps of Engineers, which provided \$15 million to deepen a stretch of river adjacent to the cleanup to improve navigation.

### TYPES OF JOBS CREATED

Dredge operators, truck drivers, heavy equipment operators, chemists, toxicologists, biologists, ecologists and general laborers.

### RESULTS AND ACCOMPLISHMENTS

The cleanup removed 630,000 cubic yards of contaminated sediment that contained more than 25,000 pounds of hazardous polychlorinated biphenyls and other toxic compounds. The project improved water quality and deepened the river channel, making the lower Ashtabula suitable again for maritime commerce, fishing and recreational boating. A habitat restoration project slated for completion in 2012 will create 1,500 feet of prime fish habitat in the lower two miles of the river, which will bolster populations of muskellunge and northern pike.

### WEB SITE

<http://epa.gov/glla/ashtabula>

# Nature Returns to an Urban Creek in Cleveland

## Big Creek Watershed Stormwater Management Improvement

CLEVELAND, OHIO



*A section of Big Creek before the restoration project began. (Photo courtesy of Biohabitats)*

### PROJECT SUMMARY

Urban development in Cleveland left Big Creek, a tributary of the Cuyahoga River, a polluted mess that was prone to flooding. An ambitious restoration project returned the creek to a more natural state. The project reduced polluted runoff and created wetlands and other habitat that benefited fish, wildlife and people who live near the creek.

### DESCRIPTION

A group of government agencies and private engineering firms developed a plan to restore nearly one mile of Big Creek, which was disfigured by decades of urban development. Intense development increased the volume of polluted stormwater that flowed into the creek, the Cuyahoga River and Lake Erie. Human activities also straightened the creek, separated it from natural floodplains and destroyed wetlands. The restoration work removed large debris from the creek, stabilized eroding stream banks, replaced defective culverts, created wetlands, reconnected the creek to the floodplain and restored its natural meander. Crews also planted native vegetation along the restored stream banks.

### APPROXIMATE COST OF PROJECT

\$923,758

### RESOURCE CHALLENGES ADDRESSED

Soil erosion, non-point and point source pollution, excessive stormwater runoff, loss of wetlands and loss of fish and wildlife habitat.

### KEY PARTNERS (PUBLIC AND PRIVATE)

The cities of Parma and Cleveland, the Ohio Department of Transportation, and the Northeast Ohio Regional Sewer District and the city of Cleveland's Division of Water Pollution Control. The engineering firms DLZ and Biohabitats designed the restoration project and managed construction activities. Biohabitats prepared stream channel restoration designs for 4,500 linear feet along the Chevrolet Branch of Big Creek.

### TYPES OF JOBS CREATED

Environmental engineers, hydrologists, ecologists, biologists, excavators, landscape architects and landscapers.



*The same section of the creek after the restoration work was completed. (Photo courtesy of Biohabitats)*

### RESULTS AND ACCOMPLISHMENTS

The restoration work created wetlands and other habitat for fish and wildlife and restored a more natural flow in the creek. The work also curtailed flooding and reduced the volume of sediment and

other pollutants that wash into the Cuyahoga River and Lake Erie following rain showers or periods of snow melt.

### WEB SITE

<http://bit.ly/zNBDKU>



# Wetland Restoration Creating Urban Oasis for People, Wildlife

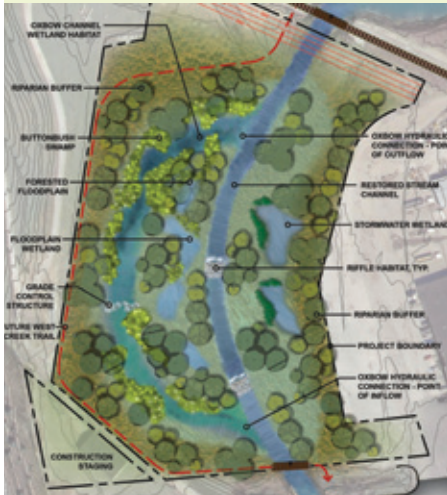
## West Creek Confluence Project

CLEVELAND, OHIO

### PROJECT SUMMARY

The ongoing project shows that even heavily developed properties in urbanized areas can be restored to improve ecological functioning.

*A conceptual plan shows the new wetlands and riparian buffer that will be created by the restoration project. (Photo courtesy of Cleveland Metroparks)*



*Students learn about urban watersheds while standing in West Creek. Concrete slabs on the banks will be removed and the river will be restored to a more natural state. (Photo courtesy of Cleveland Metroparks)*

### HIGHLIGHT OR INNOVATION

A local watershed preservation group and its partners are working to undo the damage of poor development practices at a strategic location—a property adjacent to where West Creek meets the Cuyahoga River.

The 10-acre site had been home to a warehouse and parking lot. After buying the property, the coalition demolished the building and removed the blacktop in 2008. Now, the group is about to tap \$2.4 million in federal funds. West Creek runs through the property. The group will restore West Creek's floodplain, wetlands and stream bank.

### APPROXIMATE COST OF PROJECT

\$2.4 million for the upcoming restoration work

### RESOURCE CHALLENGES ADDRESSED

In the 1950s and 1960s, when Granger Road in the city of Independence was developed, little attention was paid to West Creek. Its floodplains and wetlands were filled. What had been a meandering creek was shunted into a straight channel.

On a 10-acre site bisected by the creek, developers built a large parking lot and a store, which later became a warehouse. When the development was finished, impervious surfaces covered 85 percent of the site.

As a result, the property became a major conduit of non-point source pollution into West Creek, the Cuyahoga River and Lake Erie. During heavy rains, water ran so quickly through the creek that it scoured away aquatic species and habitat.

With the site susceptible to heavy flooding, the West Creek Preservation Committee and its partners purchased the site after the last tenant moved out.

### KEY PARTNERS (PUBLIC AND PRIVATE)

The West Creek Preservation Committee is working with partners that include the Northeast Ohio Regional Sewer District and the city of Independence. The bulk of the upcoming project taps a \$2.2 million grant from the Ohio Environmental Protection Agency's Water Resource Restoration Sponsor Program. The rest comes from Clean Water Act funds administered by the Ohio EPA.

### TYPES OF JOBS CREATED

Demolition, engineering and design, and construction.

### RESULTS AND ACCOMPLISHMENTS

Later this year, the second phase of restoration work is planned to begin. West Creek will be given a more natural hydrology. Meandering sections will be created. Floodplain and wetlands will be restored. More than 10,000 streamside plants will be added. The project will create or restore habitat for aquatic species, amphibians and birds. The vegetation will filter pollutants and the project will reduce the amount of storm water leaving the site. What's more, the site will be publicly accessible, and provide a point of access to the Cuyahoga Valley Scenic Railroad and Ohio and Erie Canal Towpath Trail.

### WEB SITE

<http://www.westcreek.org/Confluence.html>



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