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*Ensuring environmental and
economic prosperity for the Great
Lakes-St. Lawrence region through
communications, policy research and
development, and advocacy.*

**Great Lakes Commission Testimony to the
Michigan Senate Natural Resources Committee
In Support of Senate Resolutions Urging Congress to
Restore Great Lakes Restoration Initiative Funding in FY 2016**

September 16, 2015

The Great Lakes Commission supports SCR 11 and SR 42 urging the U.S. Congress to restore Great Lakes Restoration Initiative (GLRI) funding to \$300 million in FY 2016. Sustaining progress in cleaning up the Great Lakes under the GLRI is a top priority for the Commission and its eight member states. The Commission welcomes these resolutions supporting the GLRI and urges their adoption by the Michigan Legislature.

The Great Lakes are a vital environmental and economic asset for Michigan and the other Great Lakes states. With 90 percent of our nation's supply of fresh surface water, the Great Lakes provide unparalleled recreational opportunities for residents and tourists; abundant fresh water for communities and industries; an efficient transportation system for raw materials and finished goods; and extensive habitat for valuable fish and wildlife resources.

The GLRI is supporting implementation of a comprehensive cleanup plan that has been broadly endorsed by the region's governors, tribes, cities, conservation groups, and business and industry. Begun in 2009, the Initiative builds on years of work to identify solutions to key problems facing the Great Lakes: combating aquatic invasive species, such as Asian carp; cleaning up degraded "toxic hotspots;" controlling polluted runoff and cleaning up beaches; and restoring and enhancing valuable fish and wildlife resources. The GLRI is supported by sound science and guided by an Action Plan with detailed performance goals. An interagency task force is coordinating federal efforts and directing a majority of funding to states, cities and nongovernmental groups that are best able to address local restoration priorities.

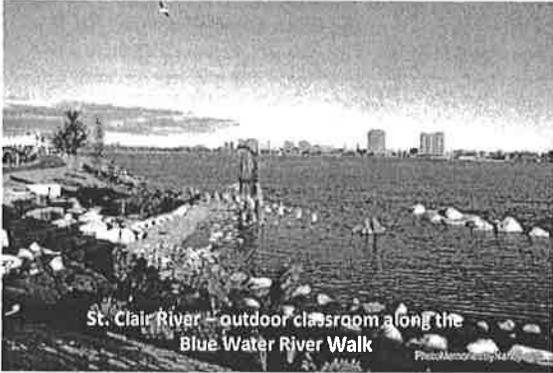
As the "Great Lakes State," Michigan is benefitting tremendously from the GLRI. More than \$250 million has come to the state to implement over 500 restoration projects. A top priority is cleaning up Michigan's 14 "toxic hotspots," or Areas of Concern (AOC). With support from the GLRI, the State of Michigan and local communities, cleanup work has been completed in two AOCs (White Lake and Deer Lake) with another seven to be cleaned up by 2019 (Clinton, Manistique, Menominee, Raisin, St. Marys and St. Clair rivers, and Muskegon Lake). Nearly 400,000 cubic yards of toxic sediment have been cleaned up and another dozen contaminated sediment cleanups are underway. The impact of this work is illustrated in the photos and quotes from local leaders on the back of this sheet.

More than 1.5 million jobs are directly connected to the Great Lakes, generating \$62 billion in wages. In Michigan, one in five jobs is tied to water or water innovation. A recent report from NOAA found Michigan to be the top state in the U.S. for water-dependent employment growth, with an 8 percent increase in 2012, nearly four times the national average.

The GLRI is helping Michigan create new opportunities for waterfront development, recreation, fishing and tourism. This is revitalizing previously degraded waterfront areas and helping local communities leverage Michigan's "Blue Economy" to create jobs and improve the quality of life for local residents. Restoring the Great Lakes in Michigan isn't just about correcting mistakes from the past, but also creating a better future for our communities.

The Commission appreciates the Michigan Legislature's support for the GLRI and looks forward to continued progress in advancing the state's environmental and economic health.

Restoration Scenes in Michigan's Great Lakes Areas of Concern



St. Clair River – outdoor classroom along the Blue Water River Walk

"In the last five years we've started to see large-scale sediment cleanup and it's been an amazing catalyst to people in the community reclaiming the river. We see lots of new river-front development that we haven't seen for generations. It has been a couple of generations since people remember the river being a great resource and a place to visit so I'm really excited that my kids might be able to use the river again."

*Jamie McCarthy
Kalamazoo River*



Detroit River – Blue Heron Lagoon on Belle Isle

"The fact that we can now swim in the river without concern of bacterial contamination is one of the successes we can tout. For me personally, the AOC cleanup means that we have done our job for the next generation. We have provided them with something better than we got."

*Patty Troy
St. Clair River*



St. Clair River – Educational sign along the Blue Water River Walk

"People are now seeing the value of the Detroit River. People are coming back to the shoreline. I think that is one of the biggest things we've seen over the last twenty years."

*Bob Burns
Detroit River*



Muskegon Lake – restoration at Grand Trunk

"We've already seen a lot more development plans for more public outdoor recreation on Muskegon Lake because of the cleanup work and especially because of the shoreline habitat work that we've done."

*Kathy Evans
Muskegon Lake*



St. Clair River – Lake Sturgeon visiting restored spawning reef (credit: Adam Lintz)

"We always knew that as long as it was contaminated, the area wasn't going to do much. By cleaning up Black Lagoon we gain as a community and as a region."

*Hon. Gerald Brown
Mayor, City of Trenton*

"What this means for the community is the beginning of a new era. We have been focused for over 25 years on cleaning up problems from the past and now it's time to look forward with a clean slate with a lot of exciting opportunities. People are very happy about the cleanup and the delisting."

*Tanya Cabala
White Lake*



Clinton River – Paint Creek dam removal and fish passage



River Raisin – fish passage stream



Muskegon Lake – shoreline restoration at Heritage Landing



Deer Lake – Partridge Creek re-routing and restoration

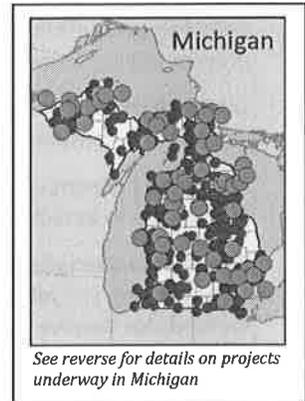


River Raisin – rock arches to provide fish passage

February 2015

Great Lakes Restoration at work in Michigan

The state of Michigan – together with local communities, nongovernmental organizations, business and industry – is collaborating with the federal government to implement a comprehensive restoration strategy for the Great Lakes. With strong support from Congress and the Administration, this partnership is generating on-the-ground actions that will improve Michigan's economy, environment and quality of life. This fact sheet describes how Great Lakes restoration is benefiting Michigan and showcases selected restoration projects now underway.



See reverse for details on projects underway in Michigan

The Great Lakes: A Vital Economic Asset for Michigan

The Great Lakes are Michigan's most valuable natural resource and are fundamental to our identity and quality of life. The Great Lakes have extraordinary economic value for Michigan. Despite difficult economic conditions, the last decade saw a 33 percent increase in tourism-related employment in Michigan's coastal counties, generating almost 20,000 new jobs. More broadly, the lakes provide

- jobs for more than 800,000 Michigan residents;
- a world-renown commercial and sport fishery with an annual value of more than \$4 billion;
- the foundation for a \$12.8 billion travel industry;
- water resources for manufacturing industries, which produce 60 percent of our nation's steel and 60 percent of our automobiles;
- a maritime transportation network; and
- harbors and marinas that support a \$2 billion annual recreational boating industry.

As these figures show, cleaning up the Great Lakes isn't just about correcting mistakes of the past but of leveraging a vital resource to build a better future.

Investing in Michigan's Waterfront Communities

The Great Lakes Restoration Initiative (GLRI) is supporting implementation of a comprehensive cleanup plan that has been broadly endorsed by the region's governors, tribes, cities, conservation groups, and business and industry. Begun in 2009, the Initiative builds on years of work to identify solutions to key problems facing the Great Lakes:

- Combating aquatic invasive species, such as Asian carp
- Cleaning up contaminated sediments in Areas of Concern
- Controlling polluted runoff and cleaning up beaches
- Restoring degraded wetlands
- Conserving and enhancing valuable fish and wildlife resources

The GLRI is supported by sound science and guided by an Action Plan with detailed performance goals and clear accountability standards. An interagency task force, led by U.S. EPA, is coordinating federal efforts and directing a majority of funding to states, cities and nongovernmental groups that are best able to address local restoration priorities.

Economic Benefits from Restoring the Great Lakes

Restoring the Great Lakes advances the region's broader strategy to create jobs, stimulate economic development and invest in freshwater resources and waterfront communities.

A detailed study by The Brookings Institution found that fully implementing The Great Lakes restoration strategy would generate \$80 billion to \$100 billion in benefits, including

- \$6.5 billion to \$11.8 billion in direct benefits from tourism, fishing and recreation;
- \$50 million to \$125 million in reduced costs to municipalities; and
- \$12 billion to \$19 billion in increased property values in degraded shoreline areas, including \$3.7 billion to \$7 billion for the Detroit metro area alone.

Solving Problems in the Great Lakes

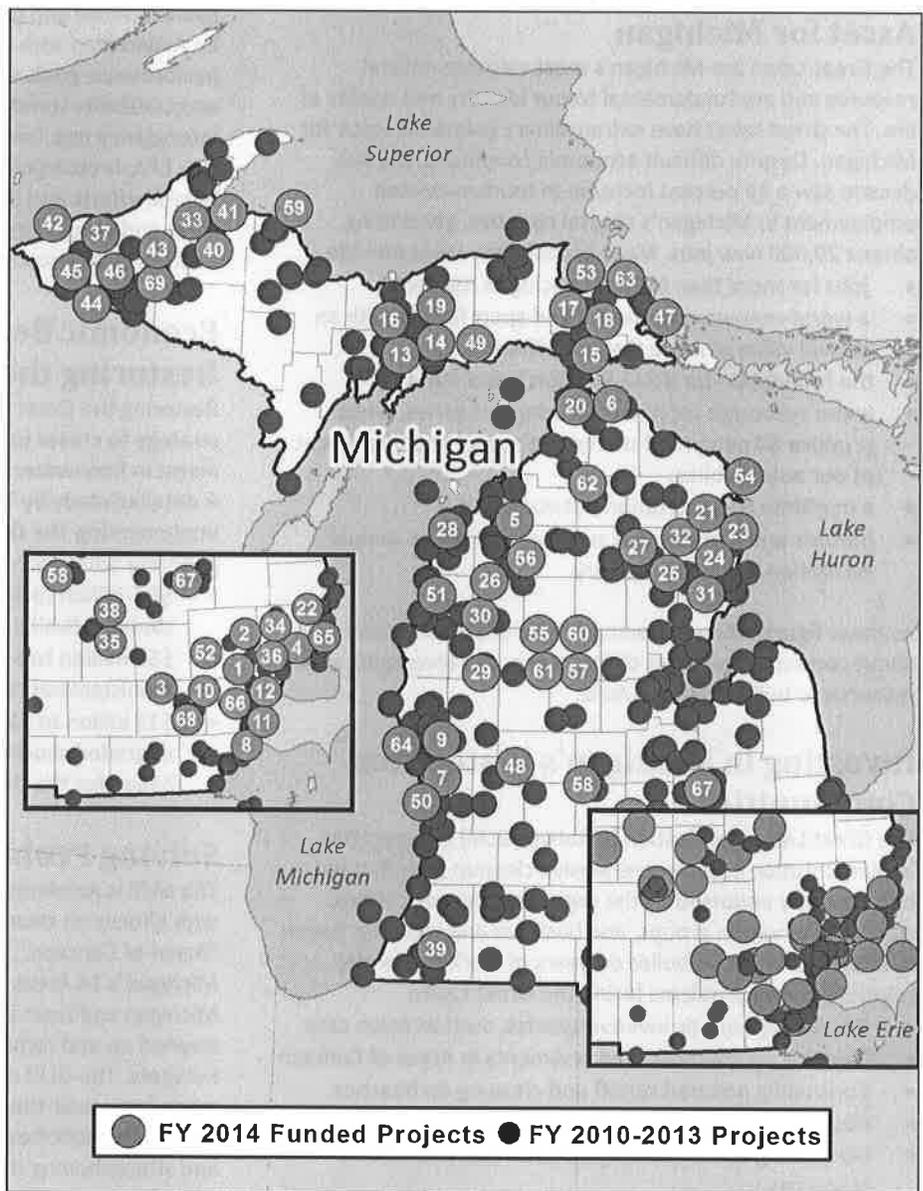
The GLRI is accelerating the pace of restoring the Great Lakes, with a focus on cleaning up highly degraded toxic hotspots, or "Areas of Concern." With investments from the GLRI, two of Michigan's 14 Areas of Concern—White Lake in west Michigan and Deer Lake in the Upper Peninsula—have been cleaned up and removed from the list of Great Lakes toxic hotspots. The GLRI aims to complete cleanup work in seven more areas over the next five years. This work is reducing threats to public health, creating recreational opportunities, and strengthening the local economy in Michigan's waterfront communities.

Great Lakes Restoration in Michigan

The GLRI is well underway in Michigan, with nearly \$250 million coming into the state to implement 489 local and on-the-ground restoration projects in the first five years, FY 2010-2014. This federal support is leveraging substantial resources from state and local governments. Restoration projects funded in fiscal year 2014 are featured on the map below and more details are provided in the attached table. In addition to these site specific projects, Michigan will also benefit from funding for broad-scale projects and activities that are underway under the GLRI that will strengthen restoration efforts across the region:

- **Engineering and design** of sustainable restoration projects, new technologies to detect bacterial contamination, and techniques to monitor invasive species.
- **Pollution prevention** to keep the Great Lakes clean, prevent beach contamination, safeguard investments in restoration and prevent polluted runoff that contributes to harmful algal blooms.
- **Outreach** to engage citizens in restoration efforts; promote best practices to prevent the introduction of invasive species; improve fish consumption and beach advisories; and keep pesticides, pharmaceuticals and other pollutants out of the lakes.
- **Monitoring** of mercury pollution to protect children’s health; beaches to inform swim advisories; and Great Lakes water, fish and wildlife to detect contaminants.
- **Research to strengthen management**, including on control methods for invasive species such as Asian carp, Phragmites and sea lamprey; preventing the introduction of invasive species in ballast water; enhancing knowledge of the Great Lakes ecosystem; protecting endangered species; identifying habitat for sensitive species; and understanding climate change impacts.
- **Capacity building** to help states restore the Great Lakes by implementing collaborative Lakewide Action and Management Plans and Area of Concern Remedial Action Plans, as well as educating health care providers about fish consumption advisories.
- **Sound science and accountability** to ensure that funds are spent effectively and that the GLRI reflects a strong, science-based understanding of the Great Lakes.

These activities will benefit the next generation of Michigan citizens who will look to the Great Lakes as an important resource to support their quality of life and economic well-being.



Great Lakes Restoration Initiative in Michigan

Site Specific Projects Funded in Fiscal Year 2014

An **interactive map** featuring Great Lakes Restoration Initiative projects funded in fiscal years 2010 through 2014 is available at projects.glc.org/restore/glimap.

Map Number	Project Title	Recipient Agency or Organization	Total Funding Amount	Fiscal Years Funded
1	Restoring Tree Canopy in the Rouge River Area of Concern	Alliance for Rouge Communities	\$100,000	2014
2	Marine Debris Removal and Prevention on Belle Isle	Alliance for the Great Lakes	\$50,000	2014
3	Restoring Aquatic Connectivity to the Kalamazoo River	Calhoun Conservation District	\$168,354	2014
4	Urban Tree Canopy Restoration	City of St. Clair Shores	\$100,000	2014
5	Boardman River Fish Passage Restoration II	Conservation Resource Alliance	\$15,000,000	2014
6	Improving Aquatic Connectivity and Habitat in the Maple River	Conservation Resource Alliance	\$558,000	2014
7	Reducing Soil Contamination on Brownfield Sites in Areas of Concern	Delta Institute	\$125,142	2014
8	Sterling State Park- Restoring Fish Access to Coastal Wetlands	Ducks Unlimited - Great Lakes Office	\$81,000	2014
9	Muskegon Lake Habitat Restoration Project	Great Lakes Commission	\$5,966,500	2014
10	Invasive Species Control: Sea Lamprey	Great Lakes Fishery Commission	\$2,981,970	2014
11	Detroit and Rouge River Watersheds Emerald Ash Borer Tree Restoration Initiative	Greening of Detroit	\$100,000	2014
12	Detroit Future City Reforestation	Greening of Detroit	\$40,000	2014
13	Camp 7 Lake Log Crib Installation	Hiawatha National Forest	\$5,400	2014
14	Install Log Bank Cover Structures in the Indian River	Hiawatha National Forest	\$30,000	2014
15	Piping Plover Habitat Restoration at Point Auxchenes and Indian Point	Hiawatha National Forest	\$20,000	2014
16	Reconstruct Horse Trail Crossing	Hiawatha National Forest	\$15,000	2014
17	Replace Culvert on Tributary to Rock River	Hiawatha National Forest	\$103,600	2014
18	Road Decommissioning (permanently decommission roads that degrade aquatic habitat)	Hiawatha National Forest	\$15,000	2014
19	Steuben Lake Aquatic Plant Treatment	Hiawatha National Forest	\$12,000	2014
20	Restoring Fish Habitat in the Cheboygan River Watershed	Huron Pines	\$470,392	2014
21	Reconnecting Black River Tributaries with Lake Huron	Huron Pines Resource Conservation and Development Council, Inc.	\$32,053	2014
22	Black Creek Marsh Coastal Wetland Restoration Project	Huron-Clinton Metropolitan Authority	\$648,000	2014
23	Au Sable and Pine River Erosion Control	Huron-Manistee National Forest	\$20,000	2014
24	Au Sable River Alcona LW Restoration	Huron-Manistee National Forest	\$15,000	2014
25	Au Sable River Mio LW Restoration	Huron-Manistee National Forest	\$57,000	2014
26	Eddington Creek Headcut Rehabilitation	Huron-Manistee National Forest	\$11,000	2014
27	Huron National Forest Road Closures	Huron-Manistee National Forest	\$6,000	2014
28	Manistee Ranger District Invasive Species Community Education and Outreach Program	Huron-Manistee National Forest	\$7,500	2014
29	Nichols Lake LW Restoration	Huron-Manistee National Forest	\$12,000	2014
30	Prairie Restoration for Rare Prairie Plant Habitat	Huron-Manistee National Forest	\$48,000	2014



Map Number	Project Title	Recipient Agency or Organization	Total Funding Amount	Fiscal Years Funded
31	South Branch River - Rollway Road RSX (IS026)	Huron-Manistee National Forest	\$50,000	2014
32	Threatened and Endangered Species Habitat Restoration	Huron-Manistee National Forest	\$100,000	2014
33	Invasive Species Prevention and Native Plant Restoration	Keweenaw Bay Indian Community	\$161,910	2014
34	Clinton River Spillway Restoration - Phase I Implementation Project	Macomb County Public Works Office	\$2,511,800	2014
35	Fish Collection by Michigan Dept. of Natural Resources	Michigan Dept. of Natural Resources	\$12,008	2014
36	Restoring Riparian and Aquatic Habitat along the Detroit River in Milliken State Park	Michigan Dept. of Natural Resources	\$800,000	2014
37	Future of Black Ash Wetlands in the Northern Great Lakes	Michigan Tech University	\$130,000	2014
38	Technical Assistance for Agricultural Producers through Farm Bill Programs	Natural Resources Conservation Service	\$3,976,202	2013, 2014
39	Dowagiac River Fish Passage Restoration	Niles City, Michigan	\$250,000	2014
40	Baraga Plains Restoration for Kirtland Warbler Habitat, Phase 2	Ottawa National Forest	\$60,000	2014
41	Keweenaw Bay Indian Community Clean Boats Clean Waters	Ottawa National Forest	\$30,000	2014
42	Pollinator Habitat Restoration	Ottawa National Forest	\$40,000	2014
43	Road Decommissioning	Ottawa National Forest	\$30,000	2014
44	Stream and Lake Habitat Restoration	Ottawa National Forest	\$53,000	2014
45	Tributary to Little Giant Creek AOP	Ottawa National Forest	\$80,000	2014
46	Wood Turtle Protection at Road/Stream Crossings	Ottawa National Forest	\$11,000	2014
47	Migratory Bird Enhancement through Bulrush Restoration on Upper St. Marys River Islands	Sault Ste. Marie Tribe of Chippewa Indians	\$99,256	2014
48	Improving Cold Water Habitat for Brook Trout	Schrems West Michigan Trout Unlimited	\$149,000	2014
49	Cooperative Piping Plover Habitat Conservation in the Lake Michigan and Lake Superior coastal zones of the Upper Peninsula	Superior Watershed Partnership	\$107,000	2012, 2014
50	Early Detection/Rapid Response of Invasive Plant Species along Eastern Lake Michigan	The Nature Conservancy	\$495,000	2014
51	Reconnecting Coldwater Habitat in Northwest Michigan Rivers	Trout Unlimited, Inc.	\$250,000	2014
52	Great Lakes Legacy Act (Rouge River AOC)	U.S. Environmental Protection Agency	\$2,077,364	2014
53	Hatchery Infrastructure Improvements and Construction	U.S. Fish and Wildlife Service	\$4,000,000	2013, 2014
54	Lake Huron Lake Trout and Lake Sturgeon Restoration Activities	U.S. Fish and Wildlife Service	\$1,561,867	2010, 2011, 2012, 2014
55	Maple River-Woodland Road Timber Crossing and Sea Lamprey Barrier Construction	U.S. Fish and Wildlife Service	\$200,000	2014
56	Quantification of Wetland-Off Shore Interconnectedness Using Stable Isotope and Trace Element Otolith Analysis	U.S. Fish and Wildlife Service	\$132,942	2014
57	Removal of Hubbardston Dam on Fish Creek (Grand River Watershed) in Ionia County	U.S. Fish and Wildlife Service	\$200,000	2014
58	Removal of Lyons Dam (Grand River) in Ionia County	U.S. Fish and Wildlife Service	\$441,856	2012, 2013, 2014

An **interactive map** featuring Great Lakes Restoration Initiative projects funded in fiscal years 2010 through 2014 is available at projects.glc.org/restore/glimap.

Map Number	Project Title	Recipient Agency or Organization	Total Funding Amount	Fiscal Years Funded
59	Salmon Trout River Watershed Crossing #17 of Unnamed Tributary to East Branch Salmon Trout River	U.S. Fish and Wildlife Service	\$44,680	2014
60	Screening Water and Sediment for Contaminants of Emerging Concern (CECs) During the Calvin College Colonial Waterbirds Study and Herring Gull and Caspian tern Egg CEC Analysis	U.S. Fish and Wildlife Service	\$70,622	2014
61	Migratory Stopover and Great Lakes Fish and Wildlife Habitat Restoration	U.S. Fish and Wildlife Service	\$300,000	2014
62	Maintain and Enhance Lake Trout Production Capabilities at Jordan River National Fish Hatchery	U.S. Fish and Wildlife Service	\$778,000	2010, 2011, 2012, 2014
63	Maintain and Enhance Lake Trout Production capabilities at Pendills Creek National Fish Hatchery	U.S. Fish and Wildlife Service	\$638,000	2010, 2011, 2012, 2014
64	Bear Lake Nutrients from Groundwater at the Muskegon Lake AOC	U.S. Geological Survey	\$75,000	2014
65	Fish Habitat Enhancement Strategies for the Huron-Erie Corridor	U.S. Geological Survey	\$3,665,432	2010, 2011, 2012, 2014
66	Fish Habitat Remediation Project at Detroit AOC	U.S. Geological Survey	\$1,595,000	2014
67	Saginaw River Edge of Field Monitoring	U.S. Geological Survey	\$281,667	2014
68	Reforestation in the Alliance of Downriver Watersheds	Wayne County	\$96,952	2014
69	Non-Native Invasive Plant Species Control--WePIC Cooperative Weed Management Area	Western Peninsula Invasives Coalition	\$28,000	2014



Status Report on Restoring and Revitalizing Michigan's Great Lakes Areas of Concern

Prepared by the Statewide Public Advisory Council for Michigan's Great Lakes Areas of Concern Program

June 2015

Cleaning up the Great Lakes

Michigan is cleaning up the Great Lakes and addressing the legacy of our industrial past, which left toxic mud in our harbors, polluted water in our rivers, degraded shorelines along our waterfronts, and poor habitat for fish and wildlife. Correcting these problems will help us leverage the Great Lakes as both a natural treasure and a vital economic asset for our state.

Michigan's Great Lakes Areas of Concern

In 1987 Michigan's 14 most heavily polluted water bodies were designated as "Areas of Concern" under the U.S.-Canada Great Lakes Water Quality Agreement. They include rivers, lakes and bays located across the state. Some are in heavily industrialized areas, such as the Rouge and Saginaw rivers. Others are in more rural areas, such as the Upper Peninsula. In some cases, a single industry is responsible for pollution problems. In most cases the pollution stems from a number of sources. Michigan is implementing cleanup plans to solve these environmental problems and enable local communities to fully benefit from their water resources.

Great Lakes Restoration at Work in Michigan

Cleanup work has accelerated under the Great Lakes Restoration Initiative, a federal program that is implementing a comprehensive restoration plan for the lakes. The Areas of Concern are a top priority and roughly one-third of the funding is being used in these areas. Michigan is managing the program for its Areas of Concern in partnership with the U.S. EPA and other federal agencies and local stakeholders.

Revitalizing Coastal Communities

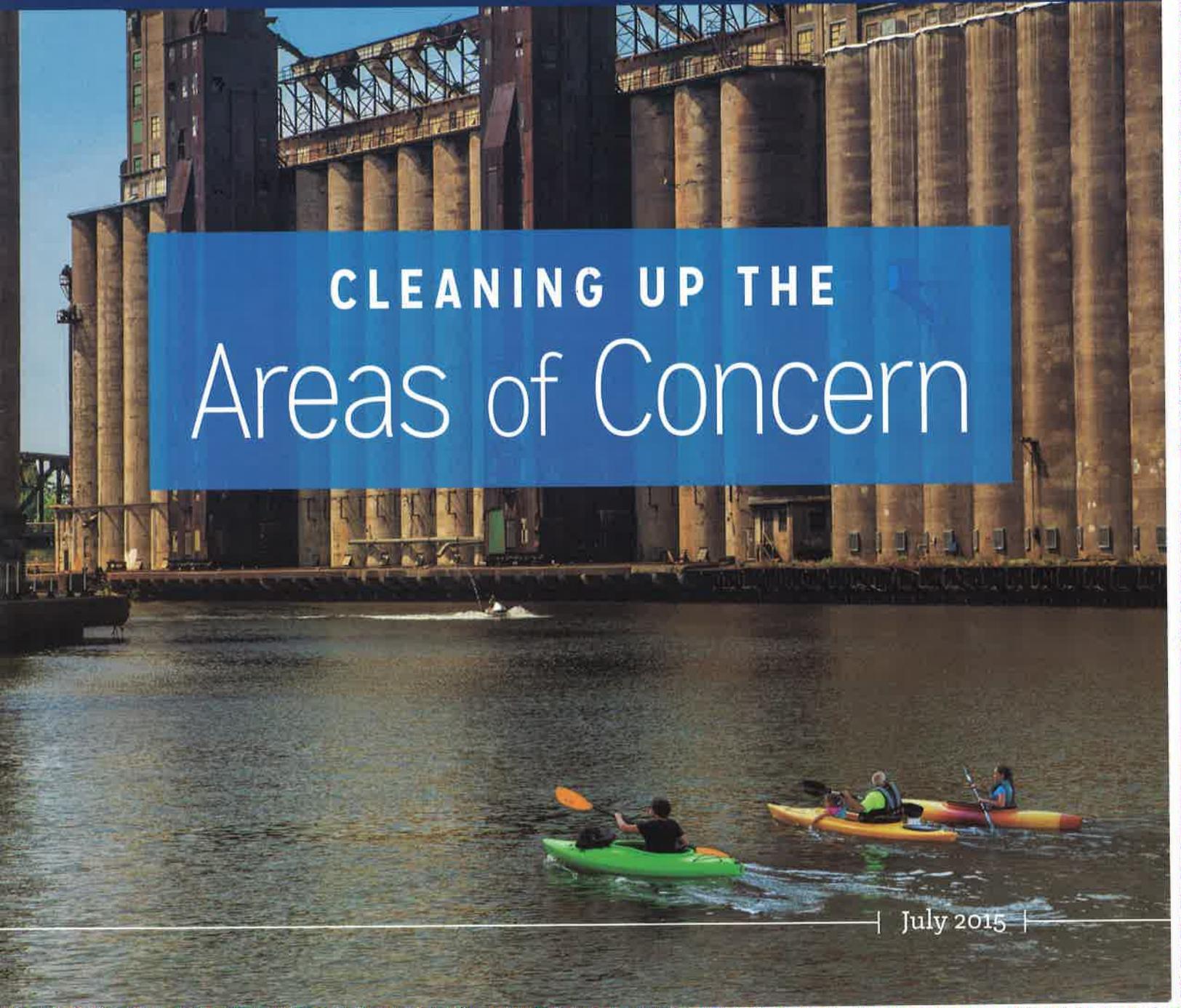
Our success in cleaning up Michigan's Areas of Concern is protecting public health and creating new opportunities for waterfront development, recreation, fishing and tourism. This is revitalizing previously degraded waterfront areas and helping local communities leverage Michigan's "Blue Economy" to create jobs and improve the quality of life for local residents. Cleaning up these areas isn't just about correcting mistakes from the past, but also creating a better future for our communities.

Highlights

- Cleanup work has been completed in two areas (Deer Lake and White Lake).
- 36 local environmental impairments have been removed.
- Seven areas are scheduled to be cleaned up by 2019 (Clinton River, Manistique River, Menominee River, Muskegon Lake, River Raisin, St. Clair River and St. Marys River).
- Six contaminated sediment cleanups have been completed remediating over 388,000 cubic yards of toxic sediment using \$44 million in federal funds and \$25 million from nonfederal partners.
- 12-14 other contaminated sediment sites are being investigated in seven areas.
- Over \$250 million has been secured from the Great Lakes Restoration Initiative for 500 restoration projects.
- Science-based cleanup goals are in place for all Areas of Concern.
- A restoration strategy is guiding specific actions, timelines and priorities.
- Public advisory councils are in place in each Area of Concern.

the **Advisor**

The newsletter of the Great Lakes Commission



CLEANING UP THE
Areas of Concern



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Canada making significant progress in restoring Great Lakes Areas of Concern

Voices from the AOCs

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AOC CLEANUPS MAKE WAY FOR ECONOMIC REVITALIZATION



T HIS ISSUE OF THE ADVISOR shines a spotlight on the restoration and revitalization of Great Lakes Areas of Concern (AOCs), some of the most polluted sites in our region. Thanks to an infusion of funding through the Great Lakes Restoration Initiative (GLRI) and the Great Lakes Legacy Act and many years of hard work by a multitude of federal, state and local leaders, communities are now in a position to jump-start economic redevelopment plans, following completion of cleanup activities.

Six AOCs have been cleaned up in the first five years of the GLRI, including Deer Lake and White Lake in Michigan; Presque Isle Bay in Pennsylvania; Ashtabula Harbor in Ohio; Sheboygan River in Wisconsin; and Waukegan Harbor in Illinois. And progress continues, with another 10 AOCs scheduled for completion under the current five-year GLRI Action Plan. In these and other Great Lakes cities, attention is now turning to a future that embraces their place as waterfront cities.

These highly polluted areas (43 in all, as identified in the 1987 Great Lakes Water Quality Agreement) are a sign of the region's industrial legacy, with lingering poor water quality, contaminated sediments, hazardous waste sites, combined sewer overflows, and degraded fish and wildlife habitat. Collingwood Harbour in Ontario was the first of the 43 to be delisted, a notable accomplishment after decades of remediation work and community engagement.

In Buffalo, N.Y., the waterfront is undergoing one of the largest river restoration and economic revitalization efforts in the country and is a leading example of how environmental remediation can drive economic development. The Buffalo River is on track to be removed from the AOC list by 2019.

At the Great Lakes Commission's 2014 Annual Meeting in Buffalo, we heard from Jill Jedlicka, executive director for the Buffalo Niagara Riverkeeper, about the community's desire to transform the region from 'rust to blue.'

Nothing can succeed without strong public sentiment, she said. Other ingredients in Buffalo's recipe for success include pursuing unique collaborations, leveraging in-kind sweat equity, pursuing innovative methods and marketing, and

not being afraid to make mistakes and learn from them.

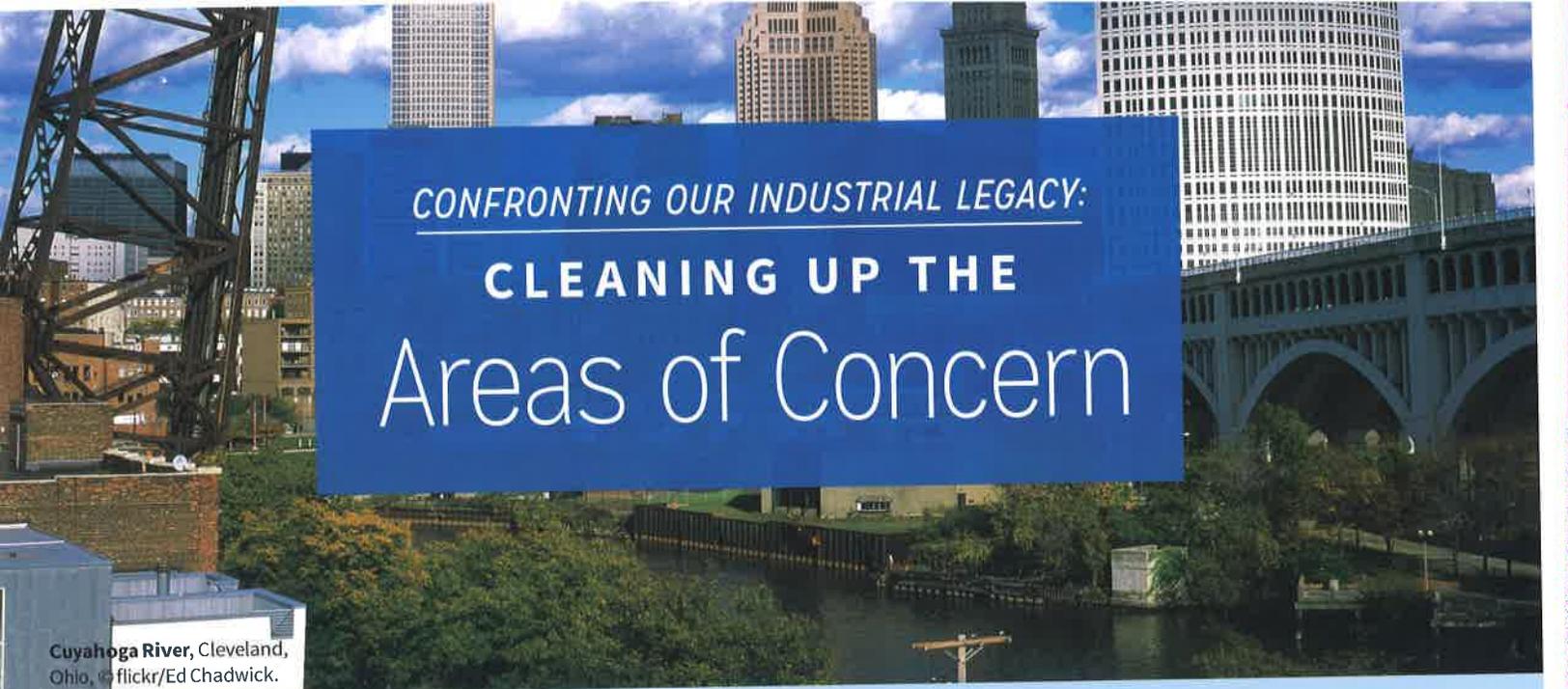
Public and private reinvestment is happening. More than \$75 million has been invested in economic and waterfront development. Though manufacturing no longer dominates, more than 3,000 jobs are coming to Buffalo through a new solar panel production facility - the largest in the world. The city has learned some important lessons and is becoming a truly great waterfront city again.

Buffalo's restoration success is symbolic of what can happen with an audacious vision and shifting perspective. The goal was to drive economic revitalization through the restoration of the health and integrity of freshwater systems. Many other Great Lakes cities - including Milwaukee, Sheboygan, Erie and Detroit - are also learning these lessons and working to change their image from industrial dominance to youthful vibrance and new economies.

The Great Lakes Commission is doing its part by leading congressional advocacy efforts and a NOAA GLRI-funded, three-year regional partnership to support habitat restoration in priority AOCs. The Commission has long recognized and promoted the complementary nature of environmental protection and economic goals. Great Lakes restoration must go hand in hand with economic revitalization.

As we restore, let's reinvest in ways that capitalize on our region's greatest asset - our fresh water. ●

TIM EDER
Executive Director



CONFRONTING OUR INDUSTRIAL LEGACY:
CLEANING UP THE
Areas of Concern

Cuyahoga River, Cleveland, Ohio, flickr/Ed Chadwick.

NOWHERE IS GREAT Lakes restoration more evident than in the Areas of Concern (AOC). Indeed, the AOCs are on the front lines of our regional restoration program. Cleaning up these most degraded areas of the Great Lakes is a key focus of the ongoing Great Lakes Restoration Initiative (GLRI), with roughly one-third of its funding being directed to AOC projects. The results are striking: six AOCs have been cleaned up in the first five years of the GLRI, with another 10 scheduled for completion under the current five-year GLRI Action Plan.

This progress has been a long time coming. Many old timers never thought they would live to see AOCs delisted, and before the GLRI, local AOC leaders viewed life after delisting as a vague and distant concept that would not be confronted for years or even decades. The GLRI has changed this and dramatically accelerated the pace of remediation and restoration in the U.S. AOCs.

The AOC program was formally established in 1987 under the U.S.-Canada Great Lakes Water Quality Agreement, which defined AOCs as “geographic areas that fail to meet the general or specific objectives of the agreement where such failure has caused or is likely to cause impairment of beneficial use of the area’s ability to support aquatic life.” As the timeline on page 4 shows, however, federal, state and provincial agencies began identifying problem areas around the Great Lakes in the early 1970s. Ultimately,

43 AOCs were identified, including 26 in the United States, 12 in Canada and five shared by the two countries.

The AOCs vary widely in size and complexity of environmental problems. Some are confined to small harbors and others encompass entire watersheds. Some are impacted primarily by one large contaminated sediment site while others face multiple sources of pollution and extensive loss of habitat. The most common environmental problems are contaminated sediments; sewage treatment plant discharges and combined

Six AOCs have been cleaned up

in the first five years of the GLRI, with **another 10 scheduled for completion** under the current five-year GLRI action plan

sewer overflows; nonpoint source runoff; runoff from hazardous waste sites; and habitat degradation and destruction.

The United States and Canada committed to implementing Remedial Action Plans (RAP) to identify beneficial use impairments (BUI) in each AOC and the actions needed to solve them. The process seemed clear and straightforward. Looking back years later, one early participant noted “we thought we’d be done in a decade.”

It wasn’t to be. Cleaning up the AOCs turned out to be more complicated and time consuming than anticipated. In the

decade following the 1987 Water Quality Agreement, the states and provinces established AOC programs, produced lengthy RAP documents, and formed public advisory councils. In its early years, the AOC program generated much enthusiasm as a comprehensive, ecosystem-based approach with a strong emphasis on community leadership and stakeholder involvement.

By the late 1990s, however, the AOC program was languishing. Despite important planning and public outreach, few on-the-ground actions were being taken and there was little guidance on how to measure progress in restoring beneficial uses and, ultimately, delist AOCs. Public enthusiasm waned and agency engagement diminished, particularly in the face of constrained state budgets and competing demands from other environmental programs.

The AOC program was challenged by a lack of funding, particularly for key problems such as contaminated sediments and habitat restoration. Existing environmental programs and regulations were not directly aligned with the AOCs and there was no regulatory mechanism, or “hammer,” to compel action. The program also lacked clear metrics—or “delisting targets”—for measuring progress in restoring beneficial uses.

Things began to change in the early 2000s when the states and local AOC leaders focused on developing scientifically justified, measurable

continued on page 4

restoration targets specific to the AOCs. The question of “how clean is clean” is especially tricky for the AOC program, which is intended to bring the areas up from being the “worst of the worst,” but not necessarily correct every environmental problem.

Another significant milestone was passage of the Great Lakes Legacy Act in 2002, which provided funding for remediating contaminated sediments in the AOCs. For the first time, the region now had a federal program specifically tailored to the AOCs, and one directed at the most significant environmental problem impacting the areas. As Kathy Evans of the Muskegon Lake AOC explained, “back in the late 1990s we were doing a lot of planning but until we got the Legacy Act and we actually competed a cleanup...I don’t think people thought it was even doable.” Funding for the program began in 2004 and the first cleanup project was completed on the Black Lagoon on the Detroit River in 2005. The Legacy Act program is now among the most successful cleanup programs in the region and a cornerstone of the AOC program.

Our current Great Lakes restoration process was born with the Great Lakes Regional Collaboration, which in 2005 produced the restoration strategy that forms the basis of the GLRI. With a clear, consensus-based plan in hand, the GLRI was launched in 2010 with AOC cleanup as a top priority. The GLRI enjoys strong, bipartisan support in Congress, which has provided nearly \$2 billion for the program in its first six years.

For the AOCs, the GLRI’s performance measures call for removing BUIs and completing all management actions needed for delisting. On the ground, this bureaucratic formulation translates into real improvements for local communities. As Jamie McCarthy of the Kalamazoo River AOC said, “cleanup has been an amazing catalyst to people in the community reclaiming the river.”



Map of Great Lakes AOCs as of October 2014, ©U.S. EPA Great Lakes National Program Office.

PROGRESS TOWARD COMPLETING MANAGEMENT ACTIONS			
<p>DELISTED AOCs</p> <p>Oswego River - 2006 Presque Isle Bay - 2013 White Lake - 2014 Deer Lake - 2014</p> <p>ACTIONS COMPLETED</p> <p>Ashtabula River Sheboygan River Waukegan Harbor</p>	<p>2015</p> <p>St. Clair River</p> <p>2016</p> <p>River Raisin Buffalo River Rochester Embayment Menominee River St. Marys River Clinton River Black River</p>	<p>2017-18</p> <p>Manistique River Muskegon Lake</p> <p>2019-20</p> <p>St. Louis River and Bay Detroit River Grand Calumet River</p>	<p>2020+</p> <p>Milwaukee Estuary Lower Green Bay and Fox River Cuyahoga River Maumee River St. Lawrence River 18 Mile Creek Niagara River Torch Lake Rouge River Kalamazoo River Saginaw River and Bay</p>

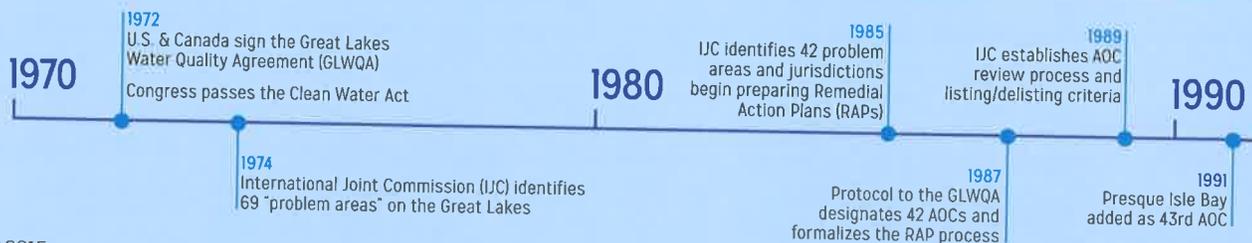
Similarly, Jane Goodman of the Cuyahoga River AOC pointed out that “folks are coming back to Cleveland especially for the natural resources and beauty and recreational activities.” Restoration under the GLRI has sparked renewed community engagement with our waters.

While GLRI funding is vital, having clear restoration targets and a concerted focus on the specific actions needed to achieve them has also been critical. Federal and state agencies and local AOC leaders are collaborating efficiently to identify critical management actions and find the best ways to implement them. The pace of restoration in the AOCs has accelerated

dramatically, but an “all-hands-on-deck” approach is getting the job done!

As the AOCs are cleaned up and delisted, local communities are starting to consider “life after delisting” and how to build on successful remediation and restoration to advance economic and social revitalization in waterfront areas. There are exciting new opportunities for communities to benefit from their water resources in ways unimaginable just a few decades ago. This underscores that our work in the AOCs is important not only to correct mistakes from the past but also to build a better future for our children and grandchildren. ●

AREAS OF CONCERN
A BRIEF HISTORY



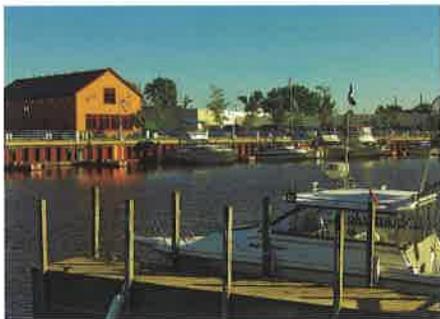
IS THERE “LIFE after DELISTING?”

Presque Isle Bay, Erie, Pa. ©flickr/Ken Lund.

WHEN AN AOC IS delisted, it is cause for celebration, but delisting can be a double-edged sword. On the one hand, it means that a legacy of contamination and degraded conditions is largely rectified. On the other hand, delisting means that one source of funding for restoration and revitalization is gone. To ensure ongoing environmental protection and economic revitalization, communities in current and former AOCs are challenged to plan for “life after delisting.” Here is how some AOCs are taking on this challenge.

PRESQUE ISLE BAY, PA (delisted in 2013)

The public advisory council (PAC) continues to convene to advise the PA Dept. of Environmental Protection. The PAC is actively involved in developing future water quality goals and initiatives for the bay and Lake Erie. The PAC has also identified a list of priorities related to research, monitoring, restoration and outreach in the post-delisting era. Improved water quality has led to investments along the bay, including a convention center and hotel, with more planned in the future.



DEER LAKE, MI (delisted in 2014)

The PAC is transitioning to a new lake association that will continue to collaborate with environmental organizations, local government and state agencies. The new lake association will help Deer Lake community members speak with a unified voice and will promote continued stewardship of the lake.

WHITE LAKE, MI (delisted in 2014)

The PAC continues to convene and pursue funding from state and federal programs to protect White Lake now that it is delisted. The PAC solicited a study of public perceptions of the lake and found that many would-be tourists were unaware of its AOC designation, suggesting a clean slate to attract visitors to the area.

SHEBOYGAN RIVER, WI (management actions completed in 2013)

Local partners continue to build on the momentum created by the Sheboygan River cleanup projects by engaging community members in citizen science programs and invasive species management efforts. The entities involved in the community science programs and invasive species management include the city of Sheboygan, the Sheboygan River Basin Partnership and other community groups. These entities will be shaping the vision for life after delisting for the Sheboygan River.

Left: Sheboygan River © flickr/islaenelinfinito.
Right: Grand Trunk shoreline restoration site on Muskegon Lake © Kathy Evans, West Michigan Shoreline Regional Development Commission.

ST. CLAIR RIVER, MI/ON (management actions expected to be completed in 2015)

The binational PAC is focusing on completing management actions to move toward delisting. There are local organizations on both sides of the U.S.-Canada border that are expected to continue their advocacy work even after the AOC is delisted. To foster continued stewardship, the AOC has leveraged environmental restoration projects, like the Blue Water River Walk, to transform an industrialized shoreline into a beautiful riverside amenity that is bringing people back to the river.

MUSKEGON LAKE, MI (management actions expected to be completed in 2017/18)

The PAC also assessed how the public perceives the lake and, like its neighbor White Lake, found that most people are unaware of its AOC designation. The Muskegon Lake PAC is engaging stakeholders to develop “Muskegon Lake Vision 20/20,” a broad, unified community vision for the lake and its shoreline. The vision is the first step in developing a more detailed plan for life after delisting, with a focus on environmental and economic revitalization. ●



1994 Collingwood Harbor AOC delisted

2000

2001 U.S. Policy Committee releases delisting principles and guideline for U.S. AOCs

2002 Congress passes the Great Lakes Legacy Act

2003 Severn Sound AOC delisted

2005 First Legacy Act sediment cleanup completed at the Black Lagoon on the Detroit River
Great Lakes Regional Collaboration Strategy released

2005-2006 Ohio and Michigan establish statewide AOC delisting targets
2006 Oswego River AOC delisted

2010

2010 Wheatley Harbour AOC delisted
GLRI launched with toxics/AOC focus area

2012 New GLWQA signed

2013 Presque Isle Bay AOC delisted

2014 Deer Lake and White Lake AOCs delisted

PROGRESS THROUGH DETERMINATION AND COLLABORATION

Ashtabula Harbor, Port of Ashtabula, Ohio, ©Fred Leitert, Ashtabula City Port Authority.

ASHTABULA RIVER AOC, OHIO

Cleanup and restoration of the Ashtabula River AOC has been completed following one of the region's largest contaminated sediment cleanups. Since the early 1990s approximately \$85 million from the Great Lakes Legacy Act, the federal Superfund program, the State of Ohio and several private companies was invested to remove more than 600,000 cubic yards of contaminated sediment and restore habitat impaired from a legacy of industrial pollution.

Follow-up funding from the GLRI and a settlement agreement supported creation of 2,500 linear feet of habitat for native fish to forage and spawn. Deepening the river has allowed the return of normal commercial shipping and recreational boating and sustained the economic viability of the Port of Ashtabula, among the busiest on the Great Lakes. Pending the results of monitoring efforts, the Ashtabula River is expected to be delisted in the near future.

GRAND CALUMET RIVER AOC, INDIANA

The Grand Calumet River is among the most highly degraded AOCs, with all 14 beneficial uses originally impaired, while also home to some of the most diverse plant and animal communities in the Great Lakes. The Indiana Department of Environmental Management and the Citizens Advisory for the Remediation of the Environment committee have implemented cleanup efforts since the 1970s. Public-private partnerships have led to the removal of two BUIs, including restrictions on drinking water consumption, a major accomplishment. Work to remove the 12 remaining BUIs continues, including habitat

restoration and invasive species removal through the GLRI and contaminated sediment remediation under the Great Lakes Legacy Act. The multi-phase contaminated sediment cleanup project, begun in 2009, has remediated more than 1.9 million cubic yards of contaminated sediments with another 1 million cubic yards to be addressed in upcoming phases. Leveraging funding from a Natural Resource Damage Assessment settlement enabled Indiana to secure more federal funding to implement a much larger cleanup.



Progress on a section of the Grand Calumet River between Calumet and Columbia Avenue ©U.S. EPA.

SHEBOYGAN RIVER AOC, WISCONSIN

The Sheboygan River AOC has suffered from a legacy of industrial pollution, resulting in contaminated sediments and nine BUIs. Nevertheless, all restoration projects necessary to remove these BUIs were completed in 2013, in large part due to GLRI funding, along with support from the State of Wisconsin, and the city and county of Sheboygan. A combined investment of \$80 million from Superfund and the GLRI accelerated the pace of cleanup and set Sheboygan River on the

path to delisting. The collective effort removed almost 400,000 cubic yards of contaminated sediment from the river and implemented seven habitat restoration projects in the city of Sheboygan.

ST. LOUIS RIVER AOC, MINNESOTA AND WISCONSIN

The St. Louis River AOC suffered from 130 years of environmental degradation through industrial practices that contaminated sediments and land use practices that resulted in both dredging and filling of critical aquatic habitat. Collaboration among more than 100 stakeholders, including Minnesota, Wisconsin, Fond du Lac Band of Lake Superior Chippewa and the St. Louis River Alliance, has generated impressive progress toward removing nine beneficial use impairments that resulted from these legacy impacts. The 2013 Remedial Action Plan is a "roadmap to delisting" that clearly defines 60 actions to clean up contaminated sediments, restore aquatic habitat, reduce erosion, restore wild rice beds and remove sources of contaminants by 2025. The RAP represents the largest cleanup and restoration effort ever proposed for the largest port and the largest freshwater estuary on the Great Lakes, and is projected to cost up to \$400 million. One BUI has already been removed and there is a clear vision for removing four more by 2018 and the final four by 2025. The goal is to formally delist in 2025. Collaboration and planning, along with sustained funding through the GLRI and Minnesota's Clean Water, Land and Legacy Amendment have charted the course for environmental recovery and economic revitalization in the St. Louis River AOC. ●



Commissioner's Corner

JAMES TIERNEY, ASSISTANT COMMISSIONER, DIV. OF WATER RESOURCES,
NEW YORK STATE DEPT. OF ENVIRONMENTAL CONSERVATION



Revitalizing the Buffalo River AOC and neighboring community

THE TRANSFORMATION OF THE Buffalo River Area of Concern (AOC) ecosystem that is currently underway in Buffalo, N.Y., is simply remarkable. More than 200 years ago this area was a verdant river delta, characterized by lush riverine flora, multiple shallow streams, wetlands and the occasional deep pool holding a wealth of fish, diverse wildlife and a series of protective sand shoals at the junction of Lake Erie, Niagara River and Buffalo River. The locale was spiritually sacred and a vital hunting and gathering ground to the Seneca Indian Nation of the Iroquois Confederacy of Nations.

With the coming of European settlers in the early 1800s, it underwent major changes to accommodate the rapidly growing businesses, commercial navigation and heavy manufacturing industries that supported the growth of the entire Great Lakes region. By the early 1900s, it became the sixth largest shipping port in the world (gross tonnage handled) as the area was packed with steel/alloy foundries, mills, grain silos, breweries, warehouses, factories, ship yards and piers. The river's shoreline had become so densely developed, people could no longer access the river, losing their spiritual link to its resources and eventually allowing it to become a cesspool for the city. Unfortunately, these changes occurred without society's consideration of the long-term legacy of ecosystem damages they were creating and "leaving behind."

Today, the multiple pieces of a river revitalization are coming together. The Buffalo River Remedial Action Plan (RAP), currently being aggressively implemented and skillfully coordinated by the nonprofit Buffalo Niagara Riverkeeper, is successfully reassembling the critical pieces with help from many partner agencies and organizations. The RAP's fundamental focus has been on 1) remediating sources of toxic pollution and pathogens; 2) enhancing water quality with a new long-term control plan to address combined sewer overflows and upriver stormwater sewer overflows; 3) restoring in-stream and shoreline habitat, where possible, critical to supporting sustainable fish and wildlife populations; and 4) re-establishing the community's links to the river and its resources.

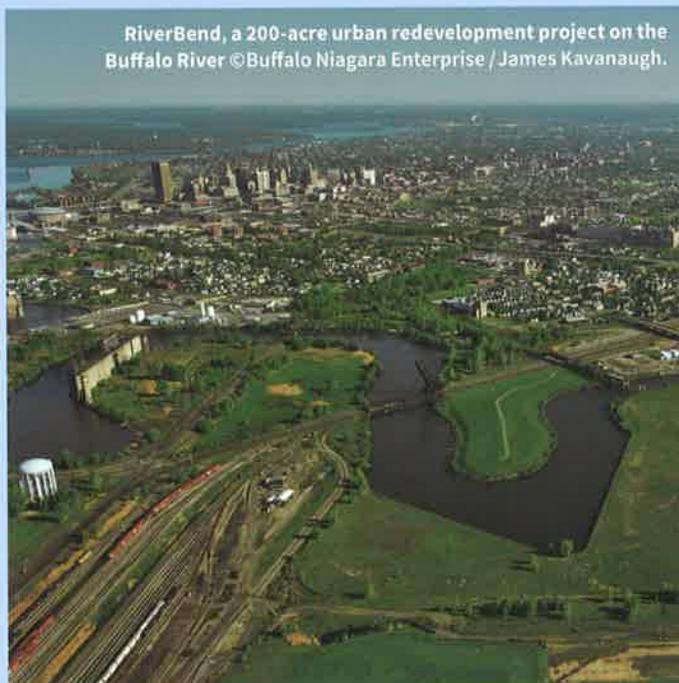
Using a complex matrix of New York State, U.S. "Superfund," Great Lakes Restoration Initiative and Great Lakes Legacy Act funding programs, as well as local government and private business contributions, some 28 active and abandoned industrial sites have been remediated. Work continues at four sites, and

nearly 1 million cubic yards of contaminated sediments have been removed from the river bottom! Clean rock/sediment backfill or an engineered environmental cap were installed in four portions of the AOC to further isolate any residual contamination and provide a base for habitat restoration.

Nearly a dozen habitat restoration projects are being implemented that, collectively, will remove the habitat beneficial use impairments. These projects are helping to replace historically lost habitat and improve the riverine environment by adding complexity to the river through woody structures and aquatic vegetation and shoreline habitat through native trees, shrubs and grasses. Small "pocket parks" have been developed offering the community access to the river for fishing, boating and wildlife viewing.

Finally, New York Governor Cuomo has dedicated the "Buffalo Billion" in state economic development funds to the region, much of which is targeting new business on old brownfields along the river. Many of the pieces and key links are being assembled, construction is accelerating, jobs and wildlife AND PEOPLE are coming back to the river. A community renaissance is underway! ●

RiverBend, a 200-acre urban redevelopment project on the Buffalo River ©Buffalo Niagara Enterprise / James Kavanaugh.



AOC SPOTLIGHT

Canada making significant progress in restoring Great Lakes Areas of Concern

T H R E E C A N A D I A N AOCs have been fully remediated and officially “delisted”: Collingwood Harbour on Lake Huron (1994); Severn Sound on Lake Huron (2003); and Wheatley Harbour on Lake Erie (2010). Two other Canadian AOCs – Spanish Harbour (1999) and Jackfish Bay (2011) – have completed all remedial actions and are now designated as “AOCs in Recovery.” Both will be delisted once restoration of environmental quality is confirmed through environmental

monitoring. The cleanup of Randle Reef in the Hamilton Harbour AOC, the largest Canadian contaminated sediment site in the Great Lakes, is a priority for the governments of Canada and Ontario and work is underway to begin cleanup efforts. Demonstrating ongoing commitment to AOC cleanup, the new Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health, signed in December 2014, commits Canada and Ontario to complete all remedial actions in five



Collingwood Harbour ©flickr/Jeff S. PhotoArt.

AOCs by 2019 (Nipigon Bay, St. Lawrence at Cornwall, Peninsula Harbour, Bay of Quinte and Niagara River). Additionally, Canada and Ontario have committed to making significant progress in all other Canadian AOCs. ●

VOICES FROM THE AOCs

C L E A N I N G U P T H E A O C S I S about more than environmental restoration, it’s about bringing communities together and reconnecting with the water. As Jane Goodman from the Cuyahoga River put it “it’s an ecological and emotional restoration for us.” The GLC asked local citizens what cleaning up their AOC means for them and their community. [Here’s what they said.](#)

Adam Payne, Sheboygan River, WI

“After decades of being a black eye for the community, the Sheboygan River and Harbor is now a shining beacon we can all take pride in.”

Victor Digiaco, Eighteenmile Creek, NY

“I am personally excited that I will be able to bring my kids down to the creek and ‘set them loose’ to explore, free from any worry that they will be exposed to harmful contaminants.”

Patricia Miller, Presque Isle Bay, PA

“What looked like a distasteful eyesore is now a busy focal point for fishing, boating, water sports, and even swimming. My family spends as much time as possible at the Bay in all four seasons – it’s our favorite ‘staycation’ spot!”

Patty Troy, St. Clair River, Michigan/Ontario

“For me personally, the AOC cleanup means that we have done our job for the next generation. We have provided them with something better than we got.”