State *of the* Great Lakes 2010

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Eternal Vigilance for the Great Lakes

The Great Lakes, *Our* Great Lakes, define the State of Michigan. Their coasts outline most of our borders and they support much of our commerce and recreation. They belong to all of us. Literally and figuratively, the Great Lakes set us apart from the rest of the Midwest. The price of keeping them great is eternal vigilance, as new threats can arise at any time. The most recent threat is the Asian carp. Through no fault of our own, these invasive fish are in the Chicago area waterways, now confirmed in Lake Calumet, too close to Lake Michigan.

Similar to Rachel Carson's warning about toxic chemicals in our environment in her 1960s book *Silent Spring*, other warning signals indicate our Great Lakes are in danger of being overrun with another unwanted and potentially damaging aquatic invasive species. The food web and ecological integrity of the Great Lakes is becoming extremely fragile as more and more species invade the waters. That disruption has led to serious ecological and economic harm to our state, and it could get much worse.

As Governor, I have resolutely pursued all available options for keeping the Asian carp out of our Great Lakes. Michigan contributed to construction of the electrical barrier in the Chicago Sanitary and Ship Canal; we contributed staff and supplies to treatment of the Canal during barrier maintenance; we pursued legal options when others were slow to act; we have vocally noted our concerns and offered solutions in Congressional testimony and

directly to the Administration as well as responsible agencies.

With invasive species, we are conducting a giant uncontrolled experiment on our Great Lakes and the results to date have been a series of ecological and economic disasters. It is difficult to predict precisely the effect Asian carp will have on the Great Lakes, but we know that in the Mississippi River Basin, Asian carp are destroying native aquatic plants, choking out native fish and posing a hazard to boaters. We must apply the precautionary principle and prevent Asian carp from being part of the invasive species mix that already infests the lakes.

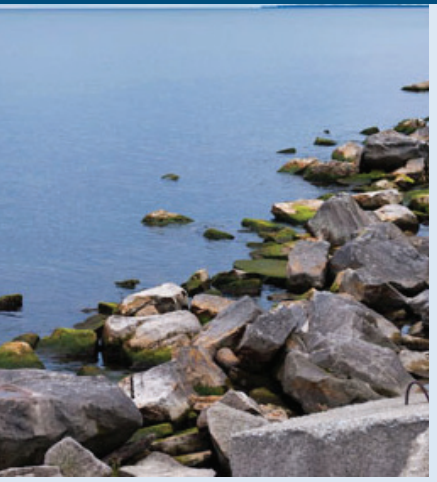
Those who love the lakes for boating, those who fish, swim, bird watch, or walk the shores have already seen the devastation caused by invasive species such as the sea lamprey, zebra mussel, Phragmites and round goby. We certainly don't need any new ones. In reality, Asian carp are just the current species of concern. All pathways invasive species use to enter the Great Lakes—not just the Chicago area waterways—need to be identified and blocked so all new invasive species are kept out. We owe it to ourselves and our children to take these actions.

In other ways, our Great Lakes are a remarkable success story. In the middle part of the last century, our lakes were too often the end of a sewer pipe. Collectively, we have done an amazing job of cleaning up the legacy of that era, and the job is not over. Water is a valuable natural resource, and we Michiganians have the awesome responsibility of protecting our share of 20 percent of the world's fresh surface water. The necessary eternal vigilance on all fronts is a price we are willing to pay to protect our Great Lakes from new threats.

Looking down from the Mackinac Bridge each Labor Day as I have crossed between Lakes Michigan and Huron, I have marveled at the vast expanse of water. I want to ensure it remains the best it can be for present and future generations, and I know those reading this feel just as passionately about the Great Lakes. Thank you for taking the time to keep informed and engaged. It is through your interest and vigilance that positive actions occur. With your help, the Great Lakes will stay great, and Michigan will prosper and continue to be a destination for commerce and recreation, as well as a place to live and raise our families.

Jennifer M. Granholm, Governor

The Value of Great Lakes Water



Benjamin Franklin wrote, "We understand the value of water when the well runs dry." But in her Special Message to the Legislature on Water in 2004, Governor Jennifer M. Granholm noted that "We in Michigan have always known the value of our water, both economically and spiritually." The Governor laid out a broad agenda and issued a call for the Legislature to work with the Administration on a bipartisan basis, to take action to reclaim Michigan's historic role as protector of the Great Lakes and our water resources.

Fulfilling the Promise

Articles in this report demonstrate that great strides have been made in finding bipartisan agreement, supported by business, environmental and conservation groups to move forward on these key items in the Governor's Water Message:

Water Withdrawal and Diversions

Water withdrawal laws and a cutting edge water withdrawal assessment tool helped restore Michigan's credibility in Great Lakes water discussions. With passage of the Great Lakes Compact negotiated by the Governor, state and federal laws now prohibit diversions of Great Lakes waters outside of the Great Lakes states.

Invasive Species

Beyond the critical battle against Asian carp, Michigan has worked to prevent new introductions of invasive species on multiple fronts:

- Successfully challenging the U.S. Environmental Protection Agency's (U.S. EPA) ballast water loophole.
- Enacting state ballast water discharge controls.
- Passage of new state laws prohibiting possession of invasive species.

Federal Restoration Funding

The call for new federal support for the Great Lakes finally came through President Obama's Great Lakes Restoration Initiative (GLRI). Development of the Great Lakes Regional Collaboration Strategy and the MI-Great Lakes Plan, strengthened connections between state agencies and hundreds of Michigan partners in Great Lakes restoration and protection. Resulting collaborations and partnerships led to Michigan's early success under the GLRI and can serve as a foundation for future protection and restoration efforts.

Looking Ahead

Since the Office of the Great Lakes (OGL) was created a quarter century ago, it has been directly engaged in Great Lakes policy discussions at the local, state, federal and bi-national levels. The transition plan creating the new Department of Natural Resources and Environment (DNRE) has created new opportunities for collaboration and coordination, with the Areas of Concern, Lakewide Management Plan, and Coastal Zone Management Grant Programs moving into the OGL.

The creation of the DNRE structure, its regional focus combined with new funding under the GLRI, provides exciting new opportunities for better coordination of state programs effecting local restoration and protection priorities. The OGL's involvement in state and regional discussions can also be better informed by input provided by Great Lakes partners.

The DNRE regional directors will likely be overwhelmed, as I have been, by the great efforts underway in watersheds across Michigan. There are countless unsung heroes working daily in professional and volunteer capacities to restore the Great Lakes and protect our waters from new and growing threats.

Ben Franklin might have had a different view if he had the privilege to watch these Great Lakes partners in action. Their passion and commitment are as inspirational as the great waters they work to protect.

Ken DeBeaussaert, Director, Office of the Great Lakes

Water Withdrawal Assessment Tool Offers Greater Protection for Michigan's Waters

Michigan recently won a 2009 Innovations Award from the Council of State Governments for its Water Withdrawal Assessment Tool for its creativity and effectiveness. In 2009, the DNRE began requiring use of an online assessment tool for applicants wishing to make a large water withdrawal from Michigan's lakes, streams or groundwater. The tool provides an initial, screening level assessment of the impact of water withdrawal on nearby stream and river ecosystems and determines whether additional screening is needed for the withdrawal to begin.

This tool is critical to ensuring Michigan's ability to satisfy its commitment under the Great Lakes – St. Lawrence River Basin Water Resources Compact (Compact) to responsibly manage the abundant waters and water-dependant natural resources of the Great Lakes region. The tool has been appreciated throughout the Great Lakes and is being used as a model for other states to meet the requirements agreed to under the Compact.

The U.S. Geological Survey, Michigan State University and the DNRE worked in collaboration to develop the tool. The online tool is required for any applicant who wishes to withdraw more than 70 gallons of water per minute from Michigan's lakes, streams or groundwater. During the first four months of the tool's mandatory use (July through November 2009) about 90 proposed large quantity withdrawals were processed through the tool. Nearly 70 registered their withdrawal without the need for further review.

Applicants can access the tool at www.miwwat.org for information about location, pumping rate and depth of water. For more information about Michigan's Water Use Program or the Water Withdrawal Assessment Tool, contact David Hamilton, DNRE, at 517-335-3174.

DNRE Transition - Great Lakes Regional Directors

The last few years have been ones of great challenge for Michigan's natural resources and environmental protection agencies, but with that challenge came the opportunity to invest in collaborative, long-lasting change. This year began with the creation of the Department of Natural Resources and Environment (DNRE), a new agency united in its efforts to conserve and enhance the sustainability, diversity and productivity of our state's natural resources – and to do so in a more effective and efficient manner.

We are taking a big step toward this goal by choosing to organize our field structure into four ecosystem regions defined by the Great Lakes watershed: the Lake Erie region (southeast Michigan), the Lake Huron region (northeast Michigan), the Lake Michigan region (west Michigan) and the Upper Peninsula region. We have added four lake regional director positions, one for each ecosystem region.

Under the new DNRE organizational structure, a lake regional director will function as my representative "on the ground" – working to build and maintain supportive relationships with executive branch staff, community leaders, legislators, stakeholders, employees and residents. The lake regional directors will play an active role in communicating department activities and policies to the local community and ensuring that local issues are kept at the forefront of department processes and decision-making.

Upper Peninsula Citizens' Advisory Council

Because the DNRE's model for the Upper Peninsula Citizens' Advisory Councils (CACs) has worked so well in meeting and anticipating the needs of local communities and environmental stakeholders at the regional level, it is one that figured heavily in the creation of the lake regional director positions.

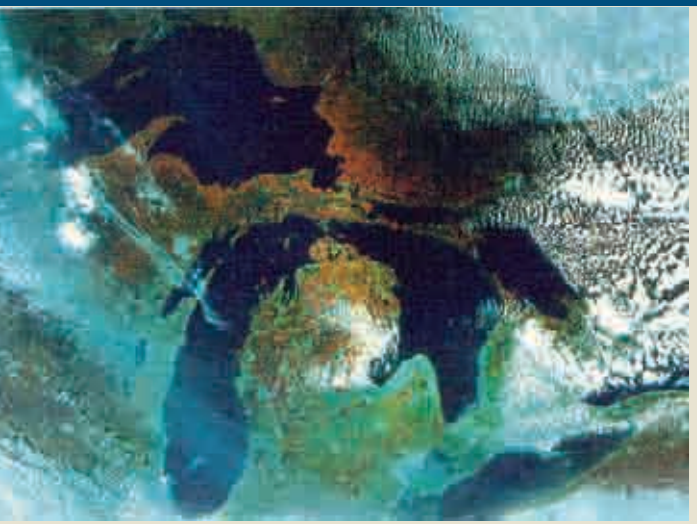
Realizing that Upper Peninsula sporting groups and outdoor enthusiasts were experiencing a high level of discontent and frustration over a perceived lack of opportunity for local involvement with regard to DNRE decisions, the department moved quickly to create the CAC structure. The council benefits proved to be twofold. Through the CACs, we as a department, have the opportunity to hear about local ideas and emerging trends, and in turn, have a clear channel through which we can inform citizens about decisions, plans and initiatives. We will pursue the same positive outcomes for other regions of the state by empowering each lake regional director to:

- Champion an integrated, regional planning approach.
- Share information across disciplines and between the region and the DNRE.
- Develop a broad working knowledge of the region and its emerging threats, successes and opportunities.
- Maintain effective public and legislative affairs in the region.

For more information about the DNRE's lake regional directors and the Citizen Advisory Councils, visit www.michigan.gov/lpcac.

Rebecca A. Humphries, Director, DNRE

Great Lakes Restoration Initiative



With signs of record-breaking snowstorms still on the ground in Washington, D.C., the U.S. Environmental Protection Agency (U.S. EPA) Administrator Lisa P. Jackson and Michigan Governor Jennifer M. Granholm, with three of her fellow governors, released the Great Lakes Restoration Initiative (GLRI) Action Plan on February 22, 2010. The Action Plan was the result of unparalleled communication, cooperation and coordination by federal agencies as part of a Great Lakes Inter-Agency Task Force (Task Force); congressional, state, municipal and tribal representatives; and public interest, business and other stakeholders. It built on exhaustive state efforts to develop their own plans—like Michigan's—public forums, conference calls, letter writing campaigns and so much more.

Unlike so many other past roadmaps, the Action Plan (available at www.greatlakesrestoration.us) does something unique: it provides annual benchmarks for progress, so that the public can hold Us...that is with a capital "U" for all of Us...accountable for results. Those results need to be achieved in five "Focus Areas:"

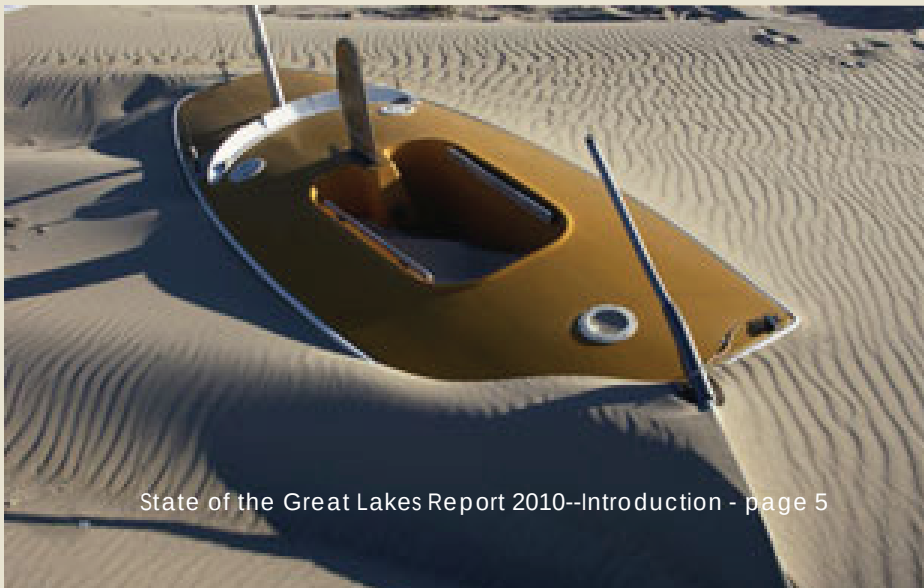
- Accountability, Education, Monitoring, Evaluation, Communication and Partnerships
- Aquatic Invasive Species
- Habitat Protection and Restoration
- Nearshore Health and Nonpoint Source Pollution
- Toxics and Areas of Concern

In that spirit, it has a bias for action. Let's face it. Those of us who live, work and play in the region are tired of the seemingly-interminable stream of studies that simply repeat what we already know: the Great Lakes are in trouble and need help. The Action Plan is a map for just that action. And, there's a sense of urgency to get down to the business of action.

This spring, roughly half of the $475 million budgeted by President Obama and appropriated by Congress has gone to more than a dozen different federal agencies and much of the remainder to states, municipalities, community-based organizations and others to undertake real, on-the-ground and in-the-water projects. As you're reading these very words, those agencies and grant recipients are putting GLRI dollars to work to help resuscitate the ecosystem.

To ensure strong confidence in our collective efforts, we are undertaking several efforts:

- Developing the Great Lakes Accountability System (GLAS) – Agencies and grantees will upload financial and project information to GLAS, a Web-based tool for decision-makers and public to see how GLRI funding is being used and progress-to-date.
- Basing Action on Science – The U.S. EPA is requesting that the Science Advisory Board provide an independent scientific review of the Action Plan and its approach. Expected to be complete by the end of 2010, this review will inform any adjustments that need to be made to the GLRI to ensure it continues tackling the toughest problems.



Great Lakes Restoration Initiative continued

- Expanding the Conversation – One of the attributes of the GLRI is that it's not just about improving the Great Lakes on-the-ground and in-the-water. It's also about how we do that work. One way is to build partnerships and reach out to communities that otherwise have been underserved or maybe haven't even identified themselves as part of the Great Lakes "peopleshed" before.
- Increased Coordination – None of us can do it alone. Nor should we. With 11 federal department-level agencies, the Task Force is dedicated to ensuring the integration of restoration efforts. We are also working with states, municipalities, tribes, businesses and public interest leaders to do the same. Clearly, this is not something that will be achieved overnight.

Though we will have to be patient while the Great Lakes start to show signs of recuperation from this work, we are off to a good start.

As David S. Broder wrote in the Washington Post just three days after the Action Plan's release, "In an age of rampant distrust, I can't think of a better way to show that government can work."

Now it's up to "Us" to show the world that we can continue to make Great Lakes restoration work.

Cameron Davis,
Senior Advisor, U.S. Environmental Protection Agency

Restoring Michigan's Great Lakes and Our Economy

As a lifelong conservationist, former chair of the Great Lakes Commission, and an elected official in Michigan, I have come to know and respect the issues that are critical to our environment and outdoor tradition.

The status of Michigan's Great Lakes could best be described as a battlefield. That has become abundantly clear with the onslaught of invasive species and the more recent threat posed by the Asian carp. I, and many Michigan and regional voices, have spent the better half of the last year urging anyone who will listen at the federal level to stand up and fight. There are recent indications that our voices are starting to be heard.

Recently, we received great news regarding the Great Lakes Restoration Initiative (GLRI). This summer the U.S. EPA announced that 270 finalists throughout the region had been selected to receive $160 million in GLRI funding.

A total of 97 Michigan-based projects were selected for funding through the GLRI competition - receiving more than $60 million. That represents approximately 40 percent of the U.S. EPA funding available. In terms of total projects to date for the 2010 GLRI, Michigan has received notification of over $80 million including more than 140 competitive projects funded by the U.S. EPA and other federal agencies such as the U.S. Fish and Wildlife Service, National Fish and Wildlife Foundation, among others.

This funding is important, not only for our Great Lakes and the recreational and commercial fishing community, but for regional tourism as well. As long as people know Michigan's lakes, rivers and streams are safe from contamination, they will be more likely to plan their summer vacation in Michigan. These successful projects will enable us to take important steps toward protecting, restoring and sustaining Michigan's natural treasures.

The Great Lakes will benefit in many ways from this funding. For example, thousands of acres of Great Lakes shoreline will be improved and restored by removing invasive plants and hardened banks. Fish and wildlife habitats will be enhanced as local groups remove dams, restore fish passage and stop shoreline erosion.

Funding will also protect families who swim at many Michigan beaches through better water quality monitoring. It will enable local groups to identify and correct problems that might otherwise lead to beach closures that hurt local economies.

Additionally, this funding will allow us to gather better health data about Great Lakes fish consumption and provide local decision-makers with the information needed to protect our waters and the health of our citizens. This all will benefit the next generation of Michigan citizens who will depend on the Great Lakes for their quality of life and economic well-being.

This international treasure that possesses one-fifth of the world's surface water means more to us than just a place to boat, swim or admire - it also offers great economic opportunities. Economists at The Brookings Institute found that investing in Great Lakes restoration provided both short- and long-term economic benefits. These benefits include rising local property values, more sport fishing and recreational boating opportunities and increased tourism.

Additionally, the Green Jobs for Blue Waters Initiative that we have recently launched seeks to expand and improve our industries that rely on water. Green Jobs for Blue Waters provides focus, support and assistance to businesses and organizations in Michigan or those relocating to Michigan to grow our clean water sector. Above all, our Green Jobs for Blue Waters Initiative recognizes that the foundation of Michigan's economic advantage lies in our two greatest assets – our healthy natural resources and our trained workforce.

It is because of these opportunities that the need to protect the Great Lakes and Michigan's way of life is so important.

For more information visit www.michiganadvantage.org/Targeted-Initiatives/Water-Technology/Initiative/Default.aspx or www.michigan.gov/dnregreatlakes.

John D. Cherry Jr., Lieutenant Governor

Michigan Demonstrates Strong Partnerships with GLRI Selected Proposals

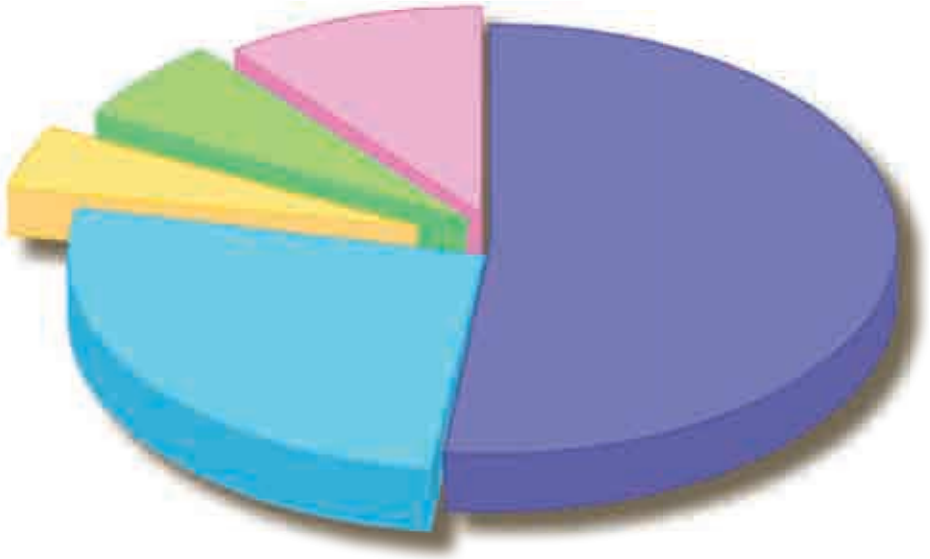
Throughout the last half of 2009, Michigan state agencies, at the request of Lieutenant Governor John D. Cherry, collaborated and developed the Michigan Strategic Framework for the 2010 GLRI. The Framework outlines Michigan state agencies' vision for these new federal dollars that is outcome-based and targeted toward the most significant stressors that affect the health of the Great Lakes. The Framework was developed collectively through interagency workgroups with representation from the Michigan Department of Natural Resources and Environment (formerly two separate departments: Environmental Quality and Natural Resources), Agriculture and Community Health.

With a state entirely within the watershed excluding small areas in Gogebic and Berrien Counties, Michigan had a seemingly endless "wish list" of priority projects for 2010. Through coordination and collaboration with state agencies, federal agencies, nongovernmental organizations, local units of government and tribes, Michigan applicants were able to present highly competitive proposals to the U.S. EPA reflecting some of our best efforts to date. Michigan projects received an overwhelming approval rating during the U.S. EPA proposal review process.

Visit www.michigan.gov/dnregreatlakes, and click on Protection and Restoration for a list of Michigan-selected projects. For more information about Michigan's efforts to respond to the GLRI, contact Emily Finnell, DNRE, at 517-335-4056.

Michigan-based U.S. EPA Funded GLRI projects

Habitat and Species Restoration	$29,105,074
Nearshore Health/Nonpoint Source	$12,664,960
Toxic Pollutants/Areas of Concern	$10,582,929
Accountability, Education, Monitoring, Evaluation, Collaboration and Partnerships	$5,035,699
Invasive Species	$4,668,996
Total	**$62,057,658**



Michigan Demonstrates Strong Partnerships with GLRI Selected Proposals

Accountability, Education, Monitoring, Evaluation, Collaboration and Partnerships

Downscaling Climate Predictions for Michigan and the Great Lakes. DNRE -$328,048

Great Lakes water levels are fundamental to conservation; these lake levels will change as the climate changes. Localized (or "downscaled") predictions of these changes are needed to guide the conservation of the Great Lakes, especially our coastlines. Managers and policy makers recognize the need both for predictions of future precipitation and temperature and for the certainty or uncertainty of these predictions. For example, decision-makers in Grand Rapids need more local or "downscaled" knowledge such as predicted increases in extreme summer rainfall in the Grand River watershed and future lake levels of Lake Michigan to design wastewater treatment and drinking water infrastructure needs for the future. They also need to know the degree to which the models agree or disagree on the extent of predicted increases in precipitation or decreases in future lake levels.

The DNRE, in partnership with Wisconsin, will create a high-resolution dataset predicting the changes in Michigan's climate through the end of the 21st century including changes in daily precipitation, daily maximum temperature and daily minimum temperature based on the global climate models. This project will also assist in determining how both the mean climate and weather extremes will change in the Great Lakes Basin based on regional model simulations, with focus on Michigan and how climate change will impact Great Lake ice cover and lake-effect snowfall across Michigan and the entire Great Lakes Basin. Projected changes in the mean climate - including temperature, precipitation and snowfall - will be assessed in these regional model simulations and compared with the downscaling projections from the other components of the project. Changes in the frequency of heat waves, cold surges and heavy precipitation events will also be analyzed in the regional model experiments for the mid- and late-21st century and likewise compared with the statistical assessment.

For more information contact Christopher Hoving, DNRE, at 517-373-3337.

Aquatic Invasive Species

Mounting a Response to New Aquatic Invaders. DNRE - $1,021,572

The DNRE will develop and implement a Rapid Response Program in Michigan. Building on Michigan's efforts to control invasive species, this project will develop a Rapid Response Program directing efforts towards the highest priority species and sites in Michigan using a defined decision-support framework. The process for determining priorities will continue to be refined but will ultimately focus on four goals: 1) treating all new high threat invaders; 2) closing vectors and pathways; 3) treating outliers of high threat invaders already established; and 4) taking advantage of available resources anywhere they can be used to successfully contain or eradicate high threat invasive species. This project will result in the eradication and control of 8 to 10 high threat invasive species that impact the health of the Great Lakes. Additionally, this Rapid Response Program will help direct future resources for invasive species control to the most cost-effective, strategic and highest threat locations. Other components of the project include expanding and maintaining the Michigan Invasive Species Information Network (MISIN) developed by Michigan State University and conducting a mock rapid response exercise that will test the effectiveness and completeness of the Program.

For more information about this project, contact Sue Tangora, DNRE, at 517-241-1153.

Habitat and Species Restoration

***Great Lakes-Wide Coastal Wetland Monitoring Program. Central Michigan University* - $10 Million**

This fall an unprecedented effort to collect comprehensive, consistent sampling data from coastal wetlands throughout the Great Lakes system is set to launch. Several years in the making, the Great Lakes-Wide Coastal Wetland Monitoring Program is the current phase of a long-running effort to classify and map Great Lakes coastal wetlands and assess and track their health. This program will take five years to complete and will involve numerous researchers and resource management agency staff from the U.S. and Canada, working at several hundred sites throughout the Great Lakes. Central Michigan University is coordinating the program and the DNRE is one of many program partners.

The coastal wetland monitoring program implements a U.S. EPA-funded monitoring plan finalized by the Great Lakes Coastal Wetlands Consortium in 2008, following almost seven years of research and development. The building blocks of the monitoring plan are five sets of indicators addressing major components of coastal wetland condition, specifically, water chemistry, vegetation, invertebrates, fish and amphibian and bird communities. Over the next five years, researchers will collect sampling data for these indicators from every Great Lakes coastal wetland at least 10 acres in area with a subset of the sites to be resampled the following year to determine trends in wetland health. The project team will hold training sessions in the last year of the project for agencies and organizations interested in continuing the monitoring program locally. The U.S. EPA Great Lakes National Program Office will take over monitoring effort coordination after the five-year project has completed.

The DNRE Wetland Program will convene a regional wetland monitoring workgroup to implement a strategy for disseminating the monitoring data and developing useful information products tailored to various stakeholders. The information collected will inform decision-makers and a variety of stakeholders of the health of coastal wetlands in the Great Lakes. Healthy coastal wetlands help maintain the quality of nearshore waters used for recreation, industry and public water supplies. They buffer shorelines from erosion damage and retain sediments that otherwise fill in navigation channels. By providing feeding and nursery habitat for many sport fish, waterfowl and non-game wildlife species, the wetlands help stoke the tourism-based economic engines of many coastal communities.

For more information about this project, contact Peg Bostwick, DNRE, at 517-335-3470.

Nearshore Health

Healthier Great Lakes Beaches through Improved Communication. DNRE - $103,337

The DNRE in collaboration with Michigan State University will communicate beach monitoring and related nearshore health issues to the public using three components: videos to inform both experts and the general public about quantitative rapid methods for beach monitoring; workshops and online materials for journalists, beach managers and others for improved communication; and sustained, in-depth news coverage of beach monitoring and nearshore health issues. The project will focus on outreach and education to encourage the dissemination of technical information to experts and nearshore health information to the public. This project is part of a statewide effort involving DNRE and its partners to develop, refine and use new tools to improve beach water quality and provide timely, meaningful information to the public.

The DNRE, on behalf of its partners, submitted 18 beach-related proposals to the U.S. EPA; 16 were selected by the U.S. EPA for funding totaling over $3 million.

For more information about this project or other beach related projects, contact Shannon Briggs, DNRE, at 517-335-1214.

Toxic Pollutants and Areas of Concern

Implementation of Mercury Strategies in Michigan. DNRE - $856,046

The project will implement strategies in several areas within communities and industry sectors that will reduce mercury within Michigan and the Great Lakes Region. The DNRE will depend on a partnership with other state agencies, industries, companies, municipalities and residents to accomplish the mercury reductions. The project will combine a balance of funding, education and outreach, expanding recycling resources and adopting new Pollution Prevention (P2) practices to address the numerous sources of mercury. A major focus will be to increase mercury awareness across the state. The long-term goal is to create sustainable programs that will facilitate the understanding of the hazards associated with mercury and the importance of effective collection of mercury and removal from recycled products, as well as proper handling and disposal. Implementation of these activities will reduce mercury pollution, related public and wildlife health risks and protect the water quality and fisheries of the entire Great Lakes Basin.

For more information about this project contact Maggie Fields, DNRE, at 517-335-6250.

Lake Erie

LENGTH: 241 miles/388 kilometers
BREADTH: 57 miles/92 kilometers
AVERAGE DEPTH: 62 feet/19 meters
MAXIMUM DEPTH: 210 feet/64 meters
VOLUME: 116 cubic miles/484 cubic kilometers
WATER SURFACE: 9,910 square miles/25.700 square kilometers
TOTAL DRAINAGE BASIN AREA: 30,140 square miles/78,000 square kilometers
MICHIGAN DRAINAGE BASIN AREA: 5,800 square miles/15,100 square kilometers
SHORELINE LENGTH (including islands): 871 miles/1,402 square kilometers
ELEVATION: 569 feet/173 meters
RETENTION: 2.6 years

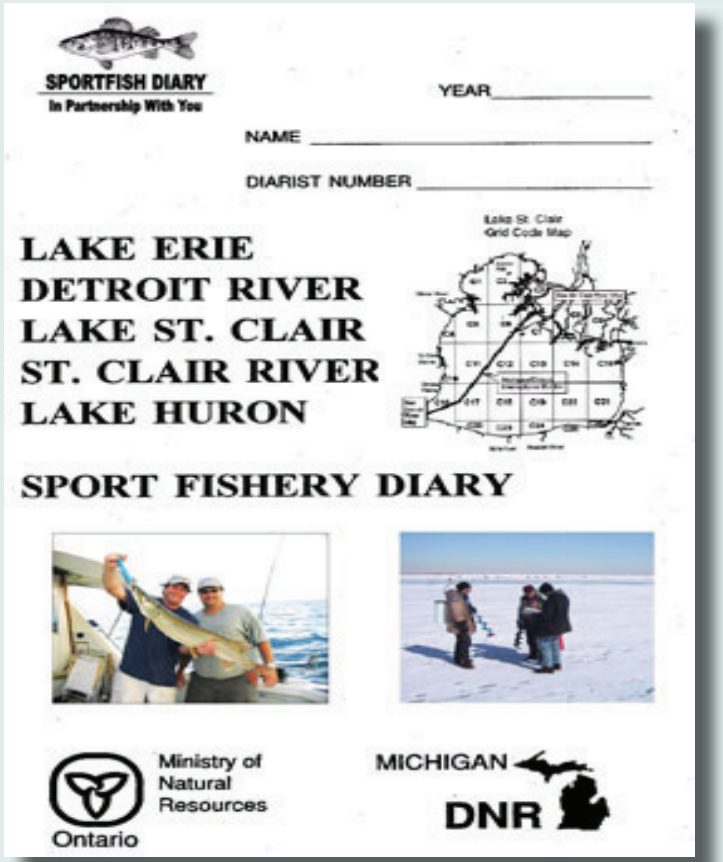
Shallow lake best known for bass, walleye, and yellow perch fishing
Includes 3 Michigan State Parks

Huron-Erie Corridor Restoration

The Lake St. Clair Fisheries Research Station of the Michigan Department of Natural Resources and Environment (DNRE) has a 45-year history of fishery science on the Huron-Erie Corridor starting in 1966. The Huron-Erie Corridor Initiative (Initiative) was proposed in 2004 by the U.S. Geological Survey's Great Lakes Science Center. It was created to address high-priority research needed to understand and remediate the impacts of habitat loss and degradation as well as invasive species on fishery resources in the Huron-Erie Corridor. The Initiative is a binational, collaborative partnership of over 20 organizations, including the DNRE as well as other government, industry, tribal and university participants. A primary goal of the Initiative is to identify historic reference conditions and provide research to support restoration and management of aquatic resources, habitats and ecosystem functions.

The Lake St. Clair Fisheries Research Station, working closely with the Lake Erie Management Unit of DNRE, has a number of annual research projects that provide essential information to the Huron-Erie Corridor Initiative. Several of the projects involve aspects of the highly-valued sport fishery which is worth an estimated $40 million annually. Lake St. Clair and the St. Clair and Detroit rivers provide 34 percent of Michigan's Great Lakes sport fishing, even though they makeup much less than one percent of the state's Great Lakes waters. In addition, the Lake St. Clair Fisheries Research Station and the Lake Erie Fisheries Management Unit are collaborating with numerous partner agencies to begin aquatic habitat restoration projects at six different sites within the Huron-Erie Corridor, mainly funded through the federal Great Lakes Restoration Initiative (GLRI).

One important project is a cooperative angler diary program run by the DNRE and the Ontario Ministry of Natural Resources. This voluntary survey provides valuable information on angler activity and success within the Huron-Erie Corridor and is a surrogate for the hugely expensive onsite survey that would provide similar, but more complete and accurate information. Anglers keep personal records of all fishing activity during the year which is entered and compiled by agency personnel. This information has many valuable uses during research and management deliberations.



Another study is looking at the fish and aquatic plant community within the Huron-Erie Corridor, concentrating on Lake St. Clair. It is important to keep track of the submerged aquatic plant community because it dominates fish habitat in the Huron-Erie Corridor.

Huron-Erie Corridor Restoration continued

When abundant, these plants are very effective at controlling other aspects of the aquatic environment, including food and living space for fish. On occasion, submerged plants also break loose and mat together that can create serious problems for lakeshore residents and recreational boaters. Plant surveys began in 2003 to measure plant height and bottom coverage. Weighted hook tosses are also being used to determine species composition and biomass. This study, in light of historical documents, has shown very extensive expansion of the native submerged plant community in the Huron-Erie Corridor since the mid-1980s to the benefit of native fishes, other aquatic organisms and the fishing public.

As part of this study, surveys are being conducted in the St. Clair River and Lake St. Clair to determine abundance, age composition and growth of the spawning stock of state threatened lake sturgeon populations and to determine important habitats for juveniles, spawning and feeding. The DNRE has documented movement of these fish into lakes Huron and Erie and have captured about 2,200 lake sturgeon since 1996 providing much valuable data on the Huron-Erie Corridor population, including age distribution. Egg mats have been placed at several locations in the lower St. Clair River to look for sturgeon spawning but only detected success at a known site in the North Channel. The Middle Channel site, which did not show evidence of spawning, has been chosen for restoration. With GLRI funds from the National Oceanic and Atmospheric Administration, a much-needed rock reef will be constructed to support spawning by sturgeon and other important species such as walleye and whitefish.

For more information contact Bob Haas, DNRE, at 586-465-4771.

Marsh and Lakeplain Prairie Restoration Projects

Two projects within the Sterling State Park and River Raisin Area of Concern (AOC) have received a total of $2.85 million to restore Great Lakes marsh and prairie habitat and control invasive plants such as Phragmites in the park. The River Raisin wetland enhancement project will restore water level management capabilities in 310 acres of wetlands at Sterling State Park to provide critical stopover habitat for migratory shorebirds and to facilitate invasive plant control. The control of Phragmites and other invasive plants and the improvement of fish passage will allow for enhanced fish production during timeframes when the water control structures will be opened, allowing a hydraulic connection to Lake Erie. Another component of this project will implement Phragmites control in approximately 1,100 acres on public and private lands in the north River Raisin delta wetlands. This project will also collect baseline data on wetland community conditions and key species in the project area and monitor changes in those conditions over 3 to 5 years to assess and evaluate key management actions of the project.

The lakeplain restoration project will recreate approximately 25 acres of emergent and submergent Great Lakes marsh and 25 acres of lakeplain prairie at Sterling State Park in an area that was historically Great Lakes marsh and lakeplain prairie. Lakeplains are broad flat landscapes formed by the lake bottoms of the much larger precursors to our present day Great Lakes and are home to several unique plant communities, including lakeplain prairies, lakeplain oak openings (savannas) and Great Lakes marshes. This project will address the River Raisin AOC's Loss of Fish and Wildlife Habitat and Degradation of Fish and Wildlife Populations Beneficial Use Impairments. Impairment of fish and wildlife populations and habitat were originally listed for the River Raisin AOC as a result of legacy chemical contamination and loss of habitat due to urban and industrial land use practices.

Over 500,000 people visit Sterling State Park annually allowing the public to directly observe benefits and the local impacts of the project.

For more information about these projects contact Glenn Palmgren, DNRE, at 517-373-7844.

Funding Announcements

Great Lakes Restoration Initiative

The information provides a summary of projects awarded within the Lake Erie Basin under the 2010 Great Lakes Restoration Initiative that will protect and restore the rivers and coastal areas of Michigan's Lake Erie Basin.

U.S. Environmental Protection Agency

Accountability, Education, Monitoring, Evaluation, Collaboration and Partnerships

Lake St. Clair Partners are Ready to Implement
Southeast Michigan Council of Governments **$279,806**

Habitat and Species Restoration

St. Clair River AOC Living Shorelines Project
City of Marysville **$1,500,000**

St. Clair River AOC - Habitat and Wildlife Restoration
City of Port Huron **$1,296,700**

Clinton River AOC: Paint Creek Dam Removal
Clinton River Watershed Council **$706,588**

Danvers Pond Dam Removal and Stream Restoration
Alliance of Rouge Communities **$499,254**

Transforming the Rouge AOC from Mowed Down to Grown Up
Alliance of Rouge Communities **$648,750**

Restoring Lake Erie Fish Passage in the River Raisin AOC
City of Monroe **$1,266,400**

Anchor Bay/St. Clair Flats Phragmites Control and Education
Ducks Unlimited, Inc. **$974,037**

Dusseau Wetland/Lakeplain Prairie Restoration Erie Michigan
Ducks Unlimited, Inc. **$284,477**

Pointe Aux Peaux Coastal Wetland Restoration and Fish Passage
Ducks Unlimited, Inc. **$192,653**

Detroit River AOC Habitat Restoration - Blue Heron Lagoon
Friends of Detroit River **$1,428,994**

Detroit River AOC Habitat Enhancement - South Fishing Pier
Friends of the Detroit River **$497,634**

Detroit River AOC Habitat Restoration - US Steel Site
Friends of the Detroit River **$1,200,000**

Clinton River AOC - Lake St. Clair Coastal Marshland Restoration
Macomb County Department of Planning & Economic Development **$1,492,500**

River Raisin Wetland Enhancement and Habitat Evaluation
DNRE **$1,350,000**

William C. Sterling State Park Marsh and Prairie Restoration
DNRE **$1,500,000**

A Blueprint for Lake Erie Biodiversity Conservation
The Nature Conservancy **$300,000**

Nonpoint Source Pollution

Illicit Discharge Elimination Program Facility Dye Testing
Macomb County Health Department **$250,000**

Michigan Beaches - Macomb County Health Department
DNRE **$162,874**

Michigan Beaches - St. Clair County Health Department
DNRE **$162,874**

Funding Announcements

Michigan-Expanded Lake St. Clair - Erie Beach Testing-Source Tracking
DNRE **$171,025**

The River Raisin Nitrate Total Maximum Daily Load (TMDL) Reduction Project
DNRE **$741,857**

Restoring the Lake Erie Corridor through Green Streets
Southeast Michigan Council of Governments **$500,000**

Toxic Pollutants

Household Hazardous Waste Great Lakes Shoreline Collection
Macomb County Health Department **$250,000**

U.S. Fish and Wildlife Service - Great Lakes Basin Fish Habitat Partnership

Habitat and Species Restoration

Avon Creek Restoration. City of Rochester Hills. This project will restore natural stream meanders in a designated 825-foot linear stretch of the creek to reduce sediment entering the stream, restore fish habitat and reduce water temperatures. **$192,857**

Howe-Brandymore Stream Restoration Project. St. Clair County Drain Commission. The project will restore approximately three miles of riverine habitat to benefit native warm-water fish species by reconnecting the stream to its floodplain, replacing undersized culverts and restoring riffle and pool habitat. In addition, up to 54 acres of streambank and riparian habitat will be restored by planting native trees and shrubs. This restoration effort will serve as a model for restoring other county drains back to their natural pre-channelized conditions. **$121,429**

Elias Cove Fish Habitat Native Plantings. City of Trenton. This project will allow the city to plant aquatic vegetation in the emergent wetland shelf and wet meadow riparian edge around the Cove, providing critically needed spawning and nursery habitat for native fish species in the Detroit River. **$14,286**

U.S. Fish and Wildlife Service - Contaminant Program

Habitat and Species Restoration

Deformities or Reproductive Problems Beneficial Use Impairment in Michigan's Great Lakes AOCs - (Detroit River, Kalamazoo River, River Raisin, Saginaw River/Bay, St. Clair River and St. Marys River AOCs.) DNRE. This assessment will determine the status of this impairment in six of Michigan's AOC and determine gaps in data sets to inform monitoring and restoration needs. **$66,000**

Michigan Coastal Management Program

Michigan coastal resources are challenged by many threats including invasive species, land use activities and nonpoint and point source pollution. They are also major hubs for tourism attractions and recreational activities. Michigan Coastal Management Program (CMP) recognizes both the economic and environmental values of these areas which include approximately 300 communities, generally within 1,000 feet from the ordinary high water mark and include coastal wetlands and lakes, river mouths and bays, floodplains, designated sand dune areas, public parks, recreation and natural and urban areas.

The CMP receives funding annually from the National Oceanic Atmospheric Administration as a result of a state and federal partnership established through the Coastal Zone Management Act of 1972. The CMP has allowed the DNRE to improve the administration of state coastal regulatory programs and provide financial and technical assistance to local units of government to address shoreline issues and improve their coastal resources including protecting and restoring coastal resources. Grants ranging up to $50,000 require a match in equal amount to the grant. The project selection is competitive and based on how well each project meets the CMP objectives.

The information provides a summary of projects within the Lake Erie Basin that were awarded approximately $140,000 through the CMP that will protect and restore Michigan's Great Lakes and waterways.

Funding Announcements

Habitat and Species Restoration

Macomb County - This project will develop a strategic conservation action plan for identifying, protecting and restoring areas with significant ecological values within the northern portion of Lake St. Clair and its watershed. **$40,000**

Central Michigan University - This project will conduct research on populations of rare, native freshwater mussels in Lake St. Clair coastal wetlands. The researchers will develop recommendations for conserving these rare native mussels, which have been decimated by the introduced zebra mussel. **$15,000**

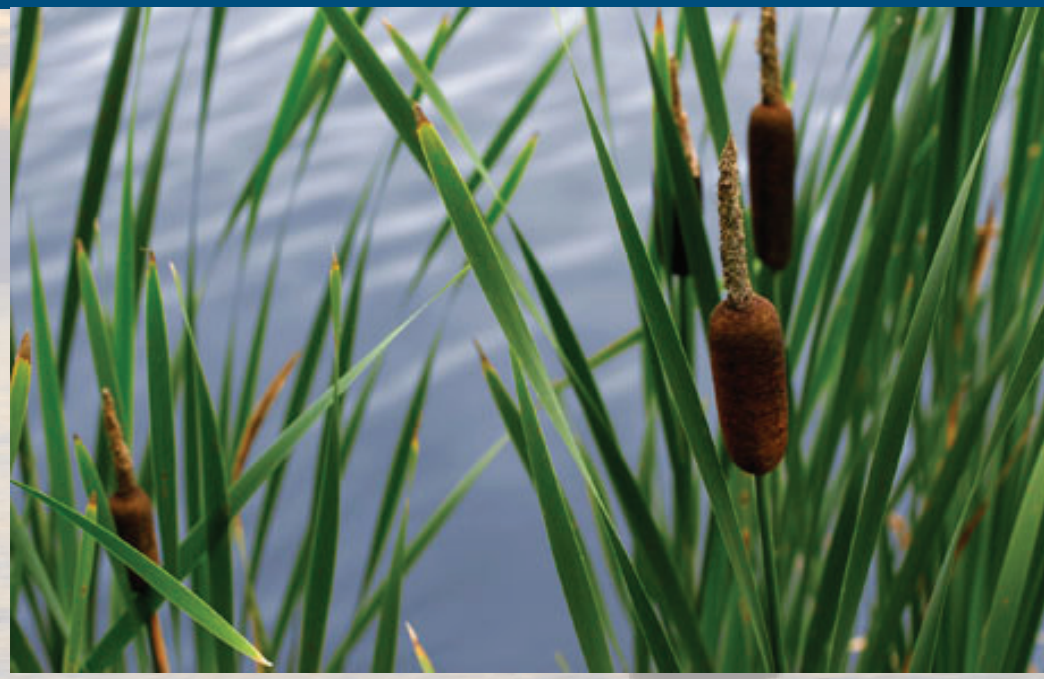
Nearshore Health

St. Clair County Drain Commissioner - This project will develop and launch a comprehensive educational program to protect local water quality. The program will include working with local governments to incorporate rain gardens, green roofs, permeable parking lots, rain barrels and natural habitats into developments as part of ordinance requirements and landscape review plans. **$35,256**

Sustainability

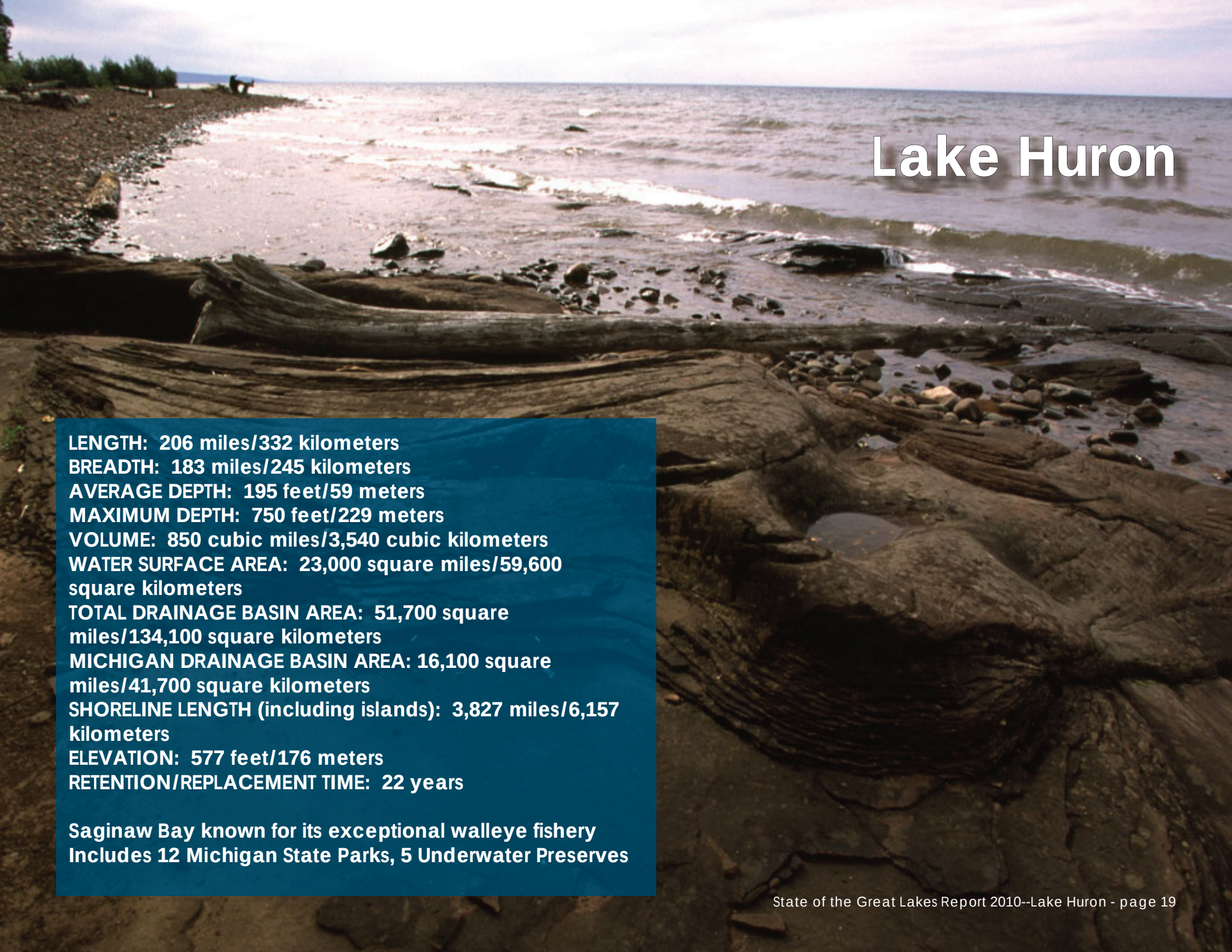
Clean Water Fund - This project will organize the annual Southeast Michigan Coastal Clean-up and collect information on the types and amounts of litter removed from local beaches. This information will be used to educate the public on proper disposal of debris, encourage public awareness of and appreciation for the Great Lakes and promote a stewardship ethic. **$2,500**

St. Clair County - This project will develop a blueway trail along 338 miles of shoreline, from Lake St. Clair to the northern border of the county along Lake Huron. The project will include an inventory of canoe and kayak access sites and coastal points of interest and recommendations for improving access, managing sensitive coastal environments and promoting the blueway as a recreational opportunity. **$40,000**



City of Gibraltar - This project will create a waterfront development plan that includes improving public access, protecting coastal resources, incorporating green techniques, enhancing aesthetics and advancing economic development. **$10,000**

For additional information on grant opportunities and funding announcements visit www.michigan.gov/dnregreatlakes and click on Protection and Restoration.



Lake Huron

LENGTH: 206 miles/332 kilometers
BREADTH: 183 miles/245 kilometers
AVERAGE DEPTH: 195 feet/59 meters
MAXIMUM DEPTH: 750 feet/229 meters
VOLUME: 850 cubic miles/3,540 cubic kilometers
WATER SURFACE AREA: 23,000 square miles/59,600 square kilometers
TOTAL DRAINAGE BASIN AREA: 51,700 square miles/134,100 square kilometers
MICHIGAN DRAINAGE BASIN AREA: 16,100 square miles/41,700 square kilometers
SHORELINE LENGTH (including islands): 3,827 miles/6,157 kilometers
ELEVATION: 577 feet/176 meters
RETENTION/REPLACEMENT TIME: 22 years

Saginaw Bay known for its exceptional walleye fishery
Includes 12 Michigan State Parks, 5 Underwater Preserves

Frankenmuth's Fish Wish Project

The Cass River flows through the heart of the City of Frankenmuth, providing scenic views for thousands of tourists and residents who stroll through the city; however, its accompanying dam - owned by the City of Frankenmuth - has also inadvertently hindered fish habitat and spawning opportunities.

The dam, built in the 1850s, is one of more than 300 dams in the Saginaw watershed. Stream spawning, tributary habitat for migratory fish from Saginaw Bay has become scarce with approximately two-thirds of this type of habitat severed from the Saginaw Bay through the construction of dams. The loss of spawning habitat affects walleye more than any other fish.

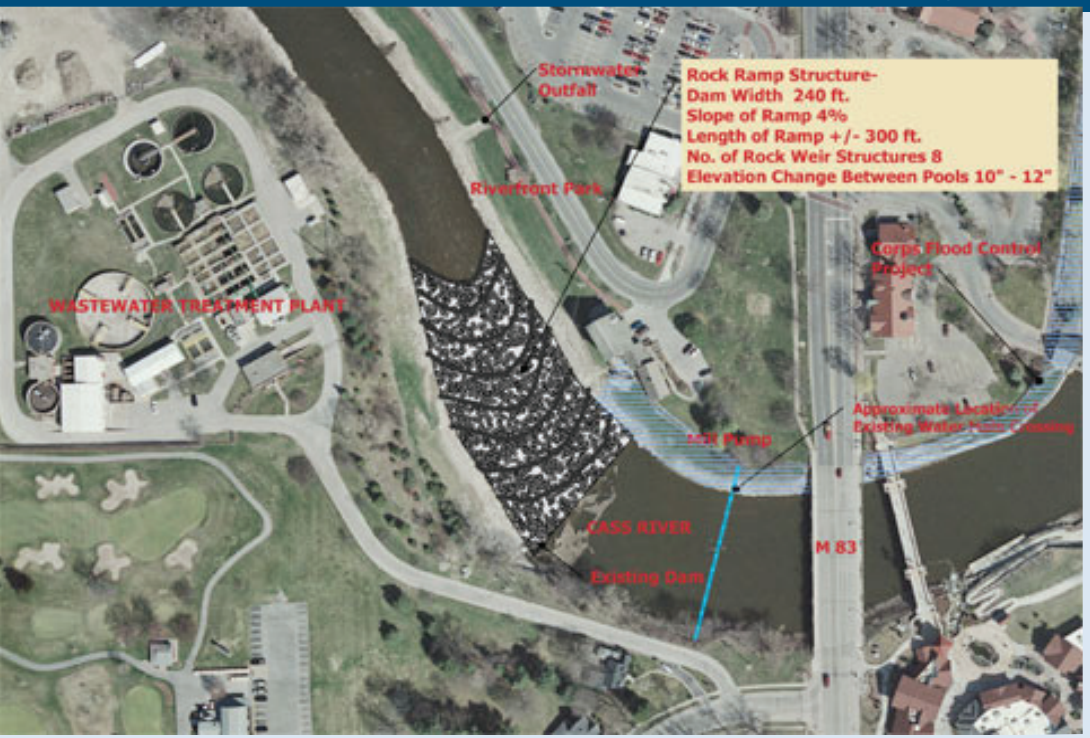
The DNRE has made efforts to restock walleye in this watershed, but with just 20 to 50 percent of walleye reproduction occurring naturally each year, the solution lies in improving habitat and access to spawning areas. The Cass River has been identified as one of six rivers in the Saginaw Bay watershed that are key to increasing the natural reproduction rate of walleye. The DNRE, U.S. Fish and Wildlife Service and other agencies have identified the dam as one of three "critically important" fish passage opportunities. Additionally, the Great Lakes Fishery Commission gave this project a "high priority" ranking when evaluating the fisheries and ecosystem benefits.

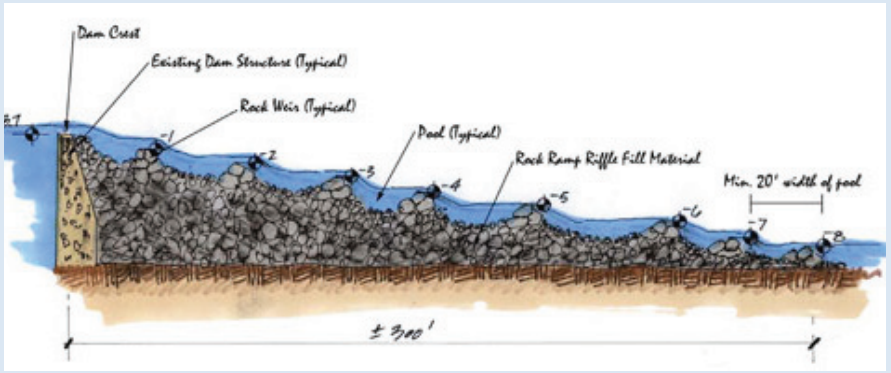
The City of Frankenmuth is working to balance environmental and economic needs. Rather than removing the dam completely - which would be problematic for commercial boating companies upstream of the dam - a rock ramp will be installed as part of the dam. This gradual slope will allow fish passage through a series of steps and pools. Variable flow around the rocks and boulders will accommodate fish of various sizes and species and create a natural appearance.

The rock ramp will benefit other fish species as well, including white sucker, channel catfish, northern pike and steelhead. Connecting river habitat for these fish will benefit the overall diversity of the Cass River and Saginaw Bay Watershed, an important step in delisting the Bay as an Area of Concern.

The U.S. Army Corps of Engineers estimates the cost of this project at $3.2 million. The City of Frankenmuth has successfully attracted multiple grants and in-kind services from a variety of sources, including the

Frankenmuth's Fish Wish Project continued





Saginaw Bay Watershed Initiative Network, the U.S. Fish and Wildlife Service, the National Fish and Wildlife Foundation through the Great Lakes Restoration Initiative, Star of the West Milling Company, Signature Bank, the Frankenmuth Community Foundation and other private contributors. The City continues to seek another $300,000 in local match for the project.

While the project has strong environmental benefit, the City also hopes to maximize Frankenmuth's unique position as a major tourism center supporting public access to the fishery and providing an opportunity for education-related to the Great Lakes Fishery. Removal of the fish barrier not only opens up the passage to fish, but also eliminates the barrier to water recreation including kayaking and canoeing. With Frankenmuth's local economy so reliant on tourism, the fish passage project enables a new destination in eco-tourism as an additional draw for the community, building sustainability in the economy and providing local jobs, all while benefitting the ecosystem.

For more information on the Frankenmuth's Fish Wish Project, contact Sheila Stamiris, City of Frankenmuth at sstamiris@frankenmuthcity.com or 989-652-3430, ext 120.

International Upper Great Lakes Water Levels Study

In response to a series of years of low lake levels, the International Joint Commission launched the International Upper Great Lakes Study in March, 2007. The five-year study looks at contributing factors to current lake level conditions. The Study is integrating information and data associated with weather patterns, water level control operations in connecting channels, and physical changes and modifications to the lakes and connecting channels. The Upper Great Lakes Study is proceeding in 2 phases: Phase 1-St. Clair River Study and Phase 2-Lake Superior/St. Marys River Study and more recently expanded to include development of an Adaptive Management strategy for dealing with future increases and decreases in Great Lakes water levels as a result of climate change.

The Phase 1-St. Clair River Study has been completed and the final report has been released. The report reviewed the physical changes in the St. Clair River and determined that there has been an increase in the amount of water flowing in the river since 1962 and recommended that measures not be undertaken at this time to remediate conditions determined to be causing the increase. The report also recommended that water control mechanisms in the St. Clair River be examined as part of the comprehensive assessment of the future effects of climate change in the second phase of the study. The report is available at http://pub.iugls.org/en/Other_Publications/IUGLS_Final_Report.pdf.

Phase 2-Lake Superior/St. Marys River Study is currently underway reviewing the operations of the existing water control structure in the St. Marys River to determine if differing management plans can improve the economics and environmental impacts of the operations by changing the water levels of the Great Lakes. The study is looking closely at the impact of varying Great Lakes water levels on water uses such as municipal and industrial withdrawals; hydropower; recreational boating and tourism; commercial navigation; coastal areas; and the overall health of the environment.

The Adaptive Management strategy will be based on a risk assessment of the vulnerability of water users to climate, economic and environmental changes resulting from changing water levels. Adaptive Management, in general, is the application of a process for decision-making in the face of uncertainty, aiming to reduce uncertainty through system monitoring and evaluation. The strategy will include a long-term adaptive management process engaging the relevant agencies and organizations that have a role in helping the Great Lakes interests adapt to climate change.

Once lake level thresholds where negative impacts on water uses are identified, the process will assess potential approaches to minimize impacts when water level near these thresholds. This may be through changes in Lake Superior regulation, water control structures at other areas of the Great Lakes; and/or

the adoption of non-structural strategies or policies other than water regulation. Indicators will also be developed to assist in determining if we are reaching the thresholds.

While the Upper Great Lakes Study is going to examine the potential for additional water level regulation in the Great Lakes, it is likely that the cost and institutional challenges will be so onerous that non-structural approaches may be more efficient and effective. Therefore, as part of the study, relationships with agencies and organizations that will be responsible for implementing non-structural adaptations will be pursued and opportunities to inform decision-makers will be encouraged.

The International Joint Commission was established under the 1909 Boundary Waters Treaty to assist the U.S. and Canadian governments in finding solutions to problems in shared waters.

The 1909 Boundary Waters Treaty established the Commission, which has six members. Three are appointed by the President of the United States, with the advice and approval of the Senate, and three are appointed by the Governor in Council of Canada, on the advice of the Prime Minister. The Commissioners must follow the Treaty as they try to prevent or resolve disputes. They must act impartially, in reviewing problems and deciding on issues, rather than representing the views of their respective governments.

For more information contact Jennifer Read, United States Lead, Great Lakes Observing System, Michigan Sea Grant at 734-332-6101, or Jim Bredin, Study Board member, Office of the Great Lakes, DNRE, at 517-335-4232.

Restoring Thunder Bay Reefs

Reef habitat was lost years ago when cement kiln dust was deposited along the Thunder Bay shoreline and lake bottom. This year with over $900,000 from the U.S. Army Corp of Engineers under the Estuary Restoration Act as well as other funding from federal, state and local efforts, twelve reefs will be constructed to restore habitat and increase potential spawning areas for lake trout. The Thunder Bay Reef Restoration Project will likely benefit other fish species such as sculpins, lake whitefish and walleye. The artificial reef will also increase forage and refuge areas for fish fry and eggs, and provide habitat for snails, crayfish, amphipods and insect larvae. The outcome of this project will also provide important information to develop strategies to increase lake trout reproductive success in other areas of Lake Huron and elsewhere in the Great Lakes.

For more information about this project contact Janice Adams, DNRE, at 989-705-3434.

Funding Announcements

Great Lakes Restoration Initiative

The information provides a summary of projects awarded within the Lake Huron Basin under the 2010 Great Lakes Restoration Initiative that will protect and restore the rivers and coastal areas of Michigan's Lake Huron Basin.

U.S. Environmental Protection Agency

Accountability, Education, Monitoring, Evaluation, Collaboration, and Partnerships

Saginaw Bay/Lake Huron Land Policy Program
Michigan State University Land Policy Institute **$399,287**

Aquatic Invasive Species

Lake Huron Invasions, Food Webs, and Fisheries: A Case Study
University of Michigan **$214,319**

Habitat and Species Restoration

Van Hove Coastal Wetland Restoration
Ducks Unlimited, Inc. **$119,199**

Nayanquing Point State Wildlife Area Coastal Wetland Project
Ducks Unlimited, Inc. **$192,862**

Nonpoint Source

Rifle River Watershed Nonpoint Implementation Project
Huron Pines Resource Conservation and Development **$382,000**

Michigan Beaches-Bay County Health Department
DNRE **$135,025**

Michigan-Expanded Lake Huron Beach Testing-Source Tracking
DNRE **$254,025**

Michigan-Restoring Three Arenac County Beaches
DNRE **$250,000**

Developing TMDL Implementation Plan for Coon Creek Michigan
Michigan State University **$202,628**

Pigeon River Corridor Sediment Reduction Project
Pigeon River Intercounty Drain Drainage Board **$800,000**

National Fish and Wildlife Foundation - Sustain Our Great Lakes

Habitat and Species Restoration

Early Detection and Treatment of Great Lakes Phragmites. Michigan State University. This project will take a regional approach to assess, prioritize, and build long-term capacity to detect and treat non-native Phragmites before widespread establishment in the tip of the Lower Peninsula and the southern coast of the Upper Peninsula. **$115,199**

Silver Creek Super Project. Huron Pines Resource Conservation and Development. This locally-led collaborative project will utilize a complete suite of protection, restoration and enhancement techniques to address the most significant pollutant sources in Silver Creek, a high-quality, coldwater tributary that flows into the Ocqueoc River Watershed in Presque Isle County. **$133,510**

U.S. Fish and Wildlife Service - Contaminant Program

Habitat and Species Restoration

Assessment of the Bird or Animal Deformities or Reproductive Problems, Beneficial Use Impairment in Michigan's Great Lakes Areas of Concern in Detroit River, Kalamazoo River, River Raisin, Saginaw River/Bay, St. Clair River, and St. Marys River AOCs. DNRE. This project will assess and determine the status of this impairment in six of Michigan's Areas of Concern as well as identify gaps in data sets to inform monitoring and restoration needs. **$66,000**

For additional information on grant opportunities and funding announcements visit www.michigan.gov/dnregreatlakes and click on Protection and Restoration.

Funding Announcements

Michigan Coastal Management Program

The information provides a summary of projects within the Lake Huron Basin that were awarded approximately $279,000 through the Michigan Coastal Management Program that will protect and restore Michigan's Great Lakes and waterways.

Aquatic Invasive Species

Huron Pines Resource Conservation and Development - This project will identify Phragmites infestations in coastal wetlands and barriers to fish passage in Lake Huron coastal streams, and develop management recommendations. Huron Pines staff will also train volunteers to identify, map, and treat Phragmites infestations and establish local habitat stewardship teams along the 467 coastal miles of the project area. **$23,000**

Habitat and Species Restoration

Michigan Natural Features Inventory, Michigan State University Extension – This project will identify and map coastal areas of the Saginaw Bay important for waterfowl and shorebirds during migration. Mapping these areas in advance will help determine where future wind energy projects might be located to avoid bird migratory pathways. **$42,000**

Central Michigan University – University researchers will assess the fisheries value of nine coastal streams flowing into Saginaw Bay. The researchers will collect field samples and measurements, analyze the data, and report the findings in a peer-reviewed journal. Documenting the use of these streams by spawning fish may influence future stream management decisions. **$6,000**

DNRE's Recreation Division – The division will prepare management plans for Port Crescent and Sleeper State Parks. Both parks have sandy swimming beaches, trails, and campgrounds, as well as sensitive ecosystems and migratory bird habitat requiring careful management. **$43,000**

Michigan Chapter of The Nature Conservancy – This project will work with state, federal, and university fisheries experts to collect and synthesize current knowledge on important fish habitats in the rivers and coastal areas of Michigan's Lake Huron Basin. This information will help guide future efforts to improve Lake Huron's sport and commercial fisheries. **$37,000**

Michigan Natural Features Inventory, Michigan State University Extension – The project will further study a globally-rare type of wetland called the coastal fen. The researchers will locate and survey the coastal fens and identify rare plant and animal species inhabiting them. The project will include detailed management and protection recommendations. **$40,500**

Sustainability

Hampton Charter Township – The township will update its Master Land Use plan to address new opportunities facing the township, including the extension of the coastal greenway to connect with the Bay City trail system, interest in residential and commercial wind energy facilities, and the desire to provide greater recreational access to the coast. **$17,000**

Sanilac Township – The township will update its Master Plan to ensure that future development is compatible with coastal resource management. **$15,000**

***Northeast Michigan* Council of Governments** – This project will develop a Web-based guide of northeast Michigan coastal greenway and blueway trails, public access sites, historic and natural points of interest, and other features that promote the coast as a recreational tourist destination. **$40,000**

Nearshore Health

Northeast Michigan Council of Governments – This project will address the final phase of a watershed management plan for the Black River watershed. A number of components will be added to the first-phase plan, including a land use update, prioritization of pollutants and pollutant sources, water quality protection recommendations, and a monitoring plan. The Black River supports naturally-reproducing steelhead, chinook and coho salmon, and brook trout. **$15,500**

Lake Michigan

LENGTH: 301 miles/494 kilometers
BREADTH: 118 miles/190 kilometers
AVERAGE DEPTH: 279 feet/85 meters
MAXIMUM DEPTH: 925 feet/282 meters
VOLUME: 1,180 cubic miles/4,920 cubic kilometers
WATER SURFACE AREA: 22,300 square miles/57,800 square kilometers
TOTAL DRAINAGE BASIN AREA: 45,600 square miles/118,000 square kilometers
MICHIGAN DRAINAGE BASIN AREA: 16,100 square miles/41,700 square kilometers
SHORELINE LENGTH (including islands): 1,638 miles/2,633 kilometers
ELEVATION: 577 feet/176 meters
OUTLET: Straits of Mackinac to Lake Huron
RETENTION/REPLACEMENT TIME: 99 years

Lake Michigan has excellent salmon fishery for coho and chinook, the lower portion of the lake has very good yellow perch fishing
Includes 20 Michigan State Parks, 1 National Park, 3 Underwater Preserves

Muskegon Lake Project: Restoring Shoreline and Creating Wetlands

Muskegon Lake is showing new signs of life this summer as a result of a $10 million federal stimulus grant awarded by the National Oceanic and Atmospheric Administration (NOAA) to the Great Lakes Commission (GLC) in 2009. The lake was designated an Area of Concern (AOC) under Annex 2 of the 1987 Protocol Amending the 1978 Great Lakes Water Quality Agreement. Historically, sawmill, industrial and commercial demolition materials had filled roughly 20 percent of the shallow water and wetlands in Muskegon Lake, and 74 percent of the shoreline had hardened with concrete stab wood and other materials over several decades. The debris reduced the quality of the lake for fish and wildlife and degraded the image of the lake and the surrounding community. Shoreline and wetland restoration are key components of long-term efforts to remove the impairments that limit the lake's fish and wildlife habitat populations.

The Muskegon Lake Habitat Restoration Project will achieve over 40 percent of the work needed to remove the lake's fish and wildlife impairments. The project will restore approximately two miles of hardened shoreline, remove more than 180,000 tons of degraded lake fill and create 25 acres of coastal wetlands.

In addition to the environmental benefits, this project will also strengthen the local economy in Muskegon County. The project is expected to generate nearly 37,000 labor hours and create or retain 125 jobs for a broad spectrum of professions, including engineers, biologists and construction workers from the local area. These jobs are welcome news to an area suffering from among the highest unemployment rates in the state and the country.

Reflecting on the project, Michigan's Lieutenant Governor John D. Cherry, Jr. and immediate past chair of the GLC emphasized that "the restoration project is a sound investment in the regional economy, both during construction and over the long-term as we work to strengthen tourism and recreational opportunities in west Michigan."

Restoration began in spring 2010 and will continue through December 2011. The project is one of 50 restoration projects funded nationally by NOAA with $167 million from the American Recovery and Reinvestment Act. The GLC is working with the West Michigan Shoreline Regional Development Commission which is managing the project.

While the full benefits of the restoration will take time to achieve, local wildlife is returning. Turtles now bask in wetland areas and fish and amphibian populations are also thriving.

For more information on the Muskegon Lake Restoration Project contact Heather Braun at the GLC at 734-971-9135, or visit www.glc.org/announce/09/06muskegon.html.

Portage Creek Clean-Up and Habitat Restoration

The DNRE Remediation Division has been selected by the U.S. EPA to receive $3.3 million under the GLRI for a project to restore portions of Portage Creek, a tributary to the Kalamazoo River. This project will restore habitat and remove contaminated material in an industrialized section of Portage Creek, a primary tributary in the Kalamazoo River Area of Concern (AOC). In addition, the previously industrialized portion of Portage Creek will be restored to a natural channel and floodplain with sustainable slopes, vegetated with native species.

The proposed project site, which resides within the Kalamazoo River AOC, consists of the urban corridor of Portage Creek stretching from East Alcott Street to Reed Street in the City of Kalamazoo, approximately three miles upstream from Portage Creek's confluence with the Kalamazoo River. The property surrounding this portion of the creek consists of multiple parcels (approximately 27 acres) previously occupied by Performance Paper which was comprised of three paper mills, a power plant and a roll grinding building. During its 94 years of operation, the facility produced a variety of high-quality papers; raw materials used included both virgin pulp products and recycled paper products that underwent a de-inking process. Various chemicals have been used at the facility during its history. The chemicals known to have been used included cutting oil, coolant, petroleum distillates, latex, polymer grease, biocides, lubricating oil, solvent degreasers, caustic acids, Stoddard solvents and dyes.

The project will prevent the release of, and reduce exposure to, toxic substances from historically contaminated sources through source reduction efforts to remove all the source materials from the floodplain. The removal of the deteriorating cement channel walls and toxic substance contaminated fill material from the upland floodplain area will contribute to increased property values in this urban stretch of Portage Creek, supporting the reuse of brownfields and creation of sustainable jobs in the community. Preventing the release and reducing the exposure of toxic substances to the Kalamazoo River AOC will also address Beneficial Use Impairments related to toxic substances (i.e., Restrictions on Fish and Wildlife Consumption and Bird and Animal Deformities and Other Reproductive Problems).

The Portage Creek project will also significantly restore habitat for fish and benthic organisms and address three habitat-related Beneficial Use Impairments (Degraded Fish and Wildlife Populations, Degradation of Benthos, Loss of Fish and Wildlife Habitat) that will contribute to delisting the area as an Area of Concern.

For more information about this project contact Mark DuCharme, DNRE, at 269-567-3529.

$3 Million Awarded for Preservation of Saugatuck Harbor Natural Area

The City of Saugatuck will secure 171 acres of land in the Saugatuck Harbor Natural Area and protect it from development thanks to a $3 million grant provided through the federal government's Coastal Estuarine Land Conservation Program and administered by the Michigan DNRE's Coastal Management Program.

The City of Saugatuck will be the title holder and land manager for the conservation area which will be preserved in perpetuity for conservation and open to the public for passive recreation such as hiking, fishing and bird watching. The acreage includes open dunes, wetlands, natural jack-pine forest, hardwood-pine dune forest, marsh, an oxbow lake, 1,650 feet of the Kalamazoo River and 3,650 feet of Lake Michigan shoreline. The undeveloped land includes an array of diverse habitats and rare plant and animal species.

For more information contact Alisa Gonzales Pennington, DNRE, at 517-241-8280.

Funding Announcements

Great Lakes Restoration Initiative

The information provides a summary of projects awarded within the Lake Michigan Basin under the 2010 Great Lakes Restoration Initiative that will protect and restore the rivers and coastal areas of Michigan's Lake Michigan Basin.

U.S. Environmental Protection Agency

Accountability, Education, Monitoring, Evaluation, Collaboration, Partnerships

Observatory for Ecosystem Changes in Muskegon Lake AOC
Grand Valley State University **$568,449**

Coordinated Lake Specific Onboard Education and Outreach
Grand Valley State University Annis Water Resources Institute **$291,721**

Aquatic Invasive Species

Grand Traverse Regional Invasive Species Network
Grand Traverse Conservation District **$935,184**

Habitat and Species Restoration

Betsie and Platte Rivers Watersheds Improvement - Phase 2
Conservation Resource Alliance **$762,500**

Kalamazoo River Dam Removal Feasibility Study
DNRE **$361,956**

Restoring Habitats of Southwest Michigan Endangered Species
Kalamazoo Nature Center **$196,413**

Little Traverse Bay Bands Bear River Habitat Restoration
Little Traverse Bay Bands of Odawa Indians **$196,148**

A Blueprint for Lake Michigan Biodiversity Conservation
The Nature Conservancy **$300,000**

Restoration of Fen and Savanna in Southern Michigan
The Nature Conservancy **$200,000**

Nonpoint Source Pollution

Agricultural Water Enhancement Program Implementation in Southeast Lake Michigan Watershed
Calhoun Conservation District **$793,424**

Studies to Support Ruddiman Creek Implementation-Ready Total Maximum Daily Loads
Grand Valley State University **$247,212**

Golf Course to Wetlands: Holland Country Club Restoration
Ottawa County Parks & Recreation Commission **$646,800**

Black Creek Sedimentation and Phosphorus Reductions
DNRE **$947,000**

Michigan Beaches - Health Department of Northwest Michigan
DNRE **$150,405**

Michigan Beaches - Ottawa County Health Department
DNRE **$97,025**

Michigan-Expanded Lake Michigan Beach Testing-Source Tracking
DNRE **$155,025**

Michigan-Watershed Center - Bryant Park Remediation
DNRE **$267,775**

Toxic Pollutants and Areas of Concern

Portage Creek Toxic Substance Source Reduction - Lower Reach
DNRE **$1,701,417**

Portage Creek Toxic Substance Source Reduction - Upper Reach
DNRE **$1,645,945**

Funding Announcements

White Lake AOC Habitat Restoration Initiative for Delisting
Muskegon Conservation District **$2,160,765**

National Fish and Wildlife Foundation - Sustain Our Great Lakes

Habitat and Species Restoration

Controlling Invasive Plants throughout Eastern Lake Michigan. The Nature Conservancy. The project will expand on a multi-partner program to control seven major invasive plants threatening dunes along the full eastern Lake Michigan coast. This project includes the full eastern Lake Michigan shoreline from New Buffalo to the Mackinac Bridge and will target control efforts including coordinating surveys, eradication and monitoring toward areas with endangered and threatened species and high quality natural communities. **$748,188**

Arcadia Marsh/Bowens Creek Restoration and Fish Passage Manistee County. Ducks Unlimited, Inc. This project will restore fish passage, improve degraded fish habitat and control invasive plants in the Bowens Creek area, its tributaries and Arcadia marsh. **$783,823**

Conservation Resource Alliance - Upper Manistee Riparian Corridor Restoration Project. This project will restore fish passage, improve degraded riparian habitat and enhance adjacent uplands by removing seven small dams, improving a road crossing and implementing conservation practices in the upper Manistee River watershed. **$625,792**

Trout Habitat Improvement Project for Coldwater River. Schrems West Michigan Chapter of Trout Unlimited. This project will reduce bank erosion and improve over 2,500 feet of instream trout habitat in the Coldwater River. Educational opportunities and monitoring will include post-construction ecological assessment. **$40,750**

U.S. Fish and Wildlife Service - Great Lakes Basin Fish Habitat Partnership.

Habitat and Species Restoration

Upper Great Lakes Stream Connectivity and Habitat Initiative. Conservation Resource Alliance. The Conservation Resource Alliance, Huron Pines Resource Conservation and Development and its partners in combination with other sources of funding will improve 75 miles of Great Lakes tributaries. This project will restore fish passage and in-stream habitat and 5,000 acres of stream-side habitat over the next two years. **$214,286**

North Branch Manistee River Fish Passage and Habitat Restoration. Conservation Resource Alliance. The Conservation Resource Alliance of Michigan will work with several partners to remove five undersized and sediment clogged culverts aggregated at one road/stream crossing and replace them with a more environmentally-friendly road crossing structure. Upon completion, the project will provide upstream access to over 30 miles of high quality habitat for fish and aquatic organisms in the North Branch Manistee River, a tributary to the Lake Michigan near Kalkaska. **$107,143**

Michigan Coastal Management Program

The information provides a summary of projects within the Lake Michigan Basin that were awarded approximately $234,000 through the Michigan Coastal Management Program that will protect and restore Michigan's Great Lakes and waterways.

Habitat and Species Restoration

The Leelanau Conservancy - This project will create a long-term countywide land stewardship planning process. The project includes sharing data with land managers, a Geographic Information System analysis of currently protected private and government lands, conducting ground surveys and writing a pilot land stewardship plan for two priority natural areas. **$25,000**

Funding Announcements

Northwestern Michigan College - This project will conduct hydrographic surveys in Grand Traverse Bay. Survey data may be used for identifying and mapping underwater cultural resources, providing key data for environmental impact assessments, updating commercial navigation charts and supporting fisheries management. **$38,000**

Michigan State University's Land Policy Institute - This project will develop and test a methodology for evaluating the effectiveness of Michigan's current sand dune regulations on the long-term protection of designated Critical Dune Areas. Most of the state's designated Critical Dunes lie along the west coast of the Lower Peninsula. **$22,700**

Sustainability

Fishtown Preservation Society - This project will develop architectural plans that detail the work necessary to preserve Fishtown's historic structures. Funds will also be used to create a plan to guide the development of interpretive and educational materials. **$40,000**

Grand Traverse Road Commission - This project will complete a feasibility study, schematic design and construction costs for connecting the Boardman Lake Trail to the Grand Traverse County Nature Education Reserve pathways. **$15,000**

City of Holland - This project will prepare final design plans, construction drawings, bid specifications and construction permits for a boardwalk on Windmill Island. The boardwalk will provide a pedestrian link from existing waterfront trails across the Macatawa Marsh to Windmill Island. It will also provide a connection to downtown Holland and the proposed Macatawa River Greenway. **$47,300**

Inland Seas Education Association - This project will expand the shipboard educational outreach program, "Day on the Bay," designed to enhance Great Lakes stewardship. The program, now in its third year, will be expanded to include Escanaba, Charlevoix and Traverse City. **$25,000**

Manistee County Community Foundation - This project will identify, design and promote universal access sites for public recreation within the coastal boundary of Manistee County. **$21,000**

For additional information on grant opportunities and funding announcements visit www.michigan.gov/dnregreatlakes and click on Protection and Restoration.

Lake Superior

LENGTH: 350 miles/563 kilometers
BREADTH: 160 miles/257 kilometers
AVERAGE DEPTH: 483 feet/147 meters
MAXIMUM DEPTH: 1,332 feet/406 meters
VOLUME: 2900 cubic miles/12,100 cubic kilometers
WATER SURFACE AREA: 31,700 square miles/82,100 square kilometers
TOTAL DRAINAGE BASIN AREA: 49,300 square miles/127,700 square kilometers
MICHIGAN DRAINAGE BASIN AREA: 16,100 square miles/41,700 square kilometers
SHORELINE LENGTH (including islands): 2,726 miles/4,385 kilometers
ELEVATION: 600 feet/183 meters
RETENTION/REPLACEMENT TIME: 191 years

Known for excellent lake trout fishery
Includes 7 Michigan State Parks, 2 National Parks, 4 Underwater Preserves

Canadian and U.S. Government Develop Aquatic Invasive Species Prevention Plan

Canadian and United States government agencies have long recognized the need to prevent aquatic invasive species from entering the Great Lakes. Almost 20 years ago, the Governors and Premiers of the region created the Binational Program to Protect and Restore Lake Superior. They have joined together again to build upon that effort to protect Lake Superior from new aquatic invasive species and developed the Lake Superior Aquatic Invasive Species Complete Prevention Plan.

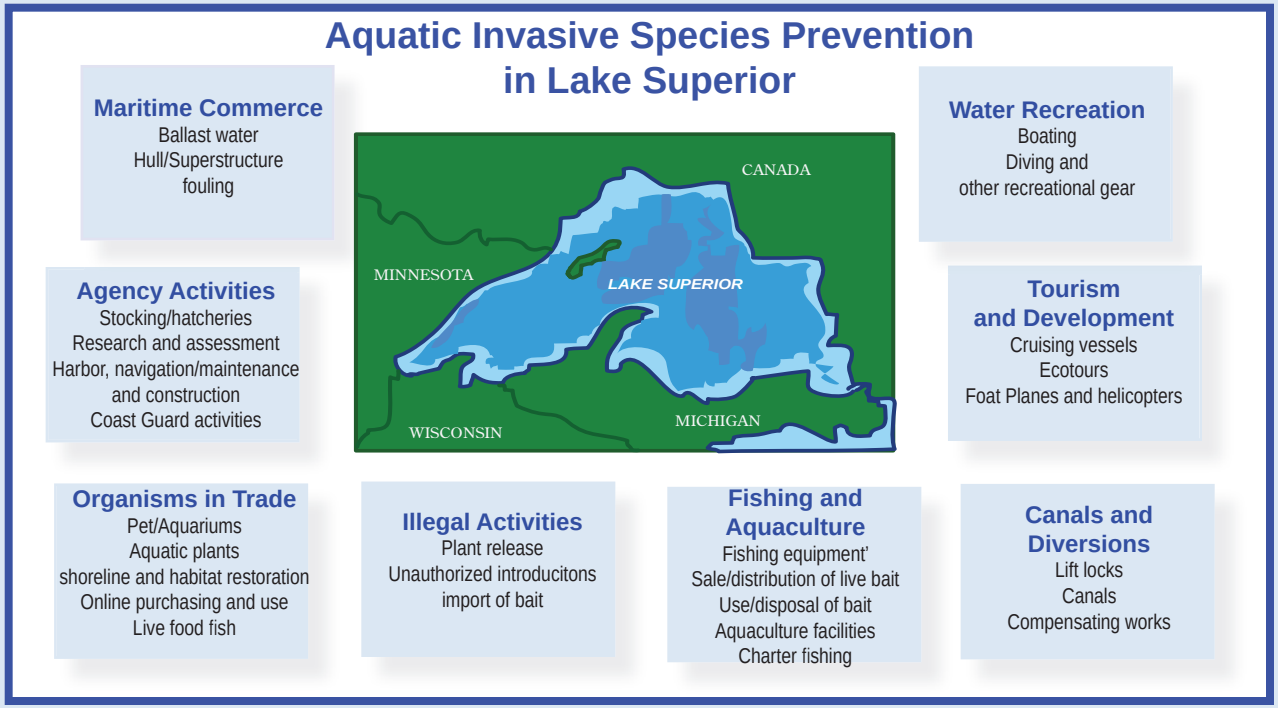
Lake Superior is situated at the head of the 2,342-mile long Great Lakes-St. Lawrence Seaway system, making it particularly vulnerable. This global trade route while economically viable can also be a detriment to the ecosystem and the local economies if aquatic invasive species are introduced. Aquatic invasive species cause significant losses in the form of damage and control costs, job losses, declining property values, compromised native species and decreased biodiversity.

The Plan identifies "vectors" – or ways in which aquatic invasive species arrive in the basin and outlines recommended actions that need to be implemented to prevent new aquatic invasive species from entering and becoming established in the Lake Superior ecosystem. These vectors are: maritime commerce, agency activities, organisms in trade, fishing and aquaculture, canals and diversions, illegal activities, tourism and development and water recreation. The recommended actions block the specific pathways for each vector rather than addressing prevention species by species.

Through the process of developing the Plan, Canadian and United States government agencies have consulted broadly and have developed recommendations for consideration by each jurisdiction. However, citizens, organizations and government agencies in both Canada and the United States need to work together to implement the recommended actions and ensure that protecting Lake Superior from new invasive species is a top priority for all. Implementation progress and overall effectiveness of the Plan will be reported through the Lake Superior Lakewide Management Plan.

Information about the Lake Superior Lakewide Management Plan, Binational Program and Aquatic Invasive Species Complete Prevention Plan can be found at www.binational.net.

For more information, contact Roger Eberhardt, DNRE, at 517-335-4056.



Coaster Brook Trout Population Rebounds

A decades-long effort to help the threatened Coaster Brook Trout in the Salmon Trout River Watershed is proving successful, thanks in part to the efforts of the Superior Watershed Partnership (Partnership). The Salmon Trout River, located in the Huron Mountains, is the last river on the south shore of Lake Superior in which Coaster Brook Trout naturally reproduce.

The Partnership, along with local, state, federal and tribal support, is implementing the Salmon Trout Watershed Management Plan they developed which is approved by the U.S. Environmental Protection Agency (U.S. EPA) and DNRE. The Partnership has conducted more than twenty large-scale projects and implemented nearly $1 million in funding in the Salmon Trout Watershed alone. Funding comes from a myriad of sources including the U.S. EPA, DNRE, Michigan Coastal Management Program, U.S. Fish and Wildlife Service, Great Lakes Commission, the Joyce Foundation, the Keweenaw Bay Indian Community and others.

A sampling of the watershed restoration projects include erosion control, clear-span bridges, bottomless arch culverts, sediment traps, storm water controls, native plant restoration and stream bank stabilization. These projects improve habitat for the Coaster Brook Trout and provide spawning areas, which are important for the long-term health of the fish population.

The tireless work of biologists, planners, technicians, officials and on-the-ground crews are paying off. The DNRE and Michigan Technological University monitor the number of large Coaster Brook Trout in the Salmon Trout River. After years of decline, researchers have seen a 70 percent increase in the number of adult fish since 2002. Although that is clearly a reason for celebration, according to the Partnership, there is still work to be done.

For more information about the Coaster Brook Trout restoration effort, contact Carl Lindquist, Superior Watershed Partnership, at 906-228-6095.

Bete Grise Coastal Wetland Protection Efforts Gain Momentum

The 8,000-plus acres of coastal wetlands at Bete Grise Wetland preserve are gaining protection from development one step at a time. The latest in an ongoing, multi-phase effort came in May when the Houghton Keweenaw Conservation District received a $1.7 million grant from the federal government's new Great Lakes Restoration Initiative (GLRI).

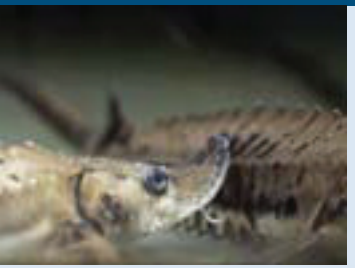
The funding was the first grant Michigan received under the GLRI. The funds will support the acquisition of 1,475 acres of high-quality wetlands, sand dune uplands and 3,500 feet of shoreline frontage on Lac La Belle — a freshwater estuary of Lake Superior.

The wetlands are home to a healthy population of diverse plant and animal species that live in the rich mosaic of habitats, including a rare type of wetland called a patterned fen. The preserve also contains the last best coastal dune swale system of its type in the United States. The area will be preserved in perpetuity for conservation and open to the public for passive recreation, such as hiking, kayaking and bird watching.

The grant process and funding was made possible by the efforts of several organizations including DNRE, Coastal and Estuarine Land Conservation Program, The Nature Conservancy, Keweenaw Land Trust and the Houghton Keweenaw Conservation District. The Houghton Keweenaw Conservation District will serve as the titleholder and land manager for the conservation area.

For more information about the Bete Grise Wetland acquisition efforts, contact Gina Nicholas, Houghton Keweenaw Conservation District, at 906-370-7248.

Menominee River Dam Project Will Benefit Lake Sturgeon



A project proposed by the River Alliance of Wisconsin to build a fish bypass around two dams on the Menominee River has received a $1.5 million grant from the National Fish and Wildlife Foundation under the GLRI. The project is aimed at creating a fish bypass at each of two dams to allow lake sturgeon to migrate and spawn resulting in more lake sturgeon reaching Lake Michigan.

The Menominee River, which forms the boundary between Michigan and Wisconsin in the Upper Peninsula, is a major tributary to Lake Michigan. Historically, lake sturgeon migrated 71 miles from the bay of Green Bay to Sturgeon Falls, near present day Norway, Michigan. The Menominee River has an abundance of high quality lake sturgeon spawning, staging and rearing habitat; however, the river is fragmented by five hydroelectric dams. The two lower dams are within the Menominee River Area of Concern.

The grant will fund the first of this four-phase project with a total project cost of $10 million. The first phase of the project includes installing a fish guidance rack within the Menominee Area of Concern at the upper dam's powerhouse to direct Lake Sturgeon to a bypass structure where they will be safely directed to downstream. Biologists will monitor fish at the bypass structure to evaluate fish health and success of the passage device. The fish will then be directed around the lower dam through an open spillway gate. Ultimately a permanent device will allow fish to pass around the lower dam.

Phase 2 will create an upstream lake sturgeon collection and sorting facility; Phase 3 creates a downstream passage conduit; and Phase 4 creates an upstream natural passageway. Once all phases are complete, the project will open 21 miles of river to Lake Michigan sturgeon, increasing spawning habitat. It will also address the Beneficial Use Impairment issues contributing to the Menominee River Area of Concern designation including the Loss of Fish and Wildlife Habitat and the Degradation of Fish and Wildlife Populations. Habitat gained by providing access upstream of the dams would mitigate for loss of habitat in the Menominee River AOC, directly addressing the Loss of Fish and Wildlife Habitat Beneficial Use Impairment. Sturgeon population growth from increased recruitment as a result of downstream passage would address the Degradation of Fish and Wildlife Populations Beneficial Use Impairment.

Overall, this project will help reconnect fragmented populations and allow growth and increased resilience of lake sturgeon in Lake Michigan, potentially increasing the population in Lake Michigan by as many as 20,000 adults over the next 50 to 100 years (up from the current estimated 3,000 adults).

Multiple agencies and stakeholders are working collaboratively on this project including the DNRE, Wisconsin Department of Natural Resources, U.S. Fish and Wildlife Service, River Alliance of Wisconsin, Michigan Hydro Relicensing Coalition and N.E.W. Hydro, LLC.

For more information about this project contact Denny Caneff, River Alliance of Wisconsin, at 608-257-2424.

Funding Announcements

Great Lakes Restoration Initiative

The information provides a summary of projects awarded within the Lake Superior Basin under the 2010 Great Lakes Restoration Initiative that will protect and restore the rivers and coastal areas of Michigan's Lake Superior Basin.

U.S. Environmental Protection Agency

Aquatic Invasive Species

Enhanced St. Marys River Sea Lamprey Control
Great Lakes Fishery Commission **$228,000**

Freshwater Ballast Treatment: NaOH a Treatment of Promise
National Parks of Lake Superior Foundation **$776,320**

Habitat and Species Restoration

Habitat Restoration of Sand Point Brownfield Site
Keweenaw Bay Indian Community **$360,960**

Implementation of the Great Lakes Coastal Wetland Consortium Wetland Mapping Protocol
Michigan Technological University - Michigan Tech Research Institute **$852,483**

Restoring Peatlands from Large Scale Ditching
Michigan Technological University **$148,650**

Stewardship Network - Lac Vieux Desert Wild Rice Restoration
Stewardship Network **$213,644**

Nonpoint Source Pollution

Collaborative Partnership to Restore Alger County Watersheds
Alger Conservation District **$789,384**

Hancock Beach BMPs Project
City of Hancock **$244,000**

Hills Creek Stamp Sand Stabilization
Houghton Keweenaw Conservation District **$415,000**

Michigan Beaches-Chippewa County Health Department
DNRE **$230,025**

Michigan-Expanded Lake Superior Beach Testing-Source Tracking
DNRE **$258,010**

Improved Cladophora Monitoring through Remote Sensing
Michigan Technological University - Michigan Tech Research Institute **$276,281**

Two Hearted River Watershed Sedimentation Reduction
The Nature Conservancy **$480,726**

Village of Lake Linden Torch Lake Nonpoint Source Pollution Reduction
Village of Lake Linden **$243,000**

Funding Announcements

Toxic Pollutants and Areas of Concern

Partridge Creek Diversion Benefitting the Deer Lake AOC
City of Ishpeming **$2,000,000**

Keweenaw Bay Indian Community Sustainable Hazardous Waste Collection Program
Keweenaw Bay Indian Community Natural Resources Department **$295,000**

U.S. Fish and Wildlife Service - Joint Venture

Habitat and Species Restoration

Completing the Swamp Lakes Wetland Project. The Nature Conservancy. This project will protect 150 acres in one of the best examples of a peat land-forest ecosystem in the Eastern Upper Peninsula. **$103,400**

National Fish and Wildlife Foundation - Sustain Our Great Lakes

Habitat and Species Restoration

Clearing a Path: Revitalizing Lake Michigan's Sturgeon. River Alliance of Wisconsin. Menominee River, a major tributary to Lake Michigan, forms the border of Wisconsin and Michigan's Upper Peninsula. This project will construct a fish bypass around the lower two dams on the Menominee River at Menominee, Michigan and Marinette, Wisconsin to effectively remove two barriers to downstream sturgeon migration thus improving lake sturgeon population growth in Lake Michigan. **$1,500,000**

Michigan Coastal Management Program

The information provides a summary of projects within the Lake Superior Basin that were awarded approximately $93,500 through the Michigan Coastal Management Program. Those projects that will protect and restore Michigan's Great Lakes and waterways.

Nonpoint Source Pollution

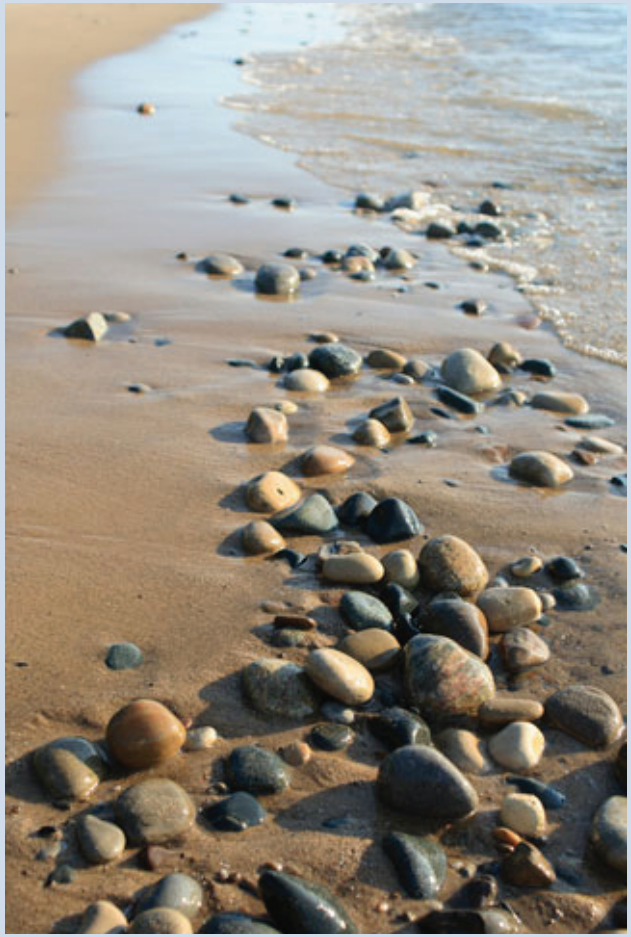
Chocolay Township, Marquette County – This project will coordinate and update the township's land use plan and the Chocolay River Watershed Management Plan. The project includes a natural features inventory and evaluation of current zoning ordinances. The township will also provide information to the public about voluntary practices to help protect coastal and watershed resources. **$15,000**

Sustainability

Superior Watershed Partnership - This project will allow for the completion of a series of low-altitude aerial photography of the Lake Michigan and Lake Huron shorelines of the Upper Peninsula, including the shores of Drummond, Mackinac and Bois Blanc Islands. The photography will be linked to maps and other information on the Internet to assist in local land use planning and coastal management decisions. **$36,000**

Superior Watershed Partnership – This project will develop a conservation model for wind energy development in northern Michigan in cooperation with Northern Michigan University and Mackinaw Power. **$42,500**

For additional information on grant opportunities and funding announcements visit www.michigan.gov/dnregreatlakes and click on Protection and Restoration.



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Michigan Department of Natural Resources and Environment
Rebecca A. Humphries, Director
www.michigan.gov/dnre

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