

GREAT LAKES NEWS FROM  
MICHIGAN SEA GRANT COLLEGE PROGRAM

# upwellings

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Sea Grant  
40 YEARS  
MICHIGAN

**LAKE EFFECT: UNDERSTANDING THE ECONOMIC INFLUENCE OF THE GREAT LAKES**

# upwellings

An upwelling occurs in a lake or ocean when strong, steady winds push warm in-shore surface water away from shore causing colder, nutrient-rich water to rise.

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## GREEN Jobs, BLUE Water Economy

Recent attention on the growth of green jobs with the help of a blue water economy has inspired an important question: how many of Michigan's current jobs are connected to the Great Lakes?

That's the question Sea Grant staff set out to answer in compiling data for two recent reports analyzing the number of jobs influenced by the Great Lakes, and the potential economic benefits to Michigan as a result of Great Lakes restoration.

In short, the numbers are surprising. An estimated 23 percent of Michigan's payroll is comprised of jobs that are directly or indirectly connected to the Great Lakes. These include jobs in tourism, agriculture, transportation, science, and many other economic sectors. The process used in compiling the data is already being replicated around the Great Lakes region. When final calculations are totaled, we may all be in for a surprise to learn how economically dependent this region is on our incomparable freshwater seas.

The Great Lakes jobs report, highlighted on page 3 of this issue of *upwellings*, complements a second Sea Grant report on the economic benefits of Great Lakes restoration to the State of Michigan. Data from both reports are incorporated in the *MI-Great Lakes Plan*, released in January 2009 by the Office of the Great Lakes. The plan emphasizes the critical

need for federal dollars to be invested in Great Lakes restoration. If President Obama follows through on his campaign promise of establishing a \$5 billion trust fund for Great Lakes restoration, that prospect is encouraging.

Even as many of the State's mainstay industries face challenging times, Michigan Sea Grant staff continue to work toward economic stability in the areas of whitefish marketing, the Michigan Clean Marina Program, ecotourism development, and many other programs. This issue of *upwellings* highlights some of these innovative projects.

These Sea Grant activities promote economic development while enhancing the health and sustainability of the Great Lakes. That combination lies at the heart of Michigan's "blue water economy," a vital component of a vibrant economic future.



Donald Scavia  
Michigan Sea Grant Director

COVER ILLUSTRATION: MARSEE



Michigan Sea Grant is funded by the National Oceanic and Atmospheric Administration and the State of Michigan. Michigan State University and the University of Michigan are equal opportunity/affirmative action institutions.



# New Reports Reveal Great Lakes' Influence on Michigan Jobs, Economy

**An estimated 806,000 jobs in Michigan—representing 23 percent of the State's payroll—are connected in some way to the Great Lakes, according to a new report produced by Michigan Sea Grant.**

In *Michigan's Great Lakes Jobs*, the authors tallied the total number of jobs in industries that rely directly on the lakes, such as recreation, tourism, transportation, and municipal water utilities. Also included are industries that benefit from their proximity to the lakes, such as coastal agriculture in areas with lake-moderated climates, power plants that use Great Lakes water for cooling, and manufacturing sectors that benefit from efficient shipping transportation.

"The Great Lakes are more than a phenomenal natural resource," said Michigan Sea Grant Director Donald Scavia, who co-authored the report. "From the time of settlement, the lakes were key elements of the development of Michigan's economy, and they can be engines of our recovery."

In compiling the *Sea Grant* report, the authors used publicly available datasets from the Bureau of Economic Analysis, Bureau of Labor Statistics, Tourism Industry of America, and Census Bureau's Geographic Area Analysis. The sources will allow Michigan Sea Grant to track state-specific occupation data annually, and the methodology can be replicated in other Great Lakes states.

A second report produced by Michigan Sea Grant, *Michigan's Economic Vitality: The Benefits of Restoring the Great Lakes*, concludes that recommended federal investments to restore the Great Lakes will yield tangible benefits to Michigan in the range of \$7 to \$13 billion.

The state-specific benefits are based on previous work conducted by the Brookings Institution, which calculated the region-wide economic benefits of implementing the restoration plan outlined in the *Great Lakes Regional Collaboration Strategy to Restore and Protect the Great Lakes*.

*"The Great Lakes are more than a phenomenal natural resource. From the time of settlement, the lakes were key elements of the development of Michigan's economy, and they can be engines of our recovery."*

— Donald Scavia,  
Michigan Sea Grant Director

The estimated economic benefits to Michigan are connected to increased tourism, fishing, and recreation, as well as reduced costs to municipalities, and increased coastal property values in Areas of Concern.

The Michigan Sea Grant reports are available online. See: [www.miseagrant.umich.edu/coastal/economy](http://www.miseagrant.umich.edu/coastal/economy)

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## MICHIGAN GREAT LAKES PLAN

Data from both Michigan Sea Grant reports is highlighted in the *MI-Great Lakes Plan*, released in January 2009 by Lt. Governor John D. Cherry, Jr. and Michigan's Office of the Great Lakes. The *MI-Great Lakes Plan* is a

blueprint for the protection and restoration of the Great Lakes and Michigan's waterways and includes specific recommendations for federal investments totaling more than \$3 billion annually.

"Protecting and restoring Michigan waterways is essential to our economic transformation," said Cherry. "By investing in the Great Lakes, we will sustain and improve our quality of life, make Michigan more attractive to talented

CONTINUED ON PAGE 11





LAPORTE

# THE RISE OF GREAT LAKES WHITEFISH

## THE HOMELY COUSIN OF SALMON GETS A BOOST THROUGH MARKETING

By Stephanie Ariganello

**It's a bit of an unsung hero, the Great Lakes whitefish. The shy, somewhat reclusive cousin of salmon and trout - with its humped back and snout face - is not necessarily a looker. But the humble, silvery-brown fish has quietly sustained people in the Great Lakes for thousands of years.**

With concerted marketing efforts over the last three years the whitefish may finally get recognition it deserves, making a name for itself across the Great Lakes and beyond. In its wake, the marketing program has bolstered local fishing economies in Michigan and created a sustainable market for the fish.

The aim of the marketing program is to recognize the Great Lakes whitefish's attributes as a nutritious and tasty fish from the deep waters of the Great Lakes. The project started as unassuming as the whitefish itself – with a grant application.

Ron Kinnunen, Michigan Sea Grant extension agent based in Marquette, explained that when NOAA National Sea Grant College Program offered a Fisheries Extension grant he and his colleague Chuck Pistis thought this might be a perfect fit.

“We put together the grant – to make the fishery stronger and to let people know about Great Lakes whitefish,” he said. “And we got it. It took off from there.”

One of the key components to make the project a success from the start was in creating a partnership with Michigan's commercial fishing industry and other organizations to form a stakeholder steering committee.

The first efforts were working with Michigan State University's Product Center for Agriculture and Natural Resources and hiring a market research firm. The firm brought

*Antoine de la Mothe Cadillac wrote around 1695:*

*“Moreover, better fish can not be eaten, and they are bathed and nourished in the purest water, the clearest and the most pellucid you could see anywhere. That is the most delicate fish of the lake.”*

Source: *The Indians of the Western Great Lakes 1615-1760* by Vernon Kintz (University of Michigan Press, 1940).

the industry together – different groups of fishermen, suppliers and wholesalers, chefs and average consumers – in order to determine what the needs and wants of the industry were. After researching the problems, the positives and the predicted future of the whitefish industry, a multi-faceted plan was hatched. Developing a brand and packaging, setting up a web site, creating advertising, administering blind taste tests and directly marketing whitefish to individual groups such as the food service industry were all parts of the overall effort.

### A MATTER OF TASTE

Great Lakes whitefish prefer to swim in the company of fellow whitefish in the dark, cool depths of the Great Lakes, sometimes retreating as deep as 200 feet as summer heat climbs. The Great Lakes easily accommodate their deep-sea proclivity. It's this that contributes to their delicate, clean taste as opposed to inland lake whitefish like those harvested in Canada, said Kinnunen.

“Our fish come out of the Great Lakes,” he said. “Those from Canada generally come from one of six inland lakes and that can create off flavors – depending on the environment of the lake. For example, the type of algae whitefish consume and how shallow the lake both can impact the flavor.”



Extension Educator Ron Kinnunen holds a whitefish from Lake Superior

*French explorer Antoine Denis Raudot wrote in 1710:*

*“... {Whitefish} must be the best fish in the world, since all those who have eaten it say that they never grow tired of it and prefer it to all other meats that one could find.”*

Source: *The Indians of the Western Great Lakes 1615-1760* by Vernon Kintz (University of Michigan Press, 1940).

In blind taste tests performed at Michigan State University, tasters chose Great Lakes whitefish 2 to 1 over comparable whitefish harvested from inland lakes in Canada.

Freshness also makes an impact.

“Our product is not traveling three days or more to be processed,” Kinnunen said. “They go straight from the lake to processing close to home, which leads to a superior product. When you look at Great Lakes whitefish packaging, it will say where it’s from and where it was processed. Other whitefish, sometimes they’re more well-traveled than me. Though they’re caught in Canada, if you look closely at the packaging, you’ll see that they’ve been shipped to China to be processed.”

Many restaurants throughout Michigan and now the Midwest have chosen to use Great Lakes whitefish exclusively – for everything from fish fries to high-end, New American cuisine.

Executive Chef Hans Burtscher with the Grand Hotel on Mackinac Island said he likes using Great Lakes whitefish because they’re delicate in flavor and are versatile in the way they can be prepared.

But the allure of the whitefish goes beyond flavor. Pistis, one of the other organizers of the effort, said Great Lakes whitefish has a kind of all-inclusive appeal.



## GREAT LAKES WHITEFISH GOES GREEK

from [www.greatlakeswhitefish.com](http://www.greatlakeswhitefish.com)

Here’s a zesty way to eat your Great Lakes Whitefish. A loaf of crusty bread is perfect for soaking up the sauce. Try a spinach or orange salad with creamy yogurt dressing on the side.

2-8 oz. fillets Great Lakes Whitefish, thawed

### For Sauce:

1/3 cup olive oil  
1 clove garlic, minced  
1/2 cup olives, mix of Kalamata green & black, pitted & chopped  
2 Tbsp. lemon juice  
2 tsp. balsamic vinegar

### For Fish:

2 Tbsp. extra virgin olive oil  
1 Tbsp. lemon juice  
1 tsp. dried basil  
1 tsp. dried oregano  
1/3 cup feta cheese, crumbled  
1 medium tomato, peeled, seeded & diced

For sauce, heat olive oil and lightly sauté garlic in medium-sized pan. Reduce heat to low and add olives, lemon juice and vinegar. Cook until blended. Set aside. Brush fillets with olive oil and sprinkle with lemon juice on both sides; place on broiler pan. Season with basil and oregano. Broil until fillets are almost done (almost opaque). Sprinkle with feta and broil until edges of cheese are very light brown. To serve, place sauce on plates and top with fillet; garnish with tomato.

■ To learn more about the Michigan fishermen who catch the whitefish or to find out where you can purchase some, visit: [www.greatlakeswhitefish.com](http://www.greatlakeswhitefish.com).

“It’s the history, the culture, the families who have fished for generations – it’s the connection to our state that adds value to supporting the whitefish,” he said. “It fits right into ‘buy local’ philosophies, and it’s environmentally sustainable. All of those things extend the value and drive people to look not only for ‘wild caught’ on the package, but also ‘product of Michigan.’”

Part of the marketing effort has been to connect the average person to Great Lakes whitefish as well. Several grocery chains throughout Michigan have started to carry premium, frozen fillets, and the fresh and smoked fish are now being sold at local farmers’ markets throughout the state.

## THE RESULTS THUS FAR

One development from the project is a higher-end product called Legends of the Lakes™, a one-pound package of frozen, pin-boned premium fillets that have to pass stringent quality tests before being shipped. The brand is controlled by a cooperative of commercial fishermen who agree to abide by particular environmental and sustainable practices. Only

about 10 percent of the fish caught are high enough quality to make the cut.

But perhaps the biggest triumph of the project has been the name recognition, said Kinnunen.

“We’ve gotten a lot of response and people are interested in the project,” he said. “There’s been more demand for the fish and that’s been reflected in the price.”

Kinnunen said fishermen were getting \$.40-.45 cents a pound off the lake a few years ago. Since the effort launched, prices are up to \$1-1.25 per pound.

The marketing effort has buoyed a once-sagging industry in Michigan.

“It not only preserves the heritage, but it also helps support the local economies,” said Kinnunen. “Their jobs are more secure now. That’s got to be a plus.”

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## Sustaining Environment and Economy

### MICHIGAN CLEAN MARINA PROGRAM CREATES WIN-WIN SITUATION

*By Stephanie Ariganello*

**With the constant exchange of fuels, cleaning chemicals and the transient nature of boats, marinas deal with hazards and potential pollutants every day. The Michigan Clean Marina Program helps marinas follow policies that ensure potential hazards don't turn real.**

"We have been partnering with and educating boating facilities for years on their role as environmental stewards – since they are the guardians of where land meets water," said Chuck Pistis, state coordinator of Michigan Sea Grant Extension. "We talked about a number of things that could fit right into their everyday practices without significant cost. The program developed from there."

The program is focused on providing ways marinas can best follow environmental practices, while remaining or growing more economically viable.

"We're always looking for win-win situations and the Clean Marina Program is a win-win situation because it's environmentally appropriate and positive overall, but it also does offer an economic payoff for the businesses," said Pistis.

Steve Remias, president of MacRay Marina in Harrison Township, said it's hard to figure out overall economic impacts, but his customers have expressed their appreciation.

"We have a lot of interaction with our different owners, renters and visitors, and there's been a definite positive reaction," he said. "We've retained the majority of our customers since we've become certified and I've heard from many that they're proud we participate in the program."

Remias said the marina has seen clear economic benefit from one part of the program – the shrinkwrap recycling program. Shrinkwrap used to cover boats stored outside during the winter season is recycled instead of thrown into landfills.

Remias said they saved \$2,000 to \$3,000 last year because they didn't have to pay for special dumpsters to collect the shrinkwrap. Instead they paid for labor to prepare the shrinkwrap for recycling before it was taken off-site to be recycled.

The cost savings was nice, said Remias, but they also opened up the program to the general public, which generated some goodwill within the community and resulted in some free media exposure.

Insurance companies are also starting to recognize the Clean Marina effort and are talking about offering a premium discount to those marinas that choose to participate.

The Clean Marina Program is a joint effort between the Michigan Sea Grant program, the Michigan Boating Industries Association, and the Michigan Department of Environmental Quality. The program is entirely voluntary and the regulations are established through the boating industry itself.





“We had that discussion right from the start,” said Van Snider, president of the MBIA. “Right from the onset we decided that this had to be an industry program and not an enforcement program from some arm of the government. I think that has contributed greatly to it being accepted as legitimate.”

Thus far 21 marinas around Michigan have pledged and become certified. Another 44 marinas are in various stages of the process.

Remias said it can be daunting for a marina to consider joining the program because of the initial commitment, but once it's completed and certification has been granted, it's worth the process.

“It forces you to get organized, that's for sure,” he said. “Once you get through it though, you look back and say, I should have done that a long time ago.”

For more information on the program, see: [www.miseagrant.umich.edu/cmp](http://www.miseagrant.umich.edu/cmp).

Interested marinas can contact Michigan Sea Grant for more materials or to register for the next meeting.

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## HOW IT WORKS:

The Michigan Clean Marina Program is a voluntary stewardship program open to all public and private marinas in the state. The designation process begins with a pledge to participate, followed by workshops where the marina management and staff receive a marina handbook, overview of the designation process and a review of best management practices related to topics such as storm water management, petroleum control, and boat maintenance and repair, among others.

The program encourages marinas and boaters to make a variety of changes from using biodegradable detergents for washing boats to using devices that prevent spills during fueling to decreasing impervious surfaces to limit stormwater run off.

The facilities then conduct self-evaluations of their environmental practices to determine strengths and weaknesses. After implementing improvements and reaching program benchmarks, the marina requests a visit by a CMP consultant, who evaluates the facility's environmental stewardship. When the facility reaches established goals, it receives the designation as a clean marina.

You can find an interactive map of marinas that have been certified as part of the Clean Marina Program at: [www.miseagrant.umich.edu/cmp/designated](http://www.miseagrant.umich.edu/cmp/designated).

## BENEFITS OF THE CLEAN MARINA PROGRAM

The goal of the Clean Marina Program is two-fold – better protect our waters and make local marinas more economically viable while doing so. The program aims to accomplish the goals by establishing a set of Best Management Practices (BMPs). Some of the benefits include:

- **New sources of revenue.** Studies have shown that Clean Marinas can charge slightly higher slip fees and have fewer vacancies.
- **Free technical assistance.** Best Management Practices guidebooks, training workshops and on-site visits are available to marina operators. Michigan Sea Grant is currently

developing an online course marina owners and managers can work through during their off season.

- **Reduced legal liabilities.** By participating in the Clean Marina Program, marinas can ensure they are meeting all regulatory requirements and avoiding fines.
- **Free publicity.** Clean Marinas are recognized through press releases, newsletters, boating guides and websites.
- **Reduced cost.** The decreased amount of waste adds up to lower disposal costs.

### ■ Attracting knowledgeable customers.

Clean Marinas are aesthetically pleasing facilities that can attract responsible clientele who follow good boating practices.

- **Improve water quality and habitat for living resources.** The marina and boating industry depends on clean waters and a healthy coastal environment for their continued success.

*Source: NOAA, Office of Ocean and Coastal Management*



# Working for Michigan's Small Harbors

## COALITION TACKLES ECONOMIC AND SAFETY ISSUES

By Stephanie Ariganello

**The Michigan Small Harbors Coalition continued to gain momentum throughout 2008 and is off to a strong start in 2009, working to bring awareness and funding to smaller harbors throughout the state.**

In less than a year, the coalition – part of a Michigan Sea Grant initiative – has brought together the state's coastal communities and organizations, representing over 1.4 million people in Michigan.

The statewide coalition is a group representing small harbors where dredging and harbor maintenance issues are a persistent problem. A small harbor is one that is federally authorized, generally shallow (14-18 feet of depth or less) and is used more for recreational purposes rather than commercial. Commercial and deeper harbors are also part of the group and have offered support.

The key to the equation is federal funding.

In order to secure funding for harbor maintenance and to dredge critical access channels, small harbors must rely on their congressional representatives to add specific earmarks to federal bills for the necessary resources.

Currently, due to administration priorities federal funds appropriated for Great Lakes harbor maintenance are prioritized for the large, deep-draft commercial ports, like Detroit, Duluth or Toledo.

Getting the federal funds is somewhat of a battle. Each port has to be individually identified during both the House and Senate appropriations committee meetings and subsequently defended during follow-up committee meetings.



MARTIN BUEDEL

Most recently the coalition met in January near Mount Pleasant. One of the goals of the coalition is to establish dedicated funding to maintain Michigan's navigation channels and infrastructure requirements annually.

According to Jennifer Read, a member of the Small Harbors Coalition technical support team and assistant director of Michigan Sea Grant, the group has made headway. More than 60 coastal communities and advocate organizations have passed resolutions supporting the coalition. On a larger scale, there's a federal appropriations bill currently being considered that would allocate \$5 million to Michigan harbor maintenance this fiscal year.

During the January meeting, organizers updated plans to pursue short-term and long-term strategies to better plead the case of dredging needs for small harbors to federal agencies and legislators and to ultimately seek



legislative change through the Water Resource Development Act of 2009 to provide an ongoing, sustainable source of funding for shallow draft harbor maintenance.

Chair Pro Tem of the Coalition Chuck May recently went to Washington D.C. to continue the buzz. He said lawmakers have been receptive to the coalition's mission, and a letter of support for specific legislation has been making its way through the Senate.

"Are we making progress? Absolutely," said May. "Do we have a game plan? Absolutely. The question now is how long is it going to take for the actions to bear fruit? I believe it can happen a lot faster than others do."

The Michigan coalition has also been discussing the possibility of forming a regional group with other Great Lakes states to increase their legislative power, but discussions are tentative.

An important element of the coalition's drive is to develop and grow an ongoing recognition of the economic impact Michigan's small harbors contribute to the state, and the safety issues that maintenance – or lack thereof – can cause.

The recently released Michigan Great Lakes Plan concluded that first class harbors and marinas generate \$2 billion annually from the recreational boating industry.

*A 2007 study completed by the Great Lakes Commission reports direct and secondary impacts from boating to the Michigan economy to include \$2.4 million in annual sales and over 34,000 jobs for a total value added of \$975 million. Further, without adequate access to many of these small harbors, the loss of property values and subsequent loss in tax revenues would be devastating to the local economies and far surpass the spending needed to keep them viable.*





RENDERING COMPILED WITH PHOTOS BY: MARSEE, PATRICK MOORE

“There is an economic impact for the whole state for sure,” said Read. “Michigan’s economy is increasingly dependent on tourism. These small harbors generate a lot of economic benefit from not only recreational boaters, but also charter fishing operations and even ferries.”

Along with economic impacts, though, safety remains a top priority for the group. In 2006 when three people boating out of the Upper Peninsula’s Grand Marais died when they could not be reached for a rescue because of a silted in harbor. A year later, a sailboat seeking refuge during the Chicago to Mackinac Race grounded in a shallow harbor in Northwest Michigan. The incident created a potentially dangerous situation and resulted in the total loss of the boat – possibly damaging the Michigan boating industry’s reputation along with it.

“This coalition has been a unifying force,” said May. “We need to work together on this; it’s critical for our harbors.”

The next meeting of the coalition is scheduled for May 12. For more information and updates, check [www.miseagrant.umich.edu/harbors](http://www.miseagrant.umich.edu/harbors).

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To see which coastal communities have supported the effort thus far, visit the Michigan Sea Grant website to check out a new interactive Google map feature. See: [www.miseagrant.umich.edu/harbors](http://www.miseagrant.umich.edu/harbors).

## NEW MSU STUDY SUGGESTS TURNING BROWN TO GREEN

**The combination of Michigan’s industrial history and the state’s location in the middle of the Great Lakes appears to be a good recipe for renewable energy development.**

According to a study released through the Michigan State University (MSU) Land Policy Institute, using all of the existing brownfields in Michigan as renewable energy sites with solar panels and wind turbines could capture an estimated 5100 megawatts – enough energy to power about half the homes in Michigan.

Brownfields are parcels of land that were once used for industrial or commercial purposes – for instance, land that once housed a dry cleaners, a manufacturing site or a gas station. While Michigan offers incentives to reuse the land, redevelopment can be difficult because of a wide range of real or suspected environmental contaminants.

The study also looked at the possible impact that creating the wind/solar fields could have on the state. The conclusion: more than \$15 billion in investment and the creation of more than 17,500 construction and long-term jobs.

A research team from Eastern Michigan University (EMU), with support from Michigan Sea Grant, is also continuing its integrated assessment of coastal brownfield redevelopment in Michigan to learn what approaches have led to successful redevelopment. The research team is exploring how these strategies can be incorporated into future redevelopment efforts.

*Using all of the existing brownfields in Michigan as renewable energy sites with solar panels and wind turbines could capture an estimated 5100 megawatts – enough energy to power about half the homes in Michigan.*

The aim of research and reports like the MSU study is to create a user-friendly system that will enable policy makers, legislators, business owners and the public to more effectively understand and accomplish the goals of brownfield redevelopment and renewable energy initiatives.

The MSU report is titled *Potential Application of Renewable Energy on Brownfield Sites: A Case Study of Michigan*. See: [www.landpolicy.msu.edu](http://www.landpolicy.msu.edu).

For more information on brownfields, visit [www.brownfieldscenter.org](http://www.brownfieldscenter.org) or the Michigan Department of Environmental Quality at [www.michigan.gov/deq](http://www.michigan.gov/deq).





## SEA GRANT PROJECTS STRENGTHEN LOCAL ECONOMIES

By Elizabeth LaPorte

### SEA GRANT PROVIDES PLANNING SUPPORT FOR MICHIGAN'S NORTHEAST REGION

More than 50 partner organizations, state agencies, and three county governments collaborated in an effort to stimulate economic development and sustainability in Michigan's northeast region. Project research teams finalized five technical assessments characterizing the status of life in coastal northeast Michigan, focusing on socioeconomic, ecological, cultural, planning and zoning, and sustainable design. The Northeast Michigan Integrated Assessment (NEMIA) has resulted in unprecedented regional collaboration. Notable outcomes include \$195,000 in grants and support from other organizations secured as a result of NEMIA, with an additional \$70,000 pending.

See: [www.miseagrant.umich.edu/nemia](http://www.miseagrant.umich.edu/nemia)

### PLANS UNDERWAY FOR DETROIT RIVER "BLUEWAY"

Sea Grant was instrumental in developing plans for the Detroit Heritage River Water Trail. The trail (or "blueway") is a river version of a greenway trail and will provide opportunities for canoeing, kayaking, and small boat paddling. Plans for the trail include areas along the Detroit, Huron, Raisin, and Rouge Rivers.

Blueway areas were selected based upon the abundant natural beauty, the wide diversity of paddling experiences, and the strong interest of communities and partners. According to the Outdoor Recreation Foundation, paddle-based recreation contributed \$36 billion annually to the U.S. economy.

### SEA GRANT HELPS SAVE JOBS IN BAITFISH INDUSTRY

Michigan Sea Grant, in partnership with the Michigan Baitfish Association and Minnesota Sea Grant, developed the Aquatic Invasive Species Hazard Analysis and Critical Control Point (HACCP) program. Sea Grant helped aquaculture and baitfish businesses prevent the introduction and spread of invasive species through their operations. Sixty Michigan baitfish wholesalers have participated in Sea Grant's training and have developed and implemented HACCP plans for their operations. Because these businesses have a certified HACCP plan to manage invasive species, including viral hemorrhagic septicemia, they have been able to remain in business under strict Michigan Department of Natural Resources guidelines in 2008. This effort helped to retain 900 jobs.

See: [www.miseagrant.umich.edu/fisheries/haccp.html](http://www.miseagrant.umich.edu/fisheries/haccp.html)

## GREAT LAKES CAMP RECOGNIZED

The 4-H Great Lakes and Natural Resources camp, a camp supported by Michigan Sea Grant Extension, was named a National 4-H Program of Distinction, which recognizes the highest quality 4-H youth development efforts in the nation. With that award, 4-HGLNR Camp became eligible for consideration and was selected in 2009 for the 4-H Natural Resources Conservation Education Award. The award is given jointly by the U.S. Fish and Wildlife Service and National 4-H.

This education award is a premier award for natural resources education programs across the country and will be presented at the North American Wildlife and Natural Resources Conference held in Washington D.C. in late March. Two campers, along with camp administrators, will receive the award and offer a presentation about camp.

The camp provides teens from across the state the opportunity to:

- Improve their knowledge about Great Lakes and natural resources ecology and management issues.
- Increase awareness of environmental problems, foster environmental stewardship and enhance involvement in local natural resources projects.
- Increase interest in the outdoors, develop leadership skills and self-confidence and influence career decisions.
- Enjoy quality camp activities, gain hands-on science experiences, meet new people and develop friendships.
- Learn from natural resources and youth development experts and develop possible career interests.

For more information, visit <http://web1.msu.edu/msu.edu/4h/glnrc.html>.



workers and new businesses, and create jobs.”

As outlined in the *MI-Great Lakes Plan*, the state will seek federal investments that include:

- \$54 million for the Great Lakes Legacy Act to ensure continued cleanup of contaminated sediments;
- \$3.8 million annually for the BEACH Act to prevent beach closures and protect human health;
- Restoring the historic funding level of \$1.35 billion for the Clean Water State Revolving Fund so communities can reinvest in necessary improvements to their water and sewer systems.

The Michigan Office of the Great Lakes facilitated the development of the *MI-Great Lakes Plan* in collaboration with businesses and advocacy groups such as the Michigan United Conservation Clubs and the Healing Our Waters Coalition, as well as tribal representatives and more than 2,000 individuals who participated in reviewing and commenting on the plan at more than 20 public meetings. Participants in the process will continue to be involved through the formation of implementation teams that will work to put the recommendations into action.

“The *MI-Great Lakes Plan* is built from the ground-up based on the experiences, challenges and needs of communities across Michigan,” said Ken DeBeaussiaert, director of the Michigan Office of the Great Lakes. “The recommendations in the plan reflect approaches that have already succeeded in creating jobs and improving water quality and apply those approaches to meeting the challenge of long-term sustainability of our waterways and economic recovery.”

“Michigan’s economic recovery and our future prosperity depend on protecting our waterways,” said Cherry. “We have a president-elect from the Great Lakes region who understands Great Lakes’ issues and has made specific budgetary commitments. That provides us with a tremendous opportunity to jumpstart our recovery by investing in Michigan’s blue water economy.”

To read the *MI-Great Lakes Plan* visit [www.michigan.gov/deqgreatlakes](http://www.michigan.gov/deqgreatlakes) and click on Protection and Restoration.



## FEATURED WEBSITE:

# GREAT LAKES COASTAL HABITATS

[www.miseagrant.umich.edu/habitat/coastal](http://www.miseagrant.umich.edu/habitat/coastal)

From dramatic, wind-swept sand dunes to lush, boggy wetlands and everything in between, Michigan is host to countless unique areas linking land and water. The Great Lakes Coastal Habitats section is a new feature on the Michigan Sea Grant web. The section provides an introduction to the most common coastal environments found in the Great Lakes region.

Habitats types covered include wetlands, emergent marshes, beaches, sand dunes, lakeplain prairie, forested shoreline, islands, and the open waters of the Great Lakes.

## THREE REASONS YOU SHOULD VISIT THE GREAT LAKES COASTAL HABITATS PAGES:

1. **Learn.** Did you know that sand particles are nearly indestructible? And that sand from Great Lakes’ beaches and dunes is generally made up of 87-94 percent quartz? No? Well, a visit to the Great Lakes Coastal Habitats pages could remedy that.
2. **Appreciate.** It took millions of years for many of these land formations to come into being. It will only take you minutes to go over the origins of things like sand dunes and coastal prairies and you’ll be all the wiser for it.
3. **Understand.** With brief descriptions on some of the flora and fauna the coastal areas support, it’s easier to see the big picture – that coastal wetlands are not just important to Michigan, but to the country as a whole.

# IT'S A POSTER BONANZA AT THE MICHIGAN SEA GRANT BOOKSTORE!



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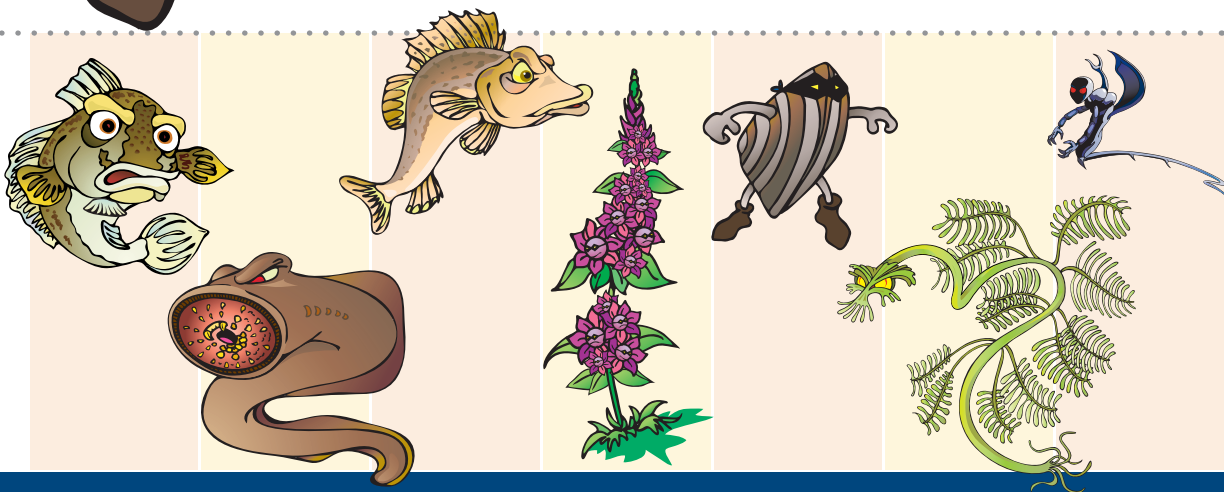
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