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

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FLOW AMONG TOP WEB PICKS
The Great Lakes Information Network recently acknowledged Michigan Sea Grant’s Fisheries Learning on the Web as a notable website. FLOW is a free Great Lakes curriculum that includes hands-on lessons, activities and materials, such as a water glossary, worksheets and games. Aligned to Michigan content expectations and national standards, FLOW was developed with support from the Great Lakes Fishery Trust.

See: www.projectflow.us

GRANT AWARDED TO PREPARE FOR CLIMATE CHANGE
Is your community ready to adapt to climate change? Rochelle Sturtevant, Michigan Sea Grant Great Lakes Regional Extension Educator, was recently awarded a grant from the National Sea Grant office to help answer that question. The grant of $25,000 will allow Sturtevant to help communities prepare for anticipated climate change. Sturtevant is working with fellow principal investigator Elizabeth Mountz, with the NOAA Office of Ocean and Coastal Resource Management. They will create training modules for leaders of coastal communities around the Great Lakes. Community leaders will have tools to develop the climate adaptation plans necessary to keep communities safe and productive into the next century.

PROFESSIONAL DEVELOPMENT FOR EDUCATORS
Information and application forms for the 2010 summer workshops offered by COSEE Great Lakes are now available. Most workshops offer stipends or scholarships. Deadlines vary, but spots fill quickly.

See: www.coseegreatlakes.net

STAFF UPDATES
Appointed – Elizabeth LaPorte, Michigan Sea Grant’s Communications Director and Education Co-Leader, has been appointed a member of the Sea Grant Management Team, effective December 2009. LaPorte serves as director of Michigan Sea Grant’s communications and education programs. For the past nine years, she has contributed to Michigan Sea Grant’s strategic planning and program development efforts.

Leaving – Nikki Koehler, Education Specialist, will be leaving Michigan Sea Grant to explore the wilds of parenthood. Koehler has worked with Michigan Sea Grant since 2007 and was instrumental in updating Fisheries Learning on the Web. She has spent the past year focusing on the development of lessons and activities for the new Great Lakes Lessons website.*

ONGOING RESEARCH AND REPORTS
WIND POWER
The West Michigan Wind Assessment, a project funded through Michigan Sea Grant, produced its first report, outlining the status and trends of wind development in west Michigan. A summary factsheet and the report are available.

See: www.gvsu.edu/wind

BROWNFIELDS
Michigan Sea Grant developed a new publication, *Diamonds in the Rough* to highlight the work of the Brownfields Assessment research team. The booklet includes 11 case studies that illustrate the benefits and challenges of redeveloping coastal brownfields.

See: www.miseagrant.umich.edu/focus/brownfields

*The Great Lakes Lessons website is supported by Michigan Sea Grant, COSEE-Great Lakes, the Great Lakes Observing System, NOAA-Great Lakes Environmental Research Laboratory and Eastern Michigan University.*

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.
Another difference between integrated research and traditional research is the outcome. With an integrated approach, the goal is to provide options to address the problem that people, such as resource managers, community leaders, business owners and other stakeholders can apply. Below is an overview of recent Sea Grant funded projects and their approach to integrated research.

HELPING COASTAL COMMUNITIES EVALUATE WIND ENERGY OPTIONS

**OBSERVATION:** Wind and other renewable energy sources are on the rise, and Michigan has high potential for wind power development.

**QUESTION:** How can coastal towns in Michigan, which often economically rely on the coasts, objectively decide if wind power development is right for them?

**RESEARCH:** Using input from local people and a variety of data sources and models, researchers will assess the many factors related to wind energy development, including environmental and aesthetic impacts, the cost to and the benefits for communities, the interests and motivations of different organizations and groups involved, information and support needed by communities, existing local policies like building codes, and technical considerations like turbine design and transmission in order to help communities make the best possible decisions.

**CONCLUSION:** The project will build expertise among Michigan residents, decision-makers, and other stakeholders by providing information on the costs and benefits of wind energy development. Building expertise includes offering training opportunities for government officials and community groups, facilitating access to decision-support tools for turbine siting, and drafting sample local ordinances for regulating coastal resources.
Science, in general terms, is an objective way of making sense of our world. At the heart of it lies research. Michigan Sea Grant funds various research projects that take different approaches to exploring our surroundings. Sea Grant’s integrated research approach may be more the norm than what we think of as classical “scientific research.”

**A METHOD TO THE MADNESS?**

Here’s the secret: there is no “Scientific Method.” There are many scientific approaches. Traditional steps or standard methods are typically found somewhere in the process, but rarely does research fit tidily inside a box.

Dr. John Carson, Associate Professor and Director of the Science, Technology, and Society Program at the University of Michigan, explained that most students are taught in school something called the “scientific method” and that it involves the following:

- Observation and description of a phenomenon or group of phenomena;
- Formulation of an hypothesis to explain the phenomena;
- Use of the hypothesis to predict the existence of other phenomena, or to predict quantitatively the results of new observations; and
- Performance of experimental tests of the predictions by several independent experimenters and properly performed experiments.

“The problem, of course, is that scientists don’t necessarily follow this method,” said Carson. “In the lab, experimenters [spend just as much time] messing around with things and trying to see what they can get to work, as they do systematically investigating a problem. Only at the end of the process, once the thousands of mistakes and blind alleys have been dealt with, is there a product to present to the scientific community. That story is often rendered in the form of the scientific method, but it’s not necessarily very closely related to what actually occurred in developing the new insight or technique or what have you.”

Carson also explained that outside the experimental sciences laboratory, for example in the natural resources realm, research often deviates further from the commonly understood scientific method. The reason: Intervening in the natural world to test all of the possible influences is impossible.

**A BLENDED APPROACH**

A one-size-fits-all approach doesn’t necessarily work for most research. But why isn’t there a developed method that can be applied?

“Well, why isn’t there one method for writing poetry, or history, or cooking an omelet?” said Carson. “By which I mean, humans are curious and creative and resourceful, so it’s not surprising that they have found a variety of methods to learn more about the natural world.

Different kinds of phenomena are more easily investigated with different methods. It doesn’t seem surprising that there is no one method, he said. “A good epidemiological study, for instance, is going to rely on observations and statistical analysis, but probably not laboratory experiments and direct causal interventions.”

Michigan Sea Grant researchers use a process called Integrated Assessment, often referred to simply as IA. The idea behind an IA is to generate information that is applied to real life situations specifically to support decisions. It is a holistic way of tackling socially important but complicated questions.

Researchers in traditional disciplines, such as biochemistry, attempt to answer the next logical question, which can be quite
different from the most pressing or socially relevant one, explained Lynn Vaccaro, Project Coordinator with Michigan Sea Grant. Sea Grant researchers attempt to answer the question that is most pressing now.

“These research questions usually involve uncertainty, several scientific disciplines, and some controversy,” she said.

Part of the Integrated Assessment research process is figuring out which question or questions to ask. One way of doing this is to ask people with a stake in the game, referred to as stakeholders, what they think the most important questions are surrounding an issue.

The Detroit River Fish Consumption Advisory project is a good example of research seeking relevant questions. Researchers started with the basic observation that contaminants in the Detroit River negatively impact both human health and the local economy. When delving into the issue further, they saw that little progress had been made in developing management strategies that effectively communicate information about eating fish from the Detroit River.

The overarching Integrated Assessment question for the research project was: What are the causes, consequences and correctives of the fish consumption advisories for the Detroit River?

Once researchers brought together different groups of stakeholders, they identified specific questions – under the umbrella of the IA question – that were relevant to the community's needs. Dr. Donna Kashian, one of the principal investigators, said they developed questions at varying stages of the project based on what was most important to stakeholders. For example, several questions that arose were:

- Where is fish contamination coming from and what effect does it have on the public?
- How can we better communicate fish consumption advisories to people eating fish out of the Detroit River both in the U.S. and Canada?
- How healthy are fish that aren't currently tested for contamination in the Detroit River like Channel Catfish?

Throughout the project, researchers continued to consult with people in the community, including decision makers, officials and anyone exposed to fish from the Detroit River. Kashian noted they had to go back and ask different questions or look to different data, based on the information they received at workshops.

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**Why isn't there a single scientific method?**

“Well, why isn't there one method for writing poetry, or history, or cooking an omelet?”

— Dr. John Carson

“...The research was very social science intensive,” she said. “Overall, I think we were better able to address the needs of the stakeholders. The project brought many of the groups together that previously did not interact much. That was the number one thing we heard: We want more communication. We were able to adapt to that and respond accordingly.”

Kashian said the research definitely varied from what would be considered traditional methods.

“In the process of the project, I learned to think outside the box a bit,” she said. “IA allowed us to pull lots of information that dealt with real-world exposure, more than you could get in a little small-scale experiment that strictly fit into the academic description of the scientific method. This subject in particular has many facets: likely exposures, sensitive populations and cultural ideas. It was more work, but more rewarding.”

While a large part of the research is interacting with people and communities, researchers still mine data and create methods for analyzing that data in a way can address questions that surface during the research process.

Thus far, the research is helping catalyze change in the way fish consumption advisory information is presented. For example, stakeholder groups like the Michigan Department of Community Health (MDCH) have modified fish consumption signs so that they are easier to
understand, based on information developed by the research team. The MDCH also developed a guide on alternative places to fish, which provides anglers more options for catching fish with lower levels of contamination.

So, said Vaccaro, the research team didn’t change the signs or come up with the alternative fishing spots; they just presented options on how that method of communication could be improved, based upon their research results.

“That’s what is great about Integrated Assessment,” she said. “The method really does provide useful information that can be applied by those making the decisions, as well as those affected by the information.”

While the original part of the research has been completed, the team will continue to explore fish contamination and consumption advisories along the Detroit River, building upon their Sea Grant funded research and feedback from the community.

A critical part of any scientific research is the peer review process. The review process provides a layer of checks and balances, testing if the results of research can be duplicated and are ultimately sound. Before research results are released, other experts in the field review them.

The scientific community uses a highly formalized version of peer review to validate research results. Researchers describe their experiments, results, and interpretations in scientific manuscripts and submit them to a scientific journal that specializes in their field of science. Other experts and the media can then use these journal articles, often interpreting the results, to help the public understand the significance of the research.

THE PUBLISHING PROCESS

Scientists who are experts in that field serve as “referees” for the journal: they read the manuscript carefully to judge the reliability of the research design and check that the interpretations are supported by the data. Based on the reviews, journal editors may accept or reject manuscripts or ask the authors (scientists) to make revisions if the study has insufficient data or unsound interpretations. Through this process, only those concepts that have been described through well-documented research and subjected to the scrutiny of other experts in the field become published papers in science journals and accepted as current science knowledge. Peer review does not guarantee that any particular published conclusion is certain. The process does provide a high assurance that informed experts have carefully vetted the work for accuracy before publication.

The other scientific oversight is the Institutional Review Board or IRB. The primary goal of an IRB is to protect the rights and welfare of human research subjects recruited to participate in research activities.

In the U.S., a review board is required for all human subject research that receives funding from a government or public source. Review boards were developed in direct response to research abuses earlier in the 20th century. Two of the most notorious abuses were the experiments of Nazi physicians that became a focus of the post-World War II Doctors’ Trial, and the Tuskegee Syphilis Study, a project conducted between 1932 and 1972 by the U.S. Public Health Service. The “experiment” tested the effects of syphilis on black men in rural Alabama. The men were told they were being treated for “bad blood” rather than syphilis and actual treatment — penicillin can cure the disease — was withheld.


REAL-WORLD APPLICATION

Sea Grant communication specialists worked with MDCH to design new signs on safer fish consumption. Specialists developed diagrams and assisted with the legibility of the final product that describes which fish to avoid, and how to reduce contaminants through proper preparation.

For more information on:
- The Fish Consumption Advisory project and its outcomes, see: www.cilet.snre.umich.edu/content/fca-detroit-river-fish-consumption-advisories
- Integrated Assessment, see: www.miseagrant.umich.edu/research/integrated-assessment.html
- The science review process, see: www.climate.noaa.gov/index.jsp?pg=/education/edu_index.jsp&edu=literacy
This is a must-have guide for every angler, fishery or wildlife professional, and conservationist. The waterproof, paperback edition is a great field resource.

Beautiful color illustrations by Emily Damstra accompany color photographs and line drawings to highlight distinguishing characteristics of each fish. Quick facts about distribution, diet, behavior and conservation status also aid in identification. Informative essays on the natural history, adaptations and characteristics of Great Lakes fishes are included, as well as detailed diagrams of the aquatic habitats and food chains within the Lakes.

Author Gerald R. Smith is Professor Emeritus of Ecology and Evolutionary Biology at the University of Michigan and Curator Emeritus of Fishes for the University of Michigan Museum of Zoology. He revised *Fishes of the Great Lakes Region* (Hubbs and Lagler, 2004) and is co-author of the *Atlas of Michigan Fishes* (2004).

The University of Michigan Press worked in collaboration with Michigan Sea Grant on the development of this guidebook, the second in a series of books about the Great Lakes coast.

Gerald Smith will be on hand Tuesday, March 23 to answer questions, sign copies and to tell the story of how *Guide to Great Lakes Fishes* was made. The talk is scheduled for 4-6 p.m. at the University of Michigan School of Natural Resources and Environment, Samuel T. Dana Building, in Room 1024.

Signed copies of the book will be available for purchase at the event. To order online, visit: www.miseagrant.umich.edu/store
There are many labors of love in life, such as having families, raising pets, or undertaking home remodeling projects. One labor of love that all Sea Grant members have in common is turning their love of science into a career.

For some, the path to science was clear-cut. They knew science was their first love and they went for it, the only difficulty was in deciding which facet would be their life’s work. For others, the path meandered a little. The following are reasons Sea Grant staff and affiliated researchers either got involved in science in the first place, or what makes them continue to enjoy it.

Cannibalistic Crickets
I’ve been in love with animals and the natural world forever, but fell in love with science and ecology in about third grade. I remember (and believe I still have somewhere) a little paper wheel that connected the circle of life: producers, consumers, decomposers and then back to producers. It made so much sense of the universe for me. I also saw my first food web that year in the same science class. I loved tracing the links and admired the complexity of the interconnections. I count myself fortunate that it was one that included humans as part of the web – I’ve never since considered nature to be something apart from humans.

I also remember one particular experiment we did that year. We set up terrariums with grass and water and then added crickets. My partner and I accidentally poured too many crickets in our terrarium, about a hundred in a square-foot terrarium. Rather than trying to get the crickets back out, we slammed the lid on and taped it shut. We learned firsthand what happens to an ecosystem badly out of balance, and that crickets will turn cannibal once the grass is gone.

This was maybe my first true science experiment as opposed to a demonstration; I’m very grateful the teacher gave us the opportunity to follow through and interpret our own results rather than chalk it up as something that “didn’t work” or telling us we had done it wrong. That, for me, is the essence of science and the scientific method: the capacity to make our own observations, interpret our own results, and ask more questions if we don’t see what we expect.

– Rochelle Sturtevant, Regional Sea Grant Extension Educator

Defense Mechanism = Vomiting
I was working with (the U.S) Fish and Wildlife Service, and I realized I loved the work I did there. I remember my “Ah-ha!” moment was the first time I went out to a Common Tern colony (on Charity Island in Saginaw Bay) to collect eggs to test for toxicity. We put on rain gear before heading out because the birds throw up on you. That’s their defense mechanism – they kind of take off and puke half-digested fish parts from the air. It’s quite a smell. I guess it’s kind of weird to have liked that, but what I really like was that it was on-the-ground work.

The other part of that job, I remember, was being part of the lawsuit against Dow relating to dioxin released into Saginaw Bay. The office had sent in a FOIA (Freedom of Information Act) request to gather information. All I did for two to three weeks was copy box after box of documents. They rented us a room in a Lansing office building, it was me, one other girl, and two copy machines, and we went through every document and made copies. It was tedious, but interesting, and sometimes surprising.

– Donna Kashian, Principal Investigator, Fish Consumption Advisory Research Project

Alien Landscapes
My interest in science was solidified during a road trip through the Southwest after my second year of college. The experience amazed me on many levels – there are very few exposed rocks in my home state on the East Coast, and I was blown away by all the enormous red rock formations in Arizona and Utah. How could such an alien landscape exist in my own country?

My travel partner spent three months working for a national park, and she introduced me to hardened field biologists and geologists – professionals who wear hiking boots rather than suits – brilliant!
I had recently chosen geo-biology as my major, and I had two geology classes under my belt. This limited knowledge provided a new window into the world around me. Rather than just appreciating the physical magnificence of the landscape, I tried to imagine the seas and sand dunes and erosion that had created the layers and shapes I saw. As I tried to filter the muddy Colorado River, I cursed the concept of sediment load, and as the temperature plummeted at night in our tent, I quickly remembered a lesson on moisture and heat capacity. To me, that is what’s cool about science—it gives you another way of interpreting and understanding the world around you, seeing connections, and imagining the forces that you can’t see directly.

— Lynn Vaccaro, Project Coordinator

He was “Hooked”

When growing up, I loved the outdoors and being in the U.P. My favorite activities were fishing and hunting, and thus I wanted to pursue a degree in the biological sciences. It was a choice between wildlife or fisheries, and I ended up choosing a career in fisheries. I liked the diversity of the fishery, from the Great Lakes to streams to inland lakes. I also liked being near water and that probably pushed me into the fishery career. I never second-guessed getting into fisheries as a profession.

— Ron Kinnunen, Upper Peninsula Extension Educator

Unraveling the Mystery

From a very young age, I’ve been interested in mysteries. In elementary school, a substitute teacher introduced me to Encyclopedia Brown books, and I was hooked on science. I was constantly trying to stay one step ahead of the story and figure out the mystery before anyone else. As I grew older, I realized that environmental science was a way for me to merge my love of mysteries with that of nature.

I found myself wondering...what makes one bird migrate while another stays put? How can syrup be made from trees? Where do insects go in winter?

— Mary Bohling, Southeast Michigan Extension Educator

You Mean, I Can Get Paid for This?

I got involved with science through my high school Biology II class. I had, for as long as I can remember, been fascinated with nature, especially water, and wildlife. But in my Bio II class, we were able to go to a local river, collect samples, and do field analyses to determine the water quality. My teacher said that our results would be shared with the county health department and that groups of people, like us, are essential to monitoring the quality of our local waters.

We did several other environmental science based experiments in that class, such as collecting and identifying aquatic macroinvertebrates and learning about invasive species. My teacher also focused on developing critical thinking skills, how to design an experiment, and the tools that are essential for scientific research. I talked to my teacher about all the cool stuff we were doing and asked if people could make a living out of this kind of work, and he opened my eyes to the entire field of environmental science, biology, chemistry, etc. Because of that class and my teacher, I was able to take an interest in environmental science into my course of study in university and pursue a career in this awesome field of science.

— Sonia Joseph Joshi, Outreach Coordinator

Getting ‘Schooled’

Growing up in California, I spent much of my time fishing and surfing, which exposed me to aquatic systems and nature. One clear memory is from when I was about 16 and our family vacationed in the June Lake area in the Sierra Mountains. We had fished the lake there for years and had done quite well with rainbow trout—mainly hatchery fish.

One day, my brother and I were hiking in the nearby mountains and we came upon a small stream full of trout. We rushed back to the cabin for our rods and reels and returned to the stream to catch dozens of fish. It surprised me because I thought if we could see the fish that easily, they could see us and would be smart enough not to bite our hooks—was I ever wrong!

This started me thinking about how the fish got in that stream and why they were so concentrated. Now, I realize that the hatchery truck had probably recently come by and unloaded the fish at this location, which was a large pool just above a dirt road. We had just happened to be by at the right time in order to catch those fish. Over time, I began to realize that merely placing large numbers of fish in different locations and hoping people would catch them immediately seemed to be a poor management practice, and was probably only usable in places like California, where fishing is very intense.

I became interested in the study of trout and other fish, and when I entered college a few years later, I decided to focus on marine biology. I love the combination of working outdoors, working in the water, and conducting analyses that could be very strongly analytic in terms of animals collected, observations of behavior, and other such patterns.

— Jim Diana, Director of Michigan Sea Grant
EVAlUATiNg pOTENtIAl WiNd ENER gy dEVELO pMENt i N cOaSTAL WESt MiChIGA N

OBSERVATiON: Wind and other renewable energy sources are on the rise, and Michigan has high potential for wind power development.

QUEStiON: What are the potential challenges and benefits to locating wind power facilities in coastal areas of Muskegon, Ottawa, Oceana and Allegan counties?

RESEaRCH: Researchers will examine environmental, social, economic, aesthetic, and policy issues surrounding wind farms. The issues will be assessed through case studies, multiple criteria and GIS analysis, as well as focus group workshops. A conflict map will be used to show the energy-generating potential of particular locations with the likelihood of environmental, social, and economic conflict.

CONClUSiON: The goal is to help communities avoid conflicts over wind energy development. Project researchers will present opportunities for stakeholders to consider wind farms, in advance of any development proposals. Project results will include an assessment of the benefits and challenges for different wind farm locations in coastal communities, strategies to avoid or resolve conflicts, and visualization tools to help determine viable sites and minimize negative impacts.

RESToRING NATURaL fLOWS i N thE cLiNtON RiVeR WatERS hED

OBSERVATiON: The 80-mile-long Clinton River faces a number of environmental challenges, including extreme changes in water flow when court-ordered lake levels are applied at specific times of the year. Twenty-one separate impoundments (dammed lakes) along the upper reaches of the river interrupt natural flows and block fish movement within the watershed.

QUEStiON: What are the most ecologically and economically sound approaches to managing the Clinton River?

RESEaRCH: Researchers will gather input from residents and decision makers, a variety of existing data sources, and hydrologic and economic models to assess the causes, consequences, and possible solutions for the current flow of the river. Researchers will also evaluate the impact of existing and potential river regulation policies on water quality and fish and wildlife habitat, as well as recreational opportunities, flood control, property values and insurance costs. Other factors to consider include taxes, wages and business income, the influence of lake-level control on adjoining lakes, and the effect of lake-level control on the overall watershed.

CONClUSiON: The overall aim of the Clinton River project is to develop a more comprehensive and sustainable approach to water level management. Researchers will develop tools and metrics that can be used by policy makers to identify, evaluate, and build consensus on better ways to manage water flow in the Clinton River.

ECOnOMIC OpPOrTuNiTiEs fOR SOUThERN LAKe hURON cOMMUNiTiES

OBSERVATiON: The declining recreational fishery for Chinook salmon has negatively impacted the coastal economies of communities located in Michigan's “Thumb” area, from Tuscola County to Port Huron in St. Clair County.

QUEStiON: What creative and effective strategies could help southern Lake Huron’s coastal communities and fishing industry adapt to the changing economy and changing Chinook salmon fishery?

RESEaRCH: Researchers are addressing the question by bringing together other researchers, town officials, and community and business leaders to assess current conditions and identify possible opportunities for the coastal region. Stakeholder workshops will help guide the project direction and focus.

CONClUSiON: The overall goal of this project is to identify ways to diversify and expand sustainable tourism activities, beyond the traditional charter fishing in this region. Researchers will consider the development of coordinated programs, infrastructure, marketing, and creating an innovative vision for the region’s economy and environment. Researchers will work with stakeholders to identify new ideas, such as web-based tools for visitors.
THE CLEAN MARINA
ONLINE CLASSROOM

Designed for marina owners and operators, the Clean Marina Program online course focuses on best management practices for petroleum control, sewage handling, storm water management and other issues that impact water quality. The online course is a new way for marina owner/operators to work toward certification.

The self-paced online course includes details on recommended and mandatory practices and how to become a certified Clean Marina. It includes nine units, photos and videos of best practices, and a review of relevant laws and regulations.

THREE REASONS TO TAKE THE COURSE AND BECOME A CLEAN MARINA:

- **Open 24/7:** The new online classroom offers pledging marina owner/operators unlimited access to updated course resources whenever they need it, at a pace that is comfortable to them.
- **Improve Water Quality and Habitat:** The marina and boating industry, along with other industries like tourism and fishing, depend on clean waters and a healthy coastal environment for their continued success.
- **Educate Boaters:** The Clean Marina Program is an excellent way to reach out to recreational boaters and demonstrate how they can alter their own practices to minimize impacts on the marine environment.

As participants in the Michigan Clean Marina Program, marinas voluntarily pledge to maintain and improve Michigan’s waterways by reducing or eliminating releases of harmful substances and phasing out practices that can damage aquatic environments.

To date, there are more than 80 program participants and more than 30 marinas have been awarded certification.

www.discovernortheastmichigan.com

DISCOVER NORTHEAST MICHIGAN

Every fish Gauthier and Spaulding catch and process reflects 100 years of experience and a taste of northern Lake Huron. It’s been more than a hundred years since John Gauthier’s ancestors began fishing in the Great Lakes near Two Rivers, Wisconsin. He was about 10 years old when he started working gill tugs with his family near Fairport, on the Garden Peninsula in northern Lake Michigan. He met Tom Spaulding in high school; the two became best friends, and John taught Tom to fish.

Visitors to northeast Michigan can sample the best of Lake Huron and taste the freshness that comes through careful handling and years of experience. Gauthier and Spaulding’s whitefish can be found in local groceries, restaurants, and festival events. They’re just one of the local business owner and operators featured on the new Discover Northeast Michigan website. The website focuses on developing businesses, but also offers a behind-the-scenes look at northeast Michigan.

THREE REASONS YOU SHOULD VISIT THE DISCOVER NORTHEAST MICHIGAN WEBSITE:

- **Good Business Examples:** Take a look at examples of successful coastal businesses that promote environmental stewardship. Be it for inspiration or guidance for other entrepreneurs, the website shows what an array of local business owners and operators are doing to stay alive in these tough economic times.
- **Get Intimate:** Most people, even natives to the state, are more familiar with the west coast of Michigan. Discover Northeast Michigan seeks to shed more light on the “Sunrise Side.” If all you know about the east side of the state is what you’ve spotted from I-75, check this out to see what the sunrise side has to offer.
- **Plan Your Time:** The maps, guides, and tourism ideas offer a wide variety of things to do. For example, consider following the Lights of Huron tour, visiting the lighthouses along Lake Huron and learning about the state’s culture and history. Take a look at the Publications and Resources section.
GUIDE TO GREAT LAKES FISHES
Author: Gerald R. Smith
MICHU-10-500/10-501

The Great Lakes are home to an impressive variety of fish. The Guide to Great Lakes Fishes describes 62 of the region’s most commonly found species, from giants like the sturgeon all the way down to the minnows and shiners, some of the Lakes’ smallest residents.

Beautiful color illustrations accompany color photographs and line drawings to highlight distinguishing characteristics of each fish alongside quick facts about distribution, diet, behavior, and conservation status.

This is a must-have guide for every angler, fishery or wildlife professional, and conservationist.

The book is printed on waterproof paper for use in the field. Available in softcover and hardcover.

GUIDE TO GREAT LAKES COASTAL PLANTS
Author: Ellen Elliott Weatherbee
MICHU-05-410

Including simple, yet authoritative, descriptions of 67 of the most interesting plants found along the United States and Canadian shores, this guidebook is full of great information about coastal plants in the Great Lakes region.

Each plant description includes beautiful color photographs and line drawings for ease in identification. Wildlife and ethnobotanical uses add fascinating information about the plants. Distribution maps are included for easy reference.

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