

The Helm

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Illinois-Indiana Sea Grant



Photo courtesy of Janis Bohing

Communities come to life in public spaces

Change is coming to Kokomo, Indiana. To improve life in the community and attract more visitors and businesses, city officials are crafting plans to build biking and walking trails, introduce more public art, and bring more events to the area.

When the work is done, Kokomo will become the latest community to harness the power of public spaces with help from a new Purdue University Extension and Illinois-Indiana Sea Grant (IISG) program.

“Public spaces play a vital role in our quality of life,” said Kara Salazar, IISG sustainable communities Extension specialist and one of the program creators. “They are the paths we bike on, the parks we play in, and the town centers where we shop. Decisions about how to design and manage these

spaces have long-term impacts on the social, economic, and environmental health of our communities.”

Enhancing the Value of Public Spaces walks local decision makers through the process of collecting data on community assets, planning improvements to public areas, and integrating those plans with larger community programs and goals. Facilitated workshops give participants the tools they need to design, implement, and evaluate community-specific public spaces projects. And a companion curriculum connects decision makers with additional how-to resources.

“The Purdue team and their approach helped us see the value in our public spaces that we sometimes take for granted,” said Randy Morris, superintendent of the

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Editor-in-Chief | Irene Miles
Writer | Anjanette Riley
Creative/Design | Joel Davenport

Kokomo Parks and Recreation Department. “I was astounded by how many community attributes we were able to identify during the workshop.”

Five Indiana communities have already participated in the program as part of a pilot phase. This initial success, in addition to the program’s comprehensive approach, led Purdue Extension to recognize *Enhancing the Value of Public Spaces* as a signature program. It has also been incorporated into the state’s new Hometown Collaboration Initiative, which helps Hoosiers boost quality of life in their hometowns.

“The final action plans can also be used to satisfy state requirements for additional funding for parks and recreation,” added Michael Wilcox, program co-creator and assistant program leader with the Purdue Extension Community Development Program. 🍷

Communities interested in scheduling a workshop can find program and contact information online—www.ag.purdue.edu/enhancing.



Get the scoop on cleanup projects with Great Lakes Mud

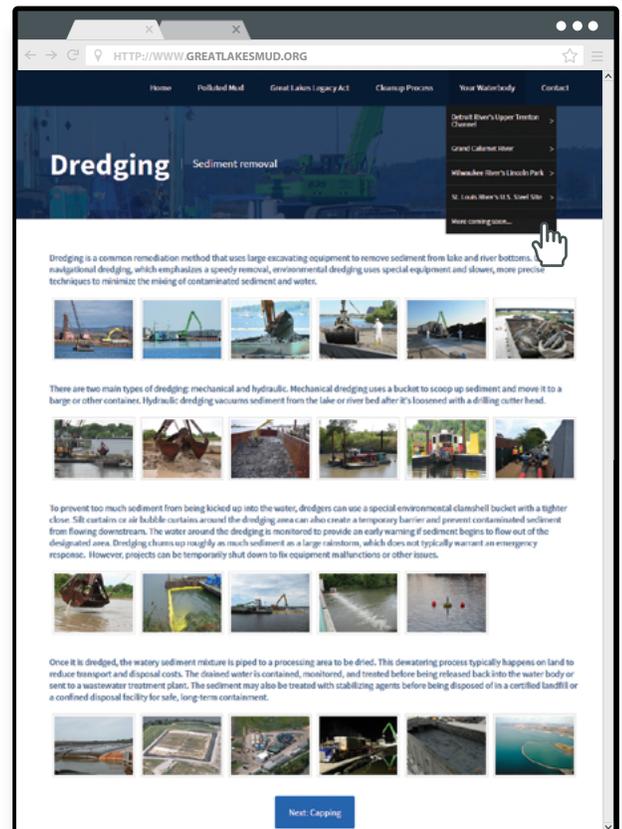
Residents living near sediment remediation projects can now stay up-to-date on cleanup goals and milestones with GreatLakesMud.org. Developed by IISG, the comprehensive website provides information on waterways selected for cleanup and restoration through the Great Lakes Legacy Act.

“These rivers and lakes are among those hardest hit by PCBs, mercury, and other contaminants that harm fish and wildlife, impede navigation, and, in some cases, leave the water unsafe to use,” said Caitie McCoy, IISG environmental social scientist and creator of the site.

At the heart of *Great Lakes Mud* are site-specific pages that identify contaminants of concern and outline plans for cleanup and habitat restoration. Here, visitors will find the latest on dredging schedules, truck routes, opportunities for community involvement, and more.

The website also provides insight into how Legacy Act projects are chosen and designed and explains how cleanup strategies like dredging and capping are able to remove the dangers of contaminated sediment while improving aquatic habitats. Illustrative photos and videos bring these processes to life and help viewers understand how project components that often span several years fit together.

The Great Lakes Legacy Act was passed in 2002 to accelerate sediment cleanup in Areas of Concern, waterways blighted by decades of industrial discharges and poor municipal sewage practices. Since then, the program has cleaned up nearly 3 million cubic yards of contaminated sediment and restored acres of habitat. 🍷



Be a Hero is the invasive species prevention message in Illinois



Be a Hero is now the primary invasive species awareness campaign in Illinois. In addition to connecting with boaters, anglers, and divers, the multi-pronged campaign now provides easy tips to help water gardeners and aquarium hobbyists curb the spread of aquatic invaders. The new messages also provide recommendations to prevent the spread of species that threaten habitats on land.

“Everyone has a part to play in helping prevent the spread of invasive species, and it is important that this message gets out to all groups,” said Chris Evans, biologist with the Illinois Department of Natural Resources (IDNR).

Many commercially-sold plants and animals pose a risk to Illinois habitats. In fact, plants like Brazilian elodea—often sold as anacharis—have already reached several Illinois lakes and ponds, where they form mats that block sunlight needed by other species and hinder recreation. And more invaders lurk on the horizon.

To prevent their spread, Be a Hero—Release Zero™ introduces water gardeners, aquarium hobbyists, and others who buy and sell species to safe alternatives for disposing of unwanted plants and animals.

“When people release their plants and animals into nearby waterways—or even drain used water—they could unknowingly be spreading invaders from one waterbody to another,” said Greg

Hitzroth, IISG aquatic invasive species specialist. “Our message encourages gardeners and hobbyists to instead bag and place all plants in the trash, find a new home for animals or seek advice on humane disposal, and disinfect or repurpose water.”

In addition, Be a Hero—Transport Zero™ now also addresses the spread of terrestrial invaders with tips for hikers, campers, and hunters who may accidentally carry species to new habitats. This summer and beyond, look for prevention tips on TV and radio and in print, as well as in sports stores, at trailheads, and in hunting guides and pamphlets.

The Be a Hero campaign kicked off in 2013 with promotions on WGN Radio, *Illinois Outdoor News*, and the *Illinois Outdoors* and *Illinois Traditions* TV programs encouraging recreational water users to remove, drain, and dry after a day on the water. Altogether, the campaign had more than 5 million audience impressions. Be a Hero—Transport Zero™ messages have also successfully been introduced at boat shows and fishing tournaments. An IISG survey of boat show attendees suggests that people who have heard these messages are significantly more likely to remove plants, animals, and mud from their equipment and drain all water from their boats and gear after every use. ♡

Be a Hero is a collaboration between IISG and IDNR. For more information, visit TransportZero.org and ReleaseZero.org.

Dead zone data helps protect vital fishery

Officials in charge of safeguarding Lake Erie fish populations are adjusting their monitoring practices with help from surprising new research showing that the lake's 'dead zone' is more dynamic than ever believed.

Every summer, the bottom of Lake Erie loses so much oxygen, due to natural conditions and nutrient-triggered algal blooms, that fish and other aquatic wildlife are forced to flee or suffocate. Scientists have long believed that the hypoxic water spreads out from the lake's central basin. But a three-year investigation of dissolved oxygen levels suggests that dead zones can spring up across the lake and disappear just as quickly.

"We were in awe when we looked at the data from the first season," said Richard Kraus, a biologist with the U.S. Geological Survey (USGS) Great Lakes Science Center. "Sometimes an area would switch from normal to hypoxic conditions in a matter of hours."

Kraus, along with researchers at the Ohio Department of Natural Resources (Ohio DNR), Ohio State University, the U.S. EPA Great

Lakes National Program Office, and IISG, discovered the changing oxygen levels using a variety of sensors, including ones that continuously recorded lakebed temperature and oxygen levels for several months. The multi-pronged study also examined the impact of hypoxia on fish habitats and field sampling.

The results have major repercussions for efforts to measure and maintain sustainable fish populations—a particularly important task in Lake Erie, which supports one of the largest freshwater commercial fishing industries in the world.

Lake managers rely on population estimates to set annual limits on how many walleye, yellow perch, and others can be fished from the lake. These estimates are calculated using models that assume that the number of fish and the effectiveness—or catchability—of different fishing gear is similar throughout the lake and across seasons.

But dynamic dead zones mean inconsistency. Fish and other aquatic wildlife cluster around the edges of hypoxic waters to avoid suffoca-

tion, turning the lake into an ever-changing patchwork of high- and low-density habitats.

"Without the high-resolution data collected in this study, we would not have been able to see the fine details of how hypoxic waters move and impact where fish are found," said Paris Collingsworth, IISG Great Lakes ecosystem specialist.

Knowing this will help managers adjust their sampling and analysis strategies to capture a more accurate picture of species behavior and numbers. In fact, groups like Ohio DNR and USGS have already made changes to their annual surveys based on study recommendations. For example, field researchers now plan to monitor dissolved oxygen levels more extensively throughout the survey to determine whether a nearby dead zone is triggering unusually high or low catch results.

Researchers also expect these results to ultimately lead to commercial catch limits that more effectively balance industry and conservation needs. ♡



Photo courtesy of Andrea Miehl, USGS

Finding where the fish are just got easier

Lake Michigan anglers and charter fisherman can find the best spots to cast their lines with a new IISG web tool. The first of its kind, *Lake Michigan Fish Catch Atlas* reveals hotspots for some of the region's most popular sport fish.

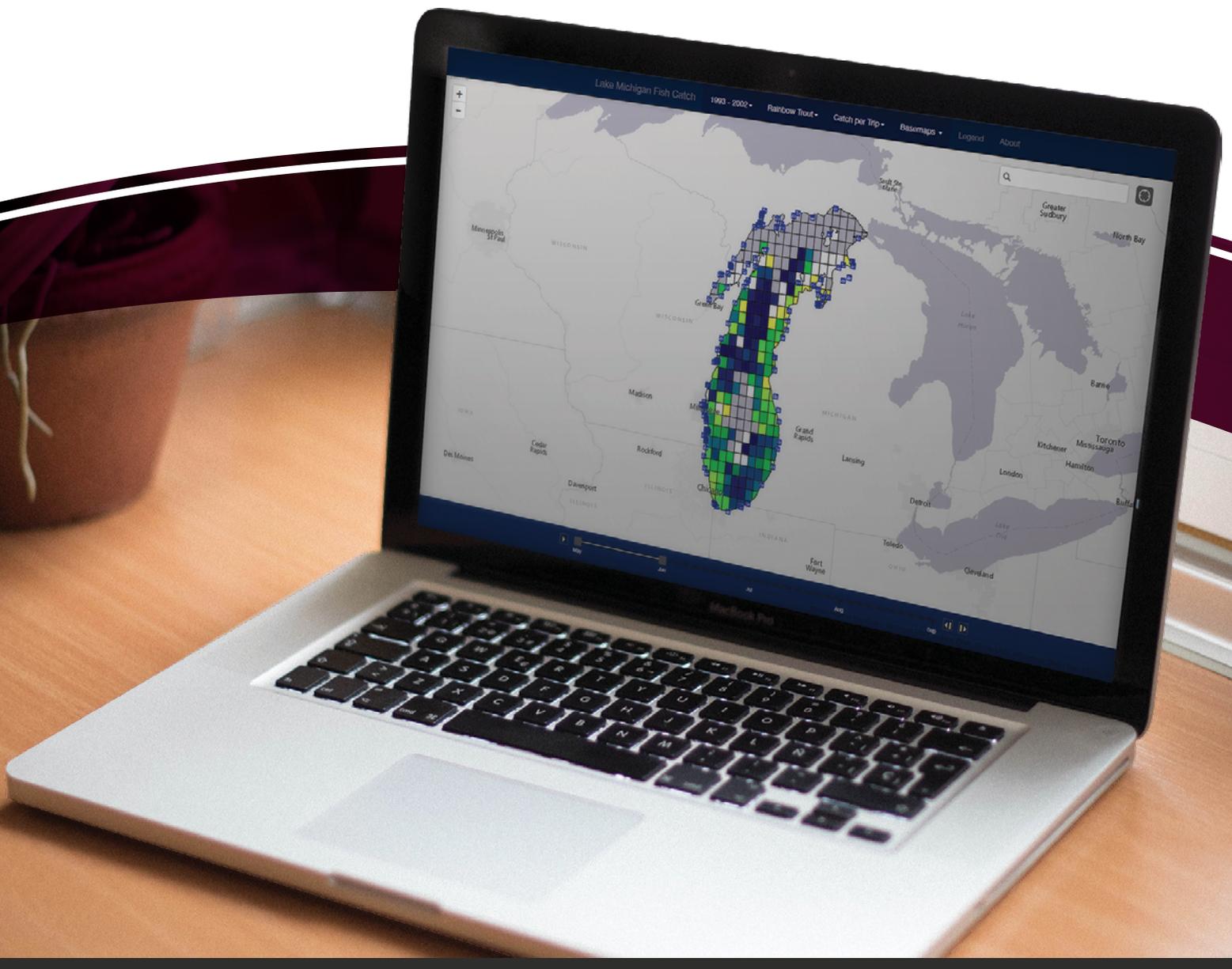
"Whether you live locally or are traveling from across the region, this easy-to-use tool can help you decide where to fish and which species to target," said Tomas Hook, IISG associate director of research and one of the tool creators.

The site uses 20 years of charter boat data from the Department of Natural Resources in Illinois, Michigan, and Wisconsin to show the total number of rainbow trout, lake trout, Chinook salmon, brown trout, and Coho salmon caught in a month. Anglers can also delve deeper to see the number of fish caught in a single trip and per angler hour.

The tool allows visitors to toggle between different species, time periods, and catch measurements. And the color-coded map makes it possible to quickly identify near and offshore areas with high catch totals.

Visitors can use the interactive map to plan their summer fishing trip or zoom in to see which fish are biting at their favorite fishing hole.

"This tool will be a great help to both anglers and charter companies," said Captain Kevin Bachner, co-owner of the King Fisher and Salukis Pride charter boats. "Knowing catch totals for the whole lake will help us confirm that we are taking our clients to the best spots." 🍷



Swim safe this summer in southern Lake Michigan waters

For beachgoers and boaters, Lake Michigan is the most dangerous place in the Great Lakes. Roughly 50 percent of drownings each year take place in Lake Michigan, particularly at the southern tip. Last year alone, more than 20 people lost their lives while enjoying a day on the water.

IISG has teamed up with city and state officials, non-profits, and fellow Sea Grant programs to raise awareness of what beachgoers can do to ensure a safe day on the water.

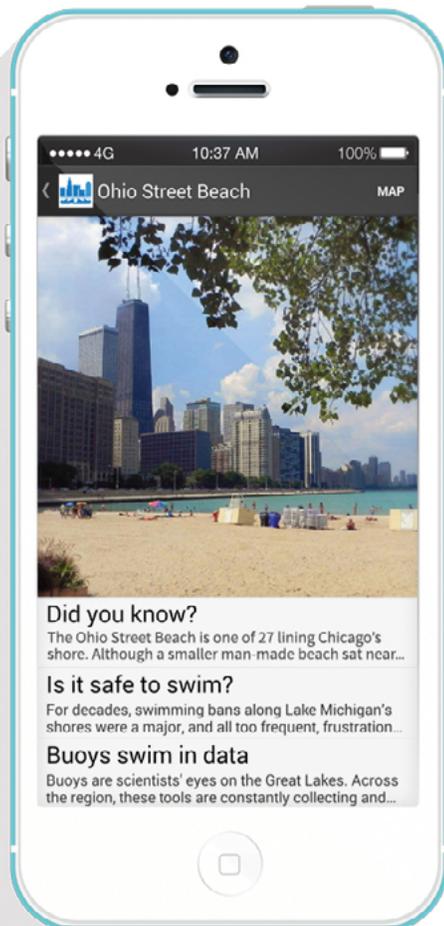
In Indiana, the Southern Lake Michigan Water Safety Task Force will bring 'how to' information to festivals and seminars throughout the summer, including the Hobart Water Festival and the Family Water Safety Days in Porter. Most of their efforts

this year align with Coastal Awareness Month in June, coordinated by the Indiana Department of Natural Resources Lake Michigan Coastal Program. The group also plans to expand its efforts to promote safety tips for boaters and anglers and to develop K-12 educational materials.

Beach-goers throughout the region can also learn how to steer clear of dangerous currents through a multi-pronged outreach project funded by the NOAA Coastal Storms Program.

The *Be Current Smart* campaign encourages swimmers not to jump off structures or enter the water when waves are high. Animations, online graphics, and more also remind parents to have their kids wear lifejackets and to keep a close eye on them while they're in the water. ♥

Campaign resources are available at currentsmart.org.



Chicago's downtown lakefront is even better with our app

Experience the Windy City's beautiful downtown lakefront like never before this summer with a self-guided app tour that weaves history, current events, and water sciences. Chicago Water Walk takes you on a journey through time to discover how Lake Michigan and the Chicago River transformed a small trading post into one of the economic and cultural hubs of the world—and the vital role these natural resources play now and in the future.

With 18 stops across four tour legs, the app explores some of the city's most celebrated sites—Navy Pier, the Chicago River, downtown marinas, and Museum Campus. Stunning photos, historical images, and links to videos and other resources bring these issues to life and reveal a lakefront that will surprise even the most veteran Chicagoans.

Chicago Water Walk is available for free on both Android and Apple devices. And a sister website allows visitors to enjoy the lakefront from the comfort of their home. The mobile-friendly site is also perfect for those with Windows devices.

The app and website were developed by IISG, in partnership with the Illinois Department of Natural Resources Coastal Management Program who funded this project, and technical support from the University of Illinois Administrative Information Technology Services. In its 2014 inaugural year, the app was downloaded more than 1,500 times. ♥

Download the app or take the virtual tour at chicagowaterwalk.org.

Steer Clear of the Pier



Staff Updates



Eliana Brown
Stormwater Specialist

Eliana Brown is a stormwater specialist with IISG and the Illinois Water Resources Center. She is helping with implementation of the Illinois Nutrient Loss Reduction Strategy. Her areas of expertise are the regulatory aspects of wastewater and stormwater programs and green infrastructure. Eliana has a Master's degree in environmental engineering from the University of Illinois where she worked as the Municipal Separate Storm Sewer System (or MS4) coordinator. She also brings experience as a water quality engineer from her time at the Illinois Environmental Protection Agency.

The Helm

University of Illinois at Urbana-Champaign
Illinois-Indiana Sea Grant College Program
374 NSRC, MC-635
1101 W. Peabody Dr.
Urbana, IL 61801



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Illinois-Indiana Sea Grant is one of more than 30 programs of the National Sea Grant College Program created by Congress in 1966. Sea Grant is a partnership of universities, government, business, and industry that addresses marine and Great Lakes needs to enhance sustainable coastal economic development. Funding is provided by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA Grant # NA140AR4170095), Office of Sea Grant, University of Illinois at Urbana-Champaign, and Purdue University. The University of Illinois and Purdue University offer equal opportunities in programs and employment.

Southern Lake Michigan marinas are going green

Boating season is in full swing, and marinas along southern Lake Michigan have ramped up operations. And for 10 of these—six in Illinois and four in Indiana—those operations include following practices that make marina and boating activities more efficient and environmentally friendly. These are the two states' certified clean marinas.

Harbors earned their status by working with state clean marina programs to preserve habitats, prevent pollution, and empower boaters to make environmentally-friendly decisions.

The Illinois Clean Marina Program launched in 2013 with support from IISG and the Chicago Parks District. In the coming years, the Illinois Department of Natural Resources Coastal Management Program expects to add at least three more to its list of clean marinas, including the popular North Point Marina.

IISG was also a partner in the development of the Indiana Clean Marina Program in 2008. The Department of Environmental Management is working to certify two more Lake Michigan harbors and hopes to expand the program throughout the state. ♥

