

Northwest Indiana Planning Smart Growth

As a region grows in population, the trick is to maintain the quality of life that initially drew people there. Residents of Porter County, Indiana, which sits along the coast of Lake Michigan, are hoping to preserve horse pastures, small-town charm, and lakefront natural areas and recreation as the region faces inevitable population growth.

One approach that county planners have turned to is Traditional Neighborhood Design (TND). "TND plans include compact development that preserves open space," said Bob Thompson, Porter County Planning director. "These neighborhoods are noted for their walkability because they feature short blocks and ample sidewalks with mixed housing that is close to commercial and office space."

"These designs preserve coastal habitat and green space," said Robert McCormick, Planning with POWER (Protecting Our Water and Environmental Resources) project leader. "An increase in impervious surfaces in the region can impact water quality in Lake Michigan and in local streams because stormwater runoff can pollute these waterways."

Planning with POWER has been working closely with Porter County planning officials, U.S. EPA, the Northeastern Indiana Regional Planning Commission, consultants, developers and interested citizens and organizations to develop TND guidelines so that they can be incorporated into the county development ordinance.

continued on page 2



Historic downtown Chesterton in Porter County

New IISG Director **Page 3**

Flood Potential in Chicago Region is Higher than Expected
Page 4

New Toolkit Helps Communities Extinguish Burn Barrels
Page 5

Illinois-Indiana Sea Grant

*Two States Caring
for One Great Lake*

Brian Miller, Director

University of Illinois
388 NSRC, 1101 W. Peabody
Urbana, IL 61801
217-333-6444

Phil Mankin, Interim Associate Director/Research Coordinator

pmankin@uiuc.edu
217-244-6916

Aquaculture Marketing Kwamena Quagrainie

765-494-4200
kquagrai@purdue.edu

Aquatic Ecology Leslie Dorworth

219-989-2726
dorworth@calumet.purdue.edu

Aquatic Invasive Species Patrice Charlebois

847-872-0140
charlebo@uiuc.edu

Coastal Sediments Susan Boehme

312-353-4383
boehme.susan@epamail.epa.gov

Communication

Irene Miles
217-333-8055
miles@uiuc.edu

Environmental Planning Martin Jaffe

312-996-8933
mjaffe@uic.edu

Great Lakes Ecosystem Beth Hinchey Malloy

312-886-3451
Hinchey.Elizabeth@epamail.epa.gov

K-12 Education Robin Goettel

217-333-9448
goettel@uiuc.edu

Planning with POWER Robert A. McCormick

765-494-3627
rmccormi@purdue.edu

www.iisgcp.org

"We met at a two-day charrette and workshop last November to flesh out the TND guidelines," said McCormick. "On the first day, the team toured the county, listened to local stakeholders, and then prepared the site plan. Day two focused on codifying the physical elements of the plan and ensuring that the plan was appropriate for Porter County's character." U.S. EPA and NOAA funded this project through the Smart Growth Implementation Assistance for Coastal Communities Program.

The TND report is in its final stages. When it is finished, it will go before the Porter County Planning Commission for approval. At that point, developers in the county will have these design guidelines at their disposal. The county already has several other subdivision design options, including a conservation plan that requires 40 percent open space in subdivisions in designated sensitive areas.

County commissioners also recently passed a watershed overlay ordinance that establishes defined buffer zones for all streams and rivers in Porter County. "This ordinance is the first of its kind in Indiana," said McCormick. "Vegetative buffer zones will reduce runoff and erosion. They will help protect Lake Michigan water quality because all these tributaries flow into it."

Since 2004, Planning with POWER has helped foster a smart growth initiative in both Porter and Lake counties in Indiana. McCormick helped organize a series of speakers that provided insight and experience to local planners regarding ongoing smart growth efforts.

During the week of September 10, the NOAA Coastal Services Center will present two coastal community planning and development workshops in northwest Indiana, this time including LaPorte County, which also sits along Lake Michigan. These workshops will feature the smart growth efforts taking place in Porter County. For more information about these workshops, contact Bob McCormick at 765-494-3627 or rmccormi@purdue.edu.

The **HELM**

Irene Miles—Editor

Susan White—Graphic Designer

Susan Boehme, Leslie Dorworth, Jennifer Fackler, Beth Hinchey Malloy,

Erin Neuman, Jessica Winter—Contributors



Printed on Recycled Paper

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 # NA060AR4170079), 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.

Sea Grant
ILLINOIS - INDIANA



New Director Will Build on Past IISG Successes

In its 25th anniversary year, Illinois-Indiana Sea Grant (IISG) is pleased to announce that Dr. Brian Miller is the program's new director. Brian Miller brings a background rich in Sea Grant and extension to the program--over the past 13 years, he has been IISG's outreach coordinator and associate director.

Miller also has a long history with Purdue University, apart from Sea Grant. There, he was awarded his doctorate in natural resource social sciences. Miller served as a Purdue University Extension wildlife specialist for 17 years and, for the past two years, as the extension coordinator for the Department of Forestry and Natural Resources.

During his tenure with Sea Grant, Miller has played a key role in initiating a number of successful programs and partnerships. Through Miller's efforts, IISG has expanded its partnership with the U.S. EPA Great Lakes National Program Office to address broader Great Lakes ecosystem issues such as monitoring and remediation of contaminants. Miller also played a pivotal role in the signing of the historic Wingspread Tri-State Accord, an agreement by four regional planning agencies to address economic and environmental concerns across traditional boundaries. And, Miller was instrumental in the development of the Planning with POWER project, which is fostering smart growth along Indiana's coast.

"The most rewarding part of my job with Sea Grant has been working with staff members in our program and around the network to develop projects that have impact for our clients," said Miller. "I'd like to build upon the past and make the program even more effective. If we develop strong ties with industry, federal agencies, and other organizations involved in Great Lakes resources, the program has potential to have a substantial impact in the region."

"I am delighted to have an experienced leader in the Sea Grant directorship," said Dennis Campion, University of Illinois associate dean of extension and outreach. IISG is administered through University of Illinois Extension. "Under Dr. Brian Miller's leadership, we look forward to enhancing our strong working relationship between the two universities and with key leaders in the Great Lakes."

"I believe Illinois-Indiana Sea Grant is positioned for growth," said Miller. "Stakeholders around the Tri-State Accord area, which is one of the nation's fastest growing coastal regions, are ready to engage in programs that apply university discoveries to achieve a sustainable future."



Flood Potential in Chicago Region is Higher than Expected

Flood peaks in the Chicago metropolitan area are higher than they used to be, and they are also higher than estimates currently used by water managers, according to an Illinois-Indiana Sea Grant study.

“Estimating future flood peaks accurately is critical in terms of allocating resources to minimize damage from these events,” said Momcilo Markus, a researcher at the Illinois State Water Survey who studied Chicago area flood trends using data from the U.S. Geological Survey and NOAA. “Underestimating or overestimating 100-year flood levels can result in large economic losses on one hand or increased environmental degradation on the other.”

He found that the steady increase in flood discharges in small streams over the past 100 years is due to increases in urbanization and precipitation, with urbanization playing the major role.

It’s no surprise that urbanization has increased dramatically in the region. “Between 1954 and 1999, urbanization, on average, increased from about 11 percent to 62 percent in the 12 Chicago area watersheds in our study,” said Markus.

Urban areas, unlike agricultural or forested areas, have hard surfaces such as roofs, parking lots and sidewalks, which cause water from large storms to rush into nearby storm sewers and waterways instead of being absorbed into the ground. Add to this an increase in frequency and intensity of heavy precipitation and the result is higher flood levels.

Precipitation records in the Chicago area generally date back about 100 years. “At the Aurora College rain gauging station, the 10 largest historical

storms recorded have been since 1950, and these storms were *much* larger than any in the previous 50 years,” explained Markus.

Flood flow estimates are reviewed by the Illinois Department of Natural Resources, Office of Water Resources and are published by the Federal Emergency Management Agency (FEMA). The extent of flooding shown on Flood Insurance Rate Maps guides development and insurance purchases.

Flooding estimates published by FEMA are used to design bridges and culverts as well as plan development.

This study shows that these estimates need to be updated. “Many regulatory discharges have not been revisited since the 1980s and 1990s when the studies were conducted. Evidence shows that since then, heavy rainfall has increased, as has urbanization in north-eastern Illinois,” said Markus. “Present day flood discharges are, on average about 15 percent larger than currently certified estimates. If you account for ongoing urbanization, the flood peaks will become even higher.”

In addition to incurring economic costs in terms of property damage and insurance rates, high flood peaks can be ecologically harmful, which is ultimately costly as well. Rainwater flowing into waterways from parking lots and other urban surfaces can carry a variety of contaminants and litter. Plus, stream banks suffer increased erosion, which further degrades water quality and washes away valuable land.

Storm water managers can design structures, such as detention ponds that lessen the impact of flooding. “To address the problem effectively, accurate predictions of future flood peaks are critical,” said Markus.



New Toolkit Helps Communities Extinguish Burn Barrels

In some rural communities, people still burn their trash. Burn barrels send up in smoke an array of toxic chemicals that can cause burning eyes, headaches, and a number of serious health problems. In fact, in the United States, backyard burning is the largest known source of dioxin, according to the U.S. EPA. This toxic organic compound gained infamy for disfiguring Ukrainian president Viktor Yushchenko several years ago. He was likely given a high dose, but dioxin poses dangers even at extremely low levels and has been linked to several types of cancer.

Dioxin from burn barrels settles from the air onto the surfaces of leaves, grass and crops and enters the food chain when eaten by animals. It accumulates in animal fat and enters our bodies through dairy products, meat, and fish. "Household garbage burning is often conducted in rural areas near crops and livestock," said Erin Newman, U.S. EPA environmental scientist.

The toxic chemicals emitted from burning trash don't just play havoc with your health. Contaminants can land directly into aquatic or terrestrial environments, and contribute to nonpoint sources of pollution in the region's rivers and lakes, including the Great Lakes.

Many state or local governments already ban or restrict garbage burning due to con-

cerns about toxic emissions. "However, it's important to recognize that some communities in the Great Lakes Basin have no infrastructure for garbage collection and recycling," said Newman. "These communities will need to work with state and local officials to develop long-term solutions to garbage disposal."

To help with this, U.S. EPA Region 5 and Illinois-Indiana Sea Grant have developed an outreach toolkit entitled *Learn Not to Burn: A Guide for Reducing Trash Burning in Your Community*. The kit provides a variety of materials to assist local communities, including a set of case studies that provide viable alternatives to burning. "The case studies repeatedly demonstrate that education about the hazards of backyard burning is key to instilling behavioral change," said Susan Boehme, Illinois-Indiana Sea Grant contaminated sediment specialist. The toolkit also includes sample outreach materials, as well as information on: the environmental impacts of backyard burning;



Courtesy of U.S. EPA

burn barrel ordinances for Great Lakes states; and solid waste ordinances and waste transfer stations.

"We are getting calls from county solid waste county officials and state agencies requesting the toolkit," said Newman. Thus far, the toolkit has been distributed at township association meetings in Great Lakes communities and interest is growing.

The toolkit is available as a CD-ROM and online at: www.iisgcp.org/learnnot2burn.

For more information or to request a toolkit, contact Erin Newman at (312)886-4587 or newman.erin@epa.gov or Susan Boehme at (312)353-4383 or Boehme.susan@epa.gov.

IISG Knauss Fellows Help Shape Ocean Policy

"In my year at the State Department, I significantly expanded my knowledge of how marine policy is created, changed, and implemented at



Kate Von Holle represented the U.S. as an advisor at the United Nations Fish Stocks Agreement Review Conference in New York.

the international level," said Kate Von Holle regarding her Knauss fellowship. Von Holle, who has a master's degree from the University of Illinois, worked in the Office of Marine Conservation. She focused on the conservation and management of highly migratory species (they cross many international jurisdictions)—mainly tuna species, along with sea turtles and sharks. "One of the most valuable aspects of the fellowship is being on the front lines of environmental policy making," explained Von Holle.

Von Holle attended five international conferences, and was the sole State Department representative at four of them. She served as interim head of the U.S. delegation at two conferences, and made statements to the conference on behalf of the U.S. "It's pretty amazing to know that I've done that. It demonstrates to potential employers that I can think on my feet, and that I have knowledge of the issues and the United States' position on these issues," explained Von Holle.

Kenli Schaaf, a PhD graduate from Purdue University, spent her year as a Knauss fellow in the Office of the Oceanographer of the Navy. The majority of her time was spent working on the Ocean Action Plan, including participating

in various interagency committees and subcommittees. She also devoted her energy to marine mammal policy issues and ocean observing systems. "I gained valuable real-world policy analysis, development, and implementation skills," explained Schaaf.

The education and outreach duties of the fellowship centered on two projects: the Navy's contribution to the Smithsonian Ocean Web Portal, a public Web site complementing the new Ocean Hall at the Smithsonian Museum; and the Coastal America Student Summit, an ocean-knowledge competition for high school students. "I have tremendously enjoyed my time in the Office of the Oceanographer of the Navy," said Schaaf. I was fortunate to work with senior military and civil employees in NOAA and the Department of Defense."

The Knauss fellowship was a stepping stone for Schaaf. "I'm convinced that having this year experience as a Knauss fellow helped me land my dream job as a foreign affairs officer with the Department of State," said Schaaf.

For additional information about the John A. Knauss fellowship, visit www.seagrant.noaa.gov/knauss/knauss.html.



Congratulations to New Knauss Fellows

Two new Knauss fellows from Illinois-Indiana Sea Grant will begin their year in Washington in January, 2008. They are Mark Carter, who has a Master's degree in natural resources from the University of Illinois and Angela Bobeldyk, who earned her doctorate in biology from Notre Dame University.



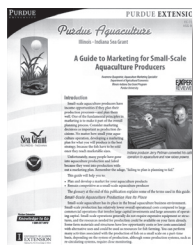
Publications

Greatest of the Great Lakes--A Medley of Model Lessons

This collection of 41 innovative classroom activities, assembled by COSEE Great Lakes, provides teachers and students in grades 4-10 with insights into the uniqueness of the Great Lakes and their influence on aquatic life and human populations. As students engage in these interactive and thought-provoking activities, they will gain an understanding of Great Lakes science as well as Great Lakes problems and potential solutions. For downloadable activities, or to order this \$15 CD-ROM, go to www.iisgcp.org/edk-12/gogl/gogl.htm.



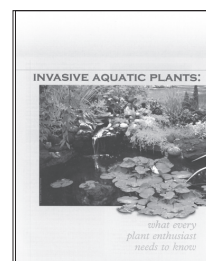
A Guide to Marketing for Small-Scale Aquaculture Producers



No matter how small your aquaculture operation, developing a marketing plan for your product is the best strategy to success. This eight-page guide will help you to plan and develop a market for your aquaculture products, and to remain competitive as a small-scale aquaculture producer. Topics include market research, finding niches, direct marketing, reputation and quality, and diversification. To download a free copy, go to www.iisgcp.org/products/free.htm.

Invasive Aquatic Plants

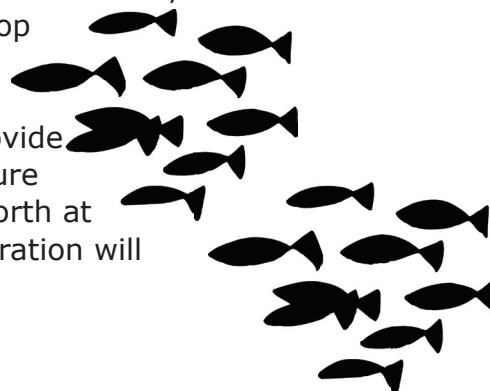
This newly updated brochure offers suggestions to water gardeners on how to help prevent the spread of invasive species while building a garden, as well as when choosing, buying, and disposing of aquatic plants. It provides characteristics of invasives and explains how they are spread and includes a list of "outlaw" plant species. To download a free copy or purchase a package of 50 for \$8.50, visit www.iisgcp.org/products/purchase.htm.



Workshop

Evaluating Fish Passages on Midwestern Streams

On November 7-8, at the Illinois Institute of Technology in Wheaton, IL, the River Restoration Practices and Concepts Workshop Series continues with a discussion on evaluating fish passage structures. If you are planning to design or implement fish passages, this two-day workshop will provide insight into how to determine why fish prefer one structure over another. For more information, contact Leslie Dorworth at 219-989-2726 or dorworth@calumet.purdue.edu. Registration will begin in September.



Speaker Series Focused on Coastal Resources



Courtesy of M. Jeffords

Go with the Flow—Get to Know Your Coastal Resources is a seminar series about coastal resources in the Lake Michigan watershed in Northwest Indiana. Designed for the general public, these talks will provide insight on the positive and negative impacts that residents have on coastal resources through everyday activities and choices. Each seminar will highlight different aspects of coastal resources and how to protect those resources.



The first seminar will be on September 12, 6:30 p.m.– 8:00 p.m. in the Calumet Conference Center at Purdue University Calumet on 172nd Street in Hammond. This talk, titled “Calumet Beginnings—The Effects of Ice, Water, Wind and People” will feature author Kenneth Schoon of Indiana University Northwest discussing the geological history of Lake Michigan. The next three seminars will take place the 2nd Wednesday of each month at the same location. For more information contact Leslie Dorworth, IISG aquatic ecology specialist at 219-989-2726 or dorworth@calumet.purdue.edu.



The speaker series is funded by the Indiana Department of Natural Resources Lake Michigan Coastal Program. IISG is a partner in this project.

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

Non-Profit Organization
U.S. Postage Paid
Permit No. 75
Champaign, IL 61820