



G.L.A.H. News

Great Lakes Aquatic Habitat

GREAT LAKES: CONNECTING COMMUNITIES

STORMWATER, FROM RUNOFF TO RENEWAL EDITION 2006
VOLUME 14 ISSUE 2

IN THIS ISSUE: STORMWATER

Collective Success	2
The State of Stormwater (Great Lakes Basin - U.S. Side)	3
The State of Stormwater (Great Lakes Basin - Ontario Side) ...	4
A Perfect Storm	5 (Lake Ontario)
Sewage in Lake Erie	6 (Lake Erie - U.S. Side)
Welcome New Lake Advisor!	7 (Lake Erie - Ontario Side)
Innovative Farmers	8 (Lake Huron - U.S. Side)
Welcome New Lake Advisor!	9 (Lake Huron - Ontario Side)
Multi-faceted Management	10 (Lake Michigan)
Stormwater (Rain) Gardens	11 (Lake Superior)
Stormwater Resources	12, 13
Calendar	14
Thank You	15
Grassroots Symposium - Save the Date!	16



Basset Creek riparian buffers, photo courtesy of Patricia Pennell.

FROM RUNOFF TO RENEWAL: HOW LOW-IMPACT DEVELOPMENT CAN REDUCE STORMWATER RUNOFF AND PROTECT WATER QUALITY

What is stormwater?

The water that flows down rooftops, sidewalks, parking lots and streets after rains and during spring runoff.

Where is stormwater a problem?

When rain and snow fall to the ground in undeveloped, vegetated areas, the water percolates through the soil and is taken up by plants. What isn't used by the plants saturates the soil; this is the natural system that eventually helps recharge our groundwater supplies. However, in areas where we have covered the ground with buildings and parking lots and removed plants, stormwater cannot enter the soil and therefore has to "runoff" into a storm drain or nearby water body.

Rain is natural, why does stormwater cause concern?

As it flows across human-made surfaces, water gathers everything from sediment to pesticides and toxic chemicals and

mainlines them into our waterways. In some areas, this runoff also overwhelms outdated sewage infrastructure, spilling raw or partially-treated sewage into waterways and the Great Lakes.

What can we do to protect our lakes, rivers, wetlands and groundwater from stormwater contamination, combined sewer overflows and erosion?

Fortunately, there are easy and affordable solutions communities and individuals can use to reduce runoff from development. Low-impact development (LID), one set of techniques, is at heart a strategy to make the built environment function like the natural environment. It involves low-cost practices as well as site planning and design to take into account on-site, natural features, to maintain an area's pre-development hydrology.

US BASIN

Attention U.S. Great Lakes Advocates:

*Please find
postcards for your
legislators enclosed:
A wonderful opportunity
to protect the Basin from
Aquatic Invasive Species!*

continued on page 2

DIRECTOR'S NOTES

GREAT LAKES STORMWATER



JILL RYAN

This edition of the *Great Lakes Aquatic Habitat News* is dedicated to stormwater issues in the Great Lakes Basin. This is GLAHNF's third year of focusing on

annual themes to highlight issues and tools of interest to grassroots advocates as one way of coordinating our voices for "collective success." Our 2006 theme is *Stormwater: From Runoff to Renewal*.

I hope you will find this newsletter, as well as the other stormwater materials that we will make available this summer, useful in your local river, lake and wetland protection work. Because stormwater is everywhere, this theme probably touches every aspect of aquatic habitat protection in one way or another.

GLAHNF will be partnering with other groups to provide you with stormwater materials that we hope you will find useful in your local work. In addition, we will be publishing a "Stormwater" edition of our annual report of success stories to provide examples of outstanding projects focused on stormwater. We will add these materials to our website, www.glahabitat.org, where you can still find our past theme materials on wetland issues and communications.

Thank you for all of the wonderful work you are doing throughout the Great Lakes Basin. I look forward to hearing your thoughts on this theme and any ideas for future themes.

An empowered movement is one in which individuals have the knowledge, skill, desire, and opportunity to personally succeed in a way that leads to collective success.

Paraphrased from Stephen R. Covey, Principle-centered Leadership.



FROM RUNOFF TO RENEWAL

Some examples of LID practices include:

- fh Vegetated roofs,
- Permeable paving,
- Rain gardens,
- Rain barrels, and
- Soil amendments.

LID also involves site planning and design, such as:

- fh Preserving natural vegetation,
- Clustering development & preserving open space, and
- Designing buildings and roads to minimize impervious surface cover.

How is Low-Impact Development different from traditional development?

While traditional development treats stormwater as a waste product, creating more runoff by removing native vegetation, and covering the natural landscape with concrete, asphalt and buildings that make the ground less able to absorb water and filter pollution, LID utilizes this water as a resource.

What tools can local communities utilize to turn their stormwater into a resource?

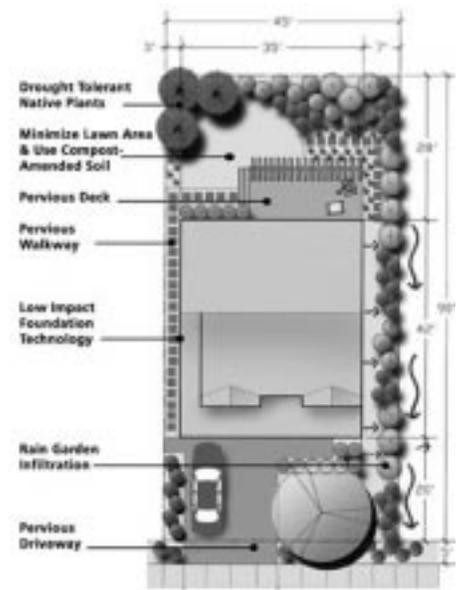
Master plans, zoning ordinances or bylaws, and stormwater ordinances can explicitly endorse and encourage practices such as LID techniques that residents and local leaders find desirable, while revising older parts of ordinances that inhibit effective stormwater management.

The key features of any LID stormwater ordinance should include:

- A standard of no net runoff from new development,
- Flexibility for developers to use a wide range of non-structural LID practices to achieve the standard, and
- Revision of outdated requirements that interfere with LID, such as requirements for excessively wide streets, large setbacks or traditional stormwater infrastructure.



Chicago City Hall rooftop garden, photo courtesy of Conservation Design Forum.



Site design using LID concepts, photo courtesy of Low-Impact Design Inc.



Rain gardens at the East Hills Center of the Universe, photo courtesy of Patricia Pennell.

continued on page 15



Great Lakes Basin Update - U.S. Side

THE STATE OF STORMWATER

By Gary Belan, American Rivers

Looking at stormwater from a national level is difficult, particularly since it is a highly localized issue. Stormwater sources, impacts and management all generally occur at the neighborhood, town and regional levels. However, there are a variety of localized issues that will have a significant national impact on the way that stormwater is managed. The most significant is the state of New Jersey's enactment of the strongest stormwater management plan in the country.

A highlight of New Jersey's management plan is the requirement that all Municipal Separate Storm Sewer Systems (MS4's) obtain permit coverage and establish stormwater management programs. Additionally, all projects must be designed with stormwater management measures so that the post-construction peak runoff rates for two, 10 and 100-year storm events are 50, 75 and 80 percent, respectively, of the pre-construction peak runoff rates. One of the most beneficial and controversial aspects of the plan is the requirement of a 300 foot no-development buffer along 'Category One', or 'pristine', waterways.

The buffer mandate was challenged by the New Jersey Builders Association, but was upheld April 12th, 2006 by the state appeals court on the grounds that the state Department of Environmental Protection has broad legal authority to manage stormwater. Not only is this victory a tremendous success for water quality in New Jersey, but it has national implications as well. New Jersey's stormwater management plan should be seen as a model that can be applied in other states looking to protect their waterways from development. New Jersey's creation of the plan and affirmation of the plan's legality by the state appeals court is an acknowledgement of the link between

traditional development and stream and water quality, and proves that this concept can be promoted and established on a state level.

While New Jersey has implemented possibly the strongest management plan in the country, it shouldn't be lost that other areas around the country are starting to take stormwater, and its links to development, seriously. Portland, Oregon has instituted a very progressive policy to limit sprawl and improve stormwater in the city. Philadelphia, Pennsylvania recently revised their stormwater management, gearing it toward urban development and redevelopment by recognizing site constraints, urban soil properties, and infrastructure conditions.

There have been attempts to implement better stormwater laws, management and funding at a truly national level. Unfortunately, as close as we have come, progressive national stormwater legislation, has yet to make it all the way through Congress. More positively, the U.S. Green Building Council, along with the Congress for the New Urbanism and the Natural Resources Defense Council have come together to develop a national rating system for neighborhood development with a strong emphasis on stormwater. Full implementation and results from these ratings are still a couple of years away.

But despite the seemingly glacial pace things are taking here in Washington D.C., various local and state-wide governments and organizations, like in New Jersey, have worked together to develop their own innovative stormwater plans, and by doing so they are setting examples that are fast becoming national standards.

For more information:
Gary Belan, American Rivers
PH: (202) 347-7550 x 3027
F: (202) 347-9242
E-mail: gbelan@americanrivers.org

GLAHNEWS:

Great Lakes Aquatic Habitat News is published five times a year and distributed by the Tip of the Mitt Watershed Council, a 501 (c)(3) nonprofit organization. Funding for the publication is provided by readers' subscriptions, contributions, and a grant from the C.S. Mott Foundation.

Director: Jill Ryan
Program Associate: Emily Hartz
Administrative Assistant:
Sheila Dodson-Wright

Address correspondence to
Great Lakes Aquatic Habitat News,
c/o

Tip of the Mitt Watershed Council,
426 Bay Street
Petoskey, MI 49770

Phone: (231) 347-1181

Fax: (231) 347-5928

Jill's extension: 106
e-mail: jill@watershedcouncil.org

Emily's extension: 107
e-mail: emily@watershedcouncil.org

Sheila's extension: 104
e-mail: sheila@watershedcouncil.org

Visit us on the web at:
www.glahabitat.org

Disclaimer:

The Great Lakes Aquatic Habitat News is intended to provide a forum for the free exchange of ideas among citizens and organizations working to protect aquatic habitats in the Great Lakes Basin. The interpretations and conclusions presented in this newsletter represent the opinions of the individual authors. They in no way represent the views of the Tip of the Mitt Watershed Council, the C.S. Mott Foundation, subscribers, donors, or any organization mentioned in this publication.

SAVE A TREE



SUBSCRIPTION INFORMATION:

Please e-mail Sheila at sheila@watershedcouncil.org if you have any changes to your contact information. If you wish to receive GLAHNF correspondence electronically, please include your email address and be sure to note "electronic subscription" in the subject of your e-mail.

Great Lakes Basin Update - Ontario Side



THE STATE OF STORMWATER

By Kevin Mercer, RiverSides Stewardship Alliance

Absent the leadership of federal legislation such as the U.S. Clean Water Act, Canada's provinces manage the protection of freshwater ecosystems. In Ontario, home to the entire Great Lakes Region in Canada, the new Liberal provincial government is delivering an extensive legislative agenda on: drinking water (Clean Water Act, Bill 43, Province of Ontario.), farm nutrient runoff (Nutrient Management Act, 2002, Ontario Regulation 267/03, Amended to O.Reg. 511/05), managing development in areas north of Toronto on the Oak Ridges Moraine (Greenbelt Act, 2005, S.o. 2005, chapter 1), and throughout the Greater Toronto Area (Places to Grow Act, 2005.). Despite this gamut of action, stormwater remains the poor cousin in Ontario's environmental galaxy with no effective standardized regulatory structure to guide the implementation or enforcement of stormwater management or to address the issue of nonpoint (runoff) pollution associated with stormwater flows.

In Ontario, stormwater management is guided by voluntary management plans such as the Stormwater Management Planning and Design Manual (2003) or the Stormwater Pollution Prevention Handbook. Although Ontario's Planning Act refers to requirements for stormwater management there are no requirements for its design or the end results. This means that stormwater management in Ontario becomes a routine process of developers building almost exclusively end-of-pipe control ponds.

However, it is not for a lack of knowledge that Ontario remains mired in the past in terms of stormwater management.



Rain barrel,
photo courtesy of RiverSides.

The Great Lakes Cities Initiative has identified stormwater runoff and sewer overflows as the first of the six key priorities for municipalities, and yet even the most advanced Ontario municipalities limit their wet weather management to ponds because there is no requirement for more stringent watershed protection criteria.

It is necessary for watershed protection advocates to ensure that the advancement of Low Impact Development (LID) becomes a primary element of all development, beyond just smart growth and what are being termed 'green development standards.'



Finch Avenue blow-out during the August 19, 2005 storm that rolled through Toronto wreaking havoc. Photo Courtesy of RiverSides.

Ontario grassroots groups have an opportunity through good LID to engage their municipalities and the provincial governments to demand standards for lot level measures for true ecosystem management of wet weather. Some municipalities are moving ahead on this front but there remains a limited sphere of knowledge and capacity in the field due to the lack of regulatory requirements.

Connected to the advancement of watershed smart growth through low impact development is the emergence of stormwater utilities in the province. These spin-off utilities allow for the management and financing of stormwater to be hived off from the municipal water rate, which heretofore covered water, sewer and stormwater but had the effect of limiting spending on the latter to a minimum, usually through the support of local Conservation Authorities. Stormwater utilities allow jurisdictions to allot funding on a more dedicated level, and to off load their costs from tax roles or water rates, thus addressing the growing need for stormwater management without the associated political costs.

As more Ontario municipalities move toward wet weather policies and explore the benefits of stormwater utilities, it is hoped that we will be able to close the policy gap at the provincial level by requiring planning authorities to implement lot level LID source protection methodologies. Ontario deserves to have the best development controls over its watersheds and while we applaud the move to source protection of drinking waters, it is well past time that Ontario engaged its municipalities in real stormwater management for the protection of our freshwater ecosystems against the largest source of degradation.

For more information:

Kevin Mercer, RiverSides Stewardship Alliance
511 Richmond St. West, Toronto, Ontario M5V 1Y3
Ph: 416.868.1983 • F: 416.868.1320
E-mail: kmercerc@riversides.org

Lake Ontario Basin Update



A PERFECT STORM

By Krystyn Tully, Lake Ontario Waterkeeper

Every time it rains in downtown Toronto, the harbour turns a distinct shade of murky brown. Same thing in Kingston, Belleville, and Hamilton. It's a tired sight, familiar and repulsive all at once.

Aging sewage overflows are not the only problem, though. Younger cities and suburban areas once considered more pristine than gritty downtown cores are experiencing similar declines in water quality. Pesticides, the contents of swimming pools, discarded household chemicals and other nasty toxins are dumped into our sewer systems with alarming regularity. As a result, Lake Ontario suffers.

Stormwater pollution is a nightmare of an environmental issue for government in Ontario. It affects all levels of government. It costs a lot of money to fix. And there is no single, "bad guy" or culprit to shoulder the blame.

Overlapping jurisdictions makes it easy for all levels of government to pass the buck and to come under fire when they try to be proactive. Many cities in Ontario are passing pesticides by-laws, using the limited power of a municipality to keep toxic chemicals out of our waterways. When they do, a powerful, industry-funded pro-pesticide lobby inevitably challenges their authority. Fortunately, such legal challenges rarely succeed.

The Province of Ontario is responsible for making sure that every person or corporation operating within its borders complies with its environmental laws. The Environmental Protection Act and the Ontario Water Resources Act both state that no one can dump toxins into the water. These laws are most effective in deterring municipalities from operating polluting sewer systems in the first place. They can encourage cities to make sure everything coming out of its pipes is clean, while cities can use by-laws to encourage citizens and corporations to ensure everything going into the pipes is clean.

continued on page 15



*Toronto's Don River after a storm.
Picture by Lake Ontario Waterkeeper*



*Waterkeeper Mark Mattson samples Toronto's stormwater. This pipe had E. coli levels of 900,000 cfu/100 mL of water - 9,000 times the safety limit.
Photo by Lake Ontario Waterkeeper.*

WHAT CAN YOU DO?

Got a problem with contaminated stormwater? Always **document** what you see. Write down the time, the date, what it looks like, how it's contaminated, the source, and if there are people, birds, or fish in the area. Then **tell someone**. Too often we forget to report stormwater because it seems so routine. Anywhere in Ontario, you can call 1-866-MOE-TIPS to report pollution. When you do, you start creating an official record of the problem. Also, publish it on your web site and notify your local councillor. If it's an ongoing problem or a real threat to the environment, file an **Application for Investigation** with the Environment Commissioner of Ontario

and ask the Ministry of Environment. If it's a chronic problem with too many sources to pinpoint, maybe you need a new policy or law. You can file an **Application for Review** with the province, or educate your local councillor about the need for a bylaw. And don't forget to **push for funding**. If your organization has a mandate to lobby, it's always good to remind government about the need for capital improvements. No one gets elected promising to put more sewers in the ground, unless they have support from the grassroots!

Lake Erie Basin Update - U.S. Side



BILLIONS OF GALLONS OF SEWAGE IN LAKE ERIE: OHIO TRAILS THE GREAT LAKES STATES IN PUBLIC NOTIFICATION 601

By Amy Gomberg, Ohio Public Interest Research Group and Ohio PIRG Education Fund

Ohioans deserve clean water that is safe for fishing, boating and swimming. Unfortunately, billions of gallons of untreated sewage are being dumped into Ohio's waterways, including Lake Erie, every year.

And the worst part is, Ohioans are being kept in the dark. While states like Indiana and Michigan have engaged in statewide efforts to educate the public about sewage contamination, Ohio has not.

More than 2 Billion Toilets Flush into Lake Erie

With the support of the George Gund Foundation, the Cleveland Foundation, and the Healing Our Waters Coalition, Ohio PIRG researched the extent of the sewage dumping problem in Ohio's Lake Erie Watershed Basin. The report "Sewage Overflow: Billions of gallons of Sewage contaminate Lake Erie" reveals that during 2004, Lake Erie and its tributaries were flooded with more than 8.9 billion gallons of untreated sewage.

"This is equivalent to more than 2 billion toilets flushing into Lake Erie's waterways," stated Erin Bowser, the Ohio Public Interest Research Group's State Director. "And there are many more billions of gallons of inadequately treated sewage being dumped into our waterways in Columbus, Cincinnati, and throughout the state."

Untreated sewage contains disease-causing pathogens including E. coli, Hepatitis A, and Giardia. Sewage overflows are a major source of beach advisories, wildlife destruction, and human health problems, and are a likely contributor to Lake Erie's dead zones.

In a recent study done by the United States Geological Survey many pathogens, including Hepatitis A, were discovered in the Cuyahoga River. The study traced many of the viruses and bacteria to discharges from the Akron, Ohio wastewater treatment utility. These pathogens can cause dangerous gastrointestinal diseases, and in some cases can even lead to death. Anyone who comes into contact with water that is contaminated with sewage is putting their health at risk. The Ohio Department of Health advises that anyone who swims in Lake Erie should wait at least 24 hours after a heavy rainfall before swimming, keep their head and face out of the water, not swallow the water, and shower after swimming.



A sewage overflow warning sign on the Scioto River in Columbus, Ohio



Any moderate to heavy rain storms lead to the dumping of untreated sewage into our waterways from pipes like this one on Ohio's Scioto River.

Ohioans Deserve the Right to Know

The Clean Water Act calls on states to develop a notification system to alert the public when untreated sewage enters our waterways. Unfortunately, Ohio does not require sewage treatment facilities to report to the Ohio Environmental Protection Agency or to the public when they are dumping sewage into the waterways.

"Compared to the other Great Lakes states, Ohio comes in dead last" comments Bowser on sewage dumping public notification systems. "Sewage dumping is an underground problem in Ohio, and we are in desperate need of a statewide system to keep track of the problem and warn the public when their health is at risk."

Representative Oelslager of Canton and Ohio PIRG have worked together to build momentum in the Ohio legislature to protect the health of Ohioans from sewage pollution. Using legislation from Michigan and Indiana, and with the input from other statewide and national organizations including Friends of the Crooked River, the Sierra Club, American Rivers, National Resources Defense Council, PIRG in Michigan, and Ohio PIRG developed legislation that will:

- Protect the health of Ohioans from sewage pollution,
- Notify the public, the Department of Health, the Ohio Environmental Protection Agency, and the media, when untreated sewage is dumped into our waterways, and
- Require the Ohio Environmental Protection Agency to record and track when utilities are dumping untreated sewage into our waterways.

Ohioans deserve clean water, and the right to know when our waterways have been polluted with untreated sewage. Ohio should follow the lead of states like Indiana and Michigan and pass sewage pollution public notification legislation.

For more information:

Amy Gomberg, Environmental Associate

Ohio Public Interest Research Group and Ohio PIRG Education Fund

36 W. Gay St. Suite 315, Columbus, OH 43215

PH: (614) 460-8732

E-mail: agomberg@ohiopirg.org • Website: www.ohiopirg.org

Lake Erie Basin Update - Ontario Side



GLAHNF WELCOMES NEW LAKE ADVISOR: NIAGARA RESTORATION COUNCIL

By Patti Green, Niagara Restoration Council

The Niagara Restoration Council (NRC) is a non-profit organization that works towards the restoration and long-term sustainability of the environment in the Niagara Region. The official mandate of the Niagara Restoration Council is: "to protect, maintain, and actively restore the ecosystems of Niagara." While working towards this endeavour, we like to have fun and promote a sense of community!

The membership of the NRC is drawn from many sectors of the Niagara community, and includes representatives from municipal and regional governments, industry, academia, environmental interest groups and concerned citizens.

The Niagara Restoration Council was originally created in January of 1989 as a Public Advisory Committee (PAC) to address concerns outlined within the Niagara River and its watershed, designated an Area of Concern by several levels of government. Several of the environmental concerns outlined for this area included degraded water quality, presence of flow barriers, lack of riparian vegetation, and low levels of naturally forested and wetland area.

The Niagara Restoration Council is committed to the development and implementation of restoration, naturalization, and reforestation projects. Several of the NRC's current projects include the Building Stream Buffers for Niagara's Rivers Project, the Niagara River Area of Concern Fish Barrier Project and the most recent Wildlife Corridor Enhancement Project.

The Buffer Project (that was discussed in last month's issue of GLAHNews, Vol. 14 Issue 1) has included the planting of thousands of native shrubs and wildflowers in "no-mow" stream buffers for public parks and golf courses in the Niagara River Watershed. These planting projects have proved very successful ecologically, aesthetically, and socially. The buffer strips aim to increase water quality and restore wildlife habitat to Niagara's watercourses, while providing excellent opportunity for involvement with landowners, school groups, and the general public.

The Niagara Restoration Council's Fish Barrier Removal Project has remediated several barriers to fish migration through their removal and restoration. These impediments have included man-made and natural barriers such as culverts, dams, weirs, crossings, and logjams, which can restrict fish migration, and impede the transportation of sediments, nutrients, and the flow of water. To date, 136 barriers, of 208 originally surveyed, have been remediated.

The NRC's most recent project, the Wildlife Corridor Enhancement Project initiated in 2005, aims to increase natural wildlife habitat in the Fifteen, Sixteen and Eighteen Mile Creek sub-watersheds. The planting of at least 50,000 native trees will increase interior forest area and establish corridors linking forest fragments.

For more information:

Patti Green, Niagara Restoration Council

250 Thorold Rd. W. 3rd Floor • Welland, ONT L3C 3W2

PH: (905) 788-0248 • niagararestoration@beco.org



Fish barrier remediation with by-pass channel, photo courtesy of NRC.



Map of the Niagara River Area of Concern, courtesy of NRC.



Bank stabilization with volunteers, photo courtesy of NRC.

Lake Huron Basin Update - U.S. Side



INNOVATIVE APPROACHES TO ADDRESSING STORMWATER POLLUTION IN THE SAGINAW BAY WATERSHED

By Karol Smith, Michigan Department of Environmental Quality

The U.S. Environmental Protection Agency estimates that some 70% of all water pollution stems from stormwater runoff. For the Saginaw Bay watershed, which drains part or all of some 22 counties, stormwater runoff from agricultural fields is a major concern for the health of area waterways and the bay itself. The following story, reprinted by permission from the U.S. EPA website, describes one group of farmers working to change all that.

The Innovative Farmers of Michigan is a group of agricultural producers, supported by more than 60 partners representing the agricultural industry, lenders, equipment companies, commodity groups, and federal, state, and local agencies. The group's two primary objectives are reducing the amount of sediment entering the Saginaw Bay and altering farming practices to reduce nutrient and pesticide runoff while retaining profitability for the farmer. "All my fields drain to large ditches, to larger ditches, and eventually to Saginaw Bay," says Pat Sheridan of Tuscola Innovative Farmers, "and I don't want my soil in the bay."

In 1996 the Michigan State University Extension in Huron County received a section 319 grant of \$71,863 for a 3-year Innovative Farmers project. The Innovative Farmers aimed to reduce soil erosion, improve soil health, and increase family farm income by using reduced tillage, cover crops, and a totally integrated system.

Confronting Traditional Farming Practices

Before the Innovative Farmers, reduced-tillage corn and soybean cropping systems had been successfully used throughout the Midwest. Michigan farmers, however, were reluctant to use high-residue cropping systems for beans and sugar beets because such high-value crops would still make fall-spring tillage profitable. In addition, many farmers in the area assumed that it wasn't possible to warm the soil in the spring, prepare a good seed bed in heavier soils, and achieve adequate weed control without tilling in the fall and the following spring.

The key to the Innovative Farmers' success was that rather than relying on research and information provided by other sources, the group designed and conducted the studies themselves. In one of the first studies undertaken by the group, 14 producers collected 127 water samples from their tile outlets. Concentrations and flow rates were used to determine the extent of nutrients and the associated dollar loss from their fields. This activity helped producers better understand the nutrient and soil interactions, as well as the impacts on water quality.



The emergence of dry beans is enhanced by using a spoke closing wheel on the planter.



Crop residue forms a protective layer on the field that prevents soil from washing away during rainstorms.

Valuable Findings

Studies conducted by the Innovative Farmers yielded many valuable findings for area farmers. Conservation tillage did not reduce yields of sugar beets, corn, and dry beans when compared to conventional tillage. In fact, corn yields significantly increased at one of the demonstration sites. Farmers also learned that the soil's capacity to supply nitrogen to a growing crop increases with conservation tillage. Although phosphorus applications ceased for 6 years, the soil fertility levels did not decrease.

At the end of the project, the water holding capacity and water infiltration rates were also higher for the limited-tillage sites. Conservation tillage reduced the potential for soil erosion from water by up to 70 percent and from wind by up to 60 percent, as compared to conventional tillage.

These results are making a difference. Several farmers in the area have converted their operations to zone till in the past 2 years. (In zone till, only a small area is tilled at planting. The result is a conventional seedbed in the

immediate seed zone while the rest of the field remains untilled and covered with residue to promote soil conservation.) Innovative Farmers members also report the increasing use of the chisel tillage system and cover crops by their neighbors. As these systems are used on a wider scale, others will adopt them as they see the success of fellow farmers. That is just what the Innovative Farmers hoped to accomplish.

For more information:

*Karol Smith, Michigan DEQ, ESSD-RLOCS
Constitution Hall, 3rd Floor South
P.O. Box 30457, Lansing, MI 48909-7957*

Lake Huron Basin Update - Ontario Side



GLAHNF WELCOMES NEW LAKE ADVISOR: LAKE HURON CENTRE FOR COASTAL CONSERVATION

By Geoff Peach, Lake Huron Centre for Coastal Conservation



Assuming the role of Lake Huron Advisor for the Ontario side of the lake, it seemed appropriate to introduce myself, and my organization. While I have been involved in coastal conservation work along Lake Huron for the past twenty years or so, my roots along Lake Huron go back over twice that long, having a family cottage at Point Clark. My formative years were spent taking in the splendor, and temperament of our lake. I began working professionally about the time that Lake Huron was experiencing its highest water levels on record. Working for local conservation authorities, my involvement and interest in working at the grassroots level was established. It was clear though, that existing organizations in the region had environmental priorities that did not include Lake Huron, or if they did, it was localized to a segment of the coast. To my friend and colleague, Patrick Donnelly, and I, this was an impediment to the effective conservation and environmental protection of Lake Huron, but also an opportunity to fill a void. In 1998, we co-founded the Lake Huron Centre for Coastal Conservation.

The "Coastal Centre" is a small grassroots, non-governmental organization dedicated to the conservation and wise stewardship of Lake Huron's coastal ecosystems. The Centre was registered as a charity in Ontario in 1998. The organization has been governed since its inception by a dedicated, and talented, volunteer Board of Directors, aided by an expert Board of Technical Advisors, and supported by a professional staff.

Its mission is to "provide leadership and expertise, in collaboration with partners, to achieve a healthy Lake Huron coastal ecosystem." While much of our work has focused on the southern coast of Lake Huron, between Sarnia and Tobermory, we have extended in recent years to include Manitoulin Island and southern Georgian Bay.

The Centre's environmental priorities are focused in four areas:

1. water quality (particularly nearshore water quality),
2. biodiversity,
3. coastal processes (including dunes, coastal wetlands, erosion processes and lake levels) and,
4. climate change.

These priorities were established through a citizen consultation process when we developed our Strategic Plan. Our primary approach to addressing these priorities was through communication and networking, research, education and outreach. We work most frequently with local grassroots organizations and municipalities with locally specific issues that require practical solutions. We also work at a regional level, which requires a broad lake-wide perspective. Our involvement in several provincial and national committees, which include discussions on the state of

Lake Huron's nearshore waters, Species at Risk, dune conservation and climate change, helps to bring local priorities to the table, and conversely, bring a more global perspective to local initiatives.

To give you an idea of the type of work we've been involved with in the recent past, we have:

- undertaken research on the state of nearshore water quality along the lakeshore;
- studied the impacts of climate change on local coastal communities;
- developed beach and dune management plans for local communities;
- implemented stewardship initiatives aimed at protecting dune systems;
- developed "Coast Watchers" volunteer monitoring program;
- developed education curriculum resource materials on "Beach and Dune Ecosystems" and "the Great Lakes and Climate Change";
- established a biennial conference on Lake Huron's coastal environment called "Is the Coast Clear?"

Our conservation work was recognized at the 2004 State of the Lakes Ecosystem Conference (SOLEC) where we were honoured with the SOLEC "Success Story" award for exceptional performance and dedication to improving the Great Lakes.

In coming articles I look forward to highlighting some of the great work that many other grassroots organizations have been doing on the Ontario side of Lake Huron.

Geoff Peach, the Lake Huron Centre for Coastal Conservation

P.O. Box 178, Blyth, ONT N0M 1H0

PH: (519) 523-4478 • F: (519) 523-4929

E-mail: geoff.peach@lakehuron.on.ca

Website: www.lakehuron.on.ca



Goderich waterfront - a popular beach, and one of Lake Huron's busiest ports. Photo courtesy of LHCCC.

Lake Michigan Basin Update



STORMWATER SOLUTIONS FOR MILWAUKEE'S RIVERS

By Cheryl Nenn, Milwaukee Riverkeeper

Like many other groups throughout the Great Lakes, Friends of Milwaukee's Rivers (FMR) is grappling with how to best address non-point source pollution on our local waterways – the Milwaukee, Menomonee, and Kinnickinnic River Watersheds, which drain to Lake Michigan. The strategies addressing stormwater pollution must be as diverse as the sources and types of pollutants threatening our waters. To that end, FMR is addressing stormwater through a combination of advocacy, education, and management.

Advocacy for Stronger Regulations: FMR has been reviewing and commenting on both the Statewide proposed General Permits for stormwater [construction, industrial, and municipal separate storm sewer systems (MS4s)] as well as individual permits for MS4s discharging into our waterways. We have also been requesting hearings on individual permits of concern. In response to our comments, as well as comments from several statewide and national groups, the Wisconsin Department of Natural Resources (WDNR) has significantly strengthened their proposed General Permit for MS4s including new provisions that address discharges to waters that are designated "Outstanding and Exceptional" by the state and to impaired waters on the 303(d) list. In addition, better opportunities for public comment have been incorporated. We anticipate that these positive changes will be reflected in all General Permits and Individual Permits for stormwater dischargers in the State and Milwaukee River Basin.

On-the-Ground Education: FMR has run a storm drain marking program for the last 2 years to educate citizens about the connection between storm drains and our waterways – approximately 3,000 drains have been marked in 7 different communities. FMR also regularly presents information to community groups on ways that they can help protect water quality in their own backyards through disconnecting roof downspouts from combined sewer systems, and by installing rain gardens and rain barrels. Reducing residential runoff minimizes negative effects on water quality as well as sewer overflows resulting from insufficient sewer capacity.

Making Changes Through Restoration and Management: In 2004, FMR planted our first rain garden at Tonawanda Elementary School in Elm Grove. This 2,500 square foot garden is adjacent to Underwood Creek, which is one of the flashiest streams in Wisconsin. Students were involved in all aspects of the project, including planning, planting, and creation of informational signage. FMR is also working with the Village of Elm Grove on a demonstration native planting area/rain garden in the Village Park, as well as with the Milwaukee River Basin Partnership on a friendly competition among several local universities to create rain gardens and other storm water solutions on their campuses.



Planting the rain garden at Tonawanda Elementary School, photo courtesy of Friends Milwaukee's Rivers.

*For more information on these projects, please contact:
Cheryl Nenn, Milwaukee Riverkeeper®
Phone: (414) 287-0207 x 29
E-mail: cheryl_nenn@mkeriverkeeper.org.*

MUSKEGON, MI

Reducing Phosphorus in Muskegon County, MI



When the Mona Lake Watershed Council conducted the field inventory for their watershed management plan in Muskegon County, MI, it quickly became evident that many riparian landowners were using the creeks as dump sites for their fall leaves and summer grass clippings. The Council began an educational campaign aimed at residents, explaining the results of their behavior; storm water runoff carries a slug of decaying material into the creek, adding nutrients and organic matter to the system, and depleting the dissolved oxygen needed by invertebrates and fish.

In addition, the Council approached local cities and townships about passing an ordinance that would ban the sale and use of fertilizers that contain phosphorus. Surprised by the overwhelming support, the Council has been encouraged to aim for a county-wide ban. The Council is moving forward with efforts to do just that. Less fertilizer will mean fewer grass clippings and less nutrient runoff; we all win!

For more information:
Annoesjka Steinman, Mona Lake Watershed Council Director
Ph. 231-830-1600
E-mail: monalakewatershedcouncil@earthlink.net.

Lake Superior Basin Update



BAYFRONT STORMWATER (RAIN) GARDEN IN DULUTH

By Jill Jacoby, Sweetwater Alliance



Duluth, Minnesota is a city on a hill. At the bottom of the hill is the largest freshwater lake in the world, Lake Superior. When the snow melts, or the rains come, stormwater flows down the hill and brings with it a host of pollutants including road salt, bacteria, heavy metals and sediment. Sweetwater Alliance has been working

on a project that brings together ecological restoration, art, and water education. The project is called the Bayfront Stormwater Garden, and its goal is to educate the public about the value of wetlands in holding and cleansing stormwater.

In 1995 I had the opportunity to participate in a project that brought an international group of artists and scientists together in Chengdu, China. From these collaborations came the development of a seven-acre park that cleanses polluted water from the Fu Nan River. The City of Chengdu had made the restoration of the Fu Nan River a priority and understood an ecologically designed park that improved water quality and educated the public worked hand-in-hand with their restoration goals.

In spite of the fact that we have the largest freshwater lake in the world at our doorstep, residents and tourists alike need to be educated about water quality concerns. In 1996 I attended a public meeting in Duluth that focused on stormwater and a proposed stormwater utility fee. I was surprised to hear citizens arguing against this fee; it was then that I thought about replicating Chengdu's Living Water Garden in Duluth. The project would provide a visible way to teach residents about the problems of stormwater and the values and functions of wetlands in stormwater management. The land I had in mind was a vacant lot and Brownfield on Duluth's waterfront, between downtown and Canal Park. Today the land sits next to the Great Lakes Aquarium and along side the Bayfront Festival Park – in the heart of our tourist district.

However, being waterfront property, there are other land and water uses being considered for the area. The property is owned by the Duluth Economic Development Authority (DEDA), and is mandated by Minnesota State statute, that the land be used for economic development. The definition of economic development varies depending on whom you talk with! The City Attorney's office has taken a narrow view, whereas some City Councilors (who make up the DEDA Commission) have taken a broader view.

Sweetwater Alliance has partnered with Patricia Johanson (www.patriciajohanson.com) and Barr Engineering to create the design for the project. Patricia has designed many fantastic projects including Fair Park Lagoon in Dallas and the San Francisco Endangered Garden. Her works restore habitat for flora, fauna, and humans. Our design process has included an all day

design charette with artists and environmentalists as well as discussions with many interested groups and individuals. We are creating two designs, one for a half-acre that has been approved by the Duluth City Council, and one for a two-acre parcel – both at the same location on the Bayfront (see map).

This fall we will bring the designs to the Duluth City Council and ask them to provide more land for the project and to approve the design. The two-acre site is ideal, providing a way to draw stormwater directly from a stormwater pipe, as well as a way to return clean water back to the St. Louis River. When we return to the Council Chambers, it will be nearly ten years since I first had the idea to create a Stormwater Garden in Duluth. Provided the Council approves the project, we will then begin fundraising for the construction of the project.

*To learn more please visit www.sweetwateralliance.org.
To participate in the City Council meeting please
e-mail info@sweetwateralliance.org.*



*Duluth waterfront - aerial of prospective stormwater gardens.
Photo courtesy of Sweetwater Alliance.*



An ideal spot for a stormwater garden! Photo courtesy of SA.

Resources: Stormwater Publications



“Catching the Rain: a Great Lakes Resource Guide for Natural Stormwater Management”

by American Rivers

A comprehensive guide with color photos, diagrams, extensive resources and case studies. This resource includes sections on: impervious and conventional Stormwater management, municipal stormwater requirements, managing stormwater with nature, natural stormwater management techniques, and stormwater resources.

<http://amr.convio.net/site/DocServer/CatchingTheRain.pdf?docID=163>

“The Clean Water Act Owner’s Manual”

by Gayle Killam, River Network

This comprehensive manual includes advice about how to use the Clean Water Act to solve real-world problems, and contains expanded information on Antidegradation, stormwater permits, TMDLs and more. The “Owner’s Manual” explains crucial sections of the Clean Water Act, points out how to get involved in regulatory decisions, and tells local stories of others who’ve done so. References, websites and other resources have been updated. This manual continues to turn legalese and scientific terminology into language you can use. For more information or to order your copy (40\$ for non-members)

Visit: <http://rivernetwork.org/marketplace/cwa.cfm>.

“Pave It... Or Save It? Volume I: The Environmental, Economic, and Social Impacts of Sprawl”

by Riverkeeper

This report discusses the environmental, economic, and social impacts of sprawl, with an aim to educate citizens and public officials about sprawl and to give them the ammunition necessary to fight sprawl projects in their communities. The report is written in a fact-sheet style, buttressed by numerous legal and scientific citations. The fact sheets, which can be used individually or collectively, cover topics such as sprawl’s impact on wetlands, air quality, taxes, race, and transportation.

http://riverkeeper.org/campaign.php/watershed/we_are_doing/1058

“Stormwater Management & Polluted Runoff”

by Tip of the Mitt Watershed Council

This brochure provides water quality stewardship tips for residents and businesses.

To order a print copy visit:

<http://www.watershedcouncil.org/pub.html>

“Stormwater Strategies: Community Responses to Runoff Pollution” CD-ROM

A project of the Natural Resources Defense Council, Stormwater Strategies documents the most effective strategies employed by communities around the country to control urban runoff pollution. CD-ROM includes: case studies on urban runoff management and low-impact-design, contacts, web links, and stormwater resources.

For more information: <http://www.nrdc.org/water/pollution/storm/stoinx.asp> or (212) 727-2700 or nrdcinfo@nrdc.org

“Waterways at Risk: How Low-Impact Development Can Reduce Runoff Pollution in Michigan”

by Public Interest Research Group in

Michigan’s Education Fund and American Rivers

This recent publication includes the following sections: “Restoring the Great Lakes through Local Government,” “Sprawling Development is Polluting MI’s Water,” “MI Watersheds at Risk from Contaminated Runoff,” “Low-Impact Development and Smart Growth Can Prevent Water Pollution,” and “Local Governments Should Promote Low-Impact Development and Smart Growth.”

For more information or to download the full report, please visit: <http://www.pirgim.org/>.

***For more stormwater resources,
please visit www.glhabitat.org.***

Resources: Stormwater Websites



Great Lakes Aquatic Habitat Network and Fund Project Summaries Available Online

All GLAHNF grant recipients including project summaries and contact information are available on-line; the database of past grants is searchable by keyword, state etc. One can find similar projects, groups nearby and more.

Visit www.glahabitat.org
(under "grants program", choose "grant recipients")

Imperviousness - Stormwater Systems Toolkit

A project of American Rivers, this electronic toolkit includes federal regulations/laws, stormwater solutions and Stormwater reference materials.

[http://www.americanrivers.org/site/PageServer?
pagename=AMR_content_39bf](http://www.americanrivers.org/site/PageServer?pagename=AMR_content_39bf)

International Stormwater Best Management Practices (BMPs) Database

This site features technical documents, software and a database to provide scientifically sound information to improve the design, selection and performance of BMPs.

<http://www.bmpdatabase.org/>

An Internet Guide to Financing Stormwater Management

A project of the Center for Urban Policy and the Environment at Indiana University-Purdue University Indianapolis (IUPUI), in cooperation with the Watershed Management Institute, Inc, this Guide is designed to help communities find ways to pay for stormwater management projects.

<http://stormwaterfinance.urbancenter.iupui.edu/>

Low Impact Development (LID): Urban Design Tools for Stormwater

A project of the Low Impact Design Center, Inc., this site seeks to provide guidance to local governments, planners, and engineers for developing, administering, and incorporating low impact development techniques into their aquatic resource protection programs. **The Urban Design Tools Site features a comprehensive Interactive Design page that addresses just about everything you might need to design LID solutions on virtually any scale.*

<http://www.lid-stormwater.net/>

Southeast Michigan Phase II Stormwater Information Clearinghouse: Meeting the Federal Regulations

A project of the Clinton River Watershed Council, goal is to provide communities and other interested parties with a central clearinghouse for information about the stormwater regulations. This site includes sections on: Communities Needing a Permit, Permit Overview, Permit Requirements, Regulations, Permits & Applications, Watershed-Based Guidance & Example Materials, Costs & Funding Opportunities, and Additional Web Resources.

<http://www.crowc.org/programs/phase2/phase2home.html>

National Low Impact Development Clearinghouse

A project of the Low-Impact Design Center Inc., this site seeks to share information and stormwater LID success stories. Projects are grouped into four (4) major program areas: Ordinances, Technical Guidance, Demonstration of Effectiveness, and Outreach and Education. Clearinghouse content associated with each of these areas also includes background information, technical discussions, literature references, and identification of additional resources.

<http://www.lid-stormwater.net/clearinghouse/>

Non-point Education for Municipal Officials (NEMO)

This site is a University of Connecticut educational program for land use decision makers that addresses the relationship of land use to natural resource protection. This site provides information and technical assistance, publications, and slide shows on land use and water quality topics, with an emphasis on protecting water quality by reducing non-point source pollution, stormwater runoff and impervious surface.

<http://nemo.uconn.edu/index.htm>

Stormwater Tool-kit: A Community Guide to Construction Site Runoff Prevention

Stormwater regulations are relevant before, during and after the construction process. This on-line toolkit includes the following sections: overview of the permit process for big-boxes, construction and post construction requirements, "how can I use this information, (pre-construction, during construction, post-construction)," and "what can I do if I find a violation?"

Visit the Stormwater Tool-kit:

[http://www.midwestadvocates.org/
advocacy/Sustaining%20Communities/toolkit.htm](http://www.midwestadvocates.org/advocacy/Sustaining%20Communities/toolkit.htm)

Stormwater Managers Resource Center

This site offers a watershed protection library; stormwater slideshows, a "manual builder" an "ordinance selector" monitoring & assessment tools, program resources, examples of real-life stormwater manuals and assorted fact sheets. The Stormwater Manager's Resource Center is designed specifically for stormwater practitioners, local government officials and others that need technical assistance on stormwater management issues.

<http://www.stormwatercenter.net/>

Center for Watershed Protection's Stormwater Management Webpage

With annotated list of Stormwater resources, including various other state's Best Management Practices Manuals and Models.

http://www.cwp.org/stormwater_mgt.htm

From Runoff to Renewal

Public Interest Research Group in Michigan (PIRGIM) has developed a toolkit, including a fact sheet, media packet and model ordinance, for groups to promote low impact development (LID) in their communities.

The entire toolkit is available online:
<http://pirgim.org/MI.asp?id2=21282&id3=MI>

Calendar



MAY

Water Walker Film Festival

May 20, 2006, 5 pm, Laacke and Joys Store, Milwaukee, WI
Exciting collection of amateur and professional films from around the world. All proceeds to benefit Friends of Milwaukee's Rivers.
For more information: www.laackeandjoys.com.

Wisconsin Wild Rivers 40th Anniversary Celebration

May 20, 2006, 11am – 3pm, Wild Rivers Interpretive Center in Florence, WI
For more information: www.wisconsinrivers.org

Chronicling Wisconsin Wetlands: Discovering Inspiration, Refuge and Renewal, May 25, 7-9pm, Madison Central Library, Madison, WI

Workshop will include a presentation, nature journaling and book signing by author Laurie Lawlor. Free and open to the public, for more information: Wisconsin Wetlands Association, (608) 250-9971/ <http://www.wiscwetlands.org/>.

JUNE

Great Lakes United 24th Annual Meeting

June 9-11, 2006, Madonna University, Detroit, MI
"Time to Review" Your opportunity to learn, participate, comment and be heard on the Great Lakes Water Quality Agreement review.

2006 Annual Ontario Nature General Meeting and Conference: Greenways & Waterways, June 2-4, 2006, Kitchener, ONT

Join us in Kitchener for exciting field trips, informative programs and innovative ideas. Ontario Nature (Formally the Federation of Ontario Naturalists) and our hosts the Kitchener- Waterloo Field Naturalists invite you to our 75th Annual General Meeting and Conference. The conference website will be updated throughout the year. Registration will begin in the spring of 2006. We can't wait to see you there!
For more information, please contact Jennifer Baker: jenniferb@ontarionature.org.

Aquatic Invasive Species Awareness Week, June 3-11, 2006, Michigan
Aquatic Invasive Species Awareness Week is an opportunity to learn about aquatic invasive species, their impacts on Michigan waters, as well as what you can do to prevent their introduction and spread in your local area and throughout the state.
Visit <http://www.michigan.gov/deq/> for more information.

Celebrate the Dog! Yellow Dog Watershed Preserve 11th Annual Meeting

June 24 and 25, 2006, 2pm at Mike and Mary's on the River
For more information: www.yellowdogwatershed.org

JULY

"Is the Coast Clear?" Changing Course: Choosing a Sustainable Direction for Lake Huron, July 21, 2006, 9:30-4pm, Oakwood Resort & Conference Centre, Grand Bend, ONT

This 4th Conference on Lake Huron's Coastal Environment is designed for cottagers, farmers, municipal staff, Councilors, public agencies, industry, environmental NGO's and anyone else interested in the future of Lake Huron's environment.
For more information, please visit: www.lakehuron.on.ca, or call (519)523-4478 or e-mail: coastalcentre@lakehuron.on.ca.

AUGUST

Northwoods Wetlands and Poetry Trip August 1-4, 2006

Join Mary Linton and Todd Davis for four days of camping, hiking, wetland discovery and poetry writing in Northern Wisconsin (exact location to be determined). No experience necessary; \$300 registration fee.
For more details call Wisconsin Wetlands Association, (608) 250-9971.

Wetlands 2006 Symposium, August 28-31, 2006, Traverse City, Michigan

An international symposium providing a forum for presentations and discussion on the scientific, legal and management tools relevant to sustaining and restoring wetlands and watershed functions. The symposium will include presentations, posters and discussion on activities in the Great Lakes area as well as projects describing lessons learned from other parts of the United States and Canada.

For more information please visit: <http://www.aswm.org/calendar/wetlands2006/wetlands2006.htm>

SEPTEMBER

Adopt-a-beach Fall Clean-up

September 16, 2006, Illinois, Indiana, Michigan, Wisconsin
A project of the Alliance for the Great Lakes (formerly the Lake Michigan Federation).
For more information: www.greatlakes.org/adoptabeach@greatlakes.org

Great Lakes Aquatic Habitat Network and Fund Fall Grant Cycle Deadline, September 30, 2006

Project and Technical Assistance Grants are available to grassroots groups working to protect aquatic habitat in the Great Lakes Basin.
For more information on GLAHNF grant programs, please visit www.glahabitat.org.

OCTOBER

2006 GLAHNF Grassroots Symposium, October 20 and 21, 2006, Algoma University, Sault Ste. Marie, Ontario

We'll be offering organizational development workshops, focus group discussions for each Great Lake, as well as various Stormwater Tools for grassroots advocates. More information including lists of speakers, specific topics and registration forms will be available early this summer.
Stay tuned to GLAHNews and www.glahabitat.org. We hope to see you in October!

Leading From Within

Oct. 19-22, 2006 & Feb. 21-24, 2007, Maumee Bay Conference Center in Oregon, OH
The Institute for Conservation Leadership is pleased to announce the next session of its LEADING FROM WITHIN program. This five-month professional development opportunity includes two 3-day workshops as well as coaching support. Leading From Within is for executive directors, board members, and lead staff of environmental and conservation organizations.
Please contact Peter Lane at 301-270-2900 ext. 5 or visit our website for more information and an application: <http://www.icl.org/programs/fli-leading.php>.

Thank You



We wish to thank our January, February and March Donors...

Lee Deanne, in honor of Glen Dale
Molly Flanagan
Wally Gemignani
Wayne and Peg Hartz
William and Betty Henne
Peggy Hutchison
William and May Legg

Bob and Ginny Lind
Justine Magsig
Amy Monohan, in honor of Jeffrey Potter
Louis Mulé
George Randall
John and Mary Lou Tanton

Firelands Audubon Society
Friends of the Bayfield River
Ohio Environmental Council
National Resources Defense Council
Southeast Environmental Task Force

continued from page 2



FROM RUNOFF TO RENEWAL



Courtesy of Low-Impact Design Inc.

Are stormwater issues isolated to particular areas?

Polluted stormwater is a significant and growing problem throughout the Great Lakes Basin. However, numerous opportunities exist within the developed landscape to control stormwater flows close to the source. Reducing stormwater runoff is simpler and cheaper than building expensive stormwater infrastructure, and more effective at protecting our waterways and the Great Lakes.

Where can resources and information be found?

One resource for groups and individuals looking to promote LID in their community is the Public Interest Research Group in Michigan's (PIRGIM) website, www.pirgim.org, where you can find the report, *Waterways at Risk*, as well as an LID fact sheet, model ordinance and media toolkit. GLAHNF will also be developing additional stormwater tools this summer.

For more stormwater related resources, see pages 12 and 13 of this newsletter.

For more information:

*Abby Rubley, Great Lakes Advocate
Environment Michigan*

*103 E. Liberty St., Ste. 202, Ann Arbor, MI 48104
Ph: (734) 662-9124 • E-mail: arubley@pirgim.org*

continued from page 5



A PERFECT STORM

In the past, Ontario has hesitated to impose water quality standards on cities. When Environment Hamilton brought their city's leaking pipes to the Ministry of Environment's attention, the MOE issued clean up orders ... and then quietly withdrew them some months later. And when Kingston's sewage washed up on a nearby island after a heavy rainstorm, the MOE refused to lay charges or to order the city to ward against future bypasses. The Canadian Environmental Law Association and Waterkeeper have vigorously protested this decision.

Municipalities, too, have problems making lofty laws work in everyday life. Big polluters usually buy their way out of complying with strict municipal by-laws, paying cities to violate the rules with impunity.

While law enforcement has languished, public education efforts have raised awareness of stormwater issues to an all-time high. Effective programs have been implemented by a number of NGO and government organizations all around the lake, encouraging the public to recycle rainwater, keep chemicals out of storm drains, abandon pesticides, and clean up after their pets.

With such broad public support for better stormwater management, it's time to branch out. To solve the stormwater crisis, we need a variety of approaches: a combination of carrots and sticks coming from all directions, reminding government and citizens that stormwater is an urgent problem, a fixable problem, and a legal problem.

That murky brown harbour water is a constant reminder: it doesn't have to be this way. To solve the problem, we need more grassroots organizations, citizens, corporations, and governments focused on a single goal: make it safe to swim, and drink, and fish from Lake Ontario every single day of the year.

For more information:

*Krystyn Tully, Lake Ontario Waterkeeper
245 Queen's Quay West, Toronto, ONT M5J 2K9
PH: (416) 861-1237 • E-mail: krystyn@waterkeeper.ca
Website: www.waterkeeper.ca*

SAVE the Date

3rd Annual
GRASSROOTS SYMPOSIUM

OCTOBER 20 & 21, 2006

This year's event will take place on the beautiful campus of
Algoma University in Sault Ste. Marie, Ontario

OUR THEME: FROM RUNOFF TO RENEWAL

This year's Grassroots Symposium workshops may include:

Organizational sessions: Fundraising, communications, board training, messaging, media work, and more!

Issue Sessions: Lake specific networking, wetlands, stormwater, mining, low-impact development and more!

As always, networking and grassroots sharing will be a prominent part of the weekend.

Woman on Big Bay Boardwalk, photo courtesy
of Wisconsin Department of Natural Resources.

Printed on Recycled Paper



**Great Lakes
Aquatic Habitat
Network & Fund**
Great Lakes Aquatic Habitat News
c/o Tip of the Mitt Watershed Council
426 Bay Street
Petoskey, MI 49770

Address Service Requested

Nonprofit
Organization
U.S. Postage
PAID
Petoskey
PERMIT NO. 108

Chequamegon Bay, Lake Superior, Wisconsin.
Photo courtesy of US Environmental Protection Agency & Karen Rodriguez.