



LET IT RAIN: *from Runoff to Renewal*

Stories of Successful Stormwater Management Projects from the Field

2006/2007 Volume 6

GREAT LAKES AQUATIC HABITAT NETWORK & FUND, INC.

Stories of Successful Projects From the Field is published annually and distributed by Great Lakes Aquatic Habitat Network and Fund, Inc. Funding for the publication is provided by a grant from the C.S. Mott Foundation.

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Stories of Successful Projects From the Field 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 publication represent the opinions of the individual authors. They in no way represent the views of the Great Lakes Aquatic Habitat Network and Fund, Inc., The C.S. Mott Foundation, subscribers, donors, or any organization mentioned in this publication.



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Cover Filmstrip: The rain garden at Ottawa Hills High School, in the Plaster Creek watershed in Grand Rapids. Three young friends play in Bear Creek, Kent county, MI, once unsafe for bodily contact. Calvin College first-year students in Grand Rapids help spread mulch at East Leonard Elementary School. These images kindly provided by Patricia Pennell, Rain Gardens of West Michigan, West Michigan Environmental Action Council, www.raingardens.org.



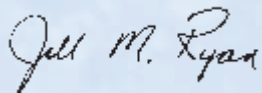
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The Great Lakes Aquatic Habitat Network and Fund builds effective community-based citizen action to protect and restore the water quality of the Great Lakes basin. We work toward this goal by providing financial assistance, communications and networking assistance and technical assistance to citizens and grassroots watershed groups throughout the Great Lakes basin.

The stories in this issue of *Stories of Successful Projects from the Field* focus on community projects led by citizens and grassroots efforts that address stormwater issues such as polluted runoff and flooding. This publication is just one tool in a toolbox of resources on stormwater issues being published as part of the 2006-2007 GLAHNF theme, "Let it Rain: From Runoff to Renewal."

My hope is that these examples provide you with ideas for projects in your own community, inspire you to continue your own good work, and help foster a sense of the larger community of citizens in the Great Lakes region working to protect and restore our precious rivers, lakes and wetlands. The stories are representative of the amazing work accomplished by inspired citizens throughout our region and the more than 500 projects that have been funded in part by GLAHNF since 1996.

These stories told by the citizens, showcase the hard work and persistence it takes to achieve success. I wish to thank these outstanding heroes for all they have done for our greater Great Lakes community and all of the citizen efforts working so diligently who we could not include in this short publication.

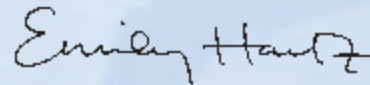


Jill Ryan, Executive Director
Great Lakes Aquatic Habitat Network and Fund

For nearly two years I have had the distinct privilege to work with the Great Lakes Aquatic Habitat Network and Fund. Through GLAHNF I have both gained a deep respect for these truly awesome lakes - and been blessed to know some truly inspiring people, a few of whom you will come to know as well in the stories that follow.

In the past we had focused heavily on the details of the project and the science involved, this year we chose to focus on the true agents of change – the advocates. Not to worry, we've saved the juicy technical details of each story for the web: www.glhabitat.org. We're pleased to share with you the following five stories, one from each Great Lake Basin. Stormwater is our theme; though the challenges addressed vary: a dying lake, stream bank erosion, and big box developments and heavily paved cities polluting local water bodies. And yet, as stormwater is a connecting thread across each of these stories, so, too are the advocates. Using ingenuity, creativity and open-minds, local advocates successfully turn stormwater runoff into a source for renewal in their communities.

With deep respect and appreciation,



Emily Hartz, Editor



FROM
THE STAFF
Success Stories

M a k i n g Allies

*Town officials
like to fish,
they all like
good water
quality. If we can
help them
protect the water
and fish while
they still get
their jobs done,
they are happy
to help.*

Backing Into a Big Culvert Project

By Dorothy Lagerroos

Wash-out

I came home in a heavy mid-summer rain and could hear the little stream near my house roaring. Usually it is a trickle. In the morning, the washed-out road left a gaping chasm—well, OK, a six-foot deep gully—across the dirt road.

“Ooh, cool,” I said, admiring the strength of the water. Wrong, I learned later. All that gravel washed downstream, covering my favorite wild iris patch and some Jacks-in-the-pulpit. It also caused the stream to “braid,” to take several small paths instead of following one main channel. This distributed what little water there was left among several shallow rivulets, making the section completely impassable to fish.

Now fish weren’t on my mind when I admired the strength of the water force, and probably weren’t on the mind of my local road crew as they hurried to get the road back in operation. But fish are on lots of people’s minds in our area, since outdoor recreation is important to locals and tourists alike.

And fish are one reason that some friends and I formed the Bad River Watershed Association (BRWA); someone needed to begin to collect

data in our watershed for which the responsible agencies had very little information. We were joined in this effort by the Ashland Bayfield County League of Women Voters to supplement its efforts in regional planning. The Bad River watershed is located in the Lake Superior basin of northern Wisconsin. It covers 1000 sq miles in parts of Bayfield, Ashland and Iron counties.

Wanted: Fish Friendly Culverts

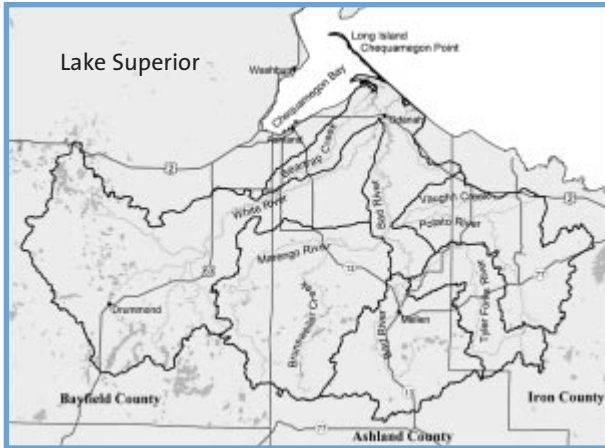
The United States Fish and Wildlife Service (USFWS) was also involved in the formation of BRWA; they have a fish passage program. Fish were certainly on Lee Newman’s mind, a USFWS biologist. Sensing that partnerships would be possible with the new citizens group, he told the BRWA board one evening that he had procured \$30,000 to restore fish passage in three culverts in the watershed. The “match” for this grant, he mumbled, would come from watershed association volunteers who would determine which other culverts needed improvement.

Seemed like a good deal, until we discovered that there are over 1000 culverts in our large, sparsely populated, rural watershed. But we were a newly formed organization in need of more members, and I thought that asking people to check out some road crossings might be a good way to interest folks in the group and to help promote a stewardship ethic. “Sure, we’ll do that,” I said. Another bad call on my part.



LAKE SUPERIOR

Success Stories



Bad River Watershed

How to Make it Happen?

When I sat down to do the planning, I figured, ok, one volunteer could do, say, ten culverts and then we would need, oops, 100 people. I could think of—maybe five. Not only that, but the sheer size of the project meant that it had to be sophisticated. “Kids,” I said to the college students in my class, “I need a computer-sortable list of all 1000+ culverts.” The watershed spreads across three counties, involving seventeen townships and not one of these jurisdictions had a list of culverts. Eventually the students produced a GIS map with each road-stream crossing marked and numbered. This made it possible to give volunteers a map showing

their assigned culverts. It also meant we could store the data in a way that the computer could search for problem sites. The college students also designed the first data collection sheet. The students did this as part of a class in which the students and I serve as a consulting firm assisting some local organization or agency, in this case BRWA.

At this point the project was becoming clearer. We would collect information on culverts, determine those needing work and present the results in a Needs Assessment report. Then we would share this report with town officials, resource agencies and others who worked on roads or streams in the watershed. Together we would figure out which agencies could remediate which culverts, based on resources available. Towns might decide to re-order their maintenance priorities, USFWS could secure fish passage funds, and the watershed association could apply for grants available to citizen groups. This agreement would be a sort of “strategic plan” for culvert remediation in the watershed. Blithely, I wrote grants promising to produce the reports. Little did I know of the problems yet awaiting.

For example, while a fish biologist can just look at a culvert and decide if it is a fish passage problem, volunteers don’t know the swimming abilities of each species, nor what species were likely to be present. They could only measure the drop, the velocity, and so on. How would we turn such numbers into a prioritized list of culverts?



Northland College students, along with watershed volunteers, studied each of over 1,000 culverts in the Bad River Watershed.





The Bad River Watershed Association assists towns in finding funding for culvert replacement to protect water quality. Here, a new culvert is installed in the Town of Ashland.

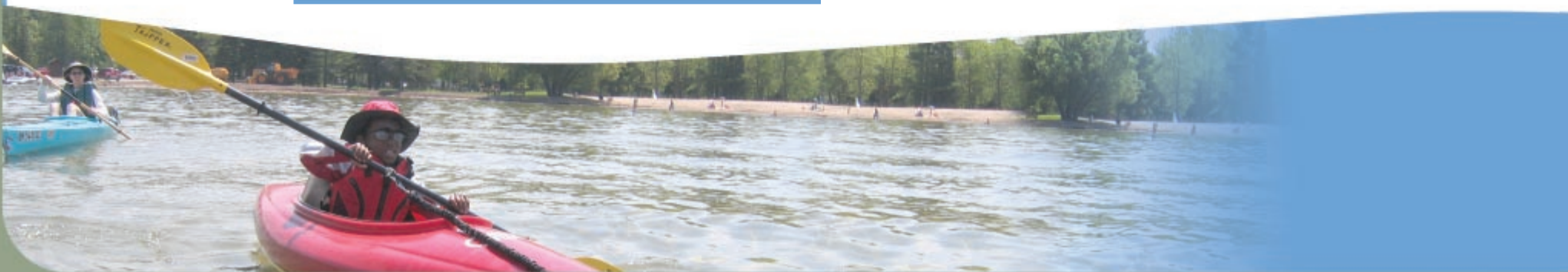


Fortunately, GLAHNF offered funds for technical assistance, but did I need a hydrologist? A statistician? A GIS specialist? Or a fish guy? The answer was Michele Wheeler, all of the above, and a BRWA board member to boot!

Michele organized two technical committees, one of fish experts and one of soil erosion experts. These committees currently advise Michele as she develops a rating system for evaluating crossings. They help her find existing soils and fish data so she can apply the rating system to the range of conditions throughout the watershed. I lined up a class of environmental studies students to write the Needs Assessment and Strategic Plan, based on Michele's research and community input.

Coordinating with Local Officials

As the pieces started coming together, we realized BRWA also needed to gain the confidence of town officials. Watershed folks and bulldozer operators are not the most likely coalition of allies imaginable. We thought we would do this by forming three-person teams from each town to visit board meetings and provide information about the culverts project. But if finding folks to inspect culverts is tricky, finding people to visit local government officials was trickier. We decided to invite the town officials to a brief presentation, and see how it went over. We had the meeting in the Grand View Town Hall. We lured them in with chili and apple pie. About 7 towns were represented and we had about 15 people. In our presentation, we used the words "fish" and "money to help with repairs" a lot. When it came down to it, they all like to fish, they all like good water quality. They don't mean to cause harm, and if we can help them protect the water and fish while they still get their jobs done, they are happy to do it right. They just weren't really aware of the many issues involved. The town chairman there was very supportive of the project, and some of our volunteers are from the town. In the end they made us promise to tell them when we would be investigating in their neighborhoods.



Last winter, the Dean of the College (Northland College, Ashland) suggested I apply for a substantial grant from National Fish and Wildlife Foundation to further the watershed work that my students and I (and the BRWA) were doing. We now have \$75,000 to pay for a training session on proper installation of Fish Friendly culverts and to fund a few replacements. We also can pay a handful of students to finish the data collection, assist with GIS, and shock fish. The NFWF grant also includes some money for 1 or 2 culverts to be replaced. This will help us continue to build our partnerships and show the towns that we really mean to help out. It is still a work in progress. Michele and I will each write and present a professional research paper on the project, which we suspect is fairly unique in its comprehensiveness and broad-based involvement.

As for the coalition with the road crews, we decided we had gained their trust when my own local road boss looked up from the map and said to me, "By the way, Dorothy, your driveway is not fish-friendly. You should really get it fixed."

This just might work out after all! 💧

This story comes from Dorothy Lagerroos, J.D. in Ashland, WI. As one of the founding members of the Bad River Watershed Association, Dorothy now advises the BRWA and is Professor of Environmental Studies at Northland College.

For more information Dorothy may be reached at DLagerroos@northland.edu; or visit the BRWA website (www.badriverwatershed.org).



A Biologist *can*
look at a culvert
and decide
if it is a fish
passage problem,
volunteers don't
know the swimming
abilities of each
species,
nor what species are
likely to be present...

LAKE
SUPERIOR



Advocates Unite

Effective Big-Box Ordinance Highlights:

*Limits on footprint size
(which allows for multi-levels
to increase square footage)*

•

*Limits on amount of impervious
surface (roofs, paved areas)*

•

*Require or encourage
the use of low impact*

development components such as:

Provide incentives for green roofs.

Breaking Down Big-Box: Using Big-Box Ordinances and Stormwater Ordinances to Reduce Runoff from Large Retail Developments

By Brent Denzin

Not only is big-box retail development spreading rapidly throughout the Midwest, so too is innovative stormwater activism. Some advocates are influencing exactly where and how big-box stores are locating by focusing on a relatively new pollutant of concern – stormwater.

When large-scale retail development comes to town, community members fall into two camps: for and against. Those against are concerned about social, economic and environmental impacts such as: threats to existing commercial centers, increasing noise and traffic, loss of a sense of community, loss of open space and farmland, habitat loss, wetland destruction, and increased stormwater pollution. As our communities change, we need tools to minimize the impacts of big-box retail development and keep our communities vibrant. We need to provide for retail establishments that serve the entire community.

MEA is making great strides, finding solutions that accommodate large retail development while helping communities clean our waters by addressing stormwater management. MEA's Sustaining Communities Campaign, launched in September 2005, provides legal, organizing, and educational assistance to help people maximize their role in shaping development in the places they call home. The Big-Box Tool-kit: A Guide to Sustaining Communities, which includes information on Big-Box Ordinances and Construction Site Stormwater, is helping many communities in Wisconsin update their zoning ordinances to address big-box development and stormwater pollution.

While Midwest communities struggle with urban sprawl, federal and state regulators have struggled with how to best regulate and manage the largest threat to Wisconsin waters—STORMWATER. Big-box developments are in a league of their own when it comes to stormwater—all because of the “BIG.” Most big-box stores occupy 20 to 30 acres of former open space, causing 16 times more stormwater, and preventing much needed groundwater infiltration. An average of 607,000 gallons of water will fall on a 25-acre big-box development during a one-inch rainstorm. Most of this stormwater will turn into runoff. With the addition of dirt, oil, grease, and metals added by cars and trucks, big-box developments become major sources of water pollution.



LAKE MICHIGAN Success Stories

Since Chicago's City Hall rooftop garden project, over two million square feet of green roofs have been installed in the city; Chicago, Illinois now leads the nation in green roof acreage. The City Hall green roof was designed by Conservation Design Forum, in Elmhurst, Illinois. Image courtesy of CDF.

Regulating stormwater is complicated and complex. Stormwater must be addressed at the source—at the local level. The EPA and state agencies, like the Wisconsin Department of Natural Resources (DNR), are using Municipal Separate Storm Sewer System (MS4) permits to address long-term stormwater reduction. The permits are given to cities or municipalities and require reducing uncontrolled stormwater. Specifically, one water quality parameter, total suspended solids (TSS), must be reduced by 20% by 2008 and 40% by 2013. One of the pivotal components of the stormwater permit is that it gives the cities the responsibility and flexibility to meet these goals. Though many communities in the Midwest are not yet required by state or federal law to limit stormwater pollution, the pollution itself is still a grave concern. MEA realized the tremendous opportunity to help communities meet their permit requirements and to reduce stormwater pollution with local zoning regulations.

**The lesson learned
from Monona is that with
creativity and dedication,
we too can influence
how our community
grows.**

Monona, Wisconsin: Lessons Learned

In December, 2005 the city of Monona celebrated a minor victory when an innovative stormwater control was incorporated into a large-retail development. Attending meetings, engaging neighbors, seeking help from MEA, the dedicated citizens of Monona diligently pushed for a more creative and environmentally friendly Wal-mart. Dedicated citizens were active participants throughout the Wal-mart approval process, after months of debate, the City of Monona approved a Wal-Mart Supercenter on the site of a much smaller, vacant K-Mart store. Due to the lack of available land, the Wal-Mart Supercenter was forced to fit into a 14-acre plot of land, roughly half the size of their usual sites. Working with a local community group in Monona, MEA obtained the blueprints for the proposed Wal-Mart. These blueprints demonstrate the feasibility of underground parking at Wal-Mart Supercenters. The Wal-Mart in Monona is near completion, including underground parking. As a result, it occupies less land, reducing stormwater and decreasing its overall environmental impact.

Specifically, Monona demonstrated that it is possible to turn a 30-acre big-box development into 14-acre big-box development and dramatically reduce the amount of polluted runoff that we are sending down the river. More importantly, this design raises possibilities for “in-fill” development in existing, vacant commercial areas. This eliminates the need to shift our economic development to the edge of our cities and create new impervious surfaces (roads, roofs, paved surfaces, etc.). Residents are encouraging the City of Monona to expand upon its big-box ordinance to require a smaller footprint requirement for future developments. Hopefully, future ordinances will also include requirements for rain gardens, cisterns to collect and use stormwater, infiltration basins, and other key low impact development techniques (LID). These low impact development techniques can be applied to all future developments, regardless of their size. The lesson learned from Monona is that with creativity and dedication, we too can influence how our community grows.





Hartford Citizens for Responsible Government mobilize against Wal-mart filling a wetland in their community.

Citizens Step Up in Hartford, Wisconsin

In Hartford, Wisconsin, advocates working at various levels of local and state government celebrated a slightly different success. The Monona Plan proved that it is indeed possible for large retail developments to reduce their overall environmental impact. Unfortunately, Hartford was not able to require a smaller footprint. However, all was not lost.

Upon review of a proposed Wal-mart Supercenter in their community, Hartford Citizens for Responsible Government (HCRG) discovered that the Supercenter was unnecessarily placed in a rural wetland area. The project proposed to pave over a wetland near the Rubicon River, which would need a wetland-fill permit from the Wisconsin DNR and U.S. Army Corps of

Engineers. Wetland permits are generally reserved for projects that have no “practicable alternatives,” such as alternative designs or locations that would avoid wetland impacts. Though proven possible in Monona, Wal-Mart had passed-over a number of other available plots of land that were 14 acres or larger, located within the City of Hartford, claiming the “Supercenters required 25-30 acres of land.”

Not only was the wetland filling a concern, so too were the estimated environmental impacts of the large development project. HCRG filed formal comments with the two permitting agencies highlighting Wal-Mart’s ability to use underground parking to decrease the footprint and choose locations that avoid wetland areas, reduce stormwater, and preserve open spaces. HCRG did not stop there, next they conducted a media campaign using press releases, their website, and broad distribution of flyers to get the issue to Hartford’s family dinner tables. The blitz generated a flurry of concerned e-mails to the HCRG website. The multitude of comments and concerns about the negative environmental impacts of the proposed store from Hartford’s citizens peaked the Wisconsin DNR’s interest. The DNR scheduled a meeting with MEA and Wal-Mart to discuss all feasible LID techniques that could be used to eliminate stormwater pollution from the site. Based on the citizen input and the active participation of local advocates, the DNR sent Wal-mart back to the drawing board to address stormwater and wetland impacts. Now, before their wetland-fill permit is approved, Wal-Mart needs to include areas of porous pavement, intermittent bioswales, and rain gardens to catch downspout runoff. A recent review of the plans shows some improvements.

Hartford Activism at the Local Level: Holding Officials Accountable

True innovators, the HCRG, while working with the DNR, also addressed the proposed new development at the local government level. Working at the local level, HCRG community leaders and MEA drafted a letter to the Hartford City Council and Plan Commission describing the Supercenter’s expected stormwater impacts. The letter offered clear, practical steps the City representatives could take to address the threat. Underground



Family on Lake Superior. Photo courtesy of Carole Swinehart, Great Lakes National Program Office, Michigan Sea Grant.

parking, green roofs, and a smaller, more suitable building size for the area were key suggestions that could reduce the impact and allow the development to proceed. Unfortunately, City officials ignored the concerns expressed by their constituents. Residents have gathered hundreds of signatures to recall City officials that have repeatedly ignored calls for smaller businesses with low impact development designs.

The fate of the Hartford, Wisconsin, Wal-Mart has yet to be determined—pending a hearing on the zoning permit. Although the community's fight for smart development is ongoing, the message is clear: Hartford cares about sprawl and stormwater pollution and expects its government officials to reflect these values. HCRG and MEA are hopeful that the wetland permit will be modified to eliminate any wetland impacts and City officials will start adopting ordinances to address future development.

HCRG's experience in Hartford illustrates that as long as there is land available, without big-box ordinances, zoning restrictions and smart-growth tools in place large retail developments are likely to take the path of least resistance, often rejecting environmental, social, and economic needs of individual communities. Once again, it is up to us to dictate the paths that our communities take through this time of development and growth.

Across Wisconsin similar successes are a reminder of the power of local advocates and the many possibilities open to our communities. In Sturgeon Bay, Wisconsin, residents have asked their Plan Commission to amend their big-box ordinance to include a mandatory size cap as a means of preventing sprawling impervious

surfaces. Additionally, the group is considering requiring underground parking as the standard for larger developments. Stoughton, Wisconsin, annexed land for a Wal-Mart Supercenter and will soon begin stormwater impact studies, as required in their big-box ordinance. Stoughton Forward, a community group organized to address smart growth, is requesting zero discharge (infiltrate all stormwater on-site) of stormwater from the planned Wal-Mart Supercenter and future big-box stores.

Engaged citizens armed with MEA's Tool-kit can help our Great Lakes communities reach our ultimate goals – sustainable communities, healthy environments, citizens engaged in local decision making, and cleaner lakes that define our Midwest heritage. MEA sees a day where size caps, impervious surface restrictions, and underground parking requirements are commonplace and integral parts of local zoning ordinances. One community at a time, dedicated advocates are making this a reality, driving change to make our lives better, the earth healthier, and our communities more vibrant. 💧

*Brent Denzin is an Attorney
with Midwest Environmental Advocates, Inc.*

*For more information on big-box ordinances and stormwater,
visit Midwest Environmental Advocates' Sustaining
Communities Campaign website (www.midwestadvocates.org).
Brent may be reached at bdenzin@midwestadvocates.org.*

Low Impact Development:

*LID techniques include
porous pavement, bioswales
(grassways or other vegetation
strips designed to absorb rain
and runoff), roof gardens,
and mechanisms for
stormwater retention and reuse.*

*These requirements improve
the prototypical big-box
development and restore the
local government's role in
shaping our landscape and
can greatly minimize the impacts
to our rivers and lakes.*

LAKE
MICHIGAN



Cheeky – not – Cheesy Activists

The WAVE is about healthy yards... and healthy waters. The WAVE is about the power of people – and you're invited to be part of it.

Saving Lake Simcoe: Ladies of the Lake Bring a Community to Action

By Annette Van Gerwen & Annabel Slight

Lake Simcoe, in the Lake Huron watershed, and Canada's fourth largest urban lake, is sick. Residents and cottagers along the lake had been watching helplessly for years as the algae and weeds were taking over the shorelines. The provincial government's known about it for decades. Yet nothing (or at least very little) was being done to save these beautiful waters. Nothing, that is, until Ladies of the Lake came along.

Ladies of the Lake made its daring debut with the 2006 Ladies of the Lake calendar. The calendar featured everyday women posing in the buff in settings that captured the beauty and spirit of Lake Simcoe. The huge success of this "cheeky not cheesy" first project made Ladies of the Lake into a household name throughout the watershed and brought public awareness of the state of Lake Simcoe.

Ladies of the Lake is a dynamic, organic grassroots organization made up of 100 warm and friendly women who are bringing people and government together to save Lake Simcoe. Most of them live in the Lake Simcoe watershed. Some live along the shorelines. Others come from farming communities. Others are from towns like

Georgina, Bradford, Barrie, Innisfil, Orillia and Newmarket. The majority of the Ladies are in their 50s and 60s. Their youngest members are thirty-something, but as the membership grows, younger members are coming aboard. The oldest member – Wanda Big Canoe of the Chippewa nation on Georgina Island – is in her 70s.

What defines them more than their age and where they're from is their positive spirit and drive. "It's great. It's electric," Ladies of the Lake co-founder Jane Meredith says of the gatherings. "It's so much fun because everybody is just open to suggestions and ideas, and everyone wants to contribute something. There's nothing stifled. There's a terrific feeling of openness and cooperation and fun as well as realizing the severity of the situation."

Evolution of Ladies of the Lake

Back in 2002 Annabel Slight and Jane Meredith, a dynamic duo themselves, (who would later co-found Ladies of the Lake in 2004) were frustrated. Both have been cottagers and residents of the lake for over 50 years. Frustrated by the lack of action by government at all levels to stop the destruction and frustrated by the thought that, as average citizens living around the lake, there was nothing they could do about it. Or perhaps there was ...

"The lake was being neglected by the politicians and really abused and neglected by people too," Annabel explains. "It struck us that



LAKE HURON

Success Stories

perhaps (putting the best light on things) people didn't appreciate that this was a resource that couldn't continue to be abused. People were using the lake but not caring for it. And then we decided that maybe we could do something about it."

It started out as a small group of people from the Keswick area who thought that if they were to have any impact, they needed to bring people from around the lake together. They started calling people to invite them to a meeting about the lake. About 30 from around the lake came to that meeting in 2002. Annabel was one of them. Those were the beginnings of the Rescue Lake Simcoe Coalition.

The Wave – Healthy Yards Healthy Water

One of the Coalition's first educational forays was the The Wave – Healthy Yards Healthy Water project, an environmental awareness program that dispatched teams of university students to inform families in the watershed about why Lake Simcoe is sick and how they could get involved. Basically, they were educating families on how to grow wonderful lawns and gardens without using phosphorus-laden fertilizers that eventually end up in Lake Simcoe to feed the algae and weeds.

The Premise of the Wave Project: Preventing Phosphorus Runoff

If residents stopped using chemical lawn fertilizers containing phosphorus, and if they watered more wisely and began to keep yards healthy in more natural ways, this would help reduce the amount of phosphorus flowing into Lake Simcoe. What's more, if many residents started taking action to improve water quality, it would send a strong message to others that improving the lake's health is a priority. RLSC developed a web-based resource detailing the Wave for citizens interested in helping the lake.

The Three Waves of Success:

1. Be Water-wise.
2. Grow grass-naturally.
3. Try trendsetting.

The WAVE program began as a pilot in the Oak Meadow area of Keswick in 2004. In 2005 it reached 2,000 families around the Lake and into the watershed. The target in 2006 was 4,000 families; communities of all sizes are invited to get involved. RLSC's ultimate goal is to involve all 100,000 families living in the Lake Simcoe watershed.

Beyond the Wave

Annabel and other members of the Coalition started asking elected officials what was being done to save the lake. The elected officials responded by saying that nothing was being done about it. It wasn't something that they were hearing from the citizens to be important. Nobody was saying that it was an issue, so they weren't dealing with it. That was three years ago.

So members of the Coalition started to do some research. They found that, in fact, Lake Simcoe had been identified as a sick lake needing help more than 30 years ago by the provincial government. There had been attempts to get things done, but nothing really happened. Even the conservation authority, which was in charge of the lake, had their funding cut back.

It was time to wake people up. Government wasn't responding. The Wave program needed funding. And more needed to be done to get people and government to act.



By air, by land and by sea the Ladies of the Lake Citizens Action Plan kept things interesting during the Naked Truth Summer of Events.

Ladies of the Lake is Born

It was time to do something different. Annabel and Jane called their friends to come out to a meeting about the lake. Those friends called friends. Over 40 people – all women from across the Lake Simcoe watershed -- came out one October day in 2004 to talk about new ideas. It was at that first meeting that they called themselves “Ladies of the Lake.”

“We were going to be a different organization. We were going to be thinking out of the box,” Jane explains. “We didn’t have ties to any one particular organization or government. We could just fire ahead with all of our creativity and we had no constraints. And we were ready to do things, ready to work, ready to get down to action.”

It was also out of that meeting that the 2006 Ladies of the Lake calendar project was launched. A sign-up sheet was sent around the meeting room, and by the end of the evening, they had more people than they could use. “People just dove in without really knowing what they were getting into,” Jane remembers. Leading up to the photo shoots, the women were “petrified” as Jane describes it, yet they braved through it for the cause. “They’re a real bunch of doers” she says emphatically.

The calendar turned out to be a great success. It sold more than 12,500 copies and raised over \$247,000. Perhaps more importantly, though, it raised the profile of the fledgling Ladies of the Lake organization to a household name along the watershed and drew attention to the desperate state of Lake Simcoe. The word was out, and people came out with their full support.

Their first line of business following the success of the 2006 calendar was to get the facts about Lake Simcoe. The Ladies commissioned the Windfall Ecology Centre, chaired by Newmarket’s Hilary Van Welter, to do research in the Winter and Spring of this year to look at the science behind Lake Simcoe’s ailments. People living throughout the watershed needed to know, in very simple terms, what was causing their lake to be sick, and what they could do to help.

“The Naked Truth – Going Behind the Science of Lake Simcoe”

The resulting “The Naked Truth – Going Behind the Science of Lake Simcoe” report, released in mid-July, explains a number of issues facing the lake. According to the report, population growth and global warming are the leading risk factors for its sustainability. The issues are being caused by people, and they need to be fixed by people. Among the issues addressed in the report: the weeds, algae and lakebed goo; the declining numbers of wild trout, frogs and turtles; and more frequent “no swimming” days. The extensive eighty-eight page report bridged the gap between what the scientific community has known for years, and what the public has needed to know.

With knowledge as their power, the Ladies launched “The 2006 Naked Truth Summer of Events” in partnership with the Windfall Ecology Centre. It was an effort that would bring together over 300 citizens of the Lake Simcoe watershed to develop a plan of action. Their goal: to return Lake Simcoe back to the point where they can drink it, swim it, fish it and love it.

The Ladies organized four public events beginning in June 2006 in Orillia, followed by events in Innisfil, Barrie, Georgina, Bradford, and the Holland River area. They enlisted the support of every council and mayor around the Lake, including Georgina, Bradford, Barrie, Innisfil, Orillia and Newmarket.

In the Ladies’ true style of keeping things fun and interesting, the meetings were adventurous ones. Volunteers came out with their digital cameras to take photos for the report. They took pictures above the water, below the water, beside the water, and on the water. People were taking pictures from helicopters, canoes and kayaks, on foot and underwater. “You couldn’t really have done something like that without that level of commitment from a whole bunch of volunteers, and from right around the lake,” Annabel comments.



Out of The Naked Truth Summer of Events sessions came “The Naked Truth Citizens’ Action Plan to Save Lake Simcoe.” It was a huge undertaking involving about 450 people and companies. It was launched in October at a gala in Newmarket to a sold-out crowd of 220 people.

Annabel attributes part of the Ladies’ successful summer of events to the organic way by which this women-only organization operates. “We were inventing things as we were going along, and this particular group of women did that very well,” Annabel says. “They didn’t mind getting right up to a decision point and then deciding to go in one direction or another. That made it very exciting.”

Barely taking a breath following the Summer of Events finale in October, the Ladies are already onto other things. They’re planning more fundraising activities (no, don’t expect another calendar anytime soon), more environmental awareness programs, and better ways of getting government and citizens to work together. They are doing some preliminary research on the idea of a mentorship program in local high schools to enable kids in the senior grades to mentor the younger students on environmental issues and responsibility. We really want to encourage younger people to get involved in the health of the lake. We can learn from them.

They’re also currently working with government to get a new Watershed Council in place. Such a group would enable residents of the watershed to work together with government agencies to help manage the lake. 💧

This Success Story is based on an article by Annette Van Gerwen, originally published in the Main Street Unionville Magazine.

For more information please contact Annabel Slaight, board member of the Rescue Lake Simcoe Coalition, co-founder of the Ladies of the Lake, and Steering Committee Chair for the WAVE Program. Annabel may be reached at aslaight@rogers.com. Visit the Lake Simcoe Coalition on the web at www.rescuelakesimcoe.org, the WAVE Program at www.thewaveprogram.com, and the Ladies of the Lake at www.lakeladies.ca.



The July beauties from the 2006 Ladies of the Lake Calendar, courtesy of Ladies of the Lake. Photo courtesy of Jim Panou.

***“It just shows
what a
difference people
can make,”
Annabel concludes.
“All you have to
do is collect a
few people
and make
a stand.”***

LAKE
HURON



Our message:

“Rain is natural; stormwater isn't. Government studies have shown that up to 70% of the pollution in our streams, rivers and lakes is hand-delivered to our precious water bodies by stormwater.”

Our mission:

“To create a “rain garden,” a human-made depression in the ground, used as a landscape tool to improve water quality, that would clean some of the stormwater runoff in downtown Erie before it entered Mill Creek and eventually Lake Erie.”



LAKE
ERIE
Success Stories

Rain Gardens Student Advocates

Young Advocates Sow Rain Garden and Stormwater Awareness

By Susan A. Smith and Sarah Galloway

While thousands of Pennsylvanians were celebrating the annual Celebrate Erie three day community event, young members of the Lake Erie-Allegheny Earth Force watershed group, Junior PA Lake Erie Watershed Association (JrPLEWA) were providing public education sessions – and showing off a rain garden full of bloom to over 350 interested citizens.

The rain garden project is located at City Hall, right in the center of downtown Erie and the Celebrate Erie festivities. JrPLEWA members used an EnviroScape portable interactive unit to demonstrate the impacts of non-point source pollution on our watershed, discussed urban and agricultural run-off as well as best management practices (BMPs). The display explained how rain gardens can be used to reduce stormwater run-off. Naturally, tours of the rain garden were also offered, sharing with visitors the stunning flowers and shrubs planted by this dynamic group of students. Visitors were guided through the yarrow, purple and yellow coneflowers, butterfly bushes, joe pye weed, liatris, black eyed susans, a dry creek bed, stepping stones, and huge granite blocks for seating. Ah, but we are



getting ahead of the journey from a neglected, barren plot of dirt and weeds to this flowering garden oasis!

The city of Erie, in northwestern Pennsylvania, was working on a project to repair a basement roof and reseal the parking lot above it. The project included tearing up an existing patch of lawn, some small trees and two small flower beds. In the past JrPLEWA had worked with Sarah Galloway, the Sustainability Coordinator for the city of Erie, on other issues; they went again to Sarah when they saw the soil and grass being torn up.

Working with Sarah, the young people presented their big idea to the City: instead of replanting a plain patch of lawn, the students wanted to create a rain garden. Their patch of flowers and shrubs could accept and filter stormwater runoff, removing pollutants before sending the water down the storm drains and into our local Mill Creek and eventually into Lake Erie.

A rain garden forms a “bioretention area” by collecting water runoff and storing it, permitting it to be filtered and slowly absorbed by the soil. The bioretention concept is based on the hydrologic function of forest habitat, in which the forest produces a spongy litter layer that soaks up water and allows it to slowly penetrate the soil layer. This site for the rain garden was placed strategically to intercept water runoff from the adjacent parking lot.

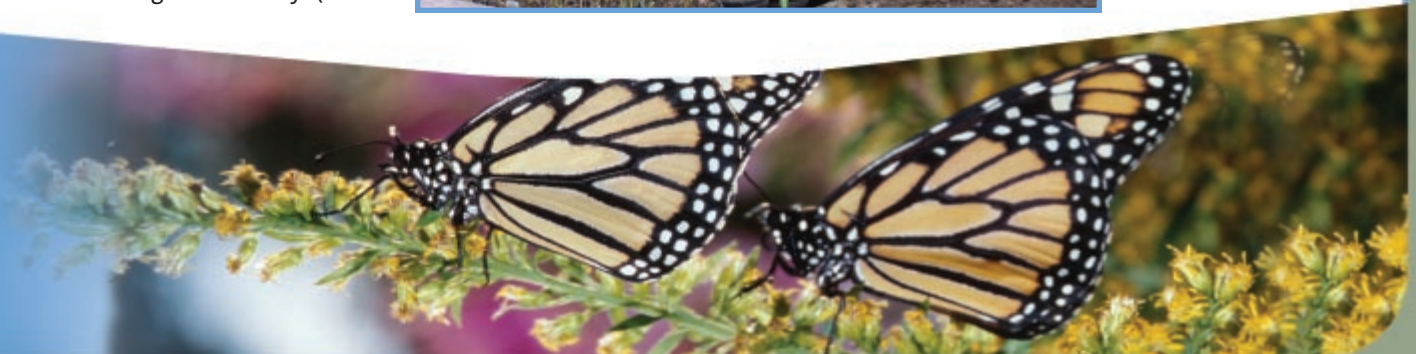
Community rain garden and stormwater education actually began long before Celebrate Erie. While getting the City’s “OK” and starting the project meant educating City of Erie employees, the students didn’t actually get to speak to the Mayor directly until after the project was started. JrPLEWA did present to the Director of Public Works, Doug Mitchell and then eventually to Erie Mayor Joe Sinnott, City engineers and the Public Works Department in City Hall at a press conference in May. At the press conference the students, Sister Pat Lupo, and Sarah Galloway all spoke. Everyone at the City was very supportive and impressed with the students knowledge and enthusiasm for the project.

“We compiled color photographs of the plants to be used, drew a sketch of the project and worked with City Traffic Engineer, Dana Beck to digitize and format it all into a professional project design. We basically “Wow’d” them with the extent of our research, enthusiasm, and commitment.”

The project was made possible by a group of very dedicated students, and many partners who were added as the project grew. The students had drafted the message and mission as a group, as well as articulated a plan of action. They gathered research and garnered support from many in the community, including: the City of Erie Public Works Department: including Bureau of Engineering, Jon Tushak, Jason Sayers and Dana Beck; Bureau of Parks; and Bureau of Streets; Sarah Galloway; Erie County Master Gardeners, Lucas McConnell, Sue Moyers, and others; and the PennState Cooperative Extension Urban Forester, Scott Sjolander, and the folks at Johnston’s Evergreen Nursery. (Erie



The group of dedicated students facilitated the entire City Hall rain garden project.





Published in the Erie Times-News
on October 24, 2006, as part of
their "Newspaper in Education" project.

Learn about your environment

HOW TO CREATE A RAIN GARDEN

To create a rain garden, select a location that allows runoff to be collected from roof surfaces and away from existing foundations, driveways, sidewalks, and other paved surfaces. Strategic placement next to hard surfaces such as streets, sidewalks, driveways and other paved areas is most effective. Create a shallow, shallow depression for the garden to hold rain and runoff. A good soil composition is 50-60 percent sand, 20-30 percent topsoil, and 20-30 percent compost. Choose native perennial plants because they are adapted to this region and will not require extra care once established. Native plants can withstand a range of weather conditions, do well in poorly drained soil, and will be low during dry weather. Don't use invasive species. Broadleafed plants keep the soil moist, help the soil settle in and makes the garden low maintenance. For more information about rain gardens including illustrations, garden designs, plant choice and more about non-point source pollution, visit www.raingardens.org.

BY THE NUMBERS

5
Percent of Pennsylvania's total species that have been eliminated, by 2050. Another 25 percent are estimated to be in danger.

45
Percent of watersheds that are not clean enough to support basic uses such as swimming and fishing.

27,154
Gallons of water that fall on one acre of land each one inch of rain falls.

30
How much more runoff, on average, that a rain garden can absorb compared to its surrounding lawn. The percentage can be as high as 80 percent.

NOTE: Environmental Protection Agency (EPA) has been working.

WHERE TO LEARN MORE

What: Rain Garden Workshop
When: Thursday, Nov. 9, 6:30 p.m. to 7:30 p.m.
Where: Tom Ridge Environmental Center
Presented by: Harry Miller, Erie County Extension Educator, and other staff.
Includes: Light supper and will be followed by the 10th Annual Watershed Conference, which will be held at the Erie County Convention Center. Tickets are \$10. Call 336-1234 for more information or to register for your seat today.

your space

Teens take action to save environment

On Oct. 18, a group of 10 students from the Erie County Environmental Center participated in a field trip to a local watershed. The trip was led by the center's staff and was designed to help students learn about the importance of water in our environment. The students were divided into groups and each group was assigned a different task to complete during the trip. The tasks included: identifying different types of plants and animals, observing water quality, and collecting samples of water for testing. The students were also taught about the importance of protecting our water resources and how they can help to do so.

But, targeted
Volunteering is an important part of our local environment. Over the past several years, the Erie County Environmental Center has been working to improve the quality of our water resources. One of the ways we do this is by encouraging students to get involved in environmental projects. The center has a variety of projects that students can participate in, including: planting trees, cleaning up litter, and testing water quality. The center also offers workshops and field trips for students to learn more about the environment and how they can help to protect it.

Let's all chip in
I decided to join the Erie County Environmental Center's "Let's all chip in" campaign. This campaign is designed to help students learn about the importance of water in our environment and how they can help to protect it. The campaign includes a variety of activities, including: planting trees, cleaning up litter, and testing water quality. The center also offers workshops and field trips for students to learn more about the environment and how they can help to protect it.

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If you are going to make a rain garden, use native plants, such as purple coneflowers and black-eyed Susans. They will help create an ecosystem in the garden and reduce runoff and pollution. Native plants are adapted to Pennsylvania's weather and soil, and have fewer pesticides against native pests and animals. Visit www.raingardens.org for more information.

Pollution solution

Rain gardens sprout to stop runoff from ruining watersheds



Junior Pennsylvania Lake Erie Watershed (JLEW) members, Albert Phillips, Todd Brown, Samantha Thompson and Todd Thompson, left to right, work to change a non-point area on the west side of Lake Erie. The area is a non-point area, which means it is not a point source of pollution. The students are working to improve the quality of the water in the area by planting native plants and creating a rain garden. The rain garden will help to reduce runoff and improve the quality of the water in the area.

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County Master Gardeners are volunteers, all others are paid by their employers to provide education and/or services.) The students worked with City Hall employees to rototill the existing soil, dig and line a pond and creek bed, shape and plant flower beds, and add stepping stones and huge granite blocks for seating. The students were able to use the money that was originally ear-marked for reseeding the lawn for their rain garden expenses.

Awareness – of the project and of stormwater - grew as people on the street frequently stopped to talk to the students as they dug, arranged, planted and perfected their garden.

When one of the students was asked whether or not she thought that the project had had an impact on the public's attitude towards stormwater, she answered: "Yes, it demonstrates that stormwater is a valuable resource that can be used to transform barren areas into beautiful gardens."

When the students were asked about how the project changed the students' views of stormwater, they said: "It was sad to learn that something that we take for granted, can cause so much trouble, such as flooding, and can become polluted as it travels across streets and parking lots and picks up pollution. It was good to learn how we can reduce that pollution and flooding by creating areas for it to soak in and be filtered." 💧

The JrPLEWA youth advocates that made the City Hall rain garden project a success:

Bryan Corle, Seneca High School • Katherine Martin, Mercyhurst Preparatory School • Elyse McMahon, Erin Nawrocki & Sonia Rosales, Villa Maria High School • Vetta Stepanyan & Samantha Szoszorek, Strong Vincent High School • Sara Yu, Northwestern High School



This Success Story, like the project, was a group effort involving: Susan A. Smith, Director of Development, Lake Erie-Allegheny Earth Force, Sarah Galloway, Erie Sustainability Coordinator and various students from the Junior Lake Erie Watershed Association.

For more information about the project please contact Susan A. Smith, ssmith@lea.earthforce.org, or visit the Earth Force website (www.earthforce.org).

"We compiled color photographs of the plants to be used, drew a sketch of the project... We basically "Wow'd" them with the extent of our research, enthusiasm, and commitment."

LAKE
ERIE



Activist's Web - Guide

*What was cool,
slow, and clean
rain destined
for groundwater
becomes a hot,
fast and dirty
flow of
contaminated
stormwater.*

Getting to Know Your Rain

By Kevin Mercer and Jennifer Hounsell

You may have wondered how a drop of rain falling on your community finds its way to the Great Lakes. Chances are first it falls on one of the many hard surfaces found throughout our cities – roofs, roads, sidewalks, parking lots and driveways, all of which are designed to quickly discharge it off these surfaces in as short a route as possible into a local storm drain. During that journey your rain grows hotter as it flows along the surface of the city and becomes contaminated by pollutants before entering storm or combined sewers. What was cool, slow, and clean rain destined for groundwater becomes a hot, fast and dirty flow of contaminated stormwater that degrades aquatic habitat, contaminates drinking water sources and endangers human health.

In the City of Toronto – like many cities on the Great Lakes, stormwater is particularly problematic. Over 70% of the City is now paved with buildings, parking lots, roads and sidewalks - which diverts more than 50% of the rain that falls from soaking into the soil. During heavy rain events, more than 25 times the normal volume of water rushes into Toronto's storm and combined sewer system. This often leads to combined sewer overflows – discharges

of raw sewage into the rivers and waterfront – as sewer system capacity is overloaded. Each year the City of Toronto experiences between 60-70 combined sewer overflow incidents, resulting in contaminated water and beach closures.

“Too many people don’t understand the impact that stormwater has on the City. A single rain storm in August 2005 cost the city over \$34 million in repair costs from stormwater damage. If city surfaces could absorb more rain where it falls, the impact of heavy rain events like this one would be much less significant,” says Jennifer Hounsell, Program Director of RiverSides Stewardship Alliance.

Stormwater pollutants have been found to carry a toxic loading of sediments, pesticides, road salts, pet waste, oil and grease as well as untreated sanitary sewage into our rivers. Research by the Canada Centre for Inland Waters determined that urban runoff is the largest source of pollutants to Great Lakes tributary rivers, most of which is generated by the average homeowner, educational institution and business in the course of their daily activities. In the City of Toronto it only takes 15-30 minutes for pollutants to travel from local backyards to rivers via the storm sewer system.



LAKE
Success Stories
ONTARIO

5 Things You Can Do For Your River

We set out to reach a growing and mobile population of homeowners, businesses and institutions with the ever-evolving message of watershed protection? The challenge was how to keep stormwater management education and learning up to date.

RiverSides' mission is to protect urban watersheds by reducing runoff pollution from individual properties by advancing the knowledge and application of low-impact development (LID) stormwater management, and reducing and preventing nonpoint source (NPS) runoff pollution. Their efforts include social marketing campaigns (the award-winning *5 Things You Can Do For Your River*) and the advancement of pollution prevention policies (including the recently released *A Low-Salt Diet for Ontario's Roads and Rivers*) that successfully and effectively advance the protection, preservation and restoration of our urban waters.

RiverSides designed a comprehensive social marketing outreach campaign - *5 Things You Can Do For Your River* consisting of a Water Quality Canvass of residential neighbourhoods to deliver a suite of water quality protection programs. Over three years, *5 Things* achieved direct personal contact and with it the commitment to water quality protection for individual residential source protection and low impact development.

A 1997 Council of Great Lakes Governors Award as "Urban Outreach and Education Success Story" helped spread the news. Over ten years, more cities and towns – Ottawa, Pittsburgh, Santa Monica, Welland – implemented RiverSides' *5 Things* program.

5 Things program designer and RiverSides executive director, Kevin Mercer, recognized that, to be effective in the long term meant keeping the 5 Things framework fresh in the minds of residents. That meant positive reinforcement and constancy. In addition to ongoing canvass outreach in neighbourhoods, Kevin knew that residents needed updated information to take them to the next level of stormwater management at home. So was born the "*Homeowners Guide To Rainfall*".



Welland Councillor Paul Grenier (centre) distributes Rainbarrels to citizens during the conservation blitz. Photo RiverSides.

Your Home – Your River: Make the Connection!

RiverSides' primary objectives were to "make the connection" between watershed source protection and the practice of lot level stormwater management and the City of Toronto's wet weather master plan. Supported by a grant from the City of Toronto's Community Program for Stormwater Management (CPSWM) and Environment Canada's Science Horizons Program, RiverSides commenced the design of *The Homeowners' Guide to Rainfall*, a source protection education initiative. *The Guide* would help homeowners understand and implement low impact stormwater management techniques to achieve zero runoff from their properties, and as a result protect their local rivers.

This "web-guide" was designed to be a more interactive format that would educate, inform, and inspire Toronto homeowners to undertake low impact development at home.

In partnership with designers from Adhawk Communications, RiverSides created a web architecture and the programming elements with dynamic programming features such as an event calendar, news and seasonal alerts; interactive elements such as the *Let's Talk Water* discussion forum, opinion polls, and roll-over flash images showcasing lot-level best practices. In addition, a glossary feature provides pop-up definitions of words throughout the site.

One of the key programming features was the design of a Content Management System (CMS) – a web application which allows for easy website management and content uploading (and updating). This enables RiverSides' staff and volunteers to upload and edit content without requiring technical expertise in website management. Using the CMS, staff and volunteers easily "populated" the site.

Once the draft site was finalized, the website underwent a thorough review process involving local ENGO staff working on similar issues, stormwater professionals (engineers, planners), City of Toronto and Toronto Region Conservation Authority staff, as well as members of the general public with an interest in finding out more about these issues.

Toronto Homeowners' Guide To Rainfall

The official launch of the web-guide took place May 31, 2006. "*The Guide* helps people better understand how water moves through our city, as well as providing tips on how they can reduce stormwater runoff – beginning right in their own backyard," says Hounsell. "We wanted residents to know how easy it was to do the things at home that really make a difference in the challenge of restoring our local water quality."

Divided into three main sections, *The Guide* helps homeowners *Make the Connection* between where the rain falls – their property – and its resultant impact (as stormwater) on the health of our rivers and lakeshore waters; provides practical, achievable solutions to help homeowners reduce runoff pollution from their property in section two entitled (naturally) *Five Things You Can Do*; and provides additional resources to assist homeowners in getting it all done with *Helping You Do It*.

The Guide not only directs homeowners to existing City of Toronto programs, it acts as a support resource to help them understand those programs as well as provide them with the support necessary to move beyond them, i.e: information on how to install and maintain the *RiverSafe RainBarrel*, rain gardens, and drywells to capture and infiltrate runoff from their properties. Installing a rain barrel enables homeowners to harvest and re-use rain water otherwise lost to runoff – in fact, the average roof generates enough runoff in a typical year to flush a 6-litre toilet 12,000 times!

The Guide also recommends naturalizing yards with native plants, replacing paved surfaces with permeable pavers or interlocking brick, conserving water through rain water reuse, and going toxic-free by eliminating the use of cosmetic chemicals such as pesticides and road salts.



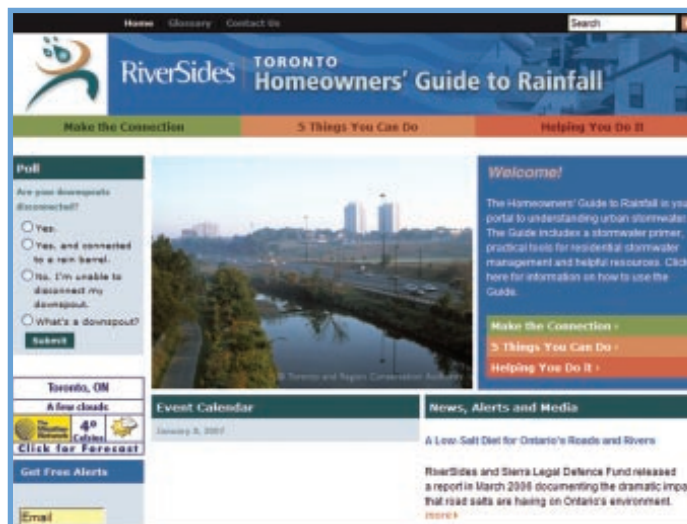
The Path to Clean Water

The Homeowners' Guide is the most comprehensive source of stormwater information for City of Toronto residents. No other resource in the City provides the "one-stop-shop" for stormwater and low impact development information. Visitors to the site have commented: "All in all a very thorough and comprehensive site, one of the best interactive sites I've ever seen. I enjoyed it and learned a lot too." "I would highly recommend it to people I know in the industry and the general public."

Why We Did It

The Guide specifically advances the City of Toronto's Wet Weather Flow Management Master Plan by "Making the Connection" between the vision, goals, and specific objectives of the Plan and the daily activities of Toronto homeowners. *The Guide* enables homeowners to integrate wet weather policy into personal habits by providing the resources and tools necessary to achieve change in an easy to understand manner. Most importantly, *The Guide* is a fulcrum for a wide variety of City of Toronto services and other community services and programs that enhance the homeowners' practical application of stormwater management at the lot-level.

RiverSides' goal for the *Homeowners' Guide To Rainfall* is to establish links between the individual property owner and the health of their local river. While we recognize that the City's wet weather awareness and education programs meet the basic needs, the *Homeowners Guide* is there to help move citizens beyond the standard education to a higher plane of achievement and participation in wet weather management objectives.



The Guide, as it becomes adopted and utilized by Toronto homeowners, grows a shared commitment to protecting Toronto's rivers and watersheds.

"We have the ability to change our actions for the better and I'm certain Torontonians will find *The Guide* a useful and highly informative resource to do this" concludes Hounsell. "We all need to make the connection between what we do at home and the health of our local rivers." 💧

This Success Story was a collaboration between Kevin Mercer, founding Executive Director of RiverSide Stewardship Alliance, and Jennifer Hounsell, former RiverSides Program Director.

For more information Kevin may be reached at kmercerc@riversides.org. Visit RiverSides on the web at www.riversides.org.

**A single rain storm
in August 2005
cost the city [Toronto]
over \$34 million
in repair costs
from stormwater
damage.**

LAKE
ONTARIO



Key Staff:



Jill Ryan, *Executive Director*



Ann Baughman, *Outreach Specialist*



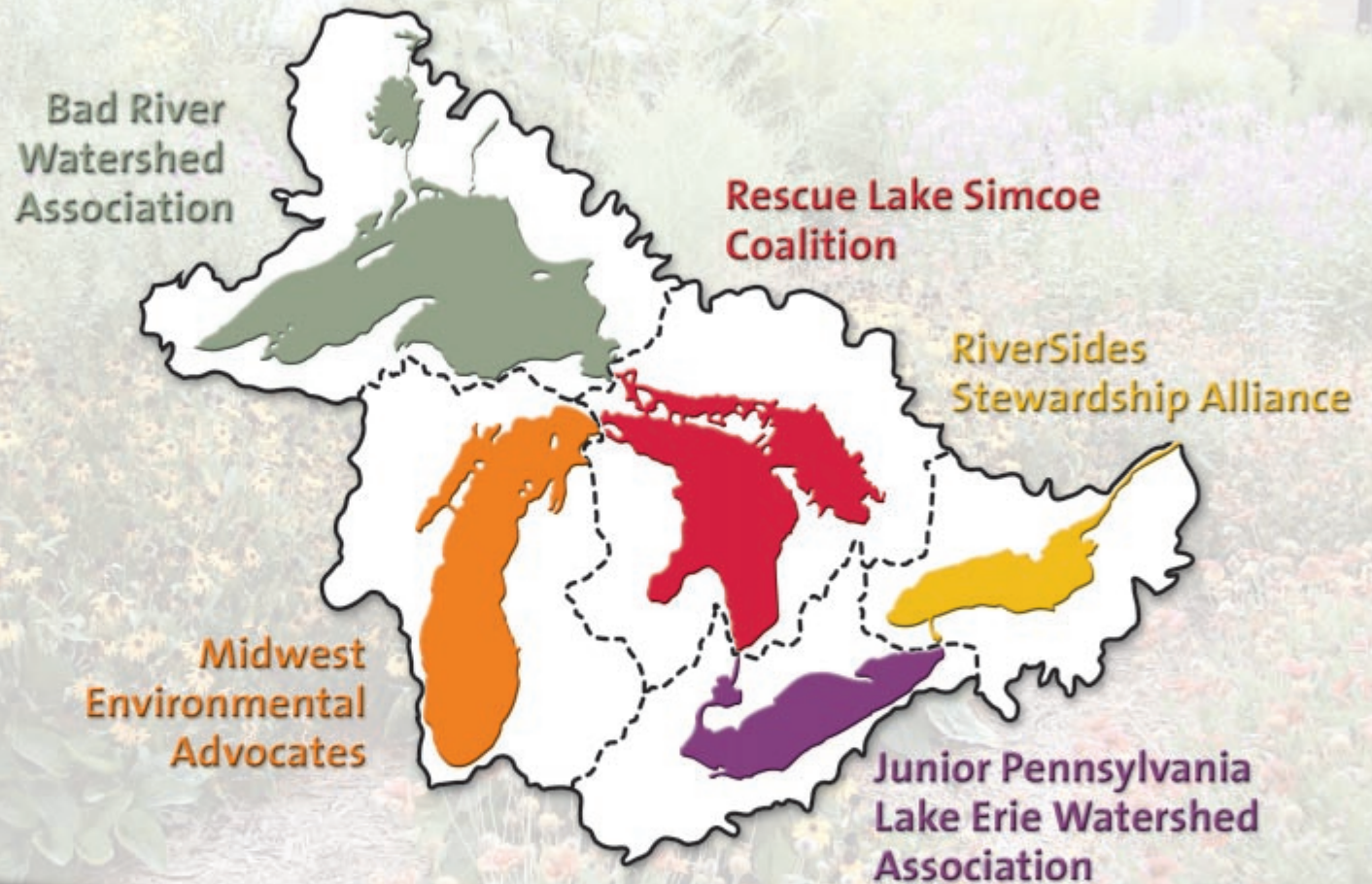
Cheryl Mendoza, *Regional Policy and Network Advisor*



Sandy Wilmore, *Grant Program and Publications Manager*

LET IT RAIN: *from Runoff to Renewal*

We invite you to look inside to learn about innovative stormwater management projects and the advocates working to implement them in your Great Lakes basin.



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