



Huron River Report

Published quarterly by the Huron River Watershed Council
1100 North Main Street, Ann Arbor, MI 48104

Spring 2010

Help with River Studies pg 5
Model Governance pg 6
Copying Fish pg 8

The Skinny on Lakes

Their health, our demands and some remedies

Anyone who has reflected silently on a lake's beauty understands how easy it is to block out life's distractions and experience a feeling of sublime isolation. However, the lake itself is anything but isolated from the surrounding landscape. Lakes are an integral part of their watersheds, connected to groundwater, streams and overland flow. Of the 300 lakes in the Huron River watershed, many are directly connected to the river; but plenty of lakes dot the glaciated landscape and appear disconnected to the river. That appearance is deceiving since even those lakes are strongly connected to the surrounding watershed via groundwater and land use activities upslope.

A BALANCING ACT

In addition to being valuable ecological resources, lakes provide aesthetic, recreational, and economic value for shoreline residents and visitors. Oakland County recently studied the economic value of its interconnected network of waterways,

natural areas, and open spaces, (aka "green infrastructure"), and found that lakes annually add \$1 billion to residential property values, contribute \$167 million in ecosystem services, and generate \$200 million in recreation opportunities for county residents. However, the potential for pollution increases dramatically as more and more people seek the lake experience for a day or a lifetime. Lakes have a limited capacity to accommodate the burden of human activities in the short term. Continued stress on lakes and their watersheds over time will ultimately lead to adverse water quality and recreational impacts that will require substantial cost to address.



Roger Storm and Susan Wedzel follow instructions from MSU-Extension instructor Jane Herbert at the Bishop Lake workshop. photo: HRWC

continued on page 3

Phosphorus Declines throughout Middle Huron

2009 results indicate significant progress

The 2009 results from monitoring programs in the middle section of the Huron River watershed show that phosphorus levels have continued to decrease – almost to target levels set by state regulation. The reductions are dramatic. Compared to data going back to 2003, phosphorus concentrations in the last two years have declined by 17% on average in the river, and by 29% in tributary streams. The median phosphorus concentration across all tributary sites was 0.042 mg/l for 2009, which is below the regulatory target of 0.050 mg/l.

WHY ARE THE REDUCTIONS IMPORTANT?

The middle Huron is under a federally mandated Total Maximum Daily Load (TMDL) regulation that sets a target total phosphorus concentration in Ford Lake at 0.050 mg/l. The TMDL further targets concentrations in Belleville Lake at 0.030 mg/l. The TMDL regulation requires communities and dischargers in the middle Huron River watershed to implement policies and practices to reduce phosphorus inputs from direct or "point" sources, such as wastewater treatment

plants, and indirect or "nonpoint" sources such as stormwater runoff and erosion.

Phosphorus is the main pollutant of concern in nutrient-rich lake and stream systems like those in Southeast Michigan. Excessive phosphorus concentrations can quickly cause extensive growth of aquatic plants and algae, and is well known for producing blue-green algae. Abundant algae and plant growth can lead to depletion of dissolved oxygen in the water, and, in turn, adversely affect aquatic

continued on page 4

Table of Contents

Featured Articles

The Skinny on Lakescover
 Their health, our demands and some remedies

Phosphorus Declines in the Middle Huroncover
 2009 results indicate significant progress

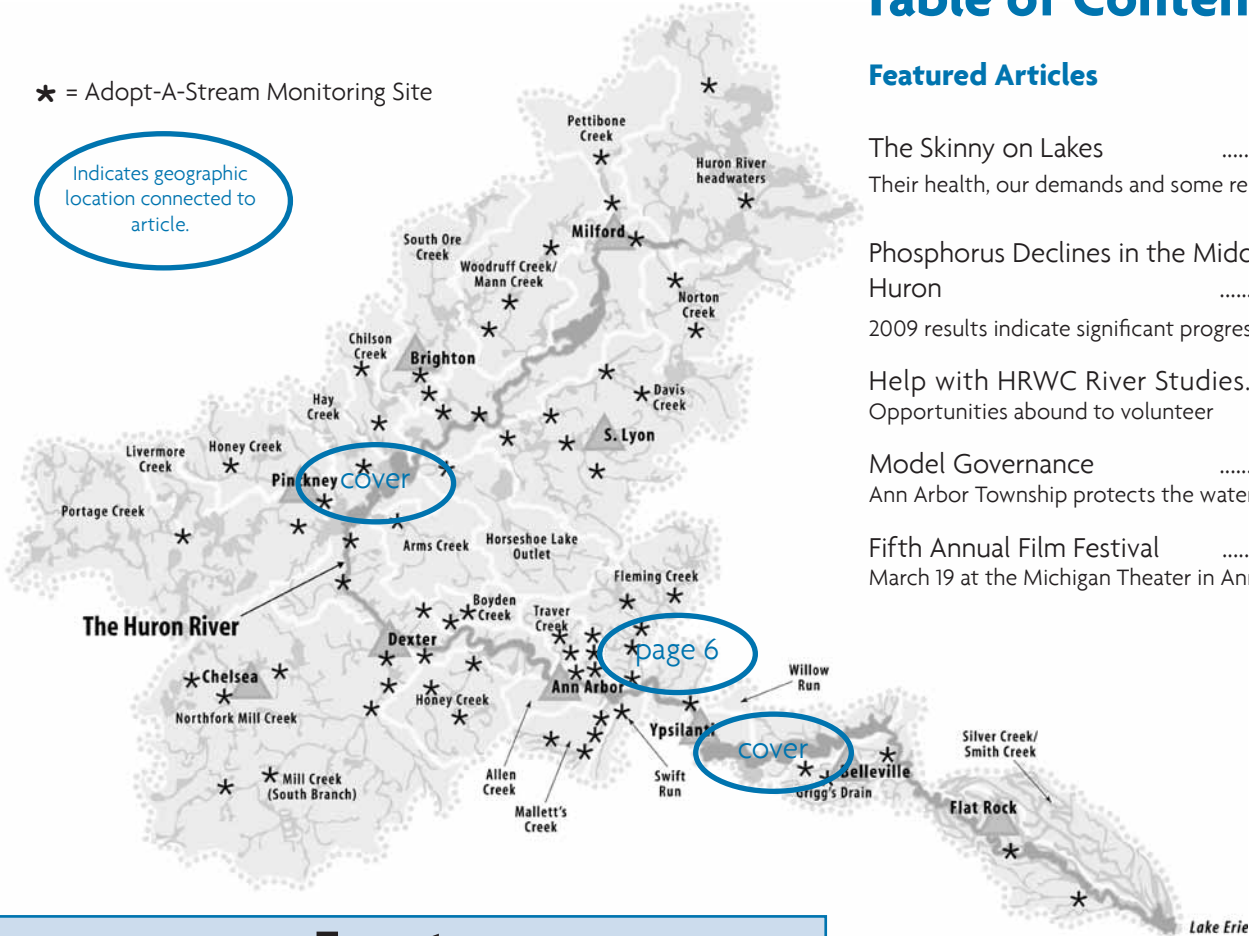
Help with HRWC River Studies.....5
 Opportunities abound to volunteer

Model Governance6
 Ann Arbor Township protects the watershed

Fifth Annual Film Festival6
 March 19 at the Michigan Theater in Ann Arbor

★ = Adopt-A-Stream Monitoring Site

Indicates geographic location connected to article.



Events

Friday, March 19, 4:30 PM
Millers Creek Film Festival
 Michigan Theater, Ann Arbor
 Pam: plabadie@hrwc.org

Thursday, March 25, 5:30 PM
HRWC Executive Committee
 NEW Center, Ann Arbor
 Laura: lrubin@hrwc.org

Saturday, April 4, 12 – 5 PM
Adopt-A-Stream Leadership Training*
 NEW Center, Ann Arbor
 Joan: jmartin@hrwc.org

Saturday, April 17, 12 – 2 PM
Water Quality Sampling Training*
 NEW Center, Ann Arbor
 Ric: rlawson@hrwc.org

* Descriptions on page 5.

Saturday, April 24
 9 AM – 3:30 PM or 10:30 AM – 5 PM
River RoundUp*
 Register by April 6 at
www.hrwc.org/volunteer/roundup

Thursday, April 29, 5:30 PM
HRWC Annual Board Meeting
 Dexter Public Library, Dexter
 Laura: lrubin@hrwc.org

Saturday, May 1, 10AM – 4PM
Bioreserve Field Assessment Training*
 Matthaei Botanical Gardens,
 Ann Arbor
 Kris: kolsson@hrwc.org

Sunday, May 2
 12 – 3 PM or 2 – 5 PM
Bug ID Day*
 NEW Center, Ann Arbor
 Joan: jmartin@hrwc.org

2010 summer recreation events on page 7

More events and updates on the web at: www.hrwc.org
 HRWC offices are located at the NEW Center
 1100 N. Main Street in Ann Arbor
 Call (734) 769-5123 or visit the HRWC website for directions

Your Path to the River Begins with Us....7
 Join us for our 2010 summer events

Copying Fish8
 Capturing river energy without the use of dams

Phosphorus Still Threatens Waterways..11
 And it begins in your yard...

Regular Features

Laura’s “Stream” of Consciousness.....9
 An update on HRWC projects and activities

Know Your Board Representative.....10
 Norman Andresen, Ypsilanti Township

You Make the Difference!11
 Become a member of HRWC

Thank You! back cover

The content of this newsletter is prepared by HRWC staff and does not necessarily reflect the opinions of HRWC board members.

The Skinny on Lakes

continued from cover

HOW ARE LAKES FARING?

Overall, some lakes are in good shape, but many are not. A recent U.S. EPA study of more than 1,000 lakes in the country rates the condition of 56% of lakes as “good” and the remainder as “fair” or “poor.” Degraded lakeshore habitat, rated as “poor” in 36% of lakes, was the most common problem. Removal of trees and shrubs, introduction of turfgrass, and construction of docks, marinas, homes and other structures along shorelines all contribute to degraded lakeshore habitat. Nitrogen and phosphorous are found at high levels in 20% of lakes. Excess levels of these nutrients contribute to algae blooms, weed growth, reduced water clarity, and other lake problems.

The water quality of thirteen local lakes monitored by volunteers through the Cooperative Lakes Monitoring Program (CLMP) was detailed in the Summer 2009 issue of the *Huron River Report*: www.hrwc.org/publications/newsletters. Average lake productivity value for these lakes is very close to the overall state average; all thirteen lakes fall into the mesotrophic category, which means that they have moderate nutrients and some algae growth. Swimming and boating can still be good, and fish populations are large due to a great food supply for all parts of the food chain. However, several lakes in the watershed have excess nutrients and extensive algae and plant growth, contributing to a greater likelihood of fish kills and limited recreational use. Concerned about the human impacts on aquatic life, drinking water and recreation, HRWC continues to work with its partners to address water quality issues through effective watershed planning and projects designed to reduce those impacts.

KEY ISSUES IN LAKE MANAGEMENT

Lake residents and visitors need to be aware of two key issues related to lake management in order to protect these valuable resources: invasive species and shoreline management.

Aquatic invasive species

Most plants and animals found in lakes are natural parts of a diverse and healthy



A volunteer installs plant plugs during a shoreline restoration workshop at Bishop Lake. photo: HRWC

ecosystem. Unfortunately, a few species can become problematic when introduced to a lake, threatening lake health by becoming overly abundant, crowding out other species, and having unpredictable environmental impacts. Because of the threat these invasive species pose to lakes, it is important to know how to identify them, work to prevent their introduction, and understand the available management options if they are discovered. Many local lakes are battling Eurasian water milfoil, which is a highly invasive plant that readily forms dense mats that crowd out native plants and degrade fish habitat. Eurasian milfoil spreads easily from lake to lake via plant fragments attached to boat trailers and motors and is very difficult to eradicate once established. Another threat looms in the form of hydrilla, an exotic aquatic plant that has not yet been found in Michigan, but has been discovered as close as northern Indiana. It is very difficult and expensive to contain the spread of hydrilla once it takes hold. To learn more about aquatic invasive species impacting our inland lakes, visit the Michigan Inland Lakes Partnership web site (www.michiganlakes.msue.msu.edu).

Shoreline management

The trees, shrubs, and grasses along the shoreline provide a natural and gradual transition from aquatic to terrestrial environments. This area, known as the “buffer,” is critical for wildlife habitat, storing water during periods of high water flow, and protecting lakes from physical and chemical pollutants. Yet, out of misplaced fear of shoreline erosion or high-maintenance lawn standards, many shorelines have

replaced natural vegetation with turfgrass, seawalls/bulkheads, concrete rubble, boulders, or other artificial barriers. These hard structures sever the critical connection between land and water. The eventual result is elimination of wildlife habitat, destruction of fish spawning areas, neighboring bank erosion and increased pollutant loading to the lake. Establishing and maintaining vegetated buffers that protect the lakeshore is critical to protecting lakes against development pressures.

Local examples of shoreline restoration using native plants are increasing as a result of growing awareness of their value and the efforts of the Michigan Natural Shoreline Partnership, whose activities can be seen at <http://michiganlakes.msue.msu.edu/LakeManagement/ShorelineDevelopment.aspx>. HRWC and partners offered a shoreline restoration workshop to 45 people in August 2009, followed by a hands-on installation at Bishop Lake to restore a portion of the shoreline. The great success at Bishop Lake will be replicated in late spring with a similar project at Ford Lake. News about the workshop and installation will be posted at www.hrwc.org.



CLMP volunteer David Boprie collects lake water sample for phosphorus analysis. photo: J. Latimore

HOW INDIVIDUALS CAN GIVE BACK TO LAKES

Reliable information including water quality data, levels of use, and use impairment, is essential for determining lake health and for developing a lake management plan. Lake residents and users must take an active role in obtaining this information and managing their lakes. Several resources are available to support these efforts, notably the Michigan Inland Lakes Partnership provides current, relevant information about

continued on page 5

Phosphorus Declines throughout Middle Huron

continued from cover

animal populations and cause fish kills. These symptoms of excessive phosphorus are what led to the TMDLs originally. Algae and plant growth also interfere with recreation and aesthetic enjoyment by reducing water clarity, tangling boats, and creating unpleasant swimming conditions, foul odors, and both toxic and nontoxic algae blooms.

The Ford and Belleville Lakes TMDL was established in 1996 – the first nutrient TMDL in the state. The affected communities and other partner agencies responded by forming the voluntary Middle Huron Partnership Initiative (Partners) to coordinate and report on activities to reduce phosphorus in the middle Huron River watershed. These activities include a range of approaches, including: public education strategies; policy changes such as construction controls; phosphorus fertilizer restrictions; physical improvements and upgrades to treatment plants; and large-scale stormwater treatment projects like the system at Mary Beth Doyle Park in Ann Arbor.

The phosphorus reductions suggest that partner program activities are working and the watershed is close to achieving TMDL targets.

GREATER REDUCTIONS IN URBAN WATERS

The phosphorus decreases do not appear to be uniform across the middle Huron River watershed. In a study sponsored by the City of Ann Arbor, a team of researchers at the University of Michigan led by Dr. John Lehman found that phosphorus concentrations dropped at river sites within the city and downstream of the wastewater treatment plant, but there was no significant change upstream of the city. Further, they found that concentrations of other nutrients did not decline over the same period of time. These findings suggest that something happened in Ann Arbor that did not occur upstream.

Monitoring conducted by HRWC under the Middle Huron Nutrient Monitoring Program found significant declines in



Volunteers Magda Herkoff and Mike Chisholm grab a bucket sample from Allens Creek for the Middle Huron Monitoring Program. photo: HRWC

tributaries both within and outside Ann Arbor, but the declines were much greater in urban tributaries. Phosphorus concentrations in tributaries dominated by urban land uses declined by an average of 36%, while concentrations in less developed tributaries declined by 21%. These results could suggest that something is reducing phosphorus runoff in urban areas, or that urban streams had further to go to get back to a more natural state.

POSSIBLE CAUSES FOR THE REDUCTION

Improvements at wastewater treatment plants within the middle Huron River watershed have reduced phosphorus loads (i.e. the total amount of phosphorus in the river at a given point) by an estimated 41% from 1996 levels and 29% from 2003 estimates. The remaining phosphorus sources are diffuse and enter the river system primarily through stormwater runoff. These indirect — also called "non-point" — sources include phosphorus fertilizers, eroded soils and other sources that enter waterways quickly as water washes off impervious surfaces. Loading from these sources is difficult to estimate.

This decline in phosphorus coincides with the implementation of Ann Arbor's phosphorus fertilizer ordinance in 2007. That ordinance restricts the application of phosphorus containing fertilizers within the city limits. Pittsfield Township also passed a fertilizer ordinance at the same time and Ypsilanti Township has recently followed suit. The lack of such regulation of fertilizer upstream could explain the difference in results.

A competing explanation is that, as construction activities have declined, so have phosphorus concentrations in the river and streams. If not properly controlled, construction activities remove ground cover, disturb soil, and expose soils to rain, all of which contribute to erosion. Phosphorus binds to soil particles and can be carried downstream in sediments. By several measures, housing construction has significantly declined in Michigan over the past few years. However, if this were the main explanation, phosphorus concentrations would have declined more evenly across the watershed, not just in the urban areas. Further, dissolved phosphorus—the kind that is soluble in water and comes from sources like fertilizer — would not be expected to show significant declines if the source was mainly from soil. The Lehman study found such a decline in dissolved phosphorus at Ann Arbor river sites.

Further research and refinement of results is needed to clarify a causal explanation, but control of residential lawn fertilizers is currently the strongest single explanation. HRWC will continue to investigate and work with communities to achieve similar results across the watershed.

— Ric Lawson

Reports on monitoring results and activities of the Middle Huron Partners can be found at www.hrwc.org or contact Ric Lawson at (734) 769-5123 or rlawson@hrwc.org for more information.

The Skinny on Lakes

continued from page 3

lake management topics such as shoreline stewardship for homeowners and monitoring lakes for water quality and aquatic plants.

Coming up in April is Michigan's training program for volunteer lake monitoring, MiCorps' Cooperative Lakes Monitoring Program. This free training is provided as part of Michigan Lake and Stream Associations' Annual Conference in Lansing. Interested? Visit www.mlswa.org.

HOW COMMUNITIES CAN GIVE BACK TO LAKES

Local governments can enact regulations to limit the impacts of human activities on lakes such as: shoreline buffer ordinances; stormwater ordinances; Low Impact Development standards; and phosphorus fertilizer ordinances. Several watershed communities already are following these



Lake shoreline development requires a delicate balance to protect lake health. photo: J. Latimore

lake-friendly regulations and can provide sample ordinances. Also, model ordinances are available at www.hrwc.org.

In addition to the shoreline demonstrations mentioned above, HRWC is engaged in lake protection, monitoring and restoration through several programs: HRWC is a member of the Inland Lakes Partnership; co-coordinates the CLMP through the MiCorps program; offers workshops on lake

stewardship and lake monitoring for shoreline residents; and implements watershed management plans that focus on the health of inline lakes such as Brighton, Kent, Ford and Belleville Lakes. Contact the authors if you have suggestions for lake projects that could benefit from the expertise of HRWC and the Michigan Inland Lakes Partnership.

— Elizabeth Riggs and Jo Latimore

Dr. Jo Latimore is the Lake, Stream, & Watershed Outreach Director at Michigan State University, and coordinator of the Michigan Inland Lakes Partnership.

Sources: Public Sector Consultants, Inc. for Oakland County, Michigan. 2008; and Land Policy Institute, Michigan State University, and Heart of the Lakes Center for Land Conservation Policy. Economic Valuation of Natural Resource Amenities: A Hedonic Analysis of Hillsdale and Oakland Counties. LPI Report # 2007-09. December, 2007

Help with HRWC River Studies

Opportunities abound to volunteer

Your reliable commitment of time, energy, and expertise make our work possible and the Huron River stronger. *To register for an event, find a location or get contact information, see our Events Calendar on page 2 or go to www.hrwc.org/volunteer.*

ADOPT-A-STREAM TRAINING

Saturday, April 4, 12 – 5 PM

(Prior participation in either a River RoundUp or Stonefly Search is required before Leader or Collector Training)

Leader Training (12 – 2 PM) Learn important information about the data sheets and the river system that will enable you to be very helpful as a Team Leader during River RoundUp.

Collector Training (12 – 5 PM) Practice in-stream techniques to search for bugs in all kinds of habitats. Teachers who want to learn techniques for classroom use are welcome to join us with permission.

Bug Show (12 PM) A dazzling presentation of the amazing insects that live under water in our streams. Everyone is welcome to attend, no registration required.

WATER QUALITY SAMPLING TRAINING

Saturday, April 17, 12 – 2 PM

Receive training in water quality sampling techniques and sign up to help collect samples and other data from tributary and river sites in Livingston and Washtenaw counties. You will learn how to take scientific samples and measure stream flow for use in determining stream health. Interested volunteers can also stick around to learn about sampling during storms.

RIVER ROUNDUP

Saturday, April 24, 9 AM – 3:30 PM or 10:30 AM – 5 PM

Get outdoors with your friends and family to join the best stream monitoring program in the state! Collect a sample of the creatures that live in our streams. Like canaries in a coal mine, the status of these bugs indicates the health of the river.

BIORESERVE FIELD ASSESSMENT TRAINING

Saturday, May 1, 10AM – 4PM

Learn how to conduct rapid ecological field assessments and sign up to do them May through September 2010. The training session will be followed by practice at



Volunteers learning stonefly collection techniques in January 2009. photo: HRWC

the Botanical Gardens' beautiful natural areas. We're especially looking for people with plant identification knowledge or familiarity with wildflowers, grasses, and trees. Last season, volunteers assessed the woods, swamps, and fields of more than 100 different properties throughout the watershed. Let's continue that success!

BUG ID DAY

Sunday, May 2, 12 – 3 PM or 2 – 5 PM

Discover what kinds of bugs you found at the RoundUp with help from an aquatic entomologist.

We hope to see you this spring at one of these fun and informative volunteer events. Your help is vital and appreciated.

— HRWC Staff

Model Governance

Ann Arbor Township protects the watershed

Ann Arbor Township is notable for its proactive initiatives, undertaken to benefit the river and area residents for generations to come. The recent decline in development pressure has given the Township Board, Planning Commission, Natural Features Committee, and Farmland and Open Space Preservation Board the opportunity to improve their master plan, update ordinances, and launch initiatives to preserve natural areas and farmland and protect water quality.



Ann Arbor Township has many strategies for preserving farmland and open space. photo: J. Wayne Jones

MASTER PLAN IMPROVEMENTS

The township recently revised its master plan, which includes many provisions to protect farmland and preserve natural areas, including:

- Natural areas mapping, including HRWC's Bioreserve Map, which shows the remaining natural areas and the creeks that flow through the township (Fleming, Traver, Malletts, and Swift Run);
- Impervious surface maps showing the built land, as well as future impervious surfaces, based on master plan designated land uses;
- Language addressing the need to control the increase in impervious surfaces through compact development design and innovative stormwater control; and
- Language addressing the need to enact policies to preserve farmland and natural areas.

NEW TOWNSHIP POLICIES

Ordinances and policies the township has enacted include:

- Open Space and Farmland Preservation Districts, which encourage grouping homes together in order to permanently preserve farmland and open space. The open space district preserves at least 65% of a new de-

velopment, and the farmland district preserves at least 80%;

- Stormwater Ordinance, which requires proper treatment of runoff pollution through innovative best management practices;
- Natural Features Setback and Steep Slope Protection, which requires a permit for any development encroaching steep slopes within 25 feet of a wetland or within 100 feet of a creek or lake;
- Wetlands Ordinance, which requires a permit for any proposal that would impact wetlands;
- Reductions in street widths and parking space areas to reduce impervious surfaces;
- Farmland Preservation Purchase of Development Rights Program, a property tax funded program that has leveraged over \$6 million in federal and other matching funds to protect about 300 acres of farmland with over 600 more in the works; and
- A small farms initiative that matches smaller farm properties with agricultural entrepreneurs growing for local markets.

COMMUNITY PARTNERSHIPS

Ann Arbor Township has also been an active partner with other communities in the region. It has contributed to development and implementation of watershed management plans in the middle Huron and has been an active partner in the Washtenaw Metro Alliance, a group of Ann Arbor area communities that meet

regularly to discuss regional planning. The township also works with the Fleming Creek Advisory Council, a group of citizens representing the primary townships of the Fleming watershed (Ann Arbor, Salem and Superior) that reviews proposals within the watershed and advises the township planning commissions on ways to improve designs.

In all, Ann Arbor Township has made great strides to show that its residents and leaders value the watershed's resources and are working to protect them.

— Kris Olsson

Millers Creek Film Festival

Friday, March 19, 2010, 4:30 – 6 PM
Michigan Theater
603 E. Liberty, Ann Arbor

Don't miss HRWC's fifth annual festival featuring short films about our fresh water.

This year's judges include Chris Cook, an award-winning local filmmaker; Jeff Meyers, film critic for the Detroit Metro Times, and Rebecca Williams, reporter and producer of *The Environment Report*.

This **FREE EVENT** is a great way to end the week! Following the screening and award ceremony, join the filmmakers for a reception in the grand lobby.

Your Path to the River Begins with Us

Join us for our 2010 summer events

VERY BIRDY TIME

Friday, May 14, 6 – 8 PM

Join City of Ann Arbor ornithologist Dea Armstrong as she leads a walk to look for birds in the evening at Gallup Park and Furstenberg Nature Area in Ann Arbor. At this time of year, many birds are just arriving in our area and actively searching for partners and nest sites. And there is the occasional colorful migrant! Meet at the Gallup Canoe Livery Paddle Boat Dock. Please bring binoculars if you have them, but they are not necessary.

Saturday, June 12, 7:30 – 9:30 AM

Join City of Ann Arbor ornithologist Dea Armstrong as she leads a walk to look for birds in the morning at Gallup Park and Furstenberg Nature Area in Ann Arbor. By June, most of the migrants have moved on and those that are breeding are quite busy with feeding young. This activity is at its peak in the earlier morning hours, so we'll hope to have a chance to see bird parenting in action. Meet at the Gallup Canoe Livery Paddle Boat Dock. Please bring binoculars if you have them, but they are not necessary.

WOMEN'S FLY FISHING LESSONS

Saturday, May 22, 9 AM – 5 PM

Ann Arbor Trout Unlimited Woman's Fly Fishing Day - a one day intro to fly fishing for women. Try fly fishing and learn casting, knot tying, fly identification, entomology, and wading with women instructors. We have rods, waders, flies and will be serving

lunch. All you need is your willingness and a pair of polarized sunglasses. Please wear appropriate clothes for the weather. Details will be sent to you with registration. Meet at the Maas Shelter at Gallup Park. Limited to 15 women, age 15 or above, and all participants must register in advance. Email msmith@hrwc.org.

WILDCRAFTING

Saturday, June 12, 1 – 3 PM

Learn to find and prepare wild edibles, identify common medicinal herbs, and be aware of what plants to avoid. Join local herbalist and Holistic Health Practitioner Linda Diane Feldt (twitter.com/wildcrafting) on this slow-paced walk through Gallup Park. If you want to learn about snacking on your walks, what you can take home and prepare, herbs to use for immediate first aid as well as long term benefit, this workshop will be a great initiation. Handouts provided. Meet at the single lane wooden car bridge at Gallup. All participants must register in advance. Email msmith@hrwc.org.

SWIMMING THE RIVER

Sunday, June 20, 8:30 AM

Barton Pond, Barton Boat Club, Ann Arbor

Sunday, July 11, 8:30 AM

Baseline Lake, UM Sailing Club, Dexter We have two community swim events this summer for those who love the water and want to try a river swim. Jump in for our annual summer tradition – swimming the Huron River with water conservationist Liz

Elling and HRWC's Laura Rubin. The Barton swim is 1.3 miles, and the Baseline swim is 1 mile. All swimmers are required to register in advance — email msmith@hrwc.org. After the swim join us for a continental breakfast of hot coffee, fruit and bagels.

PADDLE TRIPS – HURON RIVER NATURAL RIVERS SECTION

June through September

Experience the Huron River with expert paddlers Ron Sell and Barry Lonik. Each trip is 3-4 hours long, and includes discussion regarding that river section, its water ecology, history and unique features. HRWC will arrange shuttle transportation. Do one trip or all four, but bring your own watercraft, gear, food, drinking water and appropriate dress for the weather. Every paddler must wear a PFD (personal flotation device) appropriate for their watercraft.

Put-in time for each trip is 10 AM:

June 12 - Kent Lake to Placeways

July 10 - Placeways to Huron Meadows

August 14 - Portage to Dexter Huron MetroPark

September 11 - Dexter Huron MetroPark to Maple Road

Exact location of each put-in will be sent to participants after they register. All participants must register in advance. Email msmith@hrwc.org or (734) 769-5123. Paddle trips are offered to HRWC members only, but if you are not an HRWC member, it is easy to join on-line at www.hrwc.org. Registration is limited to 30 kayaks and or canoes.

Events are free-of-charge and open to the general public except the Paddle Trips, which are limited to HRWC members.

All events start on time, so please plan accordingly.

— Margaret Smith

For more information on any of these events or to inquire about HRWC membership, please contact Margaret Smith at (734) 769-5123 or msmith@hrwc.org.



photo: J. Oleksinski

Copying Fish

Capturing river energy without the use of dams

Can rivers provide more renewable energy without creating more dams? Several alternatives to traditional hydropower (that use the force of impoundments created by dams) have been developed that could be much less harmful to river plants and animals. Most of these alternatives are only in the pilot testing phase, and much research remains to be done.

One alternative to traditional hydropower captures the flow energy of water using a vast array of “hydrokinetic” turbines below or beside the river channel rather than utilizing the potential energy in water elevated behind a dam. The first commercial hydrokinetic turbine, which essentially is a “wind turbine for the water,” was installed in the Mississippi River near Hastings, Minnesota in December of 2008. While these devices can run in free-flowing rivers, some are placed beside existing dams to ease the licensing process (they have the same regulations as hydroelectric dams) and be close to the electricity grid. While smaller micro-hydropower turbines currently are used in remote or low-budget situations, such as research camps in Alaska or small villages in Nepal, commercial-scale turbines need an average current of five to six knots to operate efficiently. (A knot is a bit more than one mile per hour.) However, most of the earth’s fresh water currents are slower than three knots, and the Huron River is just one-half to two knots through parts of its middle section.

VIVACE, which means “lively” on a musical score, is an acronym for Vortex-Induced Vibrations for Aquatic Clean Energy. This novel method is inspired by swimming fish, generating electricity in water flowing at a rate of less than one knot. VIVACE was created in Ann Arbor and will soon be tested in the St. Clair River. “We live in air so we

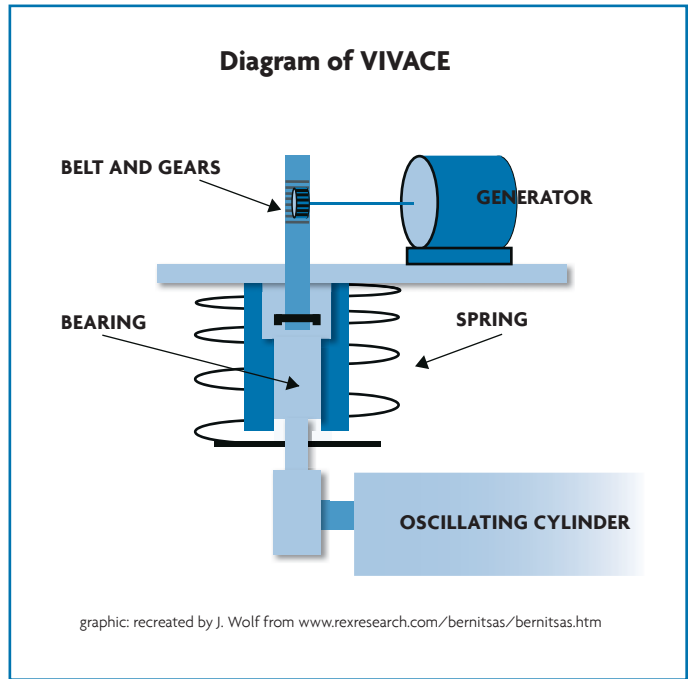
are used to lifting surfaces that support birds, sail boats and airplanes,” said Michael Bernitsas of the University of Michigan, creator of VIVACE. However, most natural swimmers — from tiny sperm to giant whales — create vortices (or little whirlpools) that they push off of to propel themselves forward.

VIVACE is a system of cylinders positioned horizontal to the water flow and attached to springs (see diagram at right). As water flows past, the cylinders create vortices, which push and pull the cylinders up and down (see diagram below). The mechanical energy in the vibrations is converted into electricity, which goes through cables to the electrical grid on land. The size, number and placement of the cylinders depend on the body of water.

Cylinders arranged over a cubic meter of a river bed with a flow of three knots can produce 51 watts of electricity, enough to run a laptop for five hours. The amount of power produced increases sharply if the flow is faster or if cylinders are added.

VIVACE systems could be sited on river beds or suspended in the ocean. Bernitsas and his colleagues say that generating power in this way potentially would cost only around 5.5 cents per kilowatt hour, compared to about 6.6 cents for wind energy and between 14.6 and 45.2 cents for solar power and 0.85 cents for traditional hydropower. They say the technology

Diagram of VIVACE



graphic: recreated by J. Wolf from www.rexresearch.com/bernitsas/bernitsas.htm

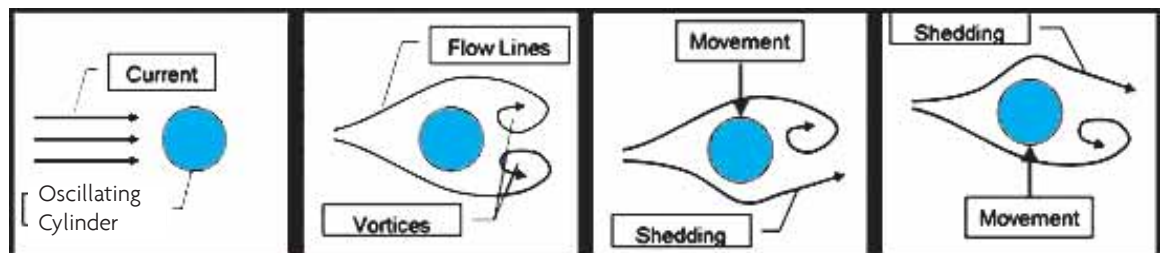
would require up to 50 times less ocean acreage than wave power generation.

In the St. Clair River, Vortex Hydro Energy (www.vortexhydroenergy.com) is developing the VIVACE converter and plans to install 8 cylinders, each about 10 inches in diameter and 10 feet long, suspended in frames mid-river on the U.S. side, which will create 1 - 3 kilowatts of power. The cylinders will be far enough apart that fish can swim between them and deep enough to avoid ships, boats and fishing lines. However, preliminary research, also at the University of Michigan, has shown that turbulent vortices can have a strong effect on swimming fish. Other researchers have shown that fish can be attracted to turbulence and may be attracted to the devices, which could be detrimental to the fish. However, if the eddies are sufficiently large, the fish may interpret them as secondary currents, reducing the effects. The development of VIVACE will be very interesting to watch.

— Joan Martin

VIVACE uses the physical phenomenon of vortex induced vibration in which water current flows around cylinders inducing transverse motion. The energy contained in the movement of the cylinder is then converted to electricity.

graphic: www.vortexhydroenergy.com



Laura's "Stream" of Consciousness

An update on HRWC projects and activities

THE GREAT LAKES RESTORATION INITIATIVE

President Barack Obama has made restoring the Great Lakes a national priority. In February 2009, he proposed \$475 million for a Great Lakes Restoration Initiative, an unprecedented investment in the nation's largest fresh surface water ecosystem. Congress approved that funding level, and President Obama signed it into law in October.

The President's \$475 million is earmarked for a new EPA-led, interagency Great Lakes Restoration Initiative, which will target the most significant problems in the region, including invasive aquatic species, non-point source pollution, and contaminated sediments. EPA and its Federal partners will coordinate State, tribal, local, and industry actions to protect, maintain, and restore the chemical, biological, and physical integrity of the Great Lakes.

The Initiative builds upon five years of work of the Great Lakes Interagency Task Force (IATF) and stakeholders, guided by the Great Lakes Regional Collaboration Strategy. The IATF has developed a Plan for the proposed \$475 million budget, including over \$250 million in grants and project agreements to meet several long term goals such as assuring safe drinking

water, safe fish to eat, safe beaches for swimming, and providing a healthy ecosystem for fish and wildlife.

The Initiative begins in 2010 by providing \$475 million for programs and projects strategically chosen to target the most significant problems in the Great Lakes ecosystem and to demonstrate measurable results. This investment increases federal Great Lakes environmental funding to about \$1 billion annually.

EPA has used the strategic planning work of the IATF to identify five principal focus areas, encompassing the most significant environmental problems in the Great Lakes (other than water infrastructure) for which urgent action is required. The Initiative will focus Great Lakes protection and restoration activities on:

1. Toxic Substances and Areas of Concern
2. Invasive Species
3. Nearshore Health and Nonpoint Source Pollution
4. Habitat and Wildlife Protection and Restoration
5. Accountability, Monitoring, Evaluation, Communication, and Partnerships

WHAT THIS MEANS FOR THE HURON RIVER WATERSHED

Much of this Initiative's focus is on the Great Lakes themselves, and on Great Lakes Areas of Concern, which are areas with major impairments that threaten the Great Lakes basin. Currently the Huron has no Areas of Concern that have been identified by the EPA. To get funding for the Huron we will have to show the connection between the health of the Great Lakes and the health of the rivers and streams that feed the Great Lakes. We are also advocating using the Huron River watershed as a pilot for many demonstration projects and new initiatives. Having one of the most comprehensive and long-term data sets for a river puts the Huron in a great position for measuring the effectiveness of best management practices.

We will be submitting grant applications to help communities prepare for and address climate change; to work with five land conservancies in the watershed to develop land protection priorities and protect and restore key habitats; to assist communities looking at dam disposition options and secure funds for removal; to help communities adopt more ordinances to regulate phosphorus fertilizer; and to work with the county drain and environmental resource commissions to develop a series of best management practices to manage road runoff. We hope to secure some funds to implement a few, if not all, of these projects.

OTHER STIMULUS FUNDS

Outside of the Great Lakes Restoration Initiative, HRWC secured two stimulus fund grants for Livingston and Washtenaw County communities to reduce phosphorus pollution and bacteria contamination. HRWC will be mapping stormwater systems, developing water quality monitoring plans, and conducting some initial monitoring to identify key inputs and priorities for phosphorus and bacteria reduction. This work began in February and will continue through September 2011.

— Laura Rubin



Half Moon Lake at sunset. photo: C. Riggs

Source: US EPA's website on the Great Lakes Restoration Initiative

Know Your Board Representative

Norman Andresen, Ypsilanti Township

Norman Andresen is Ypsilanti Township's representative to HRWC's Board. He serves on the township's Water Conservation Advisory Committee and, because of his interest in local bodies of water and environmental health, he accepted the nomination to be one of Ypsilanti Township's representatives to HRWC.

His education is in biology and botany, with degrees from Taylor University, Michigan State University, and the University of Michigan. His career has included teaching; working as Chief Aquatic Biologist for a company on contract to the US EPA Region 5, conducting Great Lakes research; and the University of Michigan's Center for Great Lakes and Aquatic Sciences, where he worked in the Phytoplankton Laboratory for 16 years. He has worked mainly on Laurentian Great Lakes samples, but has had experience with other great lakes of

the world, including Lake Baikal in the Russian region of Siberia. He is currently self-employed, providing sample analyses.

Norm has an enduring interest in the microscopic life in water. He feels that, as a scientist, he understands the technical expression of research data and is able to make it more understandable to citizens in less technical terms.



photo: N. Andresen/HRWC

He has been married for 43 years and has a son who is a medical researcher. Norm likes to canoe and do woodworking, including carving. He says, like many, he looks for opportunities to pursue these hobbies despite his busy schedule.

If you would like more information or have suggestions, comments or questions, call Norm at (734) 483-4529 or HRWC at (734) 769-5123.

— Eunice Burns

HRWC BOARD OF DIRECTORS

CITY OF ANN ARBOR

Shirley Axon
Dick Norton (Exec. Comm.)
Eunice Burns (Exec. Comm.)
Craig Hupy (Exec. Comm.)
Evan Pratt (Treasurer)
Kate Rose
Molly Wade (alternate)
Cheryl Darnton (alternate)

ANN ARBOR TOWNSHIP

Diane O'Connell (Exec. Comm.)

VILLAGE OF BARTON HILLS

James Wilkes

CITY OF BELLEVILLE

vacant

CITY OF BRIGHTON

Sue Monet

BRIGHTON TOWNSHIP

Mike Slaton

CITY OF CHELSEA

Steven Wright

COMMERCE TOWNSHIP

vacant

DEXTER TOWNSHIP

Barry Lonik
Kathryn Bowring (alternate)

VILLAGE OF DEXTER

Paul Cousins (Vice Chair)

CITY OF FLAT ROCK

Ricky Tefend

GENOA TOWNSHIP

vacant

GREEN OAK TOWNSHIP

Fred Hanert

HAMBURG TOWNSHIP

Julie Metty Bennett

HURON TOWNSHIP

Deeda Stanczak
Robert Stanczak (alternate)

LIVINGSTON COUNTY

Matt Bolang
Scott Barb

VILLAGE OF MILFORD

vacant

MILFORD TOWNSHIP

Mary Bajcz

NORTHFIELD TOWNSHIP

Sue Shink

OAKLAND COUNTY

Chris Benedict (Exec. Comm.)

VILLAGE OF PINCKNEY

Barry White

PITTSFIELD TOWNSHIP

Sabrina Gross

PUTNAM TOWNSHIP

Keith Tianen

CITY OF ROCKWOOD

vacant

SALEM TOWNSHIP

vacant

SCIO TOWNSHIP

Spaulding Clark
Gerry Kangas (alternate)

VILLAGE OF SOUTH ROCKWOOD

vacant

SUPERIOR TOWNSHIP

John Langs (Chair)

VAN BUREN TOWNSHIP

Dan Swallow

WALLED LAKE

Lisa McGill

WASHTENAW COUNTY

Janis Bobrin (Exec. Comm.)
Scott Munzel

WAYNE COUNTY

vacant

W. BLOOMFIELD TOWNSHIP

Gene Farber

WHITE LAKE TOWNSHIP

vacant

CITY OF WIXOM

Michael Howell

VILLAGE OF WOLVERINE LAKE

vacant

CITY OF YPSILANTI

Sally Lusk
Tom Roach

YPSILANTI TOWNSHIP

Norm Andresen

HRWC STAFF

Jennifer Fike

Finance Manager
jfike@hrwc.org

Pam Labadie

Marketing Director
plabadie@hrwc.org

Ric Lawson

Watershed Planner
rlawson@hrwc.org

Joan Martin

Adopt-A-Stream Director
jmartin@hrwc.org

Kris Olsson

Watershed Ecologist
kolsson@hrwc.org

Elizabeth Riggs

Watershed Planner
eriggs@hrwc.org

Laura Rubin

Executive Director
lrubin@hrwc.org

Margaret M. Smith

Director of Development
msmith@hrwc.org

Paul Steen

Watershed Ecologist
psteen@hrwc.org

Debi Weiker

Watershed Program Associate
dweiker@hrwc.org

Phosphorus Pollution Still Threatens Local Waterways

And it begins in your yard . . .

Whenever it rains, water flows over your yard, carrying untreated pollutants like fertilizer and pesticides into our rivers and lakes directly or through the stormdrains. Here are some steps you can take to keep lawn care pollutants out of the river – especially lawn fertilizer:

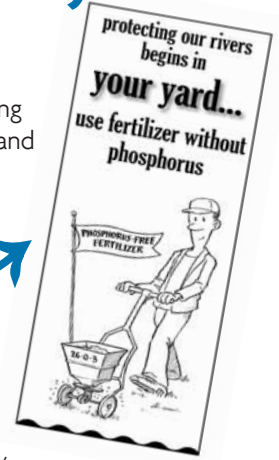
- Wait until the ground is fully thawed to apply fertilizer.
- Use a broom to sweep fertilizer spills on sidewalks back onto your lawn.
- Go phosphorus-free when choosing lawn fertilizer. Most area lawns already have enough and several watershed communities restrict its use.
- Don't guess, soil test. Find the fertilizer best suited for the condition of your soil.
- Consider applying lawn fertilizer only once this year, in the fall.

- Reduce your need for lawn fertilizer altogether by keeping the grass blade 3 inches tall after cutting to promote healthy root growth.
- Leave a “no fertilizer” zone of at least 25 feet from waterways.
- Reduce the size of your lawn by planting deep-rooted native grasses and plants.

The following watershed communities restrict the use of manufactured phosphorus fertilizer on turf grass: City of Ann Arbor, Commerce Township, Hamburg Township, City of Orchard Lake Village, Charter Township of Pittsfield, West Bloomfield, and Charter Township of Ypsilanti.

Soil testing determines what nutrients your soil needs for your lawn's optimum health and growth. Michigan State University Extension will test your soil samples for \$15 per sample, 9AM-3PM, on Saturdays throughout April at participating Washtenaw County retailers. For a PDF of

the MSUE Soil Testing Program directions and retailer list, go to www.hrwc.org. You will also find this free brochure!



Some Michigan lawmakers are seeking to protect streams and lakes by restricting phosphorus lawn fertilizer use state-wide. In September 2009 Rep. Terry Brown, D-Pigeon, introduced bill 5368 in the Michigan House of Representatives that prevents property owners from using lawn fertilizers containing phosphorus unless a soil test concludes the existing level of phosphorus is too low or they're growing new turf. The bill is currently pending in the House Great Lakes and Environment Committee. Contact your representative to voice your support.

— Pam Labadie



Photo: Jeff Orlowski

Fulfilling Goals

Leave a legacy by including the Huron River Watershed Council in your will and estate plans. Please remember HRWC and our important watershed protection and restoration programs with a generous bequest in your will or trust. Help us meet the challenges of keeping our river running clean. If you have already included HRWC in your will, please let us know so we can thank you. With your support the watershed will be enjoyed for many generations to come.

Please contact us to discuss planned giving options.
Margaret Smith, Development Director.
(734) 769-5123 x 19 , msmith@hrwc.org

*Every individual has a role to play.
 Every individual makes a difference.*

Your membership supports HRWC programs. Send us this membership form with your check made out to “HRWC” or join on-line at www.hrwc.org and click on Join Now! Your contribution is tax-deductible.

MEMBER LEVELS

- \$35 **Mayfly**
- \$50 **Crayfish**
- \$100 **Dragonfly**
- \$250 **Soft Shell Turtle**
- \$500 **Salamander**
- \$1,000 **Smallmouth Bass**
- \$2,500 **Great Blue Heron**
- \$5,000 **Mink**

thank you!

Name _____

Address _____

City _____ State _____ Zip _____

Email _____

Phone _____



Protecting the river since 1965

1100 N. Main Street Suite 210
Ann Arbor, MI 48104
(734) 769-5123
www.hrwc.org

NONPROFIT
U.S. POSTAGE
PAID
Ann Arbor, MI
Permit #435

The Huron River Watershed Council receives contributions via payroll deduction through EARTH SHARE of Michigan.



Printed on 30% minimum post-consumer recycled content paper



Thanks to Our Volunteers!

Protecting the Huron is a big job and we would be lost without the donations of time, talents, and resources from our dedicated volunteers. **We extend Special Thanks to:**

Noemi Barabas, Michael Benham, Gary Crawford, Michele Eickholt, Lee Green, Gary Hochgraf, and Dave Wilson for training a new crew of volunteers to measure stream flow.

The **145 people** who spent Saturday January 30th successfully searching for stoneflies at 48 sites throughout the watershed, and the **10 additional people** who prepared and staffed the event.

Hank Byma, Paul Evanoff and Oliver Kiley of JJR Engineering for developing the "Huron River Restoration at Argo Pond" illustrations that depict what the Huron River could look like without Argo Dam and Pond.

Tom Jenkins for all manner of file organizing, envelope stuffing, and database wrangling.

Eric Sweeney, our remarkable intern for the Bioreserve Project.

Rochelle Breitenbach for entering, checking, and analyzing monitoring data.

Debi Weiker for careful editorial review of the *Huron River Report*.

Rebecca Cheney for her help and research on a Huron River Trail.

Don Rottiers for constructing and installing racks for Apopt-A-Stream waders.

HRWC Celebrates 45 Years

TELL US YOUR STORIES!

In celebration of HRWC's 45th anniversary we want to hear your personal stories about the Huron River or your experiences with HRWC.

We will feature your stories in our newsletter and on our website as a way of honoring 45 years of successful collective river protection work.

To submit a story, contact Pam at plabadie@hrwc.org or (734) 769-5123.