



# Huron River Report

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Fall 2012

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## Ospreys Are Back!

Reintroduction effort a success

If you see a cell phone tower, look up! Ospreys, rarely seen in southeast Michigan for decades, are now living and thriving on the Huron River thanks in part to the Southern Michigan Osprey Reintroduction Project, which took flight in 1998.

Ospreys once lived throughout Michigan. Known as the "fish hawk" because they eat fish almost exclusively, these birds live near water and use their keen eyesight and superb flying skills to catch their prey. Their feet are specialized for "fishing" with each foot having four talons – one pair facing forward, the other pair facing backward – and soles covered in sharp spines that help them grip the fish in flight.

Loss of habitat and the use of DDT and other pesticides led to the osprey's decline to the point that they ceased to nest in southeast Michigan. Today, ospreys are considered "threatened" and are protected

under the State of Michigan's endangered species legislation.

Ospreys are a charismatic bird with dark brown on the back and white on the belly and chest. The head is mostly brown with a distinct, dark stripe across the eyes. Although closely related to hawks and eagles, they are unique among raptors due to their specialized feet and wings that bend in flight like a gull. The osprey grows to be about 2 feet long, with a wingspan of 4.5 to 6 feet and weights from 2.5 to 4 pounds, with females tending to be slightly larger than males. While they normally reach a maximum speed of 40 miles per hour in flight, ospreys are capable of reaching 80 mph in steep dives while hunting fish.

The goal of the osprey relocation project is to re-establish a breeding population of osprey in southern Michigan. The project is a joint effort between Huron-Clinton



*The return of the osprey to Michigan is an indication of improved water quality.*  
photo: R. Miller

Metroparks, Detroit Zoological Society, DTE Energy, Michigan Department of Natural Resources, and many dedicated volunteers. The Detroit Zoo provides

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## Restoration of a Highly Urbanized Creek

Benefits extend downriver

Malletts Creek, located in the southern portion of the City of Ann Arbor and northern Pittsfield Township, is a natural creek with several channelized sections that also receives drainage from numerous storm sewers. Thirty four percent of the 7,000 acre creekshed (11 square miles) is impervious (numerous studies have shown that fish and insect communities suffer when impervious surface exceeds 15%).

In August 2004, the Michigan Department of Environmental Quality (DEQ) established a biota Total Maximum Daily Load (TMDL) for Malletts Creek. A

TMDL sets goals for reducing pollution, sediments, and runoff in order to improve waterway health. The DEQ determined that stream bank erosion, sedimentation, total suspended solids and flashy water flow in Malletts were causing poor fish and macroinvertebrate communities. They also identified Malletts as a major contributor of phosphorus and E.coli to the Huron River. Over 1,000 tons of sediment each year was moving downstream to the Huron River from Malletts Creek and its tributaries.



*Malletts Creek prior to restoration efforts. Note the wide channel, high sediment content, and bank erosion.* photo: HRWC

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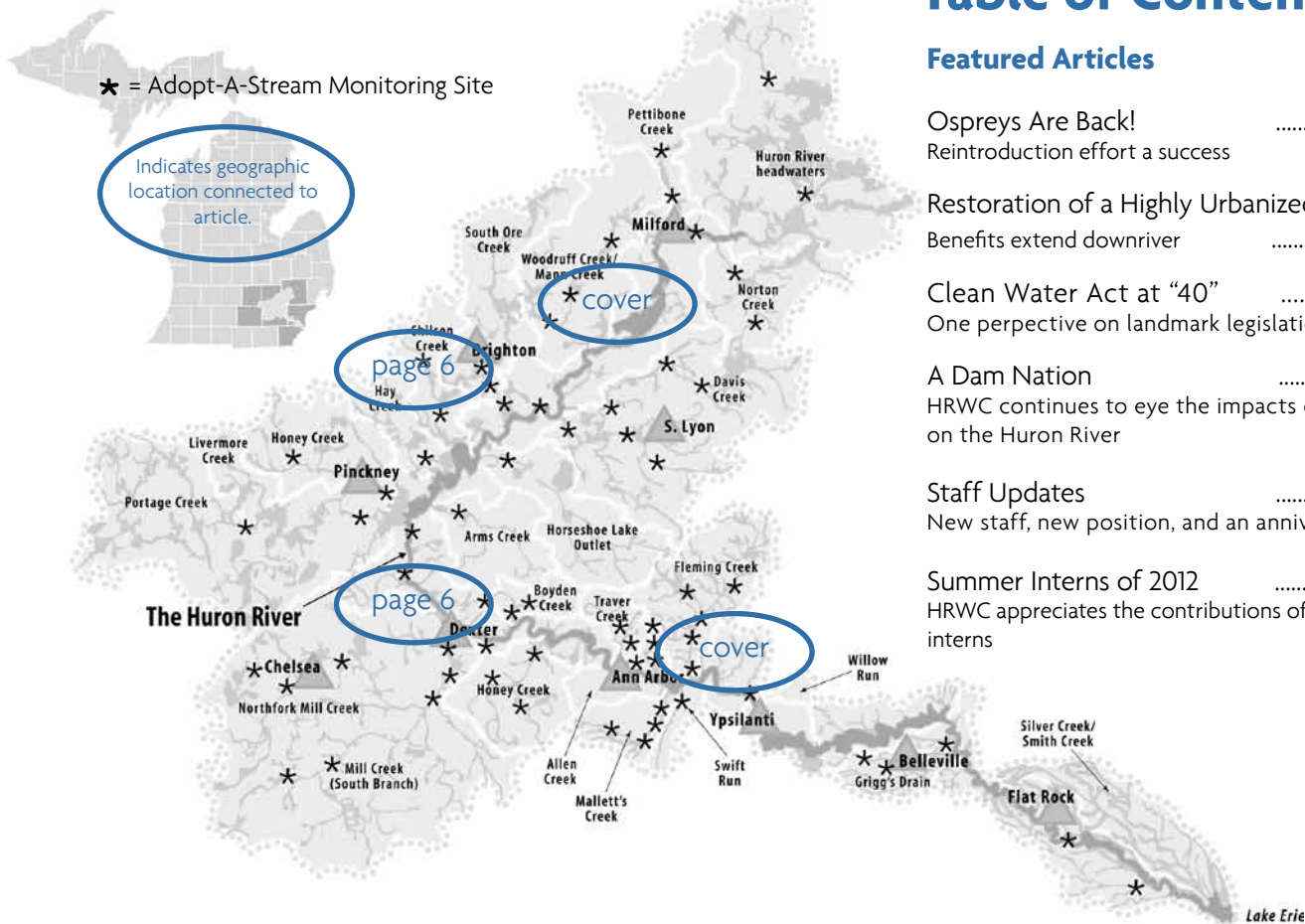
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## Events

Thursday, September 6, 5 – 7:30 PM

### Brew for the River

Blue Tractor, 205 East Washington  
 contact: msmith@hrwc.org  
 www.hrwc.org/brew

Saturday, September 8, 6 – 10 PM

### Ann Arbor Home Grown Festival

Ann Arbor Farmers' Market, 315 Detroit St  
 contact: plabadie@hrwc.org

Thursday, September 13, 6 – 9 PM

### Suds on the River

contact: msmith@hrwc.org  
 www.hrwc.org/suds

Saturday, September 15, 10 AM

### Paddle Trip Flat Rock to Point Mouillee

contact: recreation@hrwc.org

Thursday, September 27, 5:30 PM

### HRWC Executive Committee Meeting

NEW Center, Ann Arbor  
 contact: lrubin@hrwc.org

Saturday-Sunday, September 15 – 16

### Flat Rock River Fest

contact: plabadie@hrwc.org

Saturday, October 6, 9 AM – 3:30 PM or

10:30 AM – 5 PM

### River Roundup

NEW Center, Ann Arbor  
 Pre-registration required  
 contact: www.hrwc.org/volunteer

Sunday, October 14, noon – 4:30 PM

(start at noon or 2 PM)

### Bug ID Day

NEW Center, Ann Arbor  
 Pre-registration required  
 contact: www.hrwc.org/volunteer

Thursday, October 25, 5:30 PM

### HRWC Board Meeting

NEW Center, Ann Arbor  
 contact: lrubin@hrwc.org

Monday-Tuesday, October 29 – 30

### MiCorps' Eighth Annual Conference and Training

R.A. MacMullan Center, Roscommon, MI  
 Register: www.micorps.net/conference

**MORE EVENTS AND UPDATES AT  
 WWW.HRWC.ORG**

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

## Follow us on Facebook and Twitter!

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**HRWC offices** are located at the NEW Center 1100 N. Main Street in Ann Arbor. Directions at www.hrwc.org or call (734) 769-5123.

# Ospreys Are Back!

continued from cover

veterinary services, telemetry equipment and consultation. The Metroparks provides staff and trained volunteers to feed and care for the birds. The osprey program receives funding from DTE Energy and citizens who contribute to the Nongame Wildlife Fund through sales of the Wildlife Conservation license plate.

At the beginning of a relocation project, staff and volunteers transport chicks from wild osprey nests up north to a “hack box” — a tall tree-like shelter 15 feet above the water. Care for the birds includes a daily diet of fish and behavioral monitoring. The birds remain in the hack box until they fledge (fly) at about eight weeks of age.

The relocated ospreys will stay at the park through the summer and early fall and then migrate south to Central and South America. After maturing, ospreys

typically return to nest in the area where they learned to fly. Breeding pairs of osprey usually form a life-long bond, and both the male and the female will tend to the eggs. In order to protect their young from predators like bald eagles and great horned owls, osprey build their nests away from dense cover and high up enough to maintain a 360 degree view of the space around them. Cell phone towers fit the bill nicely!

HRWC staff recently traveled to Kensington Metropark to learn more about ospreys. Barb Jensen, a volunteer of Osprey Watch of Southeast Michigan (OWSEM; [www.owsem.org](http://www.owsem.org)), guided HRWC staff to the nesting site of a mated pair of osprey and their young family of three fledglings on Wildwing Lake. Thanks to a 1998 reintroduction project and cleaner water in the watershed, the osprey are

rebounding. OWSEM recorded 37 nesting pairs in 2011, and today there are 36 known nests in southeast Michigan.

The osprey’s recovery is also due to the Clean Water Act of 1972, and the work of HRWC to protect and restore clean water in the Huron since 1965. We are fortunate to have so many opportunities to see a wide variety of birds within the Huron River watershed, and to observe mating and feeding behaviors. The osprey’s return is an amazing success story of clean water, healthy diversity, and abundant fish.

— Margaret Smith and Kris Olsson

*The article from the Flint Journal titled “Michigan DNR bands osprey chick from cell tower in Lapeer” and dated July 11, 2012, is available at [www.mlive.com](http://www.mlive.com). Included with the article is a terrific slideshow of osprey nesting in cell towers, as well as pictures of the leg-banding process.*

## Restoration of a Highly Urbanized Creek

continued from cover

In 1999, the City of Ann Arbor, Pittsfield Township, and the Washtenaw County Drain Commissioner’s office hired ECT, ASTI, and Tilton & Associates to conduct the Malletts Creek Restoration Project. The report from this project, along with the Middle Huron Management Plan and the Creek Report for Malletts (all available at [www.hrwc.org](http://www.hrwc.org)) focused on developing a comprehensive assessment of the creek, establishing goals for restoration activities, and identifying specific actions to achieve those goals.

These plans identified two major goals for Malletts Creek:

- Reduce peak flow rates and in-stream velocities.
- Reduce the amount of pollutants, primarily phosphorus, to the watercourse.

Several projects, including the Mary Beth Doyle Park & Wetland Preserve Project (formerly Brown Park Pond), have already begun to address these challenges by reducing peak flows and velocities and improving water quality in the downstream reaches of Malletts Creek.

### RECENT STUDY IN MALLETT'S

After these successful projects, efforts focused on other potential ways to reduce the flow and improve water quality. OHM, Inc. and Niswander Environmental conducted field investigations and discussions with residents, who reported that the stream had been widening for many years, was extremely flashy, and was starting to jeopardize private and public property. Indicators of this widening included eroding stream banks with exposed tree roots, as well as older utility poles and storm structures now located in the middle of the channel. It was clear that the creek substrate was stable and contained good habitat (boulders and cobbles) for a diversity of benthic macroinvertebrates, but sediment eroding from the banks filled many of the spaces between the cobbles, denying the stream’s biota this habitat.

The studies also found that while Malletts Creek’s banks were still eroding greatly, the stream bed was near a stable



*Malletts Creek at the completion of construction. Note the boulders and vegetation for bank stabilization, including the toe formations added on the outer bank to reduce undercutting and erosion. photo: HRWC*

condition, due to years of bank erosion and subsequent stream widening. Thus, the most cost-effective restoration measures would include slight stream widening, combined with stabilizing the toe of the bank with vegetation and boulders in areas with high potential for erosion. In County Farm Park, the stream’s existing stresses were well above what the existing banks could withstand. This meant that the stream would continue to erode and

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# Mallets Creek Restoration

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widen until it reached an equilibrium size. Therefore, restoration measures would need to be more intrusive, including installing boulders to reduce in-stream velocities and creating a wider channel that would reduce shear stresses and could handle the higher peak flows and velocities.

## A WETLAND IS BORN

Yet there was still something missing. The staff at the Office of the WCWRC (Washtenaw County Water Resource Commissioner, formerly known as the Drain Commissioner) knew that they had to reduce the stream's flashiness and improve low base flow in order to meet the TMDLs. The WCWRC's office initiated discussions with Washtenaw County Parks to build a wetland/storm water storage area within County Farm Park. Both organizations were eager to improve water quality while adding ecosystem diversity within the park. When the pond opens and receives flow from the creek in 2013, engineering models predict the wetland will absorb and store over 30 percent of the water from a large rainstorm.

## RESTORATION CONSTRUCTION

The work began in September 2011. The warm weather last winter slowed construction, yet one benefit of having the warm winter weather was the ability to plant live stakes of woody plants through the winter months.

## SUCSESSES!

This project is one of the largest urban stream restoration projects undertaken in Michigan. Almost two miles of urban stream are now restored as part of the ongoing watershed-wide plan. Project construction statistics include:

- seventeen problematic log jams removed;
- 4.5 acres of native wetland and prairie areas created;
- over 360 native shrubs and trees installed;
- 33,000 live stakes installed;
- 6,000 tons of boulders placed along the stream;
- over 5,000 feet of coconut fiber "logs" installed along bank toe;
- 4 turtle nesting sand mounds placed, with successful nesting; and
- 11 acres of invasive plants removed with native seed and plant replacement.

Anticipated project benefits include:

- 90% reduction in sediment and phosphorus loading to the Huron River;
- increased base flow to both County Farm Drain and Malletts Creek;
- ultimate improvement of in-stream substrate; and
- improved riparian and stream ecosystem diversity.

Staff and park users already see mallards nesting along the creek's shoreline. Native plants are beginning to grow along the stream, and much of the native seed is beginning to germinate. A year from now, a vigorous native plant community within County Farm Park and Malletts Creek's riparian areas will be thriving and in-stream habitat will continue to improve and stabilize. HRWC will monitor Malletts Creek and report out on the progress.

— **Harry Sheehan, Office of Washtenaw County Water Resource Commissioner**  
— **Ron Cavallaro, OHM Inc**  
— **Jason Frenzel, HRWC**



Aerial of the Mallets Creek Project at County Farm Park, along Washtenaw Avenue in Ann Arbor. source: Google Earth, modified by HRWC

# The Clean Water Act at “40”

One perspective on how well the country’s landmark water legislation holds up

*Many of the tools that HRWC uses to protect and restore the Huron River originated when the U.S. Congress enacted the Clean Water Act (CWA) in the early 1970s. The landmark act turns 40 this year. This milestone gives the CWA’s supporters and critics cause to reflect on the original intent of its framers, evaluate its success, and envision the next 40 years of watershed protection and management.*

*Todd Ambts is President of River Network, a national river and watershed protection and restoration organization (HRWC is a member), and is intimately familiar with the successes and shortcomings of the CWA. Previously, Todd ran the Water Division of the Wisconsin Department of Natural Resources and was Executive Director of River Alliance of Wisconsin. His “Forty Thoughts for Forty Years” is available in its entirety at [rivernetwork.org](http://rivernetwork.org). An excerpt of his reflections, the first 20 thoughts, follows.*

It is 2012, a full 40 years since Congress passed the Federal Water Pollution Control Amendments of 1972, better known as the Clean Water Act (CWA). The bill was vetoed by then President Nixon, but overridden by a Congress tired of watching rivers catch on fire and raw sewage flushing into community waterways. Today it seems appropriate to take stock of how far we have come thanks to this landmark legislation, how far we have to go and perhaps some ideas on how to get there.

## TWENTY THOUGHTS IN 2012

1) We have made good progress – rivers don’t catch fire anymore, raw sewage is usually not found in our waterways, and many waterbodies once thought dead are now prime recreation locations.

2) The CWA is not uniformly applied – it is unevenly administered by eleven EPA’s (the DC office and ten regions) and through the 46 states who have been delegated authority to implement the act.

3) Stormwater regulations were not really contemplated 40 years ago and only now are we beginning to get a handle on how to address this problematic vector for pollutants.

**“Regulations to ensure that we have that most basic of human needs, clean water, produce \$40 dollars in health and environmental benefits for every dollar of compliance costs.” – Todd Ambts**



*River Network’s fifth President, Todd has worked in the environmental policy field for over 30 years. photo: [www.rivernetwork.org](http://www.rivernetwork.org)*

4) The federal government provided much of the funding for construction of the first generation of wastewater treatment facilities in the mid-1970s.

5) The federal government is unlikely to provide much of the billions of dollars in funding needed to reconstruct the nation’s wastewater infrastructure 40 years later.

6) Combined sewer overflows will be with us in many cities across the U.S. for years to come.

7) Excessive nutrients, such as phosphorus and nitrogen, are a large and still-growing problem causing deadly algae blooms in thousands of lakes and streams and a massive dead zone in the Gulf of Mexico. To solve this problem, we must get meaningful, numeric nutrient standards in place in states across the country.

8) The definition of the Waters of the United States covered by the CWA must be broad and inclusive to insure that we have clean water in all parts of the natural hydrologic cycle - it is not called the “Partially Clean Water Act”.

9) Innovative approaches to CWA implementation, monitoring and enforcement in one EPA Region or

delegated state should be encouraged, documented, assessed and, when proven to be effective, required for the rest of the EPA regions and delegated states.

10) Total Maximum Daily *Load* too often becomes Total Maximum Daily *Litigation* instead of the useful tool that it should be to develop a meaningful cleanup plan for a waterway impaired with too many pollutants.

11) Thousands of public servants around the country, many of whom have retired or are retiring, deserve our heartfelt thanks for working diligently over the years to get the CWA in place and working to clean up our waterways.

12) The requirements for an investment in green infrastructure must be enhanced and retained in order for regulated entities to qualify for State Revolving Loan Funds.

13) Old, centralized gray water systems should be replaced with today’s technology. Green infrastructure, decentralized systems where appropriate, and efforts to restore natural hydrologic system functions all must play a part in the “replumbing” of America.

14) The permits issued under the law are part of the National Pollutant Discharge ELIMINATION System – it sure would be nice if we started to focus on that elimination word.

15) The amount of a pollutant that a waterbody can hold before it becomes impaired, known as the assimilative capacity, should not be a threshold to which dischargers aspire.

16) Most Americans don’t realize that we haven’t even assessed the quality of many of the nation’s waterways, let alone determined whether they are impaired and why.

17) Regulations to ensure that we have that most basic of human needs, clean water, produce \$40 dollars in health and environmental benefits for every dollar of compliance costs.

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# A Dam Nation

HRWC continues to eye the impacts of dams on the Huron River

There are 75,000 dams in the United States. Michigan contains an estimated 2,500 dams; 101 of these are on the main stem and tributaries of the Huron River. Michigan dams once served many purposes, including providing hydroelectric power, water supply, irrigation, flood control, debris control, and recreational opportunities, as well as supporting shipping, logging and milling operations, and holding mine tailings. Today, most dams serve the purposes of recreation, municipal water supply, and property value enhancement.

## DAM PROBLEMS

Dams can be harmful to stream ecosystems:

- Dams cause the build-up of sediment behind them. They block free-flowing water and impede the river's flushing function, as well as the transport of nutrients and sediment downstream.

Because sediment accumulates behind dams, water flowing over or through dams is sediment-starved, and will pick up sediment below the dam, increasing the erosive potential of the river.

- Dams fragment rivers and block the natural movement of fish and other aquatic species.
- Dams contribute to, and sometimes are the sole cause of, many species becoming threatened, endangered, or extinct.
- Dams can greatly increase water temperatures, reduce the water's dissolved oxygen levels, and produce turbidity and salinity, both upstream and downstream of the structure. All of these effects reduce the amount and diversity of aquatic life.

Dams require ongoing operation and maintenance and have maximum expected

life spans. Typically, engineers design dams to last for 40 years. According to the Michigan Department of Natural Resources (DNR), most dams in Michigan were built several decades ago, and many have deteriorated due to age, erosion, flood damage, and poor design. In the Huron River watershed, 65% of dams are more than 40 years old.

According to the DNR, some dams are "at significant risk of failure, particularly during high flow events." This poses a looming safety problem to the public. When dams fail, the results can be loss of life, significant property damage, loss of recreational resources, and significant environmental damage. If these aging dams are not properly maintained or removed, dam failures will become a more frequent occurrence.

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## The Clean Water Act at "40"

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18) The practice of approving broad generic template permits that then apply to whole classes of facilities is largely the result of our failure to invest in the necessary resources to make it possible to properly approve individual permits for those facilities. These general permits simply do not protect our water resources as well as individual permits.

19) The CWA was a great piece of legislation when it was passed in 1972, but this law in its current form will not enable us to achieve the physical and biological integrity goals that produce truly healthy waterways.

20) It is time to consider amending the CWA again to bring it into the 21st century.

— **Todd Ambs**  
**President, River Network**

*Michigan, and the Huron River, has much to gain with full implementation of the CWA. Yet the CWA faces political pressures and court rulings that seek to narrow its vision. This year, give back to the act that protects your drinking water and favorite bathing beach by learning about these challenges and how to speak up for the continuation and strengthening of the CWA.*

— *compiled by Elizabeth Riggs*

*Todd's blog "Forty Thoughts for Forty Years – The Clean Water Act Four Decades Later" originally appeared on Jan. 26, 2012 at [www.rivernetwork.org](http://www.rivernetwork.org); search for "40".*

*More reading: Weakening the Clean Water Act: What it means for Michigan; [www.nwf.org/Wildlife/Policy/Clean-Water-Act/In-Your-State.aspx](http://www.nwf.org/Wildlife/Policy/Clean-Water-Act/In-Your-State.aspx)*



### REMINDER:

1. Take extra, old and unwanted books, CDs, and DVDs to HRWC
2. Feel good about a cleaner home with less clutter, while raising funds for HRWC
3. Tell friends and neighbors about Books by Chance

Bring your goods to HRWC between 9:00 AM and 5:00 PM weekdays. Books by Chance will sell them over the internet and donate the proceeds to HRWC. Books that sell very well are non-fiction, scholarly, technical, current medical and science, quilting/sewing, engineering, law, political, very current fiction, and textbooks.

**THANKS!**

# A Dam Nation

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## HYDROPOWER NO LONGER VIABLE

Though hydropower has provided an alternative to fossil fuels for the state in the past, hydropower from low-head dams (the type of dam most common in Michigan) is no longer economically viable, and should not be considered “clean” energy given the negative impacts dams have on stream ecosystems. While 114 of Michigan’s dams generate electricity, they provide a mere 1.5% of the state’s energy; just ten of those dams generate over half of that hydropower. This is due to Michigan’s relatively small and flat rivers. Since the 1960s, Consumers Energy and Detroit Edison have been retiring hydropower dams.

## HRWC’S DAM PRIORITIZATION TOOL

HRWC’s goals regarding dams are three-fold. First, HRWC desires to remove unwanted and environmentally-unfriendly dams from the Huron River and its tributaries. Second, for dams that remain in place on the river, HRWC wants them to be safe for the public through regular, proper maintenance. Third, HRWC wants to work with dam owners to improve the management of dams in order to minimize their impact on the river.



*The Village of Dexter removed a dam in Mill Creek in 2008. Today, the free-flowing river is the centerpiece of a downtown revitalization project.* photo: HRWC

In regards to HRWC’s first goal, there are many dams whose removal would benefit the river ecosystem. However, there are limited funds for dam removal, and deciding how to best use these funds is an important decision. HRWC has developed a prioritization tool to determine which dams are most economically and socially feasible to remove and would also result



*The Mill Pond Dam in Brighton creates a weedy impoundment on South Ore Creek.*

photo: HRWC

in the greatest ecological benefit to the river.

HRWC based the tool on data from the State of Michigan, as well as data generated from digital mapping software. The tool uses this data to provide a quick and easy “first cut” assessment. For example, HRWC used the tool to glean a list of 10 dams from the total of 101 that are likely the most ecologically important and most feasible to remove. HRWC will further investigate this more manageable list, saving considerable effort, time, and resources by focusing on high priority potential targets.

The tool measures three characteristics of dams:

- 1. Public Support** – when stakeholders are interested in seeing a dam removed, the entire process is much easier and cheaper to accomplish. People are more likely to support the removal of a dam that no longer fulfills its intended function (like electricity generation), a dam that produces a weedy and undesirable pond, or a dam that would cause a high amount of property and environmental damage upon structural failure.
- 2. Environmental Benefits** – dam removal will be most beneficial on streams that hold rare species, that have a potentially high gradient and wide range of habitat types, and whose removal would reconnect long stretches of free-flowing water.

- 3. Costs of Repair, Maintenance and Removal** - dams facing large maintenance and repair costs are more worthy to consider for removal if the removal will save money in the long-term. Dam removal will be cheaper for small dams with small impoundments.

Dams that score high in public support and environmental benefits and low in removal cost are dams worth further investigation.

## HRWC’S NEXT STEPS

HRWC is contacting owners of dams in the watershed in order to get more detailed and updated information. HRWC is also conducting a desktop analysis using aerial maps to find undocumented dams and to add them to the list for evaluation.

Finally, HRWC will continue to use the prioritization tool to determine which dams have high public support and low cost for removal, and where removal would produce a noticeable ecological benefit. HRWC will be working with the owners of these dams to determine interest in dam removal or better methods for dam management.

— Paul Steen and Josh Miller

Sources:

MDNR, *History of Michigan’s Dams*, [www.michigan.gov/dnr/0,4570,7-153-10364\\_52259\\_27415-80296--,00.html](http://www.michigan.gov/dnr/0,4570,7-153-10364_52259_27415-80296--,00.html).

MDNR, *Dam Removal*, [www.michigan.gov/dnr/0,4570,7-153-10364\\_52259\\_27415-80303--,00.html](http://www.michigan.gov/dnr/0,4570,7-153-10364_52259_27415-80303--,00.html).

# Staff Updates

New staff, new position, and an anniversary



HRWC Staff: (back, left to right) Ric, Pam, Jason and Paul; (front, left to right) Laura, Jen, Rebecca, Elizabeth, Margaret and Kris. photo: H. Buffman

HRWC welcomes Rebecca Esselman to the staff (learn more about Rebecca on the next page); Elizabeth Riggs is HRWC's new Deputy Director; and Kris Olsson just celebrated 20 years on staff with HRWC. Congratulations to all!

**h2oheroes**  
use their powers sparingly

Heroes set their mower blades to 3 inches. Longer grass needs less fertilizer and water, keeping our water ways healthy.

Huron River Watershed Council  
Learn more at [www.hrwc.org/h2oheroes](http://www.hrwc.org/h2oheroes)

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# Laura's Stream of Consciousness

An update on HRWC projects and activities

The Huron River had its first in-stream whitewater structure proposal this past summer for the section of the river below Argo Dam. The City of Ann Arbor proposes to install two whitewater structures. While we want to encourage the diverse use of the river, and while this stretch of the river is already grossly impacted by Argo Dam, we also feel it's important to point out the potential negative impacts of this whitewater structure and – even more so – of future whitewater structure installations. Whitewater structures, like all man-made in-stream structures, have the potential to negatively impact stream hydrology and hydraulics, sediment transport, channel morphology (shape), and stream ecology (collectively known as “stream function”).

Whitewater structures are new to Michigan, and we are concerned about their impacts on rivers while balancing recreational interests. These features commonly use artificial rock or wood structures to augment natural whitewater features (steep, fast-flowing stream reaches, usually with rocky substrates) or to create new ones. Two whitewater structures have recently opened in Michigan; in the Bear River in Petoskey and in the Argo Dam mill race on the Huron River in Ann Arbor. Proposals for several others are being considered around the state. The whitewater structures noted above, like many installed in other states, consist of channel-spanning, boulder-drop structures that increase water velocity in short reaches by significantly reducing the channel width and increasing the channel slope to vertical or near-vertical.

HRWC concerns fall into a few categories:

1. Whitewater structures can potentially impact stream hydrology and hydraulics in several ways. Low-flow dams/weirs incorporated into certain white water structures reduce channel width by up to 90 percent, creating water flows that are too intense for fish and other wildlife to swim upstream, and potentially increasing shear stress on downstream beds and banks.
2. These narrow weirs can create stagnant pools that strand aquatic organisms and raise water temperature.
3. Many of the white water structures include “low head” dams and have similar effects of any low head dam (see related article on page 6). These dams interfere with sediment transport by creating sediment deposition zones in the pools between structures, which in turn may eliminate preferred fish habitat, interfere with downstream drifting of macroinvertebrates, and lower dissolved oxygen concentrations. Whitewater pools may also interfere with the transport of small and large organic materials. Organic material transport plays a crucial role in stream health, from fallen leaves that are food for macroinvertebrates to large woody debris that provides sediment retention in stream channels and cover for fish.
4. Whitewater structures can create passage barriers or stranding hazards for fish and other aquatic organisms due to a combination of high water velocities, inadequate water depths, high vertical drops, turbulence, and lack of space for resting cover. The measured velocities over current white water structures are greater than the known velocity capabilities of most of the native fish species present in Michigan rivers.
5. Porous streambeds and banks found in natural rivers are critical habitat for fish and macroinvertebrates. Additionally, this habitat functions to exchange water between the ground and river, assist in nutrient and carbon assimilation, and moderate river temperatures. Grouted whitewater structures are nonporous and block the interplay between the river, land, and groundwater.
6. The social impact of whitewater structures is also an issue, in that modification of a channel to maximize whitewater recreation precludes other recreational uses.
7. Whitewater structures may include large rocks, benches, terraces, or viewing platforms, which displaces riparian vegetation. Riparian vegetation contributes to the health of the river by providing shade, bank stabilization, large woody debris, and habitat for aquatic and terrestrial wildlife. Riparian vegetation also improves



photo: H. Buffman

*I am pleased to welcome a new watershed planner to HRWC. Rebecca Esselman joined us in June. Rebecca comes to us from the Nature Conservancy as a conservation scientist and brings 10 years of experience with the Conservancy. She holds an M.S. in Ecology from the University of Georgia and a B.S. in Environmental Biology from Michigan State University. Rebecca is a skilled researcher, facilitator, and communicator on conservation knowledge. She lives outside of Dexter with her husband and young daughter. Please stop in to meet her if you are in the office, or introduce yourself at an HRWC event.*

water quality by removing excess nutrients, preventing sedimentation from bank erosion, and lowering water temperature. Whitewater structures also increase the amount of rock in the stream or riparian corridor, which can increase water temperatures.

HRWC is awaiting MDEQ's decision this fall on whether to issue the permit and to determine if these whitewater structures are consistent with the state and federal laws protecting use, habitat, and water quality. Concerns include how a precedence allowing this structure would set and how the MDEQ/MDNR will handle future requests on Michigan rivers given current laws.

— Laura Rubin

References:  
Michigan Stream Team White Paper,  
Whitewater Parks, Draft-5/6/12.

# Summer Interns of 2012

HRWC appreciates the contributions of eight interns

**Jon Doubek**, M.S. Candidate in Conservation Biology at University of Michigan's School of Natural Resources and the Environment (UM's SNRE), completed his second season as a water quality intern at HRWC. He collected biweekly water samples and flow measurements in Livingston and Washtenaw counties, set-up and analyzed storm samples, and coordinated with HRWC volunteers on the water quality monitoring project. Jon notes that he "loves the Huron River watershed because it is a very diverse watershed ecologically – lots of surrounding wilderness, farmland, and urban areas – and a huge river system that possesses a rich history. It is great to be an intern with HRWC where one is able to proportion their time between the office work and being outdoors, immersed in rich ecosystems."

**Lindsay Hanna** is a graduate student at UM's SNRE, and this summer's Bioreserve Project intern. She scheduled, coordinated and performed field assessments to help



HRWC summer interns, like Lindsay Hanna pictured above conducting a wetland assessment, proved to be outstanding in their fields! photo: M. Smith

record the condition of natural areas within the watershed.

**Jenna Hetherington** is a senior at UM, studying environmental science and specializing in environmental health. She helped HRWC assess the quality of possible Adopt-a-Stream sites as well as find undocumented dams in the watershed.

**Nick LaVigne** is majoring in Environmental Studies at Schoolcraft College. With HRWC, he worked with Debi Weiker doing water quality monitoring. He loves the Huron River because of its diverse scenery, ecosystems and wildlife; "I like doing my part to help keep the Huron River the cleanest urban river in Michigan."

**Amanda McCarthy** is majoring in Science, Technology, and Society at Vassar College. Originally, she comes from a relatively water-scarce area, and notes, "it was very interesting and rewarding to learn about issues in the Huron River watershed." Working on projects like Failing Septics Detection and Brew for the River not

only helped her better understand differences and similarities with home, but also demonstrated collaboration and community support for clean water and responsible stewardship.

**Josh Miller** is a graduate student in Environmental Policy and Planning at UM. He worked this spring and summer with Ric Lawson on the water quality monitoring program and Honey Creek project, as well as the green infrastructure planning project in Washtenaw County.


**Emily Provonsha** planned logistics for and facilitated recreational events this summer. She is pursuing a masters of urban planning at UM. One of the driving forces for her to become an urban planner is activating the public to interact with the natural environment so that she can help better plan our cities according to natural systems. She notes, "being the recreation coordinator for HRWC this summer is a great experience in working hands-on with the public in natural areas throughout the watershed."

**Rob Selesky** is an Environmental Studies student at Michigan State University who assisted with coordinating the water quality monitoring program and Honey Creek project. His career goals are in natural resources management and policy. Rob says, "I am very excited to be getting experience in this area by working to protect the cleanest urban waterway in Michigan: the Huron River."

— compiled by Jason Frenzel

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## 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:**

**Marc Akemann, Matt Bolang,** and **Barry White** for keeping us grounded in 30 mph winds and for talking up the Huron River at Pinckney's Art in the Park.

**Korinne Wotell** and **Dave Wilson** for their excellent outreach efforts at the Ann Arbor Mayor's Green Fair.

**Shirley Axon, Julia Henshaw, Keely Kaleski, Jackie Richards, Jana Smith, Gayle Thomas** and **Irwin Weingarten** for teaching the public how *Saving Water Saves Energy* at Mission Zero Fest.

**Korinne** and **Joe Wotell** for taking in over 70 pledges to save water and energy at HRWC's Huron River Day booth.

**Polina Gouskova** for helping us look at our Adopt-a-Stream data in new and fun ways.

**Dick Chase, Bruce Artz, Joan Martin, Chatura Vaidya, Pranav Yajnik, Peggy Liggitt, Brett Harris, Dave** and **Sharon Brooks** for scouting out streams this summer and giving wonderful feedback on the program.

**Mike "Schultzzy" Schultz** for creating the Single Fly Tournament and making it all happen, and **Maggie Long** and **Jolly Pumpkin** in Ann Arbor for raising much needed funding for RiverUp!, and **Mike Mitchell** of Staffan Mitchell Funeral for the tee-shirts.

**Mike Mouradian, Ann Arbor Trout Unlimited** and **Colton Bay** for great fly fishing instruction to over 43 people.

**Donna Snyder, Michigan Sailing Club, Washtenaw Marine Sheriff, Suzanne Van Appledorn, Melinda Colquitt,** and the safety paddlers for making the Baseline Lake swim so much fun.

**Bob Hospadaruk** and the **Michigan Geocachers** for hosting geocache adventures and instruction on Huron River Day.

**Ron Sell, Barry Lonik, Gerry Neumeier** and **Bob Jack** for their help with the summer paddle trips, and **Al Heavner** for the ice cream.