Huron River Report

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feature story

200 Years of Michigan Fish

Part 3 of a four-part series on Michigan's fisheries

Michigan boasts 11,000 lakes, 36,000 miles of streams and rivers, and is surrounded by the largest freshwater lakes on Earth. Over the past two hundred years, European settlers and their descendants have done much to alter these natural systems and the creatures inhabiting them. This article is the third in a series examining how humans have changed – and are still changing – fish diversity and abundance in Michigan through greed, stewardship, ignorance and intention.

1930-1973. Invasives Attack!

Throughout the 19th, 20th, and 21st centuries, there have been numerous intentional and accidental fish introductions into the Great Lakes and its tributaries. Only some of these species were able to establish reproducing populations. As mentioned in part one of this series, non-native brown and rainbow trout were intentionally introduced and thrived, and are major contributors to Michigan's sport fisheries. The American eel and the cutthroat trout are two examples of fish that were introduced but failed to establish reproducing populations. Fish introductions can be considered good or bad depending on any particular person's perspective. For example, the common carp has been around for almost 150 years and is widely considered a nuisance species, although many anglers like the challenge of landing such a large fish. Regardless of perspective, there is no argument that the Great Lakes fishery ecosystems have changed irreparably.

Coho and Chinook salmon were introduced in the early 20th century but did not thrive as a sport fishery until they were actively stocked starting in 1966. The stocking of these two salmonids in particular is a very interesting ecological story of the interactions between the salmon, the native lake trout, and two invasive species: the alewife and the sea

This lamprey mouth seems like something from a sci-fi horror movie but, to a fish, it is an all-too-real threat to survival. credit: U.S. Fish and Wildlife Service

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Honey, We Shrunk the Huron!

University researchers tackle big problems on a small scale

In the past several decades, many aquatic ecosystems, including the Huron River, have been exposed to new and increasing amounts of stress. This stress has come in a variety of forms, including increasing use of chemicals, changing climate, and losses of biodiversity, and this has affected these environments at local, regional, and global scales. Many of these stressors don't show any indication of going away on their own either, and will likely continue to impact freshwater ecosystems far into the future. If we wanted to be proactive and start thinking about which stressor(s) might cause the biggest problems in the future, how would we identify the worst offenders? Can we predict the effects of these stressors on our streams? Well, we can't go and dump herbicides into the Huron as an experiment, and there's no switch

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Laura's Stream of Consciousness

This spring, the U.S. EPA released its National Rivers and Streams Assessment (NRSA). The goals of the NRSA are to determine the extent to which rivers and streams support a healthy biological condition and the extent of major stressors that affect them. In addition, the survey supports a longer-term goal: to determine whether our rivers and streams are getting cleaner, and how we might best invest in protecting and restoring them.

Laura Rubin, Executive Director

The toughest question for me to answer is, "How is the Huron?"

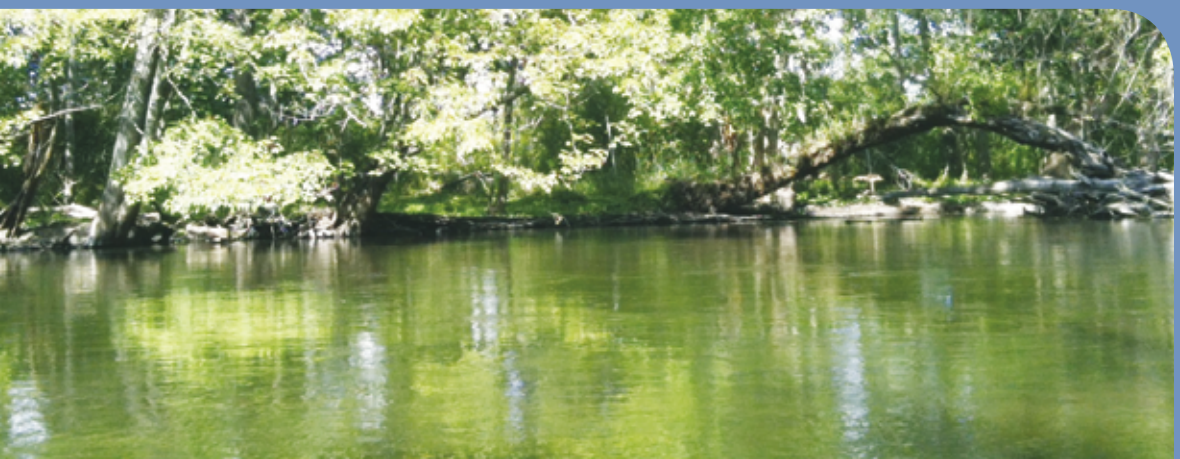
The report is based on field work from 2008-2009 and presents a picture of the state of the nation's rivers and streams. I met the results with mixed emotions. Our rivers and streams are under significant stress, and more than half exhibit poor biological conditions. Phosphorus, nitrogen, and streambed sediments in particular have widespread and severe impacts; reducing levels of these constituents will significantly improve the biological health of rivers and streams. This survey points to the need to address the many sources of these stressors – including runoff from urban areas, agricultural practices, and wastewater – in order to ensure healthier waters for future generations. Yet streams also saw some improvements since the last assessment (2004): the percent of stream length with good in-stream fish habitat rose from 51.7% to 68.9%; and the percent of stream length with low levels of disturbance rose from 22.7% to 34.8%. These summary statements echo the struggles here in the Huron.

We have many signs of improved stream and river health, yet we still have major problems. Many of our monitoring sites are seeing improved habitat and water quality, and greater biodiversity. We are seeing the restoration and protection of hundreds of acres of natural areas and streambanks, as well as many water quality improvement projects. At the same time, erratic flows, excessive phosphorus, runoff, and dams plague the river and stream health. Overall, the Huron is on the upswing – seeing declining phosphorus trends, the clean-up of contaminated sites, stronger regulations for river and land protection, and dedicated funding for water quality projects. As a result, there are more opportunities to get out and enjoy the river, and more people are taking advantage of those opportunities. The Huron is increasingly seen as one of the "main streets" of our communities, a central gathering place, and a hub of activity. This progress is thanks to the strong community of visionaries, scientists, and stewards who continue to advocate for the watershed, making the Huron a bright spot on the national map of rivers and streams!

– Laura Rubin

There is a new funding source for dam removal and restoration through the MDNR. In 2011, Governor Snyder noted the problem of the hundreds of old and crumbling dams in his infrastructure talk. The state followed up on this point by dedicating $2.3 million this year toward a grant program. This year's awardees were announced in late March, and applications for 2014 will be out in August and due in November. This funding could be a huge boost to our local municipalities struggling to maintain the 100+ dams on the Huron.

Link to NRSA: http://water.epa.gov/type/rsl/monitoring/riverssurvey/index.cfm

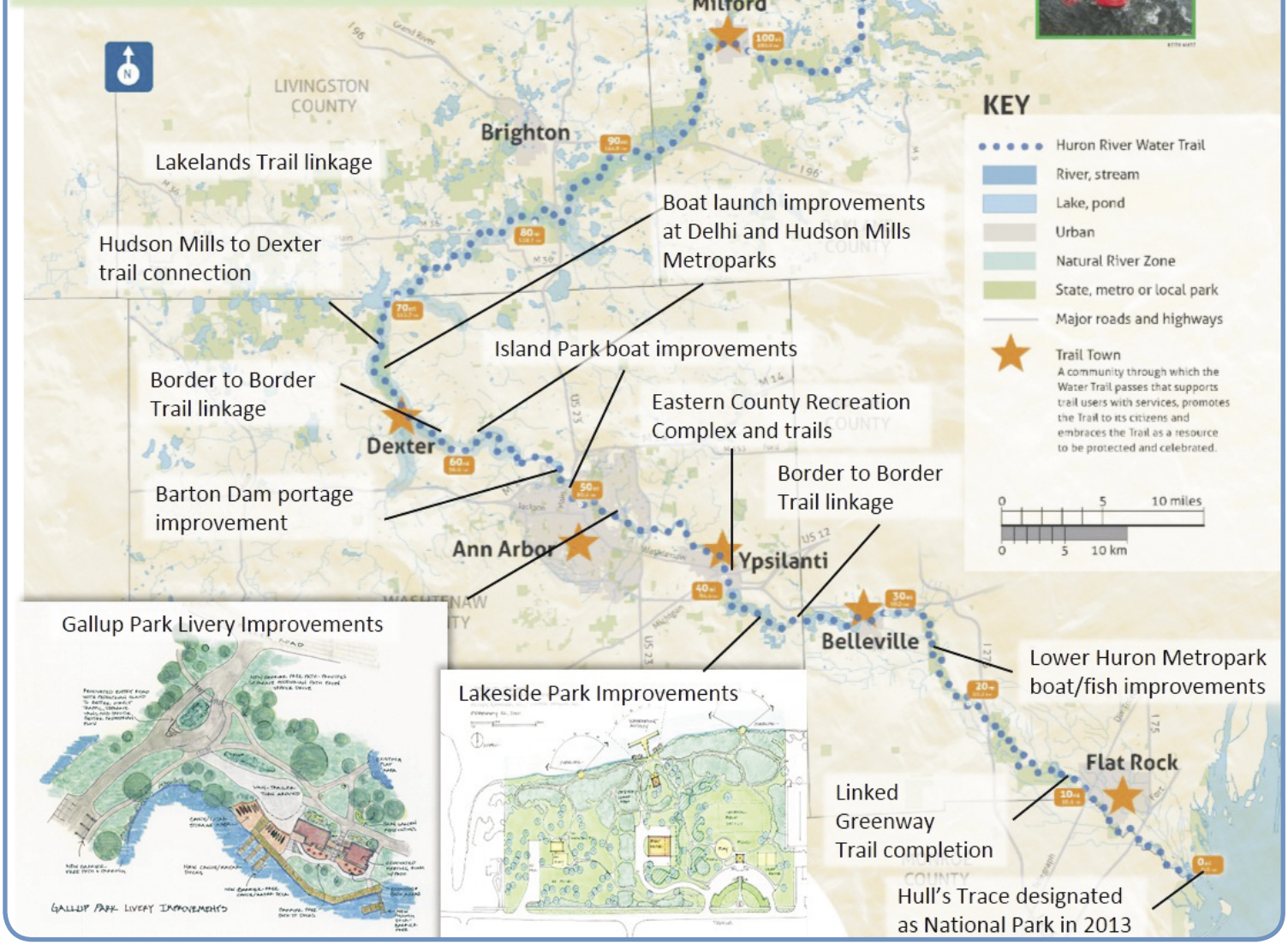


RiverUp!

Community projects celebrate the Huron's natural assets. Check the map for upcoming recreation features in your area, and get ready to go outside!

Watershed communities and businesses are creating and improving recreation opportunities for residents and tourists all along the length of the Huron River. More than $30 million of river-related improvement projects are underway or planned in 2013. Several of those projects are depicted in the map on this page.

RiverUp! builds on and, in many instances, spurs these projects that are part of a community movement to embrace and celebrate the assets of the river for the benefit of local economies, and conservation of our shared natural heritage.



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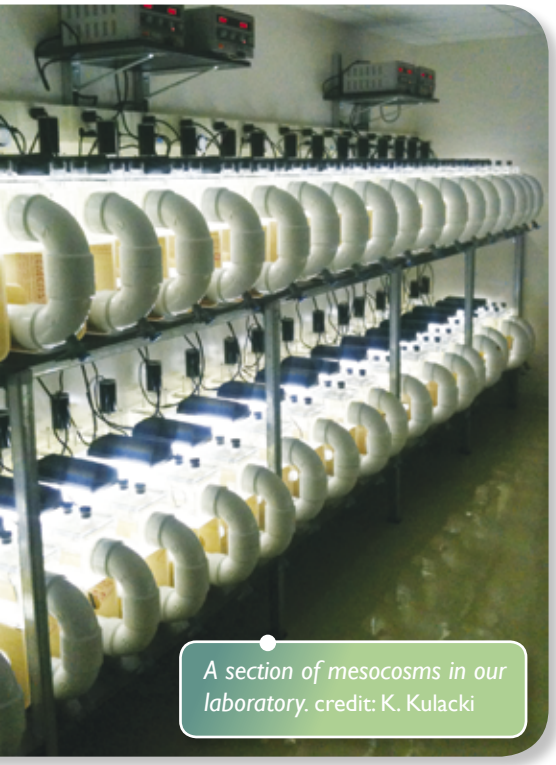
we can flip to warm up the water. We certainly can't go out and kill the organisms living in the stream. There are rules against those sorts of things, and rightly so. So what's a scientist to do? Sometimes big questions require small solutions. If we can't bring our laboratory out to the stream, we can instead bring the stream into our laboratory.

A Hundred Mini-Hurons

To do so, we use mesocosms (see photos). Mesocosms are miniature versions of natural ecosystems that attempt to mimic many of the conditions of the natural system in a smaller, more controlled setting. Using mesocosms, instead of working on one full-scale Huron River, we can work on a hundred "mini-Hurons." We can add a little bit of fertilizer to one mesocosm, or use a $10 aquarium heater to raise the temperature of another. We can control what organisms go into these mesocosms and more easily measure what's going on inside. This control often comes at a cost, though, as we lose the ability to include larger organisms like birds or fish, and we shrink things down to the point that some processes that take place in the river may no longer take place in a mesocosm (e.g., floods and droughts, interactions with riparian areas). That said, mesocosms like these still offer a unique way to address interesting scientific questions, and they allow us the replication to achieve precise estimates of important ecological processes that would be difficult to measure in an actual river.

One stream mesocosm, complete with lights, gravel, a motor and propeller to maintain flow, and filled with water from the Huron River. credit: K. Kulacki



A section of mesocosms in our laboratory. credit: K. Kulacki

To create our mini-Huron Rivers, a group of researchers at the School of Natural Resources and Environment at the University of Michigan first collected over 800 gallons of water out of the Huron, then brought it back to our lab to fill up our mesocosms. We then took about thirty different rocks from the Huron and used toothbrushes to scrub off all of the algae that were covering those rocks to add to our mesocosms. We avoided sampling benthic macroinvertebrates, as we were mainly interested in the algae for this experiment. We focused on algae and bacteria because they form the base of most aquatic food webs, and they are responsible for many processes that control water quality. However, future work could certainly include these important stream organisms. After adding in some gravel, lights, propellers to re-circulate the water, and after several long days of work, we had over 100 miniature streams in our laboratory.

Finding the Top Stressors

We used these streams to address a question that HRWC and other resource managers often face: if you were in charge of managing the Huron River and maintaining water quality in the face of existing and emerging stressors, where should you focus your efforts, given you don't have the time or the budget to address all of them? To do this, we first came up with a list of stressors we felt were important in our local watershed. These included things like climate change, herbicides and fertilizers, sediment loading, and species loss. We then exposed a subset of our streams to each of our stressors, one stressor per stream, and monitored how the algae responded over time.

At the end of the experiment, approximately two months after we added in water, algae, and stressors, we determined how each of the stressors were impacting rates of algal primary production (photosynthesis), a common measure of how well an ecosystem is functioning. Because we performed the experiment in a controlled, replicated environment, we could then compare results across stressors and make strong inferences about which of the stressors are the most impactful and should be high on our priority lists for maintaining water quality.

And what did we find? Broadly, our experiment showed that chemical stressors, and in particular herbicides, had the greatest potential to disrupt the functioning of the stream mesocosm communities. Species extinctions also ranked highly, while temperature increases and sediment loading ranked lower. While we certainly won't go as far as to say stop using herbicides, we do strongly encourage users to adhere to all warnings on the product labels. Furthermore, if the chemical isn't meant for aquatic use, keep it well away from any nearby lakes and streams. Good practices can include not spraying immediately prior to

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200 Years of Michigan Fish *continued from page 1*

lamprey. The interactions of these species irreversibly changed the ecology of the Great Lakes. The story begins with sea lamprey, native to the Atlantic Ocean. Sometime in the 19th century, the sea lamprey entered the Great Lakes – most likely through the Erie Canal, which runs from the Hudson River in New York State to Lake Ontario at Buffalo, New York. From there, the fish used the Welland Canal to bypass Niagara Falls and enter Lake Erie, where it was first officially recorded in 1921. By 1938, sea lamprey were spawning in the rivers that flow into Lake Michigan and Lake Huron, and by 1948 the fish appeared in Lake Superior.

Lampreys were not unknown to the Great Lakes prior to the sea lamprey invasion. In fact, the Great Lakes system has four native lamprey species: chestnut, silver, American brook, and northern brook lampreys. Both the chestnut and silver lamprey are parasitic fish, meaning that in their adult stage they feed on the blood of other fish. However, they rarely kill their host fish.

On the other hand, sea lampreys are parasitic fish that quite readily kill their hosts. The sea lamprey picked the lake trout, the top predator of the Great Lakes, as its preferred host. Prior to the sea lamprey invasion, commercial harvests of lake trout averaged 15 million pounds per year.

By the 1960s, the catch had dwindled to 300,000 pounds per year. The lake trout population was in rapid decline, and eventually the species became extinct in Lakes Ontario, Huron, Erie, and Michigan. A small population of lake trout was able to survive in Lake Superior. Other Great Lakes fish like whitefish, walleye, and steelhead (lake-run rainbow trout) were also hit hard by the sea lamprey, though not as severely as the lake trout.

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DEFINITIONS:

Native or indigenous: species that exist in an area as the result of natural processes, with no human intervention.

Non-native or exotic: species that have been introduced either accidently or intentionally by humans. Accidental introductions include fish entering through freighter ballast water and the construction of canals. Intentional introductions happen through rogue individual actions like dumping a pet fish into a lake or through purposeful management like the stocking of salmon into the Great Lakes. A non-native species may or may not be considered invasive depending on the consequences.

Invasive: non-native species that negatively affect the physical and/or biological components of the natural ecosystem.

One sea lamprey would be enough to make life miserable for this poor lake trout; two spells certain doom.

credit: U.S. Fish and Wildlife Service

Honey, We Shrunk the River! *continued from previous page*

rain events, using extreme caution in riparian areas, and trying not to let any chemicals enter your storm drains.

Mesocosms are important tools for addressing important environmental questions. They provide a critical link between small-scale experiments that address underlying causes of natural phenomena but lack environmental realism, and large-scale natural experiments that often more accurately predict what can happen in nature but cannot always explain why. Mesocosm experiments can strengthen our predictions about the future of our freshwater resources and their reactions to changing levels of stress, thus helping to inform the difficult decisions resource managers make. If you're interested in more details, keep an eye on the Cardinale lab web page, where we'll post more information when the results of this research are published.

– Konrad Kulacki, Guest Author

Konrad Kulacki is a postdoctoral researcher in the lab of Dr. Bradley Cardinale at the School of Natural Resources and Environment at the University of Michigan, studying aquatic ecology and ecotoxicology. See more of what he and the rest of the lab are up to at http://snre.umich.edu/cardinale/.

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Invasive Control Success

The sea lamprey is one of the few Great Lakes invasive species that fisheries managers have successfully controlled. In the 1950s, scientists developed a lampricide called TFM (3-trifluoromethly-4-nitrophenol) which killed only the sea lamprey and had no discernible effect on other wildlife. This chemical, sprayed into lamprey nursery streams, is quite effective, although expensive. Eventually other techniques were developed, like placing barriers at the mouths of the nursery streams and releasing sterile male lampreys to compete with the normal males. All of these techniques helped reduce the Great Lakes populations of sea lamprey by 90% from their peak abundance. The control efforts are still ongoing today, since it has proven impossible to eradicate the sea lamprey altogether.

A fisheries manager applies TFM to the Manistique River in order to kill spawning sea lamprey. credit: T. Lawrence, Great Lakes Fisheries Commission

Lake trout populations have increased since the effective control of the lamprey. Lake trout have returned to all of the Great Lakes, with varying success. Their population in Lake Superior was noted as "good" and "improving" in a 2009 EPA document, while the other Great Lakes have populations described as "poor" and "mixed." In general, lake trout populations remain far below historic levels, and heavy restrictions on commercial and recreational lake trout fishing remain.

1966-1972: Using Fire to Fight Fire

At the same time the sea lamprey were decimating the top predators of the Great Lakes, a small forage fish, the alewife, entered the Great Lakes through the same route as the sea lamprey. The decline of top predator fish allowed the alewife population to grow unchecked. In addition, the alewives out-competed native forage fish (lake herring, emerald shiner, some species of chub, and yellow perch). By the 1960s, the alewives ate so much of the plankton crop of the Great Lakes that they exhausted the bottom of the food web and reduced competitor populations. Ironically, they put such a strain on the food web that millions of the alewives themselves died each summer, washing up on Great Lakes beaches and creating a stinky mess requiring tractors and bulldozers to rake, pile, and clear away the carcasses.

In 1965, Dr. Howard Tanner, chief of the Michigan Department of Natural Resources Fisheries Division, directed research to look at how the current condition of the Great Lakes could be improved for both sport fishing and ecosystem stability. Fisheries researchers noted that steelhead were doing very well in Lake Michigan where alewives were abundant. Since steelhead lived in upper river tributaries for the first two years of their lives, and then swam down to the Great Lakes for their adult lives, the fish were large enough that they did not eat the same items as the alewife, so they were unaffected by alewife competition. In fact, the steelhead were often big enough to eat the younger alewives themselves.

Dead alewives cover this Lake Michigan shoreline. credit: Great Lakes Fisheries Commission

After this observation, DNR management decided to embark on a large scale effort to stock other fish that could grow in stream tributaries, live as adults in the Great Lakes, and feed on the excess numbers of alewives. They desired to find a fish that could fit into the top predator role that was lost with the decimation of the lake trout. Managers began cultivating millions of the non-native Coho and Chinook (king) salmon in the State's fish hatcheries and planted year-old fish into tributaries. The

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program proved very successful: the salmon survival rate was extremely high, and the alewife provided a plentiful food source. In Lake Michigan, Coho were able to grow from one ounce to ten pounds in 17 months. The annual summer die-offs of millions of alewife also largely ceased, although smaller die-offs still occurred.

The arrival of the sea lamprey and alewife mark a distinct milestone in the life of the Great Lakes. The overharvesting of whitefish and sturgeon in the late 19th and early 20th centuries altered many ecological interactions of the Great Lakes, but the sea lamprey, alewife, and subsequent salmon stocking radically changed the ecosystem to such a great extent that today, most people are not aware of which fish species are indigenous to the Great Lakes.

The Lakes' original ecosystem cannot be restored, and it will continue to change with every new invasive species that is established. The zebra and quagga mussels and round gobies are among the newer non-natives that have joined the Great Lakes ecosystem; the silver and bighead carp (aka Asian carp) are potential invaders just waiting for an electric barrier to fail. With so many potential variables, it is difficult to predict the future for fish in the Great Lakes.

– Paul Steen

Sources:

- Michigan Department of Natural Resources Centennial Report, 1873-1973. Michigan Department of Natural Resources Fisheries Division, Lansing, Michigan.
- Michigan Sea Grant. 1997. The Five Lampreys of Michigan's Great Lakes. Fact sheet.
- The USGS Great Lakes Science Center. 2000. Sea Lamprey- A Great Lakes Invader. Fact sheet.
- US EPA. 2009. State of the Great Lakes, Lake Trout, Indicator #93. http://www.epa.gov/solec/sogl2009/0093laketrout.pdf

Fish Species Introduced into the Great Lakes

Successful, intentional introductions

Atlantic salmon[2]
Brook trout [1, 3]
Brown trout [1]
Chinook salmon [1]
Coho salmon [1]
Common carp [1]
Goldfish [1]
Margined madtom [2]
Mosquitofish [2]
Oriental weatherfish [2]
Pink salmon [2]
Rainbow smelt [1]
Rainbow trout [1]
Redear sunfish [1]

1 Highly successful introductions; widespread distribution
2 Limited success; narrow distribution or small populations.
3 Brook trout only had a narrow range in Michigan's Upper Peninsula prior to widespread stocking, which is why this species is considered non-native.

Unsuccessful, intentional introductions

American eel
American shad
German whitefish
Chum salmon
Sockeye salmon
Japanese salmon (masu)
Cutthroat trout

Accidental introductions, with destructive results

Sea lamprey
Alewife
Round goby
Tubenose goby
Rudd
Ruffe
White perch

Coming NEXT!
"200 Years of Michigan Fish" wraps up with a current perspective on many of the topics addressed thus far: status of the Great Lakes fish community, fish stocking and stream fish management, invasive species, and watershed management.

Put those old books to good use!

Books By Chance

donates the proceeds from their internet sales of old and unwanted books, CDs and DVDs to HRWC. Your donations have earned $16,000 for HRWC so far!

We like the slightly esoteric , academic, scholarly and especially university presses. Please bring your donation to the HRWC office, weekdays, 9am - 5pm. We will handle the rest. QUESTIONS: Rebecca Foster (734) 769-5123 x 610 or rfoster@hrwc.org.

Founded in 1965, the Huron River Watershed Council (HRWC) is southeast Michigan's oldest environmental organization dedicated to river protection. HRWC works to inspire attitudes, behaviors, and economies to protect, rehabilitate, and sustain the Huron River system.

HRWC coordinates programs and volunteer efforts that include pollution prevention, hands-on river monitoring, wetland and floodplain protection, public outreach and education, and natural resources planning.

Individuals, local businesses and more than 40 communities support HRWC's work through voluntary membership.

Huron River Watershed Council

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facebook.com/huronriver

twitter.com/hrwc

The Huron River Report is published quarterly. Its content is prepared by HRWC staff and does not necessarily reflect the opinion of board members.

The Huron River Watershed

Front row: Laura, Jennifer, Rebecca Esselman, Elizabeth, Margaret and Kris. Back row: Ric, Pam, Jason and Paul. Not pictured: Rebecca Foster, Debi Weiker.

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H_2O Heroes Never Waste

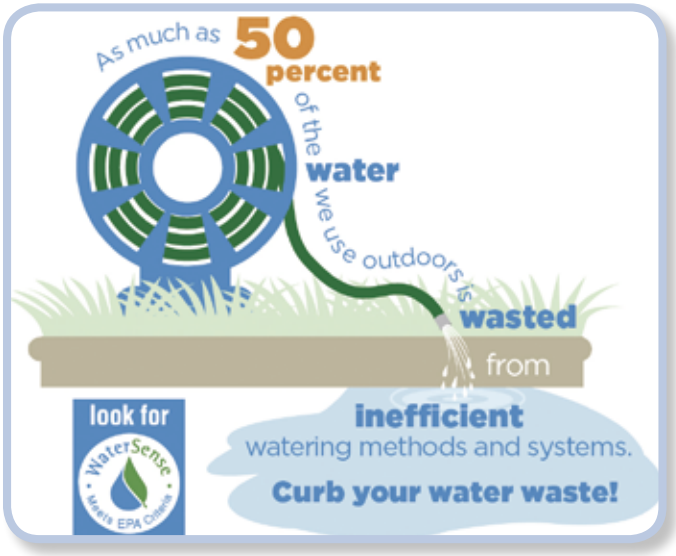
From the front lines of the "blue revolution"

H2O Heroes who have been following HRWC's education and outreach efforts for the past two years know that saving water saves energy. Pumping, heating and treating water supplies accounts for 13% of our nation's electrical energy and emits 290 million metric tons of CO2 every year.

H2O Heroes getting ready to protect water resources! photo: HRWC

A Hero Rises

In an effort to recruit even more H2O Heroes, HRWC's Saving Water Saves Energy project has launched a new video public service announcement and website to promote the water-energy connection. "A Hero Rises" takes a lighthearted look at using efficient plumbing fixtures to help conserve water and energy. The website also provides plenty of indoor and outdoor water-energy-saving tips and links to the internet's best household and personal water calculators. Go to **H2oHeroes.org** to view the video and learn more.



Never Waste

HRWC's Saving Water Saves Energy project also continues to work in step with national partners to promote water conservation. Never Waste is a new campaign launched by the Alliance for Water Efficiency (AWE) to build awareness about the impact of water waste. Never Waste quantifies the amount of water wasted in our daily lives by comparing it to an everyday object – a water bottle – and encourages consumers to make a measurable impact by wasting less. Help raise awareness by purchasing a Never Waste water bottle at **www.NeverWaste.org**.

Tips to Beat the Peak

Residential outdoor water use in the United States accounts for more than seven billion gallons of water each day, mainly for landscape irrigation. Experts estimate that as much as half of this water goes to waste due to overwatering caused by inefficiencies in irrigation methods and systems.

Homeowners who use an irrigation system with a clock timer should consider upgrading to a WaterSense labeled controller. WaterSense labeled irrigation controllers act like a thermostat for the lawn, using local weather data to determine when and how much to water, reducing waste and improving plant health.

Even for homes without irrigation systems there are a variety of ways to save water outdoors:

- Reduce lawn areas and plant native species that need less water in the summer.
- Assign landscape areas different zones depending on sun or shade exposure, soil and plant types, and type of watering needs, and then adjust watering schedules based on those zones.
- Allow grass to go dormant during a heat wave by not watering it – dormant grass will rebound to green lushness when the cooler weather and rains return.
- Raise lawnmower blades to at least three inches – longer grass promotes deeper root growth resulting in a more drought resistant lawn, reduced evaporation, and fewer weeds.

Go to **H2oHeroes.org** for more tips on saving water outdoors.

– Pam Labadie

The Saving Water Saves Energy Project is made possible by a grant from the Masco Corporation Foundation.

Adapting to a Changing Climate

Communities in the watershed come together to become more climate-ready

Climate adaptation is an emerging field. Initial efforts to combat climate change focused on climate mitigation, looking at strategies to slow or stop the changes to the Earth's atmosphere that are changing the climate. It is critically important work that must continue. Yet people are realizing that mitigation alone is not enough. Changes are already occurring, necessitating preparations that should start now. This is climate adaptation – examining what can be done to reduce the impacts of climate change. The push to slow the release of carbon and other heat trapping gasses is essential. Simultaneously, communities must prepare for climate variability.

Systems, both built and natural, are designed to succeed under a certain range of climatic conditions. Current climate conditions, and those predicted for the future, are changing that range of conditions in the Huron River watershed. This has repercussions for the way communities are planned, built and protected. Drought, storm events with larger rainfalls and shifting of rain/snow patterns each have implications to business-as-usual. For example, will storm drains overflow more frequently? Will street trees be able to withstand prolonged summer drought? Will there be more conflict around the multiple uses for water during periods with low water levels? Will floodplains and low-lying areas experience flooding more often? What does this mean for existing and future development?

Creating Climate Resilient Communities

Over the past year, HRWC has facilitated a process to allow three sector-based working groups to consider the implications of climate change in the watershed and develop some early solutions that will help communities be more prepared for uncertainty and variability in local weather patterns. This March, more than 40 stakeholders from throughout the watershed met to hear the sector teams share outcomes from the first year of the project.

> **Climate adaptation** *is adjusting to a new set of climatic attributes. It is a concept for guiding action to ensure sustainable development, reduce vulnerability and minimize risk to humans and the environment resulting from climate change.*

Project Outcomes

Paul Bairley of Forestry Consulting Services shared the work of the Natural Infrastructure work group, which produced a series of fact sheets that summarize expected impacts of climate change to native tree species of the Huron River watershed and the natural communities within which they occur.

Jerry Hancock, of the City of Ann Arbor and member of the Water Infrastructure work group, discussed the need for improved precipitation frequency data used to inform stormwater and floodplain-related decisions, and the steps the group proposes for achieving those improvements. He also shared a list of "no regrets" actions the team felt were high priority for communities of the watershed to implement in order to improve the practice of stormwater management.

Jeff Allen from the Charter Township of Ypsilanti represented the In-stream Flows work group. He introduced the audience to a newly formed Dam Operators Network to facilitate communication among main stem dam operators, which will improve day-to-day operations and the preparedness of the group to respond to emergency situations.

What is Next?

HRWC will continue facilitating sector team discussions to develop additional priorities to pursue. Additionally, HRWC will be sharing the outcomes of the work groups with communities throughout the watershed and promoting adoption of the strategies with appropriate stakeholder groups.

These are important early efforts to create more climate resilient communities in the Huron River watershed. Climate adaptation occurs at the local level, and the communities of the Huron are at the front edge of this emerging field. To learn more about the work of any of these teams, reports are available at www.hrwc.org/climate-resilient-communities.

– Rebecca Esselman

The Climate Resilient Communities project is made possible by funding from the Mott Foundation, Friedman Family Foundation, City of Ann Arbor, Porter Family Foundation, Esperance Family Foundation, Upton Foundation, Washtenaw County Water Resources Commissioner, and GLISA.

Jeff Allen with Ypsilanti Township shares climate adaptation strategies with stakeholders from throughout the watershed. photo: M. Naud

HRWC Summer Events

MEMBERSHIP MATTERS

Our members join HRWC for a variety of reasons. Many enjoy making a hands on contribution in addition to their financial support.


photo: K. Greenwald

Katy Greenwald is a biology professor at Eastern Michigan University and a recent volunteer who also saw the value in membership. "I became a member to support the HRWC's conservation work," Greenwald explained. "Professionally, I am an ecologist, and I work with amphibians (many of which are very sensitive to habitat degradation, environmental contaminants, etc.). Personally, my husband and I live on the Huron and spend a great deal of time enjoying the river. We love to kayak, bird watch, fish, and have friends over for cookouts on the river. Since conservation and education are so close to my heart, I am happy to be able to support an organization doing this type of work literally in my backyard!"

Graham Battersby and his family got hooked on HRWC through River Roundup four years ago, when one of his daughters brought a flyer home from school. "River Roundup was fantastic," he recalls. "It taught the kids the value of water and its impact on life. We were out having fun with bug collection, but it was the more intuitive learning – the good stream vs. bad stream and why – that I found invaluable." The Battersbys became HRWC members right away. "HRWC is resource-constrained, but does a great job at involving and empowering its members, which results in more resources. The money is put to good use and not wasted," he says.


photo: HRWC

Won't you please join them? Contact Rebecca at 734-769=5123 x 610 or rfoster@hrwc.org.

RECREATION

www.hrwc.org/events/summer-events

Various dates and locations

Paddles, Swims, Walks, Fly Fishing

There is no WiFi on the Huron River, but we promise you a better connection.

VOLUNTEER

www.hrwc.org/volunter

Sunday, June 9, 2 - 4pm

River Scout Training

Scout a local stream with a protective eye, looking for potential problems.

Sunday, August 4, 2 - 5pm

Measuring & Mapping Training

Learn to "read a river" by characterizing the bed, banks, and other indicators of stream health.

Saturday, August 17, time TBD

River Cleanup

Near Milford and Ypsilanti - get those beer cans, bikes, and fishing lines out of the river!

Coming this Fall...

Suds on the River

Sign up to work our annual fundraiser by emailing msmith@hrwc.org.

COMMUNITY

www.hrwc.org/events

Friday, June 14, 6 - 9pm

Mayor's Green Fair

Main Street, downtown Ann Arbor – special event: Stormdrain Art Competition; www.a2gov.org

Sunday, July 14, activities from 8:30am - 4pm

Huron River Day

Gallup Park, Ann Arbor; www.a2gov.org

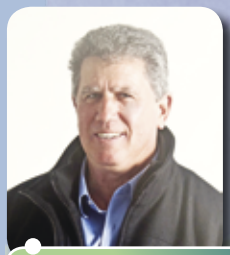
Stewardship Awards

Special thanks for exceptional dedication!

Korinne Wotell *received the "Volunteer of the Year" award for all of her work in 2012. Kori is one of those rare people with the time, energy, enthusiasm, and drive to help HRWC across the board. In 2012, she volunteered 196 hours across six programs, including many events and activities that didn't even exist as volunteer opportunities at the start of the year. "This is the most meaningful thing I have ever done," Kori said after learning of the award. "HRWC makes it so easy to do good things and make a valuable contribution." Over the past year, Kori has grown from an excited "Mom from Whitmore Lake" into a watershed leader, who instructs groups about how they can make a contribution. Thanks, Kori, for your time, energy and fun-loving spirit!*

Kori gets a little help from a friend. photo: HRWC

John Carver *received the "That's Using your Headwaters" award for his work on RiverUp! in the last two years. John used his head to craft and instigate the RiverUp! project with numerous private and public partners. His vision of a restored and vibrant Huron River continues to challenge and push HRWC staff and partners…..in a good way! John's grass-roots focus and "let's do it!" attitude have spurred progress on the Huron River Water Trail signs and the paddlers companion booklet, the completed Superior portage, and mapping tools to visualize progress and spur funding. "It's the right thing to do," is John's motto, and we can't agree with him more. Thanks, John!*



John used his can-do attitude to launch RiverUp! photo: MLCV

HRWC is excited to honor **Eunice Burns** *with our first* ***Herb Munzel Lifetime Achievement Award!*** *Eunice has been active in Ann Arbor civic and community affairs, city politics and the environment since the mid-1960s. For more than four decades she has been a board member at HRWC and, along with Shirley Axon, was one of the founders of Huron River Day. Eunice entered local politics with her successful campaign in 1962 for a seat on the Ann Arbor City Council and was re-elected in 1964 and 1966. In 1968 she became a member of the Ann Arbor Planning Commission, serving until 1974. She has also been active in Ann Arbor's Downtown Development Authority (DDA). Eunice received her BS degree from Wisconsin State College and received her Master's in Urban Planning from the University of Michigan in 1970.*

Eunice recalls the exact moment she learned about the very limited amount of fresh water in the world and decided to do something about it. After some considered thought, she concluded that working at the local watershed level with one river was a scale where she could make a significant difference. She was right! Eunice's constant presence, keen observations, and commitment to the education of children in the water sciences has helped foster the development and effectiveness of HRWC for over forty years.

Thanks, Eunice, for a lifetime of achievements we can all find inspiring!

Eunice and John Dingell share a laugh. photo: MLCV

HRWC would like to extend our gratitude to everyone that helped protect the Huron River by giving of their time, talent, in-kind contributions and financial resources.

Thank you to our generous supporters• ***February through April, 2013***

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You are important to us! If your name is misspelled, incorrectly listed, or omitted, please accept our sincere apologies and bring the error to our attention so that we may correct our records. Contact Margaret Smith at (734) 769-5123 x 605.

Thank you to our volunteers • *February through April, 2013*

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