



Huron River Report

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Fall 2008

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Making History on Mill Creek

HRWC celebrates first dam removal in the watershed

On June 5, 2008, a small group of people gathered to witness the long-anticipated demolition of the Mill Pond Dam on Mill Creek in Dexter. There was no loud explosion from dynamite, no TV cameras, no great fanfare. But the people who witnessed the event understood its significance. For the first time in 185 years, Mill Creek would flow freely to the Huron River.

GETTING TO NOW

Discussions about the future of the dam began in earnest ten years ago, spurred by the anticipated reconstruction of the road and bridge over Mill Creek. HRWC facilitated a task force comprised of concerned citizens and Village of Dexter officials that evaluated the alternatives for the dam. After 18 months of research and careful consideration, the task force recommended full removal of the dam. The Dexter community rallied behind the

recommendation, and the Village Trustees voted unanimously for removal of the dam in order to eliminate a public safety hazard, improve stream quality and create recreational opportunities and access for residents and visitors.

Years of research followed in order to answer questions about dam ownership, as well as about characteristics of the dam, impoundment and creek. Scientists and researchers conducted studies of the sediment in the impoundment to characterize its content and abundance, and of the aquatic life and habitat upstream and downstream of the dam.



Mill Pond Dam during removal. photo: D. Snell, MDEQ

Last year, the bridge over Mill Creek was crumbling and the vehicle weight limit

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Keeping Urban Streams Healthy

A look at three critical factors for stream preservation

HOW HAVE WE STUDIED URBAN STREAMS IN THE PAST?

In the Huron River watershed, we are able to enjoy great quality streams in forested, rural, and urban settings. However, not all urban rivers are as clean as the Huron; over 80,000 miles of streams and rivers have been affected by urbanization in the United States, and land-use projections predict that developed area will increase by 80% in the next 25 years.

We know urban development impacts the river flow and water chemistry, causing changes in habitat that reduce the diver-

sity and abundance of resident organisms. Because we expect residential and commercial areas to continue to increase around established urban centers, scientists have been intensively studying urban stream effects for two decades – searching for information and management plans that can ensure the long-term sustainability of our aquatic systems. One of the goals in past scientific investigations has been to document the strength of the negative urban impacts on biotic communities. A typical method is for researchers to pick sites that have the same underlying characteristics (temperature and geology,



Gary Crawford sampling in Millers Creek. This creek in northeast Ann Arbor is a great (yet terrible!) example of what can happen to a stream channel with flashy flows.

photo: M. Akemann

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Lights, camera, ACTION!

On December 22, 2008, entries are due for the Millers Creek Film Festival! Learn how to submit your film at: www.hrwc.org/filmfestival



★ = Adopt-A-Stream Monitoring Site

Indicates geographic location connected to article.



Events

Thursday, September 18
 6:00 P.M. - 9:00 P.M.

SUDS on the RIVER
 Purchase tickets online or email msmith@hrwc.org

Friday, September 19, all day event
Arbor Farms Market HRWC Day!
 5% of your purchase supports HRWC's Adopt-A-Stream Program

Saturday, September 20
 9:00 A.M. - 3:30 P.M. or 10:00 A.M. - 5:00 P.M.

River RoundUp
 Must register by Sept. 7.
 Contact: jmartin@hrwc.org

Wednesday, September 24,
 8:30 A.M. - 4:00 P.M.

State of the Huron Conference
 Washtenaw Community College
 Register online at www.hrwc.org
 Contact: lrubin@hrwc.org

Sunday, October 5
 Noon - 3:00 P.M. or 2:00 - 5:00 P.M.

"Bug" ID Day
 Help identify samples collected at the River RoundUp
 NEW Center, Ann Arbor
 Must pre-register: jmartin@hrwc.org

October 20, 12:00 PM through October 21, until 4:30 P.M.

Fourth Annual MiCorps Conference
 Fee and registration required.
 RAM Center, Higgins Lake, MI
www.micorps.net/conference.html
 Contact: Matt Doss, mdoss@glc.org

Thursday, October 23, 5:30 P.M.

HRWC Board Meeting
 NEW Center, Ann Arbor
 Contact: lrubin@hrwc.org

More events and updates 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

Making History on Mill Creek

continued from cover

was downgraded. School buses, trucks, and even routine fire truck runs had to find others ways around the bridge. Regardless of ownership, something had to be done. The Washtenaw County Road Commission secured funds from the Michigan Department of Transportation to rebuild the bridge. But dam removal costs were not included, so the Village of Dexter decided to invest in the dam removal cost itself with an eye toward developing a natural park along Mill Creek and downtown. “Every thriving city or village we look to has a prominent natural feature in the downtown. We realized it was what we were missing,” said Paul Cousins, Village Trustee and Chair of HRWC.

The Road Commission hired a consulting team to develop dam removal and sediment management strategies. Numerous meetings with the Michigan Departments of Environmental Quality (MDEQ) and Natural Resources (MDNR) firmed up a proposed strategy and permit. After a public hearing in early January 2008, MDEQ issued the permit on February 1, 2008.

THE DAM REMOVAL

The permit allowed for a gradual, phased removal of the 70-foot wide by 8-foot high rock dam. As planned, the drawdown would take six weeks to complete, with dam removal occurring in phases over the course of the summer. However, the concrete structure had to be removed more quickly than planned. As parts of the dam were removed, water began to flow under the structure and bubble up

downstream, raising concerns about damage to the bridge footings. So the dam came out quickly and a temporary access road built 20 feet upstream of the dam served as a minor dam while construction occurred. The temporary road also provided an upstream rock control structure that trapped sediment and slowed the flow, creating a 500-foot long by 44-foot wide channel bottom.

As workers removed the dam structure, large amounts (an estimated 4,700 cubic yards) of sediment were put into motion due to head cutting (the stream cutting away at the banks as it finds a new channel) as far as 1,300 feet upstream of the dam. The sediment was collected and disposed of on the east side of Mill Creek, creating a 1.14 acre spoil area. This fall, the spoil area will be capped with orange plastic mesh fencing, 8 inches of clean fill material, 8 inches of topsoil, plus seed and mulch. In addition, Mill Creek’s bank will be armored with rock riprap.

All of the dam removal and road work will be completed this fall. The total cost for removal, plus some restoration, was ~\$290,000. The Village received a grant from the U.S. Fish and Wildlife Service for \$48,000 to help with removal. The Village is moving ahead with plans to restore

the area to a park and has a standing committee meeting with a consultant to design the next phase.

THE RESULTS

Dam removal will restore more than 200 miles of stream to free-flowing habitat, which will improve the overall health

and connectivity of Mill Creek. Removal of the dam and impoundment is restoring traditional dispersal routes for young-of-the-year fish and aquatic invertebrates (Schaeffer, 2001). Fisheries scientists expect immediate benefits for fish species that inhabit the Huron River and migrate to tributaries for spawning, including chubs, smallmouth bass and northern pike. Research led by Michigan State University Professor Dan Hayes indicates that at least 23 species of fish found below the former dam will have access to Mill Creek above the former pond.

As a result of improved fish populations, a restored Mill Creek likely will benefit unionid mussels – their larvae take advantage of migrating fish by parasitizing them for several weeks after hatching. Unionid mussels, a group of freshwater mussels, are considered the most endangered freshwater organism in North America. The gravelly streambed and high channel gradient found at the former dam site make suitable habitat for unionids. (Learn more about snuffbox mussels on page 9 of this issue.)

HRWC’s studies of aquatic insects below and above the Mill Pond Dam reveal that restoring this stretch of Mill Creek will increase the number and diversity of insects. In the short term some nutrient rich sediment will also make its way down the river (not all gets dredged and trapped), but this will settle out in the river eventually, and the overall benefits of dam removal outweigh this one-time input of sediment.



Before removal: the impoundment behind the dam, with invasive purple loosestrife in bloom. photo: E. Riggs, HRWC



After removal: Mill Creek defines its new course. photo: D. Snell, MDEQ

— Laura Rubin and Elizabeth Riggs

Keeping Urban Streams Healthy

continued from cover

for example) but have a whole range of urbanization and development. This enables these researchers to detect how stream health responds to high urbanization while minimizing complicating effects of a stream's physical characteristics on the analysis. These studies have found a strong negative relationship between stream health and percent impervious surface (e.g. pavement, roofs, etc.) in a watershed. Once a watershed increases to around 8-12% imperviousness, the decline of bug and fish communities is rapid and dramatic (see graph, this page).

Some urbanized streams contain highly diverse biotic communities while others contain degraded biotic communities, despite having similar levels of urbanization within their watersheds. A relatively new method employed by researchers is to examine this variability of stream health for sites that have the same amount of urbanization. Using this method, we are able to ask questions about how highly urbanized sites may still have the potential to be healthy. This is a very important question because if the current, spread-out, low density patterns of land development continue, in fifty years we may have very few streams which do not have a significant amount of impervious surface in their watersheds.

HOW CAN DIVERSE, HEALTHY STREAMS EXIST IN URBAN AREAS?

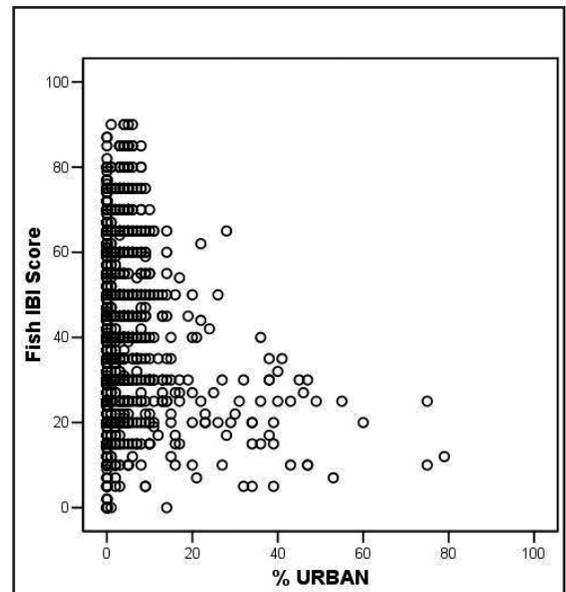
A recent study has proposed three ideas:

1) The first one is a simple concept. Research has indicated that in urban areas, healthy biotic communities occur at sites with few nutrient and chemical inputs to the watersheds, from both point and non-point sources. Urbanization typically increases the concentration of nearly every chemical constituent in the water of urban streams. Phosphorus and nitrogen sources include wastewater, fertilizer, and leaking sewage systems. Metals such as cadmium, lead, and mercury are routinely found in high concentrations in the sediment of urban streams. However, not all urban areas are highly polluted; some streams are good, and some streams are degraded. The less polluted urban streams, which

tend to retain healthier bug and fish populations, need to be watched carefully so we are able to quickly catch any new problems.

2) The second idea relates to a stream's flow. Urbanization increases the amount of impervious surface in a watershed, which results in water run-off from rainstorms and snowmelt being transported to streams and lakes faster. The quickly routed rainfall results in "flashy" streams; these streams fluctuate rapidly between low and high flows. The high flows are often fast enough to carry woody debris downstream, scour the streambed of sand and rocks, and erode the stream banks. In addition, the low flows can be so low that there is not enough water in the stream to consistently support bugs and fish. Creatures certainly prefer consistent flows, as these flows create stable habitat. Interestingly, in highly urbanized areas, point-source water coming into the streams on a consistent basis may actually be helpful for the stream to maintain a constant flow. For example, consistent outflows from sewage treatment plants, which do not fluctuate with storm events, may be a boon to the biological community in highly urbanized systems. Of course, these flows also carry some of the pollutants mentioned above, so there is certainly a tradeoff here between water quality and water flow.

3) The third way in which healthy communities can be found in urban streams is through a dependence on vegetated, non-agricultural land cover. Urban streams will have a mosaic of watershed land use, from agriculture, commercial areas, residential areas, lawns, forests, and wetlands. A watershed with high amounts of both urbanization and agriculture will tend to have streams of low quality; pollution and flow instability due to development, plus sediment and nutrients due to agriculture, contribute to degraded systems. On the other hand, an urban stream that has plenty of forests, wetlands, and parks scattered



This graph represents the relationship between fish quality and the amount of watershed urbanization for numerous streams across Michigan. credit: P. Steen, HRWC

around the watershed will have a much higher chance of holding good fish and insect communities. Forest corridors along river banks are important, but so are the forests that are further away from the river. We are lucky in the Huron River watershed that there is such a large expanse of undisturbed forest in the upper reaches of the watershed. This natural land helps the river maintain a higher quality, even in the more heavily urbanized sections downstream.

THE WATERSHED'S FUTURE HEALTH

It is highly likely that land development will increase in the future as our population grows. In the Huron River watershed, we are already blessed with a great urban river, but we need to keep it that way. To maintain the Huron River watershed's health in the face of increased population, we must change current patterns of development by encouraging higher density where infrastructure already exists, while simultaneously preserving our natural areas. This will keep water pollution lower and help stabilize water flow. HRWC will continue to strive for this goal, and with your help, we can succeed!

—Paul Steen

Adopt-A-Stream Special Appeal

We need your immediate help!

Many of you reading this article are very familiar with HRWC's Adopt-A-Stream program because you are one of the hundreds of volunteers and donors who have made it one of the most recognized river monitoring programs in the country.

Your support and involvement have been invaluable and we are extremely grateful. Over 600 volunteers have participated and visited local streams, learning firsthand about the bugs in the river, the flow of the river, and what impacts our rivers and streams. This educational aspect promotes stewardship of the watershed and individual actions that protect the watershed.



An Adopt-A-Stream training session teaches lead collectors the proper protocols for taking samples from the river and its tributaries. photo: HRWC

Federal, State and Local funding cuts have had a negative impact on the Adopt-A-Stream Program. Recently, state and federal cuts on water resource protection, drastic decreases in environmental funding, and dwindling corporate resources (such as Pfizer's departure) have negatively impacted Adopt's bottom-line. Adopt needs to raise \$120,000 over the next two years to replace lost funding. We are turning to people like you to help raise funds.

HRWC has tripled the number of funding applications for Adopt, and we will continue to seek diverse foundation support and new sources of funding for the program. But HRWC also needs your support to continue our most critical river protection work.

For fifteen years Adopt-A-Stream has produced a highly respected scientific database that is widely utilized in government and citizen decisions. The program is used as a model by other river groups, and program staff were chosen to run "Mi-Corps," the State of Michigan's river and lakes training and monitoring program.

HRWC's Adopt-A-Stream program has made the Huron River the most monitored river in Michigan. The resulting data enables authorities to monitor the consequences of future actions by providing years of baseline data (both biological and physical characteristics) rarely available on any river.

HRWC's Adopt-A-Stream Program produces data that gets results. Just a few examples include:

- Adopt-A-Stream water quality monitoring data was used by the Michigan Department of Environmental Quality (MDEQ) to determine impaired and high quality water bodies.
- This same data is used in the review of wetland and discharge permits, and it was recently used to deny two new wastewater treatment plants requesting discharge to the main river.
- Adopt-A-Stream data on the biology, flow and geomorphology of Millers Creek contributed to making the Millers Creek Watershed Improvement

Friday, **September 19**, all day event!
Arbor Farms Market

2103 W. Stadium, Ann Arbor
Shop at Arbor Farms and 5% of
your purchase supports
HRWC's Adopt-A-Stream Program.

Plan one of the "Ten Best Watershed-Based Plans in the Nation" in 2006, as chosen by the EPA.

- Adopt-A-Stream data contributed to the City of Ann Arbor's decision to acquire 13.5 acres of land in Millers Creek, including the most pristine portion of any creek in the city.
- Volunteers in Salem, Superior and Ann Arbor Townships coordinated and improved their ordinances to protect Fleming Creek.
- People fish and swim in parts of the Huron River that formerly were neither swimmable nor fishable, thanks to stronger natural resource protection policies and procedures supported by Adopt-A-Stream findings.

Your financial support will strengthen one of the most effective river monitoring programs in the country. To contribute to Adopt online go to www.hrwc.org/1members.htm and click on **GIFTS** to send us your donation quickly and securely from our website. Be sure to tell us your donation is for Adopt.

HRWC has to work harder than ever to protect the places we value – places for clean water – and we hope you will rise to the occasion and support our most significant program, Adopt-A-Stream.

— **Margaret Smith**

Intern Class of 2008

Summer interns dive into work on the Huron

We were gifted with a stellar class of summer interns this year, with great contributions from an independent study student as well.

Elizabeth Nellums and Lynn Kalfsbeek joined HRWC this summer as Marshall Weinberg recipients. Both received their Masters degrees this spring from the School of Natural Resources and Environment at the University of Michigan. Elizabeth and Lynn are coordinating volunteers and conducting

Elizabeth...



field assessments for both the Bioreserve Project and the Portage Creek Watershed Management Plan. Elizabeth is also assisting with monitoring in the Middle Huron and has impressed us with her willingness to put in long, odd hours to get needed information. Lynn has devoted herself to learning new publishing software and has spent many hours scouring the internet to create the Field Guide for the Bioreserve Project, including finding and organizing over 300 photographs of plants into an easy-to-use field book for our volunteers. Both Elizabeth and Lynn are seeking positions in land conservation this fall.

Jenny...



Finally, Helena Mastrogianis is a 2008 graduate of the University of Michigan, where she studied environmental policy and political philosophy. Her interests include the integration of sound science in policymaking, particularly in the field of climate change. After providing great assistance to the HRWC development staff since November 2007, Helena is moving on to the University of Maryland's School of Law where she will be studying environmental law and policy.

— Ric Lawson



...and Helena photos: HRWC

HRWC has benefited greatly from the contributions of these dedicated women, and it will be some time before they clean all the Huron mud from under their fingernails.

Lynn...



We thank them for their efforts and wish the best for them in their future endeavors!

Also joining us this summer is Jennifer Miller. Jenny is pursuing her Masters in Ecology and Organismal Biology at Eastern

Top Rated Outdoor Fun

Summer adventures in the watershed

Outdoor enthusiasts and HRWC teamed up and made a splash on the river this past summer starting with the first professional canoe races on the Huron at Gallup Park. Over sixty paddlers entered the races and came from all over Michigan, Indiana and Ohio to participate. If you missed it, don't worry, Michigan Professional Canoe Association and HRWC are teaming up again next year for the second annual Huron River Canoe Challenge.

Liz Elling and Laura Rubin were joined by over twenty five swimmers for a one-mile swim of Baseline Lake. Starting at the U of M Sailing Club, the swimmers, guided by paddlers, crossed the lake and back – some for their first-ever river swim. (Yes, it was a “river swim” indeed, because the Huron River runs through Baseline Lake.)

The Huron History Mystery Tour, our first-ever geocache adventure, continues through September 15, and can be found at www.huronhistorymysterytour.com. Show the kids in your life how rewarding it can be to spend time in the outdoors by geocaching.

Finally, the Annual Ann Arbor Ultimate Frisbee Charity Tournament brought over 500 athletes together for a day of competitive frisbee, with all proceeds going to HRWC.

HRWC believes that stewardship includes getting people outside and having fun in shared natural spaces like the Huron River Watershed, so see you next summer for more adventures!

— Margaret Smith



Huron River Canoe Challenge at Gallup Park – may the best racer win!
photos: M. Akemann



Liz Elling, Laura Rubin and friends gather for a one-mile swim of Baseline Lake. photos: HRWC



New Stormwater Permits Issued Amid Controversy

Changes to MDEQ permits worth noting

The MDEQ issued new permits in May for controlling stormwater runoff pollution discharging into Michigan watersheds. These new permits revise previous ones that expired in April that target public jurisdictions in the State's urban areas. The new permits are more prescriptive than the previous versions, as they require specific documentation of discharge points, monitoring, and stormwater management policies.

On the surface, these changes appear to encourage better management of stormwater, but for some communities, they come at great cost and effort. Many communities also believe that local management discretion was eliminated. A group of southeast Michigan communities and other permitted entities led by SEMCOG worked with MDEQ to negotiate a redraft

of the watershed-based permit that included more flexibility. Still, Wayne and Oakland county departments were not satisfied and are contesting the permit, along with many permitted communities within those counties. So far, MDEQ has indicated that they intend to move forward with the new permit and communities must apply for coverage or risk violations. As of this printing, the outcome of the contest to the new permit was pending.

Rather than fight the new permit, Janis Bobrin, the Washtenaw County Drain Commissioner, is instead taking the opportunity to lead a watershed permit group for the Huron River in her county. Washtenaw was previously covered under the original

voluntary Rouge River Watershed permit. Moving primarily to the Huron River Watershed would bring stormwater planning in Washtenaw in line with separate efforts to reduce nutrients in the Middle Huron Watershed to address impairment of Ford and Belleville Lakes. That could create cost savings and stronger cooperation in the Middle Huron, among other benefits.

The outcome of these developments will impact the direction of stormwater management in the watershed over the next five years. It bears watching.

— Ric Lawson

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Laura's "Stream" of Consciousness

An update on HRWC projects and activities

What makes the Huron unique? I bet you know many things that make the Huron special, but didn't realize that we have the densest population of snuffbox mussels in the nation. The snuffbox is a medium-sized (up to 2 inches) mussel that is triangular in shape. Its shell is thick and yellowish on the outside with numerous, broken, dark green rays.

The snuffbox mussel has been listed by the State of Michigan as endangered. But as Renee Sherman tells us, the population of snuffbox mussels in Davis Creek at Silver Lake Road is famous.

"I returned from the Freshwater Mollusk Conservation Society meeting in Little Rock, Arkansas, [where] Dave Zanatta, a graduate student at the Royal Museum of Ontario in Toronto, [reported on] a genetic study on the snuffbox mussel. He collected at several spots around the

country and the information he provided to the U.S. Fish and Wildlife Service for their review of the snuffbox showed that the population in Davis Creek at Silver Lake Road is the most dense in the nation!"

The snuffbox lives in sand, gravel, or cobble substrates in swift small and medium-sized rivers. Individuals are often buried deep in the sediment.

The snuffbox requires clean, swift currents. It is relatively immobile as an adult and is therefore sensitive to river impoundments, siltation and disturbance. As a result they are rare in the Huron and declining nationwide. In order to maintain the current population, we need to reduce sediment load and run-off, with vegetated riparian buffers being key. And as with all mussels, protection of their hosts' habitat is also crucial. Because the life cycle of the



Snuffbox mussels photo: MNFI, D. Stagliano

snuffbox is inherently linked with that of the logperch (a fish) in Michigan, conservation and management of this fish species is needed to ensure the snuffbox's continued existence.

— Laura Rubin

For more information visit the Michigan Natural Features Inventory website: <http://web4.msue.edu/mnfi/explorer/species.cfm?id=12365>

Know Your Board Representative

Steven Wright, City of Chelsea

Chelsea's representative to the Huron River Watershed Council Board is Steven Wright. He has lived in Chelsea since 1977 and was its former representative to the board until he was replaced while on sabbatical in 1992. He was recently reappointed to the HRWC Board.

Steve's Bachelors degree in agricultural engineering and his Masters degree in hydraulic engineering are both from Washington State University. His PhD. in civil engineering is from Caltech. He is a professor in the Civil and Engineering Department at the University of Michigan where he has taught a wide variety of courses in the general areas of hydraulics, hydrology and water resources. His research covers much the same areas. He was recently involved in the development of a new dual Masters degree program with Engineering and the School of Natural Resources which will combine the engineering water resources with the aquatic sciences programs.

Steve grew up on a small farm in Eastern Washington where his interest in water issues began. The family's shallow well was a worry because they were never certain



Steven teaching at U of M. photo: S. Wright

that there would be enough water for family use. After he moved to Chelsea, two former executive directors of HRWC, Owen Janssen and Roger Copp, were instrumental in directing his attention to the Huron River Watershed and its issues. In the early 1980s, Steve volunteered as a county representative and was a member of the Executive Committee.

He has served locally on the Ann Arbor Sanitary Sewer Backup Prevention Committee which recommended the footing

drain disconnect program. He is the chair of the Chelsea Water Study Committee, which deals with issues associated with water, wastewater and stormwater systems in the city. He is currently a Fulbright Scholar in Chile where he is involved in teaching parallel interdisciplinary courses at the Universities of Michigan and Concepcion, relating to issues surrounding the proposed hydropower development in Patagonia.

His wife, Dayle, is a dietician at Foote Hospital in Jackson. One of his sons, Glenn, is a statistician for the State of California. Another son, Dan, is in the Peace Corps in Bolivia, developing rural water supplies. Steve enjoys canoeing, fly fishing for smallmouth bass, backpacking, gardening, and making his own "home brew."

If you have questions, suggestions, or comments about the river or watershed issues, call Steve at (734) 475-1563 or the HRWC office at (734) 769-5123.

— Eunice Burns

CDM Michigan, Inc.

HRWC business partner highlight

Founded in 1947 with a focus on environmental services, CDM is a leading global consulting, engineering, construction, and operations firm. Areas of focus and services include water, environment, transportation, facilities and processes, and international development. Current CDM projects underway in the watershed include:

MALLETTS CREEK MARY BETH DOYLE PARK REGIONAL DETENTION BASIN DESIGN AND CONSTRUCTION

The Washtenaw County Drain Commissioner, in conjunction with the City of Ann Arbor, initiated a project that redesigned the stormwater control pond at Mary Beth Doyle Park (formerly Brown Park) to improve water quality in Malletts Creek. This project integrates site design for the Mary Beth Doyle Park storm water control pond that improves water quality and habitat, protects Malletts Creek, enhances aesthetics, recreation and education opportunities, and maximizes the use of sustainable processes.

Following completion of the design, CDM was selected to provide construction services, post-construction sampling, and wetland mitigation monitoring. The retrofit construction work includes dredging and disposal of 25,000 cubic yards of sediment, as well as construction of an earthen embankment, extended detention wetland, forebay, mitigation wetland and park enhancements. The park enhancements include a new pedestrian path and pedestrian bridge, improved habitat via native landscaping (including the addition of numerous trees), parking lot expansion and improvements, and



Mary Beth Doyle Park Regional Detention Basin Design and Construction
photo: CDM

relocating selected holes and tees on an existing disc golf course.

This project is the first non-point source project in Michigan to be financed with State Revolving Fund loans.

STORM WATER GIS DATA COLLECTION AND HYDRAULIC MODEL DEVELOPMENT

CDM is developing a citywide geographic information system (GIS) and model of the City of Ann Arbor stormwater sewer system. The GIS and model will be used for operations and maintenance and to identify water quantity and quality issues in the stormwater system.

CDM is gathering information on each sewer pipe so that they can be included in the citywide model. The information collected is being used to develop GIS coverages to allow this information to be available for other applications.

To support the use of this citywide model to evaluate the stormwater system conditions reliably, flow, level, and rainfall data is being collected and used to calibrate and verify the model configuration and representation of the system.

To learn more about CDM, and to access their online Knowledge Center of articles, case studies and podcasts, go to www.cdm.com.

— Margaret Smith

It's not too late!

**2008
State of the Huron
Conference**

Wednesday, September 24

8:30 – 4:00 pm
Washtenaw Community College, Ann Arbor

Keynote speaker: Herbert Dreiseitl,
internationally renowned Artist, Landscape
Architect, and Founder of Atelier Dreiseitl

**Register today on-line
at www.hrwc.org**



**Huron
River
Watershed
Council**

Protecting the river since 1965

HRWC Wish List

Your junk might be our treasure!

Looking to clear out some old equipment? Consider making a donation to HRWC. Call 734-769-5123, extensions listed with each item. Thank you!

ARTIST PORTFOLIO/CARRYING CASE

For transporting 24 x 36 inch program display posters to events. Pam – x17 or plabadie@hrwc.org

PORTABLE GPS UNITS

For use in our Bioserve Project's field assessments. We want to keep track of the routes we take on our field assessments and enter them into our GIS computer map. Kris – x16 or kolsson@hrwc.org

DIGITAL SCALE OR BALANCE

For weighing small sediment samples - sensitive to 0.1 mg for weighing suspended sediment samples. Paul – x14 or psteen@hrwc.org

SQUIRT BOTTLES

For our RoundUps/Stonefly Searches. The bike-bottle style with the push-pull cap for drinking and a screw-on top. Paul – x14 or psteen@hrwc.org

PLASTIC STORAGE TUBS

All sizes, with snug-fitting lids, for storing Adopt-A-Stream monitoring equipment. Paul – x14 or psteen@hrwc.org

Thursday, September 18 from 6 to 9 pm



SUDS



on the
river

MICROBREWERIES of the Huron River Watershed

For tickets call 734-769-5123 ext 19.

YOU Make The Difference

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

Our most valuable world resource in the 21st century is not oil, not natural gas, not even some type of renewable energy. It is water—clean, safe, fresh water.

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.



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MEMBER LEVELS

- \$30 **Mayfly**
- \$50 **Crayfish**
- \$100 **Dragonfly**
- \$250 **Soft Shell Turtle**
- \$500 **Salamander**
- \$1,000 **Smallmouth Bass**
- \$2,500 **Great Blue Heron**
- \$5,000 **Mink**

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www.hrwc.org

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Mott Foundation for providing two scholarships to the 2008 River Rally for HRWC staff members.

Pauline Loewenhardt for thoroughly researching funding sources for the Millers Creek Film Festival.

Nancy Stokes for representing HRWC so thoughtfully in our advisory role with the Southeastern Michigan Coalition for Place-Based Education.

Dave Brooks for handling our equipment storage shed, multiple printing needs, and rain barrel repairs.

Marilyn and Edward Couture, Paul Cousins, Kendra Kyle and Courtney Kiley for distributing Millers Creek Film Festival fliers.

Richard Pierce for stopping illegal dumping at a storm drain and engaging his Forsythe Middle School students in environmental activism.

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The **25 people who performed Bioreserve field assessments** through woods, swamps, and fields, and the **property owners** who permitted the field assessments.

Jacqueline Courteau and Lara Treemore-Spears for their leadership at the Bioreserve Field Assessment Training.

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