

River Waves

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Installation of Phase II of Rain Gardens at Cincinnati Zoo proceeded under fair skies

ORF Installs Largest Rain Garden in Region

Ohio River Foundation and Aveda, Inc. recently installed the region's largest complex of rain gardens at the Cincinnati Zoo and Botanical Gardens. In June and July, Aveda volunteers joined ORF and Zoo staff as they dug holes, mulched, tilled, and planted 4,000 sq. ft. of landscaped gardens.

Funding from Aveda, Inc. and Hamilton County Stormwater District made this possible. Most importantly, the site is extremely visible and accessible to the community. Already, hundreds of people have visited the site to learn more about what a rain garden is and how it can make a difference in their community. Read more on page 3.

GORP Makes a Great Big Splash in July

Double the fun! Almost twice as many people paddled in this year's GORP, compared to last year. The weather cooperated, and ODNR-Watercraft provided a welcome escort through the lock chamber. The camaraderie amongst paddlers was evident throughout the 2-day educational and fundraising event.

Sightings of great blue herons, belted kingfishers, tri-colored herons, and several fish species illustrated the variety of Ohio River wildlife. For all, including staff, it was another wonderful and memorable GORP adventure. Read more about GORP on page 3.



GORP 2008 paddlers exit Meldahl Lock.

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From the Executive Director



These are good times for Ohio River Foundation. River Explorer registrations are going through the roof, and grant funding is keeping pace with this tremendous growth. The new staff that we have added and continue to hire are proving to be tremendous assets to the program and organization. And our new ventures are starting to open eyes around the watershed as to what is possible.

Our new Community Rain Garden Program is off to a great start with the installation of 4,500 sq.ft. of rain gardens in the last 12 months. These demonstration gardens are beginning to capture public attention and gain recognition for ORF as a leader in the drive to protect water sources and reduce stormwater treatment costs.

Already, we're seeing interest in several communities to begin community programs. What these communities lack is the experience and how-to knowledge that ORF can provide.

With more demonstration gardens in the planning stages for installation during the next 12 months, we are in position to greatly increase our presence in many more watershed communities in Ohio, Indiana, and Kentucky.



We will continue to focus our installations in high visibility areas to spur community interest in these passive stormwater controls and assist in creation of community rain garden programs.

Your help enables us to keep the ball rolling and the gardens growing. The future for our rivers, creeks, and streams and watershed has never been brighter or greener!

Take care,
Rich



ORF Welcomes Sara Ernst as Rain Garden Program Manager



We are pleased to welcome Sara Ernst as the Rain Garden Manager for Ohio River Foundation.

Sara earned a B.S. in Botany from Miami University. She has a great deal of experience in both field botany and environmental education. This Ohio native has

traveled extensively, holding positions in Florida, Pennsylvania, and Ohio. She recently returned from a two-year stint as a Peace Corps volunteer in El Salvador, where she worked in Agro-forestry and Environmental Education.

Sara brings a broad range of experience and enthusiasm to the organization, and we are very excited to have her on our team.

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Hundreds of Plants Take Root at the New ORF Rain Garden



Aveda, ORF, and Zoo staff and volunteers combined forces over two days for RG planting.

On a few gorgeous days in June and July, hundreds of plants were given a new home at rain gardens in the Cincinnati Zoo and Botanical Gardens. These are not your ordinary gardens, but ones that are specifically designed to capture stormwater and reduce the flow into the storm sewers.

At the zoo site, grassy areas were dug up and converted into rain gardens. Instead of areas dominated by grass that need

to be regularly watered and mowed, plants assume a valuable role in capturing stormwater, filtering pollutants, and recharging our groundwater.

Commenting on the effort for Aveda Mid-America, Kathryn Whittington said, "Building a rain garden was hot, dirty, fun and fulfilling. We believe in rain gardens and it was great to be a part of an important prototype like the Zoo garden. We are looking forward to watching "our" garden grow!"

In future issues we'll more fully detail the zoo and other rain garden installations to provide some below-the-surface information as to what makes a rain garden work.



Great GORP!



GORP paddlers have Meldahl Locks in sight.

140 paddlers frolicked in the Ohio River during Great Ohio River Paddle 2008 (July 19-20). It was an outstanding turnout with a fabulous group of people. With ORF staff leading the way, paddlers enjoyed Ohio River community hospitality with visits in Ripley, OH and Maysville, KY. The EcoPod and TouristPod paddling configuration was a hit, and provided a much more personal experience for all participants. Of course, to see the kaleidoscope of colors of all the different kayaks and canoes made for a veritable feast for the eyes!

We must again acknowledge the support of our sponsors who helped make this event the great success it was: Ohio Division of Natural Resources – Watercraft, Tradewinds Beverages, Benson's Catering, Enterprise Rent-a-Truck, Dicks Sporting Goods, Designs of The Interior, Clermont County Park District, and the towns and cities of Maysville, KY, Ripley, OH, and Chilo, OH. We encourage you to patronize these generous supporters.

The entire event generated more than \$13,000 in revenue for ORF, which will help support our conservation activities. Thanks to our sponsors and GORP Paddlers!!!



Paddlers gather at the main shelter to feast on a barbecue dinner!

Aveda ORF Earth Month Generates \$107,000 and Reaches 100,000 People with Clean Water Awareness Campaign



“How Clean Is Your Water” was a smashing success! One hundred Aveda Experience Centers, Salons, Spas, affiliates, and Dillard’s Salons joined with Ohio River Foundation to educate customers in Ohio, Indiana, and Kentucky about local water quality issues. In conjunction with that effort, customers made donations to ORF to further its efforts to protect and improve water quality in the Ohio River watershed.

The featured grand prize of the event was a vacation trip to an eco-resort in the Dominican Republic. Thank you to Apple Vacations for its donation of this exquisite trip, and congratulations to Ana Salinas of Cleveland, the grand prize trip winner.

(A full listing of donors in the campaign, including participating Aveda salons, will be forthcoming in the Oct./Nov./Dec. newsletter.)



ORF trustee Judi Cogen and Kathryn Whittington (Aveda Mid-America) at the raffle drawing at Designs of the Interior.



How clean is **YOUR** water?

More than 40% of our rivers and lakes remain polluted.
These are sources of drinking water to millions of people in Ohio, Indiana, and Kentucky.

Your donation will help support the Aveda and Ohio River Foundation partnership to improve water quality.

Grand Prize Raffle

Trip for 2 - Dominican Republic
Eco-Resort & Spa 5 days/4 nights
hotel & air from Columbus, OH
taxes and gratuities not included

Ohio River Foundation

AVEDA
the art and science of pure flower and plant essences

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School Rain Garden Program



As one of ORF's educational stewardship opportunities, schools that participate in the River Explorer program are being invited to team with Ohio River Foundation to reduce stormwater pollution on their properties.

Students will be given instruction on steps for designing, constructing, and monitoring a rain garden. Working with ORF staff, partners, and volunteers, each class will take all measurements, create the layout, select plants, and design the overall look for the garden. After planting, students will monitor and maintain the gardens.

The completed rain gardens will provide the community with a model of stormwater management. They will also provide the schools with an outdoor classroom they can use for years to come. Commented Erin Crowley, ORF Education Director, "These gardens will provide students with an ongoing annual teaching tool for multiple grades and courses in math, science, and social studies."



Planting a rain garden is a learning opportunity. (David Dodds)

To be a rain garden school partner, contact Erin Crowley, ORF Education Director, at: 513-377-1408.

Community Rain Garden Program



Multi-cell rain garden receives direct rainfall and also runoff from building (to the right in photo) via re-directed downspouts. (Melinda Chamberlain)

Non-point pollution from stormwater runoff continues to overwhelm our creeks, rivers, and streams. Sewer overflows are an additional problem associated with stormwater runoff. A key goal, identified by water-related agencies and experts, is local control and reduction of stormwater runoff. Rain gardens, popular in other parts of the midwest, are increasingly being considered in our watershed as a solution to reduce stormwater pollution and improve water quality.

Ohio River Foundation is putting together the pieces of a rain garden program for several communities in Ohio, Indiana, and Kentucky. Demonstration gardens in select cities and towns will help illustrate the financial and esthetic benefits associated with this low cost solution.

To be a rain garden corporate partner contact Rich Cogen, ORF Executive Director, at: 513-460-3365.

River Explorer Program: Hands-On, Feet In!



We are barely able to keep up with the growth in the River Explorer program this fall. We are poised for our biggest field season yet, with over 900 students registered to participate!

Some additions to our program this season include brand new stream monitoring equipment, pre-trip curriculum for several of our learning stations, and a few new field educators.

Although our fall season is booked, we are currently taking reservations for spring. Get a jump start and register today for your students to participate in a River Explorer field trip!



(Photo: Malinda Hartong, Cincinnati Enquirer)

Find more information or register for a spring RIVER EXPLORER field trip at: www.ohioriverfdn.org.

Wonderful Watersheds: Coming to a Classroom Near You!



Schools unable to participate in a field trip will now be able to study stream critters in the classroom. (Photo: Angie Mathews)

We are pleased to announce the launching of our Wonderful Watersheds program, a sister-program to River Explorer. This program, funded in-part by a grant from the Ohio Environmental Education Fund, brings the excitement of outdoor water education right into the classroom. Activities in this program include:

- 💧 **Wonderful Watersheds:** Students learn about stormwater and nonpoint source pollution as they experiment with a watershed model.
- 💧 **The Incredible Journey:** Students journey around the water cycle in this fun activity, learning how water moves through the hydrosphere.
- 💧 **MacroMania:** Students unable to attend a River Explorer field trip get to experience some of the diversity of our streams as they observe and identify live critters from a local stream!

Naturalist Corner: Mussels in the Ohio River

by Julie Haidle, Senior ORF Educator



At the turn of the 19th century, the Ohio River basin was home to 127 of the 297 freshwater mussel species native to North America. Sadly, these animals are now among the most troubled natural resources in this country. Approximately 70% of Ohio River basin freshwater mussels are extinct, endangered, or in need of special protection. Many of their problems stem from the changes that have occurred to their habitat during the past 200 years.

Freshwater mussels are filter feeders, allowing the swift current of rivers and streams to bring the tiny plants and animals they eat right to them. Drawing water inside their shells through a siphon, their gills filter out food and take in oxygen.

Mussels' hard, calcium-based shells consist of two halves joined by a hinge. Unique names like "Fat Pocketbook," "Purple Cat's Paw," and "Pink Heelsplitter" refer to the wide range of shell size, color, shape, and texture found among mussels. Early settlers to the Ohio River Valley harvested mussel shells to make buttons.

Freshwater mussels need a lot of luck to successfully reproduce. Females fertilize their eggs with sperm they siphon from the water. If there are no males upstream, they're out of luck! The female releases the larval mussels into the water, where they enter a parasitic stage. The larva must attach themselves to a fish host or they will die. Generally harmless, the larval mussels remain attached to their host for a few weeks, dispersing throughout the stream at the whim of the fish. Then they transform into young mussels, dropping off the host and settling into the stream bed where they will stay the rest of their life, some for over 100 years!

Native freshwater mussels face greater problems today than ever. Pollution, especially non-point source pollution and sedimentation, poses a huge threat to native mussels. Channelization, clearing of streamside vegetation, dredging, and dam construction all threaten mussel habitat. Mussels are impacted by loss of fish hosts from fish kills or dams that prevent fish migration. Poachers continue to violate harvest regulations set by conservation agencies.

Perhaps one of the biggest causes for concern in the Ohio River basin is the advent of the zebra mussel. In the past twenty years this invasive mussel, originally from the waters of Eastern Europe, has infected most waterways of the eastern United States. Zebra mussels do not go through the



Purple Cat's Paw, an endangered mussel species found in large rivers of the Ohio River watershed. (Photo: G. Thomas Watters, OSU)

same parasitic stage that native mussels do, so they are not impacted by lack of fish host. They are able to attach to any hard surface in the river, including the shells of native mussels, effectively suffocating them.

Why should we care about native mussels? In the rivers and lakes where they live, mussels' ability to filter makes them natural water purifiers. They are an important part of the aquatic food chain, as a food source for wildlife including muskrats and otters.

Mussels are the ultimate indicator of the health of a river. With their long lives and sensitivity to pollution, they are the canaries in the coal mines, warning us about the health of the waterways on which we all depend.

What can we do to help? Each of us can do our part to keep our waterways pollution-free. We can: (1) follow application directions and apply fertilizers and pesticides minimally to our lawns, especially avoiding areas near surface waters; (2) reduce sedimentation by leaving stream sides vegetated; (3) get involved with land use planning in our communities; and (4) plant rain gardens in our backyards to reduce the amount of stormwater that reaches the streams. With everyone doing their part, freshwater mussels will benefit from improvements in water quality. And so will we!

References:

Ohio River Foundation: www.ohioriverfdn.org

US Fish & Wildlife Service: www.fws.gov

The Nature Conservancy: www.nature.org

