



A Letter from the President

Change is the constant in the Mukwonago River watershed.

The Friends of the Mukwonago River continues to do important work to protect the lakes, rivers, wetlands and properties we love. In 2013, we successfully completed two grants, and this year, we received two additional grants to further our protection, restoration and education within the watershed. This includes a WDNR Aquatic Invasive Species grant to expand citizen water monitoring, community education and collaboration with UW Waukesha and Carroll University on invasive removal, and a WDNR Private Forest Weed grant to educate landowners about the damaging effects of terrestrial invasive species and how to remove them.

We continue monitoring and providing constructive input into changes on the landscape, working with WDNR and land trusts as they preserve lands under long-term master plans. We are also partnering with the Eagle Springs and Phantom Lake Management Districts to further our outreach and education about the threats and challenges to shoreline owners, and we're working to bring awareness, education and new skills to watershed landowners to help them mitigate the scourge of invasive species on their properties.

We have included Natalie Dorrlor, an environmental educator with whom we have worked the past two years, as our Invasive Species Coordinator, to assist with the grants and carry out the educational components of our ongoing work.

We have continued to build awareness within the watershed, received assistance from wonderful sponsors, and grown our membership base as we sponsor hikes and paddles to encourage people to get into and explore this incredible resource.

But as always, we couldn't do any of this without your financial support and your continued input, as volunteer citizen monitors, as cheerleaders for the Mukwonago River watershed, and as advocates for its protection as threats appear and changes occur.

This begins our 15th year striving to create awareness around this very special place. With your help, we can keep it pristine, protected and a wonderful place to live and play.

Thank you,

Ezra Meyer, President

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Purple Loosestrife Control: Collaboration in Action

Purple loosestrife (*Lythrum salicaria*), a Wisconsin DNR Restricted Species, is an invasive wetlands plant that competes with and displaces native wetland species. Introduced as an ornamental plant sold at nurseries and planted for its abundant bright purple flowers, Purple loosestrife has moved well outside backyards and is now commonly found in large quantities in wetlands across the Mukwonago River watershed and the rest of Wisconsin.

In recent years, control efforts have been implemented to slow the spread of the species and to control established populations. Because Purple loosestrife grows in wetlands, the use of herbicides can be of special concern, but fortunately a bio-control method has emerged in the form of *Galerucella* beetles. These beetles only feed on Purple Loosestrife, so they can be released in areas where the plants are present and will only negatively affect the loosestrife.

Working with DNR Aquatic Invasive Species Specialist Christina Wolbers, Friends is helping coordinate a broad effort across the Mukwonago River watershed to raise and release *Galerucella* beetles. As part of its Wisconsin Environmental Education Board grant (2012-'13), Friends established an Education Consortium with the aim of getting camps, schools and environmental education programs in the watershed to better collaborate. One result of this effort is that Nature's Classroom Institute, Camp Timber-Lee, YMCA Camp Edwards and Eagleville Elementary



School began the process of raising Purple loosestrife seedlings, which host beetle larvae as they grow into mature beetles, to be released in local wetlands. The Nature Conservancy has also been actively working on raising and releasing beetles and is the recipient of the beetles raised at locations that do not have easy access to wetlands for release of the beetles.

While it is a multi-year effort to build up a population of beetles extensive enough to result in large-scale control of Purple loosestrife, The Nature Conservancy and others have seen very promising results over the past few years.

Your children can raise beetles as a fun project with their schools at very little cost and learn about a method to deal with the invasives that threaten the watershed.

Friends Calendar of Paddles, Hikes and Programs

We had a six-month calendar of fun, interesting and educational paddles and hikes, and our very informative Got Buckthorn? in the Mukwonago River Watershed in 2014. We introduced old friends and several new friends to new parts and aspects of the Mukwonago River watershed, as we try to make more people aware of this incredible place. We showed people what invasives are in the watershed and how to remove them yourself. We will have more hands-on programs over the next two years to help our residents gain control of their properties.

We paddled some segments of the river that most of us have never paddled, very different and incredibly unique. We hiked some of The Nature Conservancy's great preserves, which they are enhancing and protecting from the threats that exist throughout the watershed.



We will be continuing this inclusive outreach next year. Watch **mukwonagoriver.org** for more information & events.



Friends' Accomplishments Over the Past Year

Watershed Protection & Restoration

- Awarded DNR Aquatic Invasive Species grant to expand citizen water monitoring, community education and collaboration with UW Waukesha and Carroll University on invasive removal.
- Awarded DNR Private Forest Weed grant to educate landowners about the damaging affects of terrestrial invasive species and how to remove them.
- Continued work with DNR as part of key stakeholders group for the Mukwonago River Unit (former Rainbow Springs Golf course) Master Planning process.

Education & Outreach

- Completed Wisconsin Environmental Education Board grant that established collaboration between multiple environmental education programs in Mukwonago River watershed.
- Offered "Got Buckthorn?" a community education event that provided training in buckthorn removal.
- Implemented watershed community Paddle & Hike series.
- Held 3rd annual watershed pancake breakfast.
- Sent 5,000+ residences in watershed the first annual Friends' Watershed Newsletter.
- Held 1st annual Watershed Weekend – educational workshops and hike.

Organization Growth

- Over 150 current members and sponsors
- Raised contributions for period ending November 15, 2012 compared with November 15, 2013 by \$5,000
- Obtained financial support from the Eagle Springs Lake Management District and the Phantom Lakes Management District in 2014

This snapshot of our efforts provide a basis of how your support dollars are used to build and maintain momentum towards a sustained Mukwonago River Watershed.



Removing Asian Clams from the Mukwonago River

By Matthew Schneider, UW-Waukesha

In 2008, the invasive Asian clam (*Corbicula fluminea*) was found in the Mukwonago River Unit of the Southern Kettle Moraine Forest, one of the first instances of this invasive in inland waters. In 2013, Tina Wolbers, of the Wisconsin DNR, and Jerry Ziegler, The Nature Conservancy found the Asian clam in Lulu Lake, upriver of the MRU. This was of concern, as a species moving upriver is indicative of spread due to



Asian clams of varying sizes taken from Lulu Lake, with a penny for size comparison

human activities. It is for this reason that the Friends of the Mukwonago River wrote and were awarded a grant that aims to explore, educate and control the spread of the Asian clam as well as other invasive species within the Mukwonago River watershed.

I believe we were able to develop an easily executed and scientifically sound method for testing the effectiveness of manual removal as a means of control for the Asian clam.

Method

PVC pipes and elbow joints were used to create a 1-meter by 1-meter square to designate the sample plot. Subsequent plots were designated by bordering the square as it lay in



Author demonstrating removal procedure

the initial plot, creating a ladder design. Before actual removal, GPS coordinates of each plot were acquired. The colander was used to scoop into the substrate (1-2 inches), then shaken to filter out sand and soil while submerged. Next, I began to search for both living and dead Asian clams, zebra mussels (*D. polymorpha*), native Sphaeriidae species (also known as Fingernail clams), and native mussels species in the colander. All non-living bivalve shells were collected and placed in the mesh collection bag for later sorting and counting, as well as living Asian clams and zebra mussels. Live native mussels or Sphaeriidae were not removed due to Wisconsin state law prohibiting their removal. Any live native species were counted before they were returned to their original location. Between each plot all samples taken were placed in Ziploc bags. Each bag was labeled with the date, site, and appropriate plot se-



Sample analysis

quence number. The type of substrate within each plot was also noted (more gravel than sand, more sand than gravel, high vegetation, etc.).

For each subsequent visit to a sample site, samples were removed from two individual plots. The first plot was the exact location removed from previously. The second plot was directly adjacent to the previous plot. Between each site, gear was disinfected with a bleach water mixture by either submerging it in the solution or spraying it with a spray bottle.

Continued on page 5



DNR Private Forest Weed Grant

Friends of the Mukwonago River is continuing and broadening its focus on invasive species as a primary ecological concern within the watershed and has received a Wisconsin DNR Private Forest Grant Program-Weed Management Area grant. This grant will complement the DNR Aquatic Invasive Species Control grant that Friends was recently awarded. That grant provides two years of funding for aquatic invasive species monitoring, control and education. The Private Forest Grant Program on the other hand is focused on terrestrial invasive species. Together, these grants will allow Friends to take a comprehensive approach to invasive species education, control and monitoring.

The Friends grant proposal seeks two years of funding that will be used in part to expand upon our very successful, "Got Buckthorn?" workshop. In addition to making it possible for Friends to offer additional workshops that focus on other terrestrial invasive species and control methods for them, we will also offer workshops

on woodland and prairie restoration methods and best of all, we will move some of our education offerings out into the field and offer hands-on workshops so attendees can try out basal barking, cutting and burning control methods while working with experts who can provide detailed instruction, tips and hints on how to make invasive species control and native species propagation work for individual land owners and their unique situations.

Other aspects of the grant application are focused on developing a template for landowners to use to develop a land management plan for their property, watershed-wide invasive species monitoring, the development of a tool loan program so that landowners can easily access the tools they need for invasive removal and working with local and county officials to ease the regulatory process for landowners seeking to undertake invasive removal on their land.

Asian Clams Continued from page 4

Sample bags were sorted and counted off-site in a timely manner to prevent decay of live specimen. The mixed samples were separated by species. Note that native mussel shells and shell fragments did not need to be identified further than "Native Mussel" and status, either "live", "paired shell," or "shell half/fragment."

Notes

The invasive Asian clam and zebra mussel were both relatively easily distinguishable from native bivalves. There was some initial confusion between some of the smallest Asian clams and native Sphaeriidae, but the main differences were found to be the well-defined ridges on the Asian clam, the easily crushed shell of native Sphaeriidae, and the dark purple-colored area found toward the

umbo of the Asian clam (not present in Sphaeriidae). See photo below.

Analysis

The main goal of project was to maximize removal efforts, while collecting data on the effectiveness of removal methods employed. It was found that the best sample site locations were those most accessible. This meant areas of high human activity, road crossings and bridges, were chosen. With the data acquired, it seems that the Asian clam can be found with highest abundance in primarily sandy substrates. The area east of the Phantom Lake dam has an abundance of native mussels that may be out-competing the Asian clam.

More data will be necessary to draw further conclusions about the Mukwonago River watershed's

Asian clam population. However, now that a standardized procedure exists for sample collection, additional data can be collected with greater ease.



Juvenile Asian clam (right), showing the well-defined ridge and dark center

The full report is available on the Friends website, mukwonagoriver.org



Making Friends — and a Difference — on the Mukwonago River

By Natalie L. Dorrlor, Nature's Classroom Institute & Montessori School

What do you do when something breaks? Attempt to fix it yourself? Call a repair man? Buy a new one? As we know, most Americans choose the latter, often without even considering the other options. However, when it comes to our environment, it's hard to find replacement parts at the local hardware store or on Amazon.

This is why students attending Nature's Classroom Institute (NCI) in Mukwonago have paired with the Wisconsin Department of Natural Resources in an effort to repair the Mukwonago River at the former Rainbow Springs property. During the 1960s, development on the site largely altered the natural state of the Mukwonago River through the installation of culverts as well as the transformation of natural buffer zones into greens and fairways.

The collaboration began in the 2011-'12 school year under the guidance of WDNR Fisheries Biologist Ben Heussner and his charismatic team. The first time I met Ben at the now Mukwonago River Unit of the Kettle Moraine State Forest, we started by walking the property for quite some time while brainstorming possible work projects for the students. As we chatted, it quickly became clear that the goals of the WDNR project paired naturally with the learning objectives of the NCI program. Heussner is incredibly passionate about his work and is simply enjoyable to work with; things that would be apparent to the students as we partnered on this venture. This would be an opportunity for NCI students to be a part of



I have done many things at Rainbow Springs. Some examples of my work are planting trees, removing culverts, removing buckthorn, and picking up golf balls. I have enjoyed every moment. I loved helping this area become more natural.

—Kassi T., Milwaukee Montessori School, 2013

I felt like I was making a difference.

—Thierry T., Milwaukee Montessori School, 2013

While I worked at Rainbow Springs, I learned many things including character building and giving back to the environment.

—Zoe A., Milwaukee Montessori School, 2013

Being able to help with our ecosystem feels really meaningful and I like the fact that I got to do it with friends.

—Mady B., Milwaukee Montessori School, 2013

We did fish shocking, stream flow, made brush bundles, and planted dogwood, hazelnut, and wild plum trees.

—Dajion D., Milwaukee Montessori School, 2013

Planting trees around the river was simple work that really paid off.

—Madison K., Milwaukee Montessori School, 2013

I think that every activity that everyone contributed as a whole led to large positive impact to what makes Mukwonago River Unit different from Rainbow Springs.

—Julian T., Madison Community Montessori School, 2013

I've gotten to help the environment and be with friends at the same time.

—Dylan M., Nature's Classroom Montessori School, 2013

We measured the depth and speed of the water, observed the water creatures, and planted trees, all to help restore the land to how it was before negative impact. It all made me feel so powerful and important. To actually make a change on the earth, no matter how small, really meant something to me.

—Shiloh B., Council Oaks Montessori School, 2013



something real; something meaningful, impactful and challenging.

Every week throughout the school year, students from across the Midwest travel to NCI with their classmates and teachers to participate in supplemental academic curriculum in the outdoors. The project work at the Mukwonago River Unit (MRU) is geared toward our adolescent-aged students. Maria Montessori suggested that it is necessary for adolescent students to be provided with purposeful work in order to feel a true connection to their learning. Adolescent students attending NCI have had just that opportunity while working at the MRU.

NCI's collaborative project work with the WDNR has included mapping the river meanders, measuring stream flow, assessing biodiversity, removing invasive species, building brush bundles to aid in sediment collection, planting trees, examining water quality, studying fish populations, protecting native species during culvert removal, cleaning up litter, restoring the river banks, and mapping natural spring locations on the property. Three years later, NCI students have had the opportunity to see the impact of their work while visiting the site multiple times over several years.

Schools participating in the collaborative work at the MRU are Brickton Montessori, Chicago; Council Oaks Montessori, Chicago; Country Meadows Montessori, Gurnee; Crystal Lake Montessori, Crystal Lake; Joliet Montessori, Joliet; Lemont Montessori, Lemont, Ill.; Madison Community Montessori, Middleton, Wis.; Milwaukee Montessori, Milwaukee; Montessori Habitat, Champaign, Ill; and Nature's Classroom Montessori, Mukwonago.





Longear Sunfish (*Lepomis megalotis*)



Friends of the Mukwonago River would like to thank the following area businesses and individuals for their generous sponsorship of this watershed event.



Waldheim Park (John Macy & Sandi Brand) • Sydney Shimko Design

**Berg Corporate Interiors • Charles & Heidi Miller • Farina Tree Care, Inc.
Holtz Farms • Interstate Sealant • Kurt's Country Porch
Mukwonago Family Dentistry**

**Allan ICS • Anich's Liquor • Doug Bruins • FS Frontier • John Amato • Patrick McAdams
Seasonal Services LLC • Warren Hansen, Sr.
Warren Hansen, P.E., Farris, Hansen & Associates, Inc.**

Please join us in our support of these businesses which help further our mission. Thank you.

The mission of Friends of the Mukwonago River is to protect the Mukwonago River and its associated watershed ecosystems by way of education, advocacy, and promotion of sound land use throughout the watershed.



You're Invited!

Friends of the Mukwonago River is pleased to present an afternoon of learning and exploration on Saturday, Nov. 8. Educational sessions will provide information for landowners and recreational users of the Mukwonago River watershed. Our hope is to inform and initiate protection and restoration activities that will improve the state of our ecological communities.

This community event is to bring awareness of the recent aquatic invasive, the Asian Clam to folks in the watershed, and to encourage volunteer citizen monitors. Friends has received an Aquatic Invasive Species Control grant targeted at providing support to local communities to combat non-native species of plants and animals that have been introduced and are negatively affecting native species. The discovery of Asian clams (*Corbicula fluminea*) in Lulu Lake last fall raised special concerns for the DNR and Friends.

Over the next two years, Friends will be working with the University of Wisconsin-Waukesha, Carroll University, Nature's Classroom Institute, YMCA Camp Edwards, Timber-Lee, the Village and Town of Mukwonago, The Nature Conservancy, Eagle Spring Lake and Phantom Lakes Management Districts, WDNR and others to implement the grant. Totaling more than \$60,000, the grant will fund the recruiting and training of citizen monitors who will help to document the presence of native and invasive species across the watershed, and fund research and removal of Asian clams by our university partners and education for land owners, municipal officials and staff, businesses and residents of the watershed.

Our goal is to educate residents, landowners, local governments and businesses owners through community outreach using targeted events and educational tools: printed materials, presentations and on-line resources that have been informed by land managers, SEWRPC, scientific research, lake management district boards, educators and others. We have received generous cost-share from the lake districts and sponsorships from other nongovernmental partners to reach constituents to foster interest in the watershed and its protection.

Watershed Awareness Event about aquatic and terrestrial invasive species

Saturday, Nov. 8, 1-4 p.m.

Featuring three, 45-minute
information/education sessions

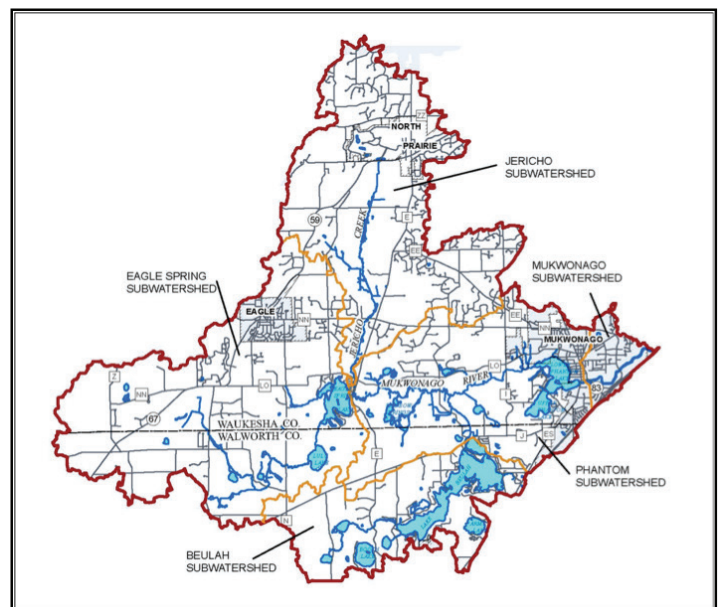
WDNR Eagle Headquarters

Sessions include:

- Mussels in the Mukwonago River, Lisie Kitchell, WDNR
- Asian Clam Discovery and removal, Matt Schneider UWW
- Invasive plants in your watershed, Friends' Forest Weed Grant

**For details on presenters & schedule,
visit www.mukwonagoriver.org**

**To register, return form on back cover
by October 31st**



THANK YOU!

Thank you to all our members, donors, volunteers and partners who made this past year a success. You helped preserve the health of the Mukwonago River watershed and educate others about its importance. We appreciate all you do and thank you for your support!

Bret Achtenhagen
Seasonal Services, LLC
Keith Anderson
Dorothea Anich
Jerry Anich, Anich's
Liquor
Jeff & Deb Bacon
Dave Barkei
Bob Bartelt
Steve Bartle
Jennifer Bayerl
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Martin Kern
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Laurie & Jack Lawlor
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Todd Levine
Jacki Lewis
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Monty Mackey
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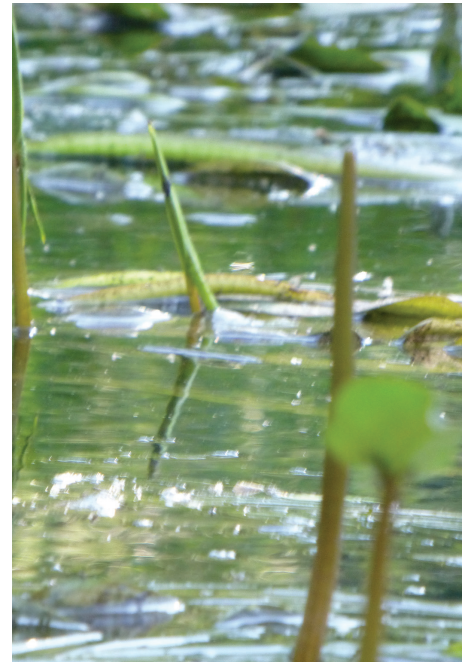


We Welcome Your Support

The Mukwonago River watershed is one of four “Last Great Places” in Wisconsin. Because of its high-quality waters and diverse wetlands, it was selected in the early 2000s as one of three focal sites of the Global Wetland Network. The Mukwonago River is home to over 50 species of fish, several species of rare freshwater mussels, an incredible diversity of wetlands, and some of the best water quality in Southeastern Wisconsin.

The mission of the Friends of the Mukwonago River is to protect this natural treasure, including its associated tributaries, lakes, wetlands and buffer zones, through education, advocacy and promotion of sound land use throughout the watershed. Friends works collaboratively with many other public and private organizations that have also recognized the importance of preserving the ecosystem.

The need for the preservation of this resource gem is clear and compelling. The 18 miles and 74 square miles of the watershed include seven major lakes, seven minor lakes and numerous tributaries, sustained by natural springs, seepage from wetlands and moraines and runoff from surrounding farms and developed lands.



We have four program areas we have focused on for over 14 years:

Conservation initiatives

Utilize scientific concepts, scientists and technology to analyze and protect the valuable resources in our watershed. This watershed is studied by citizens and scientists alike as we continue to monitor its health and preserve its pristine qualities.

Watershed protection

Projects with local citizens which demonstrate and educate about the watershed and the needs to protect and preserve its habitat, animals and resources. We work with our Education Consortium to educate youth and adults about the benefits of the watershed.

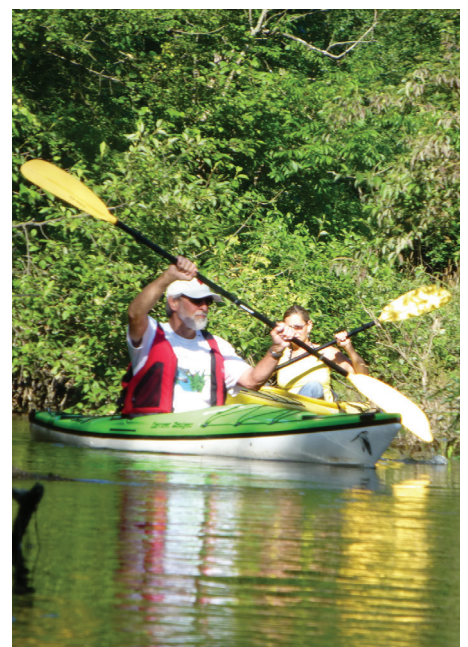
Policy for protection, preservation and restoration

With our partners we support legislative protections for our waters, work with local governments to educate our constituents of its value, and teach and use best practices for watershed wide protection.

Promotion of sound land use

We work with local municipalities, developers, landowners and stakeholders to ensure that planning and zoning efforts include river and watershed protection.

These programs areas are of concern to the management districts of our major lakes, since these influences can positively or negatively impact the system. We hope to continue our partnership with riparian residents to protect our shared, valuable resource. We will further the work we can do together to implement the recommendations of the Mukwonago River Watershed Protection Plan.



Friends of the Mukwonago River
P.O. Box 21
Eagle WI 53119

Event Registration & Friends Membership

Saturday, November 8, 2014 1 p.m-4 p.m.

Please register before Oct 31

Name _____ # Attending _____

Whether you can attend the Nov. 8 workshop or not, please consider becoming a Member of Friends of the Mukwonago River!

Your support is critical to protecting this pristine resource!

Address _____

Email _____

Membership levels (please choose one)

☐ Senior/student \$10 ☐ Friend \$25 ☐ Organization \$40 ☐ Corporate \$50

\$ enclosed _____

Mail to: Friends of the Mukwonago River, P.O. Box 21, Eagle WI 53119