



## KETTLE MORAINE LAND TRUST

*Serving the Southern Kettle Moraine lakes area in Walworth County, Wisconsin*

### **Progress Report - Delavan Lake Watershed Initiative Network November 10, 2011**

Major highlights and progress of Kettle Moraine Land Trust's work to facilitate the Delavan Lake Watershed Initiative Network (WIN) since the last monthly report are described below.

1. The Land Management Workgroup met on October 20<sup>th</sup>, 2011 at Millie's Pancake House parking lot. Members present included: Greg Igl, NRCS; Karla Eggink, WalCoMet; Maureen McBroom, WDNR; Fay Amerson and Brian Smetana of Walworth County LURM; Mary Knipper, KMLT; and Maggie Zoellner Project Manager.

The group met to examine surface runoff conditions at the southwest corner of Delavan Lake; to identify potential hot spots; identify resource issues; and gather strategies for improvements. This work is conducive to facilitating two of Delavan Lake WIN's work plan actions: Abatement of Urban Non-point Source Pollution, and Establishment of Buffers and Wetlands. A summary of the meeting can be found in Attachment A.

2. The workgroup members working on developing an expanded lake & watershed monitoring program for Delavan Lake met on November 4, 2011 at DLSD offices. Attendees included Karla Eggink, WalCoMet; Mary Knipper, KMLT; Shari Wisniewski, DLSD; Charlie Handel, DLSD; Ryan Simons, Town of Delavan; Heidi Bunk, WDNR; Maggie Zoellner, Delavan Lake WIN Project Manager. Citizens in attendance: Merilee Holst, Richard Beers. UW Whitewater Professors Elisabeth Harrahy and Bruce Eshelman, Jeff Thornton of SEWRPC, and Town of Delavan Lake Committee member Dan Lemanski were absent.

The meeting was convened in order to identify and develop a lake and watershed monitoring program that would meet all stakeholder monitoring needs and could be implemented with the resources available. Additionally WDNR representative Heidi Bunk provided an assessment of the proposed in-lake monitoring program. A summary of the meeting can be found in Attachment B.

3. The Delavan Lake WIN Education & Outreach workgroup website design team selected Signalfire, LLC located on Hobbs Drive in Delavan. Signalfire was most qualified to meet the requirements of the Delavan Lake WIN website request for proposals. Signalfire's website

can be found at: <http://www.signalfire.us/> the project manager and website design team met with the web designer on October 31, and November 7<sup>th</sup>. The project is in the design phase and will move into development phase after November 11<sup>th</sup>. The development portion of the project includes the CMS site build-out based on the approved site map, the implementation, testing, content migration, and go live, as well as set-up of Google analytics and search engine optimization. The site also includes a Google Interactive map of the Delavan Lake watershed and surrounding SE Wisconsin area. The purpose of the map will be to allow people and organizations to show and pinpoint the geographic location of activities and events related to ecological restoration and enhancement projects designed to promote watershed health.

4. Upcoming DL WIN meetings:

- Outreach & Education Workgroup, November 16<sup>th</sup>, 9:00 AM, UWEX Conference Room at Walworth County Building in Elkhorn.
- Steering Committee, December 1, 9:00 AM, location to be announced.



## **Delavan Lake WIN Land Management Workgroup Meeting Summary October 20th, 2011**

The Land Management Workgroup met at 1:30 PM on October 20<sup>th</sup>, 2011 at Millie's Pancake House parking lot. Members present included: Greg Igl, NRCS; Karla Eggink, WalCoMet; Maureen McBroom, WDNR; Fay Amerson and Brian Smetana of Walworth County LURM; Mary Knipper, KMLT; and Maggie Zoellner Project Manager.

The group met to examine surface runoff conditions at the southwest corner of Delavan Lake; to identify potential hot spots; identify resource issues; and gather strategies for improvements. This work is conducive to facilitating two of Delavan Lake WIN's work plan actions: Abatement of Urban Non-point Source Pollution, and Establishment of Buffers and Wetlands. The site was reviewed first by aerial photo followed by a site inspection of the area.

- This subbasin is a mix of commercial, residential and agriculture use, a complicated runoff site
- Three homeowner associations are found here: Highlands, Ravenswood and Viewcrest, possible 300 homeowners. One of the associations also owns a lakeshore park here.
- Millie's Pancake House parking lot run-off travels under South Shore Drive through the residential area to the boat channel.
- Agriculture field runoff occurs during peak run-off events; field was in hay land but has recently been tilled so an increase in sediment reaching the lake might occur.
- The road side ditches along Channel Drive do not have the capacity to convey water during heavy precipitation events without overflowing.
- Recent improvements to Poplar Drive are new culverts under the road.
- LURM staff reported concern from area residents about the banks of the channel sloughing in.
- Engineering studies about the surface water flows and constraints in this area may already have been completed.

As this was the first field review by the Land Management workgroup a process and planning discussion followed:

- how to determine what projects are of most value to protect and improve water quality
- document partner relationships that must be established for project success
- assign "next step" responsibilities
- development of a resource inventory process for each field site is needed at some level and should include soils, vegetation, hydrology, lake related issues.

- aquatic organism protection and habitat improvement are also important component of water quality

The group felt this site in particular would benefit from the implementation of good housekeeping practices such as rain gardens or bioswales along Millie's parking lots; planning native vegetation on the lake channel banks to promote infiltration of runoff; a basin to mediate peak flows between the agriculture areas, and the residential area might reduce flows to a level the residential infrastructure can accommodate and improve water quality. Funding for improvements would probably need to come from several different sources since some issues are agriculture related, some residential and others commercial. The WDNR has Targeted Runoff Management grants that might apply to portions of this situation.

The important contacts for this site are: Millie's Pancake House, Town of Delavan's Lake Committee, Homeowners Associations, agricultural land owners.

Next Steps:

1. Contact Town of Delavan to determine interest in project planning, and if engineering studies are available. Maggie
2. Contact Homeowner Associations and agricultural landowner to brief them on the goals of Delavan Lake WIN and the purpose of the site meeting. Maggie & Brian
3. Formalize project field review process and outcomes.
4. WDNR to provide additional runoff and construction information (see attached).

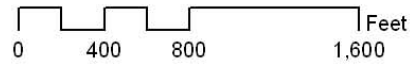
The project manager provided the group an update on the development of the lake monitoring program.

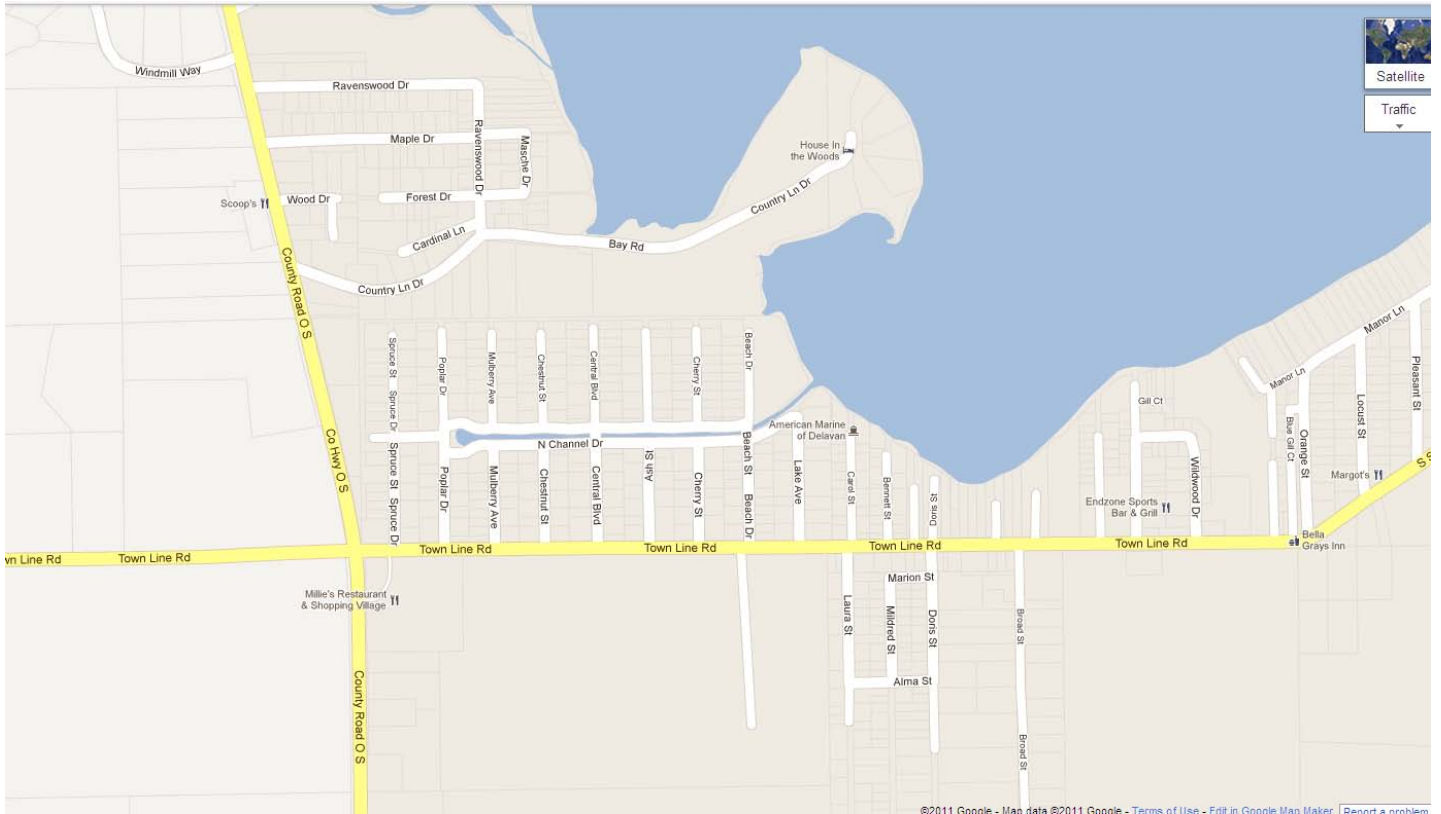
The next Land Management Workgroup meeting is to be determined. Potential sites include Mound Rd wetlands to learn about the wetland features, and the Schulz property.

# Southwest Corner of Delavan Lake Land Management Site Review - October 20 2011



2010 Aerial  
10' Topo







**Delavan Lake WIN Lake & Watershed Monitoring Meeting Summary**  
**November 4, 2011**  
**Delavan Lake Sanitary District Office – 10:00 AM**

Attendees: Karla Eggink, WalCoMet; Mary Knipper, KMLT; Shari Wisniewski, DLSD; Charlie Handel, DLSD; Ryan Simons, Town of Delavan; Heidi Bunk, WDNR; Maggie Zoellner, Delavan Lake WIN Project Manager. Citizens in attendance: Merilee Holst, Richard Beers.

The meeting was convened in order to identify and develop a lake and watershed monitoring program that would meet all stakeholder monitoring needs and could be implemented with the resources available. Additionally WDNR representative Heidi Bunk provided an assessment of the proposed in-lake monitoring program.

Heidi conveyed that the proposed Tier 6 in-lake monitoring program would provide a clear picture of what is happening in the lake, and it is probably more samples than what is needed. The proposed program was designed to be liberal allowing for downscaling depending of available resources.

WalCoMet and the Town of Delavan representatives would like to see additional sampling done to reflect their particular research questions about inflows to the lake, and outflows from the lake. This resulted in proposing an expansion of the monitoring effort to include watershed sample collection during flow events at 8 locations in the watershed and the central deep hole location, as well as sampling during 2 low flow events. The locations identified are: Mill Pond/Comus Lake, Borg Road, Browns Channel weir, Hwy 50, Mound Rd, Jackson Tributary, Hwy 67, and Petrie Rd. The parameters to be measured are: ammonium nitrogen, chloride, conductivity, nitrate + nitrite (N), reactive phosphorus, total Kjeldahl nitrogen and total phosphorus.

Currently WalCoMet is determining the cost of providing the lab services for the watershed effort and will report the conclusions.

A written summary of possible collaboration opportunities has been provided by UW Whitewater Biological Sciences Department and is attached. Also attached is information on potential funding from Walworth County Lakes Association.

Possible Collaboration Between the University of Wisconsin- Whitewater  
Department of Biological Sciences and the Delavan Lake WIN

Dr. Bruce Eshelman and Dr. Elisabeth Harrahy

On October 6, 2011, we met with representatives of the Delavan Lake Watershed Initiative Network (WIN). As discussed in this meeting, we would like to help establish a research relationship between the Delavan Lake WIN and the University of Wisconsin-Whitewater Department of Biological Sciences. This document outlines opportunities for collaboration and student participation in long-term water quality monitoring and special projects, and suggests possible funding opportunities.

Delavan Lake Water Quality Monitoring

The overall goal of the Delavan Lake monitoring program is to provide quality data that can be analyzed in a timely manner, shared with citizens, and used to make sound management decisions. Proposed monitoring will follow the Tier 6 sampling regime as outlined in the Aquatic Plant Management Plan written by the Southeastern Wisconsin Regional Planning Commission. Key components include monitoring the deep hole location, and possibly two additional sites on the north and south ends of the lake monthly (or ideally, bimonthly) from May through September. Samples will be sent to the Water and Environmental Analysis Laboratory for analysis, and results will be entered into the WI DNR's Surface Water Integrated Monitoring System (SWIMS) database.

The University of Wisconsin-Whitewater (UWW) Department of Biological Sciences proposes to coordinate sampling efforts by UWW Biology students with Charlie Handel and others associated with the Delavan Lake WIN. We believe this offers current stakeholders a cheaper alternative for sampling efforts, while also providing benefits to the students. Students who participate in water quality monitoring and/or special projects will receive hands-on training and experience, exposure to standard methods currently employed in their field (e.g., WI DNR Citizen Lake Monitoring, USGS stream gauges and monitoring protocols), and the opportunity to network with local stakeholders (and potential future employers).

Internships/Student Stipends

Internships could be established between the Delavan Lake WIN and the UWW Department of Biological Sciences. For example, two Biology students from UWW could serve as interns during the busy sampling season (late spring through summer) on Delavan Lake. The primary assignment of these interns would be to help with the harvesting of noxious weeds in the lake and other lake management duties as required by the Delavan Lake Sanitary District. As discussed, these duties could be performed four days a week with the fifth day being devoted to

water quality monitoring. Students would be trained by UWW faculty to follow already established monitoring protocols. Equipment needed to perform these tasks has been budgeted for, and will be purchased and maintained by the Delavan Lake WIN. Student interns should expect to be paid a stipend of between \$8.75 and \$9.25 an hour during the summer. If student interns are working full-time harvesting and conducting water quality monitoring, there would be no need to pay the students for gas.

During the fall and spring semesters, students could also participate in water quality monitoring on a part-time basis. This may be done by students working on special projects on Delavan Lake or by students conducting other research projects on campus. Students working on special projects would be eligible to apply for a grant (up to \$500) from the UWW Undergraduate Research Program. It is unlikely that students conducting only routine sampling would be awarded a grant from this program. These students would need to be reimbursed for the gas they use in traveling to and from the Lake.

### Special Projects

There are many opportunities for students to participate in special projects (designed with the help of faculty mentors) on Delavan Lake and its tributaries. Equipment for these projects would be provided by UWW Department of Biological Sciences. Selection and scope of these projects would be determined by UWW Department of Biological Sciences faculty and Delavan Lake WIN members.

While the Delavan Lake WIN monitoring is well defined, it is somewhat limited in scope. Additional sampling sites or special research projects may provide more detailed data that can be used to make more solid management decisions. Analyses of samples taken outside the realm of the standard Tier 6 monitoring scheme can be performed by the undergraduate interns or research students and faculty at UWW. UWW is well-equipped with a variety of equipment and instrumentation that would be useful in such studies, but it should be noted the analytical laboratory is not a State Certified laboratory.

Examples of these types of special projects include, but are not limited to:

-Phytoplankton and zooplankton studies.

-Blue-green algae studies that focus on characterization of blooms, and identification and quantification of blue-green algal toxins.

-A study of contaminants such as heavy metals, polycyclic aromatic hydrocarbons, or pharmaceuticals and personal care products, in the sediments of the lake and the settling ponds. Sediments hold a long record of the inputs into the lake. While sediment ponds are dredged

occasionally, this is not true of the lake in general. Sediment samples from various regions of the lake could be collected, analyzed and concentrations compared. There are limitations to collecting grab samples of overlying water, but sediments tend to integrate variation in loading over time.

-A comparison of algal growth rates in various regions of the tributaries. Artificial substrates could be placed at key locations.

-A comparison of *E. coli* or other indicator bacteria levels in various regions of the lake during the recreational season. Key sites would be selected that would reflect recreational use and potential inputs into the system. Identification of these input areas could lead to suggestions for controlling high levels of potentially harmful bacteria.

-Macroinvertebrate studies conducted in the littoral zone and tributaries, especially in relation to shoreland or streambank restoration, or following herbicide treatments.

-Comparison of methods to control Eurasian water milfoil (harvesting, herbicide application).

-Impacts of the proposed Highway 50 project (road widening).

-A mass balance approach to loading rates of various constituents could be helpful in determining the need for dredging of the settling ponds.

#### Additional Student Help: Environmental Science Majors

UW- Whitewater is in the process of establishing an Environmental Science major. Students in this major will participate in a capstone course, which requires working in a group to address a local environmental issue. This may be an opportunity for (different cohorts of) students to participate in long-term studies related to Delavan Lake. For example, they may participate in, and determine the effects of restoration work done on the channelized area above the sediment ponds where the stream sits about four feet below the floodplain.

#### Potential Grant Sources

Undergraduate research students are encouraged to apply for grants from the Undergraduate Research Program. Grants are typically \$500.

Faculty may work with other stakeholders in the Delavan Lake Watershed Initiative Network to write grant proposals to be submitted to Federal agencies (e.g., U.S. EPA, NSF) and State agencies (e.g., WI DNR), and foundations (e.g., Joyce Foundation, The Charles A. and Anne

Morrow Lindbergh Foundation). For example, the WI DNR offers Lake Management Planning Grants, Lake Protection Grants, and River Protection Planning Grants. It should be noted, however, that most Federal agencies and many Foundations are not interested in funding long-term monitoring; rather in special projects that will lead to new information that can be applied to other sites.

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# **Walworth County Lakes Association, Inc. (WCLA)**

## **Kevin MacKinnon Education Fund**

### **Application Guidelines**

The Kevin MacKinnon Education Fund is a restricted fund that serves to provide education opportunities for lake advocates who desire to increase their natural resource knowledge and enhance their leadership capabilities.

#### **Application Guidelines:**

- A candidate must be a member of/or sponsored by a member in good standing of the WCLA.
- Request for Fund monies must be in writing and submitted to the WCLA Secretary at least 4 weeks prior to the event. A copy of the event promotional material must accompany the request.
- The application will be reviewed by the WCLA Board of Directors
- Within two weeks following receipt of the application, the reviewing board will provide written notification of its funding decision.
- Event fees and expenses will be reimbursed from the Fund as follows:
  - Registration and workshop fees up to \$125.00
  - Per Diem lodging allowance of \$50.00
  - Per Diem meal allowance of \$25.00
- Within 4 weeks following event attendance, a written summary report of the seminar/conference/symposium will be submitted by the candidate to the President of WCLA.
- Reimbursement from the Fund will be made following the submittal of appropriate receipts and expense documentation per WCLA requirements.
- More than one award to a recipient in any time period may be made at the discretion of the WCLA Board of Directors.
- A single event award may not exceed \$500.00