

West Michigan Currents

West Michigan Currents is a publication of the West Michigan Great Lakes Stewardship Initiative

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Two Years of Place-based Education



Muskegon Catholic Central students removed phragmites and planted native species on the Muskegon Lake shoreline.



Students from Bunker Middle School worked to improve the Muskegon Lake shoreline.



Newaygo Middle School students planted native species to mitigate run off on two lakes near Newaygo.



A Youth Symposium where students shared their work has been the culmination of both years of WMGLSI activities.



North Muskegon students installed mulch blankets to control erosion until their plants are established at Bear Lake.



Three Whitehall Middle School students met with Alyssa Merten from the MCD to discuss their rain garden design.



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Students to Monitor Shoreline Restoration



Bunker Middle School students removed debris, planted native species and performed water testing as part of their project.



By Dave Craymer
Eighth Grade Science Teacher
Bunker Middle School

A Muskegon Lake shoreline restoration project, that will partner students from Muskegon's Bunker Middle School with several community organizations, is another example of how the West Michigan Great Lakes Stewardship Initiative (WMGLSI) is fostering place-based education (PBE) for stewardship development.

Their work is part of a project that will restore 10,000 feet of shoreline, at nine individual sites along the Muskegon Lake. The restoration will involve removing approximately 145,000 cubic yards of unnatural fill and planting native species. As part of their participation, these eighth grade science students will monitor native wetland plant growth and water quality at one of the nine sites to assess the impact of the work.

The students have divided the site into twelve plots. Two plots will be outside the restoration area and will be left in their pre-restoration condition as the control plot. The other ten experimental plots are within the restoration area.

The students, together with members of Lakeside Neighborhood Association, and several other community partners, will carryout plant surveys over the next five years. The experimental plots will be compared to the control plots.

Their water quality monitoring will involve sampling and testing the water in the fall and in the spring to identify any changes that occur over time.

Bunker Middle School is also partnering with the Muskegon Naval Memorial and Museum to build an R.O.V. (Remotely Operated Vehicle) to monitor underwater flora and fauna.

The students really are beginning to understand that they are working on a project of importance to the entire community. I had one come up to me last spring and say "Wow, Mr. Craymer, this really is a big deal, isn't it." They are learning to appreciate nature and beginning to understand the nature of real science – gathering evidence to find out how the world around them really works.

The students will post their data on the web so their community partners and others who are interested in wetland restoration will be able review it. The data will be used to assess the effectiveness of the wetland restoration, determine which plants are best for future planting, and to help fulfill one of the National Oceanic and Atmospheric Administrations grant requirements.

The overall project is funded by a \$10,000,000 stimulus grant from the National Oceanic and Atmospheric Administration Coastal and Marine Habitat Restoration and ARRA Program. Members of the West Michigan Shoreline Regional Development Commission, the Muskegon Lake Watershed Partnership Habitat Committee, the Great Lakes Commission, the GVSU Annis Water Resources Institute and the Muskegon River Watershed Assembly developed the project proposal. The West Michigan Shoreline Regional Development Commission will coordinate the project. The students' work, in large part, is funded by the WMGLSI.

Students Solve Drainage Issue by Designing and Installing a Rain Garden

By Rachel Kent
*Eighth Grade Science Teacher
Fruitport Middle School*

Last year eighth grade science students from Fruitport Middle School identified a drainage problem in the front parking lot of their school campus and as part of their participation in the West Michigan Great Lakes Stewardship Initiative (WMGLSI) created a plan to address this problem.

Their plan involved constructing a rain garden of plants with fibrous root systems to improve the absorption of rainwater and infiltration of runoff into the groundwater system.

Students took measurements of the roof drainage area and

factored in soil type to design the rain garden, which will alleviate the flooding issue.

Due to construction on the school roof over the summer, the rain garden could not be constructed until this past October. Over the course of three days, this year's eighth graders hauled 12 dump truck loads of dirt, spread 26 cubic yards of mulch, and placed 1,000 plants in their rain garden. There are about 18 varieties of Michigan native species in the garden and it will take two to three years before they are fully established, so those who come to admire the student's work will need some patience.

There is a walking path through the middle of the garden, so people know where it is safe to walk and not harm the plants. Teachers at the sixth grade level are planning on using this garden as an outdoor classroom during their unit on Michigan Native Species.

This has been an exciting project to work on with the kids, they loved getting out of the classroom and realizing they can do great things with a little hard work. The most touching comment I heard was when one of the boys said "When I drop my kids off at school here some day I will be able to tell them I built that!"



Installing a rain garden by the numbers: In three days more than 120 Fruitport Middle School students hauled 12 dump truck loads of dirt, spread 26 cubic yards of mulch, and placed 1,000 plants in their rain garden.



The eighth graders at Fruitport Middle School have been involved in the WMGLSI for two years now. During the first year students worked at two parks in northern Ottawa County planting 1500 tree seedlings, pulling invasive garlic mustard plants and building brush habitats for ground dwelling animals.

MCD Coordinates Teacher/Community Partnerships

By Alyssa Merten

Project Manager

Muskegon Conservation District

How do we create knowledgeable citizens who are passionate about protecting local natural resources? Citizens who not only know how to protect the environment, but work daily to do so?

Start when they are young and full of enthusiasm!

The Muskegon Conservation District's (MCD) role in the West Michigan Great Lakes Stewardship Initiative (WMGLSI) is to facilitate school/community partnerships to implement projects that meet the goals and missions of local environmental groups, natural resource agencies, and community organizations. These partnerships are the basis of place-based education (PBE), which engages students in projects that meet community needs.

In August the MCD and the WMGLSI hosted a "Priority Project Development" (PPD) day to connect local watershed organizations with teachers. These sessions provided an opportunity for local organizations to share issues their watersheds are facing and highlight projects being implemented to address those issues. The participants were able to brainstorm how students could meet their curriculum standards while partnering with the watershed groups to address these issues.

With partnerships formed at the PPD day, teachers hit the ground running in the fall with their PBE projects. Their projects included planting wetland species along Muskegon Lake, developing protocols for species diversity data collection at a key restoration site, and devising strategies for routine chemical water testing at priority sites throughout the watersheds.

In order to develop sustained PBE in West Michigan, it is imperative to expand the of network local community partners actively incorporating students into project. The following are just a few



Alyssa Merten and Jeff Auch from the Muskegon Conservation District, work with teachers during the Priority Project Development Day.

of the key ways in which organizations can participate in the growing PBE movement in West Michigan.

- Assist in identifying projects within a watershed.
- Provide speakers and presenters to ensure that students have a clear understanding of local natural resource issues.
- Share technical expertise and assist in developing project implementation strategies.
- Work in the field with students and supervise on project implementation days.
- Provide equipment, tools, and materials on project work days.

Could your organization meet one or more of the above needs? Please contact me at 231-773-0008 or alyssa.merten@macd.org if your organization or business is interested in playing a part in fostering young community stewards that are critical to the conservation, preservation, and restoration of West Michigan's unique natural resources.

Great Lakes Stewardship Initiative (GLSI)

The GLSI was established and is funded by the Great Lakes Fishery Trust, with additional support from the Wege Foundation. Other funders include Charles Stewart Mott Foundation, Community Foundation for Muskegon County, Fremont Area Community Foundation, and Frey Foundation.

The goal of the GLSI is to develop knowledgeable and active stewards of the Great Lakes. The GLSI funds eight regional hubs that provide leadership, expertise, materials, and financial resources to support the collaborative, community-based work of K-12 teachers, their students, and local organizations.



Expanding classrooms. Strengthening communities.

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