



# Students Lead Trout River Water Study

Rogers City middle school students monitor water quality, health of local Trout River

**Replacing their classroom with the Trout River's bank, Rogers City Middle School students are able to provide valuable water quality data for the community.**

## Getting Started

When Rogers City Middle School teacher Holly Wirgau started participating in the Michigan Dept. of Natural Resources (DNR) Salmon in the Classroom (a program in which students raise salmon throughout the school-year then release them in the spring), she wasn't expecting it to turn into something much larger. But once she began connecting her students to local environmental issues, it only made sense to broaden the scope and focus on the community for additional projects.

When Wirgau was introduced to the Great Lakes Stewardship Initiative (GLSI), she had the opportunity to build off of the concepts she was already teaching with the Salmon in the Classroom program. Why not use an outdoor, hands-on approach to help her middle school science students learn about the river habitat of Salmon and other fish? Studying water quality, how to measure it, and what effects it has on habitat provided the perfect opportunity for Wirgau to create a place-based education project with her science classes.

## The Project

With funding and professional development support from the Northeast Michigan Great Lakes Stewardship Initiative, Wirgau was able to connect with community partners and get her students outside and feet wet in the local Trout River to study and monitor the quality of the water.

Testing chemical properties such as pH and dissolved oxygen allows the students to build off of their previous chemistry knowledge. After all, the process for testing these properties teaches students the same skills as learned in chemistry labs conducted in the classroom.



“This partnership will not only promote increased awareness about watersheds but also will introduce methodology and promote a value system toward good stewardship of the wetland ecosystem.”

- Charles Lyon, Presque Isle Drain Commissioner

Additionally, the students used macroinvertebrate studies to help them better understand the ecology of the aquatic ecosystem (different species of small aquatic organisms are found in different water habitats, so sampling and identifying these critters is an incredibly useful way to determine water quality). In doing so, students learn how to use dichotomous keys to identify species, while realizing living organisms flourish in many shapes and sizes.

## A Memorable Experience!

In just one year, students are raising salmon, wading in rivers, and even making Great Lakes connections with their inland water study, while actually out on Lake Huron aboard a glass-bottom boat! In this class, students gain hands-on experience and make valuable connections with their water resources, ranging from water quality monitoring, Great Lakes and inland watershed studies, and understanding how aquatic habitats support valued local fisheries.

Wirgau recognizes her GLSI programming is not about the project, rather her year-long program of engaging youth with their local water resources, threaded in her teaching through the year with the goal of complementing school improvement and her own curricular teaching goals.

## Community Benefits

In a river where no water quality monitoring had previously been conducted, Wirgau's middle school science students are able to provide important new data. Working with community partners Ralph Stedman of the Presque Isle County Conservation District and Charles Lyon, Presque Isle County Drain Commissioner, the students were able to learn from the experts while also providing them with valuable information they don't have time to collect themselves.

With the help of these students, the Rogers City community now has some baseline data about the Trout River to which they can refer in the future, something that likely never would have happened without the help of this project.

## Curriculum and Resource Rich

Capitalizing on GLSI networking and professional development opportunities, her educator team has benefited in wealth of curriculum and resource support for her program. Supported by the Toyota 4-H2O program, her team has received curriculum training in Project WET, Michigan DEQ-sponsored Michigan Environmental Education Curriculum Support (MECS) water quality module, as well as Great Lakes and water education resources provided through the Michigan Sea Grant College Program and other water education-interested partners. Leveraging GLSI start-up funding, the class has received funding support from various partners to secure water testing equipment, outfitting her students with equipment needed to accomplish their water quality monitoring objectives.



## Middle School Project Partners



"I enjoy getting out of the classroom and learning in the outdoors... They're creepy, but I liked the macroinvertebrate study."

- Veronica Kuznicki, Roger City Middle School Student

## One Step Further—When Students become Teachers

When the school year came to a close, Wirgau and her students decided that the project didn't have to end. Partnering with local 4-H Youth Development, supported by the Toyota-sponsored 4-H20 program, they set out to continue monitoring throughout the

summer and to share their newly learned knowledge with the rest of the community.

Wirgau, some of her students, and Huron Pines AmeriCorps member Christina Carson met with the 4-H Summer Recreation Program several times throughout the summer. They brought the program participants to the Trout River, teaching them about water quality monitoring, getting into the river to sample the water, and conducting both types of water quality analyses mentioned previously.



This partnership with 4-H allowed the project to connect even further with the community and to spread the knowledge of why water quality is important information and how to test it to yet another group of kids. In doing so, it also gave Wirgau's students a chance to share their knowledge and provide year round water quality data for the project's partners and the rest of the community.

Wirgau is excited to introduce the project and partners to her sixth grade science students this year and "take advantage of the nice, fall days to learn in the great outdoors!" she says.

## What is Place-Based Education?

*Protecting the Great Lakes and environmental resources of northeast Michigan through hands-on, placed-based learning in the community.*

Place-Based Education (PBE) or Community Based Education (CBE) brings students into closer contact with their communities, through youth-led stewardship projects that enhance their environment and community. This education strategy allows schools and educators to enrich the learning and lives of their students.

Hands-on, placed-based education is a proven method for developing knowledgeable and active stewards of the environment. When schools and communities work together, they produce powerful partnerships that are beneficial to all.

### What is our goal?

The Northeast Michigan Great Lakes Stewardship Initiative (NE MI GLSI) is a regional network of education and community partners working to promote quality place-based or community-based education opportunities in northeast Michigan for the benefit of our youth, our community, and our environment. The initiative supports place-based programming in three primary ways:

- **Schools and Educator Support:** provides program support for educator teams engaging their schools and youth in place-based education programming.
- **Quality Professional Development:** supports the uses of best practices that maximize the

effectiveness of PBE by providing access to quality local training and professional development opportunities that support place-based education processes, provide content-based learning, and facilitate networking among regional partners.

- **Strong Community-School Partnerships:** Seeks meaningful community service and environmental stewardship in youth projects, linking community partners and their community development or environmental stewardship goals with schools to inspire youth-driven stewardship projects.

Through the Community Foundation for Northeast Michigan, the NE MI GLSI provides grants in support of local place-based education programming. These funds are available to school educator teams to use over two years in developing a PBE or CBE project team and program in their school with community partners. Applications are available online.

### Supporting Community Development and Resource Stewardship Priorities through Education

Since 2006, many local and regional partners have engaged in Great Lakes and aquatic education networking and planning efforts across a six-county coverage area that includes Alcona, Alpena, Cheboygan, Otsego, Presque Isle, and Montmorency. These regional relationships and planning efforts resulted in establishing

a regional, collaborating network of school and community partners, receiving funding support from the Great Lakes Fishery Trust's Great Lakes Stewardship Initiative, and operating as the Northeast Michigan Great Lakes Stewardship Initiative.

The six counties encompassed by this regional education network are rich in natural, cultural and historic resources that are invaluable to the region's "sunrise side" identity and quality of life. Several regional, coastal community development and tourism planning processes identify needs and strategies for enhancing coastal access, education, and sustainable resource management. These provide examples of regional planning efforts that identify community partners, community priorities, and coastal resource stewardship project opportunities in which schools and students can engage.

### Who is involved?

The NE MI GLSI is supported by the statewide Great Lakes Stewardship Initiative. This organization, funded by the Great Lakes Fishery Trust, supports place-based education efforts throughout the state of Michigan by funding and supporting regional hubs, such as NE MI GLSI.

In northeast Michigan, many schools and community partners are already involved in NE MI GLSI projects, which reflect partnerships among in-school educators, local, state and federal agencies, universities, non-profit conservation and community organizations, non-formal education programs, and representatives from area businesses and industries. Currently, there are 11 funded projects throughout northeast Michigan. Any schools in northeast Michigan are invited to join the initiative!



### How can I participate in the NE Michigan GLSI Network?

Many partners are currently exploring community- or place-based education development opportunities within the NE Michigan region. For more information, visit us on the web

### Who Can I Contact?

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Leadership for the Northeast Michigan Great Lakes Stewardship Initiative provided in partnership by: Alpena-Montmorency-Alcona ESD, Cheboygan-Otsego-Presque Isle ESD, MSU Extension 4-H Youth Programs, Michigan Sea Grant, Community Foundation for Northeast Michigan, Northeast Michigan Council of Governments, NOAA Thunder Bay National Marine Sanctuary, US Fish and Wildlife Service, Huron Pines, AMA/Iosco Math and Science Center, and area schools. Funding and support provided by Great Lakes Fishery Trust's Great Lakes Stewardship Initiative.