Students Investigate Black River

Environmental Science Students partner with the Northeast Michigan Council of Governments to develop a management plan for their local Black River Watershed

Stepping outside the classroom and into the waters of the Black River, students gained first-hand knowledge of the river system while collecting and contributing important data to a watershed planning project.

Engaging in place-based learning activities is nothing new to students of the Alcona Community High School Environmental Science Class. In fact, they regularly ask themselves the question: how can we learn about our environment while contributing to stewardship and our community at the same time?

Collaborating with the Northeast Michigan Council of Governments (NEMCOG) and others to monitor and developing a watershed management plan for their local Black River Watershed created one such perfect opportunity for students along with their teachers, Mr. Brian Matchett and Mr. Russell Champagne. Initiated in 2010, and continuing through the current school year, Alcona students have taken leadership in sampling and testing water quality at sites along the Black River. Their water quality monitoring efforts are contributing data toward a larger watershed management planning effort facilitated by NEMCOG with funding support through the Michigan Coastal Management Program, Department of Environmental Quality, and the National Oceanic and Atmospheric Administration (NOAA).

Why Study the Black River?

The Black River waterways reflects a relatively small waterway which is largely understudied; yet important to the Alcona community, as the Black River watershed encompasses a large majority of the natural areas and communities of Alcona County.

"I loved how we could put all we learned in the classroom into action. It's a unique way of learning, one that I will never forget." **Amanda Swinson, Alcona HS Student**

Recognizing this significance, NEMCOG secured funding through the Michigan Coastal Management Program to work with local community groups and Alcona School youth to conduct a watershed inventory and develop a watershed management plan for this coastal waterway.

Alcona students, key partners to this project, coordinated with NEMCOG staff and other resource professionals to identify water study sites throughout the watershed to be included in this inventory, and jumped right in – literally – to visit these sampling sites collecting important physical, chemical, and biological water quality information. The data and findings from this project are regularly shared with NEMCOG as part of the larger watershed inventory and planning effort, and students, through their learning, can take pride in their stewardship roles toward protecting our local aquatic environments. Students found this project both educational and fun.

Incorporating Math and Science

The goals of this student-led project were to test water quality and collect information vital to evaluating the status and health of river habitats. In preparation of their field studies, Alcona students launched into the project, beginning their work learning about river system and the habitats and ecosystems, plants and organisms that live within this watershed. With the guidance of resource professionals, students learned about the purpose and goals of watershed planning effort and started preparing their study plan and field site visits to the River.

Once prepared, these volunteers set off for the river to begin water testing and recording data. At different sites, students collected physical data pertaining to river, including observations of width, depth, flow, stream bank habitats and human influences affecting the river. Other group of students used dip nets to collect aquatic macro invertebrates as part of a bio-monitoring effort. Learning about these living organisms and their slightly different habitat and water quality requirements, students were able to evaluate water quality of the river through the aquatic invertebrates they collected. Students collected and sorted, identified and counted various aquatic organisms, capturing a record of ecological biodiversity through a total species count and eventually mathematically calculating a water quality rating for the river based on how common or rare each species was within their samples.

Project Partners

Power in Partnerships

Not only has this High School Class gained valuable data toward a watershed planning project, but they also generated awareness about protecting locally important water environments – and students gained in their own knowledge and learning along the way.

Supporting youth engagement in this watershed study, Matchett's class benefited from an array of community and education partners. NEMCOG and Michigan Sea Grant provided additional resources and technical assistance toward student efforts as part of the Coastal Management Program-funded watershed management planning project.

A partnership with Michigan State University Extension 4-H Youth and the Toyota 4-H20 Program provided teacher training and curricular resources, as well as water quality monitoring equipment and supplies in support of student sampling activities.

Through the regional Northeast Michigan GLSI, this project is also networked among other schools conducting similar watershed studies, affording them best practices and lessons learned from across this water science learning community.

"It is very rewarding to work with a dedicated class of students who are committed to learning about our environmental resources and at the same time providing a service to the community in which they live." **Brian Matchett, Alcona HS Teacher**

Looking to the Future

This group of students is excited and ready to continue their work as stewards of the environment. As the river study project continues, each new class considering opportunities to grow possibly building an online database enabling to better communicate their findings with communicate; and in the future may students may even provide leadership in cross-sharing their findings with other students from other schools conducting similar water studies across different northeast Michigan watersheds.

What is Place-Based Education?

Place-Based Education (PBE) or Community Based Education (CBE) utilizes the local, natural and built environments as a context for learning and in doing so brings students into closer contact with their communities. This method is proven to develop knowledgeable and active stewards of the environment. When schools and communities work together, everybody wins!

Why:

This education strategy protects Great Lakes ecosystems, strengthens Northeast Michigan communities and provides critical support to schools as they strive to serve the academic and developmental needs of their students.

How:

Teachers and students are supported through project mini grants, connection to resource partnerships, and high-quality Professional Development that provides essential tools and techniques for fostering a collaborative culture of place-based learning within and among schools and their communities.

Supporting Community Development and Resource Stewardship Priorities through education:

Since 2006, numerous local and regional partners have engaged in Great Lakes education, networking and planning efforts across Michigan's "sunrise side." These efforts mobilized a network of school and community partners committed to identifying needs and developing strategies for enhancing coastal access, education, and sustainable resource management. Empowered through funding support from the Great Lakes Fishery Trust (GLFT), this collaboration now comprises the Northeast Michigan Great Lakes Stewardship Initiative, one of nine regional hubs through which GLFT furthers the principals and practices of place and community-based education as the Great Lakes Stewardhsip Initiative.

You are invited:

If you care about Northeast Michigan and want to make a difference for the future of our region, please contact NEMI GLSI to find out how you can get involved.

Phone: 989.356.8805 x41 or daniel.moffatt@noaa.gov

Northeast Michigan GLSI network programs and materials are open to all without regard to race, color, national or ethnic origin, gender, gender identity, religion, age, height, weight, disability, political beliefs, sexual orientation, marital status, family status, or veteran status.

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:* www.nemiglsi.org

Who Can I Contact?
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