



## Great Lakes B-WET Grants Funded in FY18

### **Great Lakes Literacy in Action: Connecting Students to their Watersheds in Southeast Michigan through Place-Based Education [Eastern Michigan University]**

#### *Continuation grant*

This project will build on the successes and lessons learned thus far in the use of NOAA assets, experiment with innovative content and processes, and disseminate innovations and evaluation results to the broader NOAA and Great Lakes educational communities. The Southeast Michigan Stewardship Coalition's (SEMIS) Placed-Based Education (PBE) curriculum methodology is an ideal delivery method for NOAA's MWEEs as the goals of the two efforts overlap substantially. SEMIS has set a long-term strategic goal of integrating NOAA educational assets into our organization's activities. The project objectives are to: 1) continue to focus on Great Lakes and NOAA areas of concern and the Great Lakes Literacy Principles in our teacher professional development, 2) bolster curriculum coaching resources and create new coaching protocols in the use of NOAA assets and MWEEs, 3) create a "SEMIS Speaker's Bureau" for teachers of NOAA and other Great Lakes scientists and policy experts and better integrate these scientists and policy experts into our professional development sequence, 4) increase the sharing of professional development and other resources between the SEMIS Coalition and two other B-WET recipients—the Michigan Natural Features Inventory and Inland Seas, 5) Develop scaffolds for MWEE experiences for new SEMIS teachers, 6) pilot a mentoring system that allows experienced SEMIS teachers to share their knowledge of engaging students in MWEEs with new SEMIS Coalition teachers.

Location: Southeast Michigan

## **Promoting Healthy Watersheds and Communities by Integrating Ecosystem Science, Transportation Networks, and Stewardship** **[Michigan State University]**

### *Continuation grant*

This project will pilot a place-based classroom and field-investigation program for teachers and their middle and high school students that will help them better understand significant wetland ecosystems in their local watersheds, how transportation networks may impact watersheds, and stewardship activities they can engage in to help address these impacts. The project was inspired by the recent collaboration between the Michigan Department of Transportation (MDOT), Michigan Natural Features Inventory (MNFI) and Southeast Michigan Council of Governments (SEMCOG) to apply a new planning framework to the multi-billion dollar I-75 corridor reconstruction in Monroe County in southeast Michigan.

The project will focus on coastal and inland wetlands by examining particularly vulnerable and the relationship of transportation corridors to key stressors (e.g., invasive species) on these ecosystems. Teachers and students will learn about these wetlands in a watershed context, develop and investigate questions about impacts of transportation corridors, gather and synthesize their data, design and implement stewardship actions (e.g. mapping and monitoring of invasive species or vernal pools), and share their results with relevant audiences. They will experience ‘Meaningful Watershed Educational Experiences’ while addressing a real-world, local watershed issue of immediate concern—how to minimize impacts to vulnerable wetlands from the I-75 corridor reconstruction. Their activities will build local community awareness to spur lasting efforts to improve the health of wetlands and watersheds. The training will arm teachers with field-based experience, knowledge of local wetlands and field kits that can be used with future classes, thereby sustaining the program over time.

Location: Southeast Michigan

## **Our Fisheries, Our Future** **[Michigan State University]**

This project will apply place-based stewardship education (PBSE) practices to engage teachers, students and their communities in meaningful watershed experiences (MWEEs). Connecting NOAA Great Lakes Literacy principles, our valued fisheries, and feet-wet watershed experiences, this project will engage school project teams and students in educational water studies and stewardship projects with their communities. Ten area schools and educator teams are committed as project partners; and our team will support these educators through a sustained professional development strategy supporting Great Lakes content learning, PBSE pedagogical practices, rich school-community partnerships, and in-the-water MWEEs and stewardship projects with their students. This project will engage more than 800 students and 12 teachers from 10 local schools (K-12) across eight northeast Michigan counties in meaningful watershed experiences.

Location: Northeast Michigan

**Great Kids Saving the Great Lakes  
[Detroit Zoological Society]**

This project will provide a community-based Meaningful Watershed Educational Experience (MWEE) for 20 out-of-school-time teachers and 180 6-8 grade students participating in ACCESS (Arab Community Center for Economic and Social Services) after-school programming in the Dearborn, Michigan schools. The Detroit Zoological Society (DZS) will work with afterschool staff at ACCESS to create an engaging learning environment where youth use science as a lens to make decisions and solve problems. Students will ask questions, collect data and conduct research, with opportunities to make a personal difference in water issues that affect their families, their community and the Great Lakes. To help students increase their awareness, knowledge and action around Great Lakes Watershed issues, the DZS will provide out-of-school-time educators and classroom teachers with resources and support on MWEE, Great Lakes Literacy and inquiry-based education.

Location: Dearborn, Michigan

**WAKE Zone: Watershed Advocates for Kids' Engagement  
[West Michigan Environmental Action Council Education Foundation]**

This project will engage students and teachers in Muskegon County, Michigan from 4th - 6th grades (500 students, 25 teachers). The project's goals and objects will be delivered through a variety of hands-on educational techniques including teacher training, student engagement in a community water festival, classroom interactive presentations, field research and activities, project development and implementation. Major components of the project include refining and expanding current WMEAC watershed education materials, delivering Meaningful Watershed Education Experiences (MWEEs) through existing Teach 4 Water components, including coordinating and delivering field events and water-quality investigation activities involving students and teachers over their project period. Finally, the project will also support teacher professional development programming in place-based education efforts to expand teaching water quality, using the outdoor classroom to engage students in projects that support real water quality data, explore emerging threats to the local ecosystems, and foster a love for science, research, and place.

Location: Muskegon, Michigan

**Groundswell – Go Outside and Learn (G-GOAL)**  
**[Grand Valley State University]**

This project will leverage Groundswell’s successful model to deepen the impact and enhance the watershed experience for teachers and students within our region. This project will promote meaningful watershed educational experiences through student-led exploration, research, and problem solving; strong teacher support with curriculum integration; use of local context for learning; substantial investment of instructional time; and use of NOAA assets.

The project will engage 15 teachers and 700 students from 4 schools in two school districts. Teachers will begin by attending Groundswell’s multi-day Summer Institute. A two-day Water Festival will follow in the fall where students will explore a variety of environmental stewardship topics based on the GLRI Action Plan focus areas. Teachers will guide their students through the festival, giving them an opportunity to practice sharing the content knowledge gained through PD, with direct support of community experts. Upon return to their classroom, students will identify the topic that most interests them. They will then research this topic, engage in outdoor discovery activities around this topic, develop a stewardship action project that addresses this topic, and share their project with the community at the end of the school year.

Location: Grand Rapids, Michigan area

**Ganawedan Ginibiiminaan: Bad River Water Stewardship**  
**[University of Wisconsin – Madison]**

*Continuation grant*

The Ganawedan Ginibiiminaan (Take Care of Our Water) project involves Bad River tribal community leaders and scientists, NOAA personnel, and UW-Madison staff in collaboration with Ashland teachers to engage Native youth in a sustained year-round for-credit field course on the Bad River reservation including meaningful watershed investigations and monitoring to assess and address threats on Bad River land to water quality and manoomin (“wild rice” in the Ojibwe language).

Students will share data and experiences with peers in multiple classrooms and in the community and identify and implement water stewardship projects. Teachers will participate in a yearlong professional development to support these experiences in the classroom and make connections with local and global issues using NOAA data. Teachers will involve additional students through integrating Bad River watershed monitoring and NOAA data into classroom lessons and providing complementary watershed experiences on and near the school grounds and in the Bad River watershed. Community members, youth and teachers will participate in seasonal events to strengthen school-community relationships.

Location: Ashland and Odanah, Wisconsin (Bad River Reservation)

**Lake Superior National Estuarine Research Reserve Rivers2Lake South Program  
[University of Wisconsin – Superior]**

The Rivers2Lake education program integrates Lake Superior into education as a foundation for engaging place-based learning, Great Lakes literacy, stewardship and watershed restoration. Based at the Lake Superior National Estuarine Research Reserve (“Reserve”) with a community of many partners including the National Park Service, Great Lakes Aquarium and Bad River Watershed Association, the program provides teacher professional development through life changing field experiences and bi-monthly year-long mentoring. Rivers2Lake engages students through outdoor and inquiry-based learning, and provides extended resources, opportunities, and year-long support to Rivers2Lake classrooms. Through this proposal, Rivers2Lake will expand its reach along the Wisconsin coast, work with a minimum of 18 teachers and their 432 students in the Lake Superior watershed in Wisconsin and Minnesota, and continue to support a community of 42 alumni teachers.

Location: Wisconsin’s south shore of Lake Superior

**STEM Hub engages students in Great Lakes research  
[Pennsylvania State University]**

This project will provide the resources necessary to directly engage ten teachers and ~300 students from five Erie County, PA school districts in Great Lakes research efforts. It includes funding for: bus assistance to the lab and field experiences (six per district), materials for field, lab and classroom activities, and support for student participation in outreach events such as the Great Lakes Awareness Day organized by PA Sea Grant and the Regional Science Consortium’s annual Research Symposium, and a stipend for cooperating teachers.

Participating districts run the gamut from rural to suburban to urban. Each of them has a core group of exemplary science educators who take pride in using engaging, novel ways to bring science alive for students who show an aptitude and interest in STEM topics.

Location: Erie, Pennsylvania

**Watershed Stories: Learners Exploring their Place in the Ecosystem  
[University of Minnesota]**

This project includes designing and facilitating an in-person, summer teacher workshop for 12 K-5 teachers at Stowe Elementary school in Duluth, MN, serving 284 students. During the workshop, teacher-participants will experience the “Earth Systems Journey” model as it relates to the Great Lakes Watershed, create their own GIS Story Maps, and receive guidance in the process of facilitating student-led inquiry projects. Story maps will be developed throughout the year and coupled with watershed-based inquiry projects going for that year and subsequent years. At the end of the academic year, teacher-participants and their students will present their findings to the community and beyond by sharing their GIS Story Maps during the Environmental Education fair held annually at the school.

Location: Duluth, Minnesota

## **Testing the Waters (TTW)**

### **[Riveredge Nature Center, Wisconsin]**

This project will increase its capacity to expand the existing watershed-focused environmental education program, titled Testing the Waters (TTW). This expansion will allow Riveredge to reach 1,300 students and 30 teachers at 15 schools directly as well as up to 9,775 students and 325 teachers at 15 schools indirectly. The overall goal of TTW is to activate engaged and educated citizens with the ability to make scientifically informed environmental decisions while learning about and engaging with the Great Lakes Watershed. The TTW program is a joint public-private partnership between Riveredge Nature Center and schools throughout the Milwaukee River Basin that aligns with state curriculum standards while engaging the classes in hands-on water quality testing in their communities and sharing the collected data sets with a larger scientific community throughout Wisconsin.

Location: Saukville, Wisconsin (Ozaukee County)