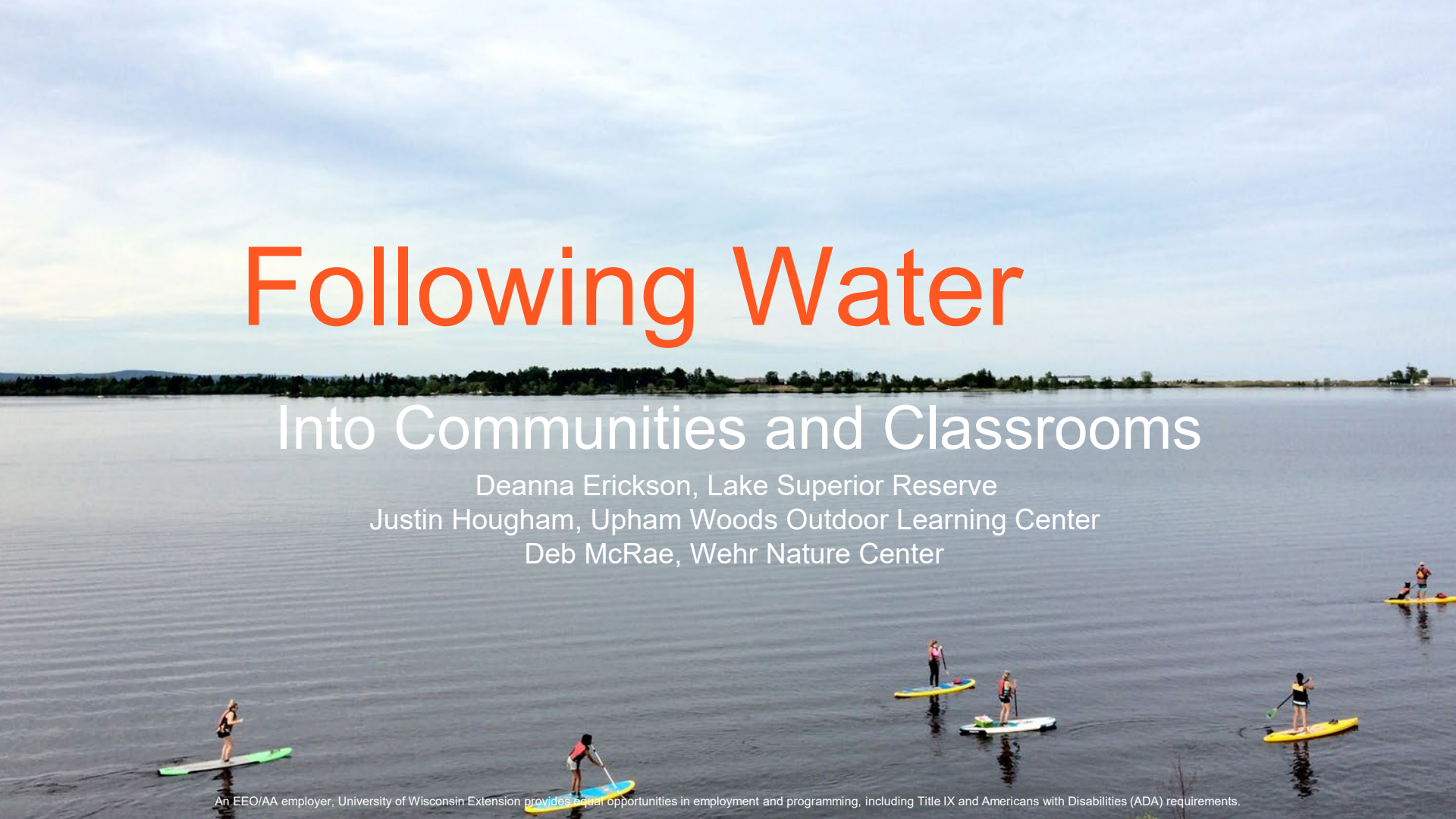
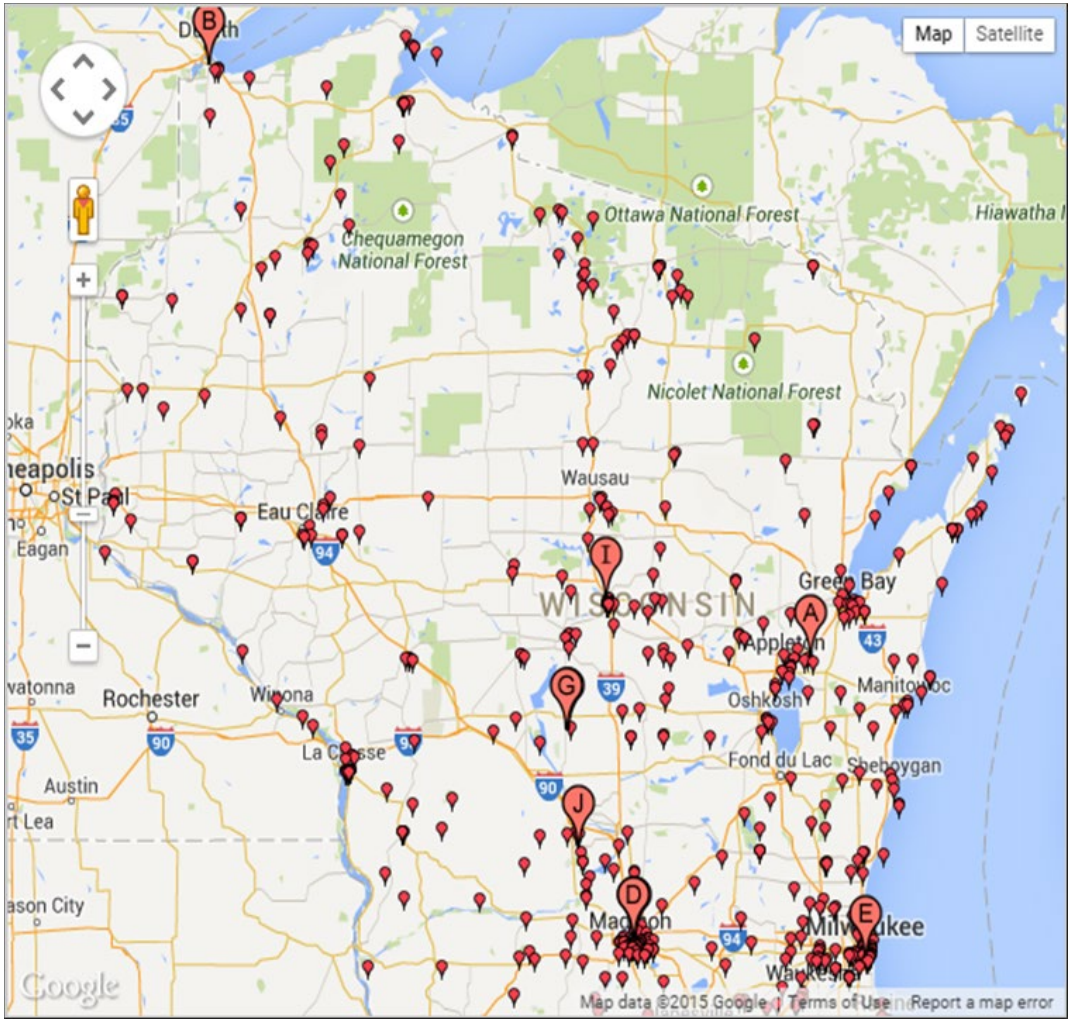


Following Water

Into Communities and Classrooms

Deanna Erickson, Lake Superior Reserve
Justin Hougham, Upham Woods Outdoor Learning Center
Deb McRae, Wehr Nature Center



700 Environmental Education related organizations in Wisconsin

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Status & Needs Report of Wisconsin Environmental Education Related Organizations

1. Organizational management, content understanding (i.e. water) and effective delivery is a high priority

1. They would benefit from trainings focused on technology usage in outdoor education and using STEM as a context for environmental education

1. Professional development on increasing inclusion in facility and programmatic accessibility

Hougham et al., 2017a

In total **156 EE organizations responded** to the survey including:

- 23 Camps
- 20 K-12 School Programs or Groups
- 18 State-Run Parks, Programs, or Groups
- 13 University-Run Programs or Groups
- 11 City/County-Run Program or Groups
- 7 Friends Groups
- 6 Watershed Groups
- 7 Museums/Zoos/Aquariums

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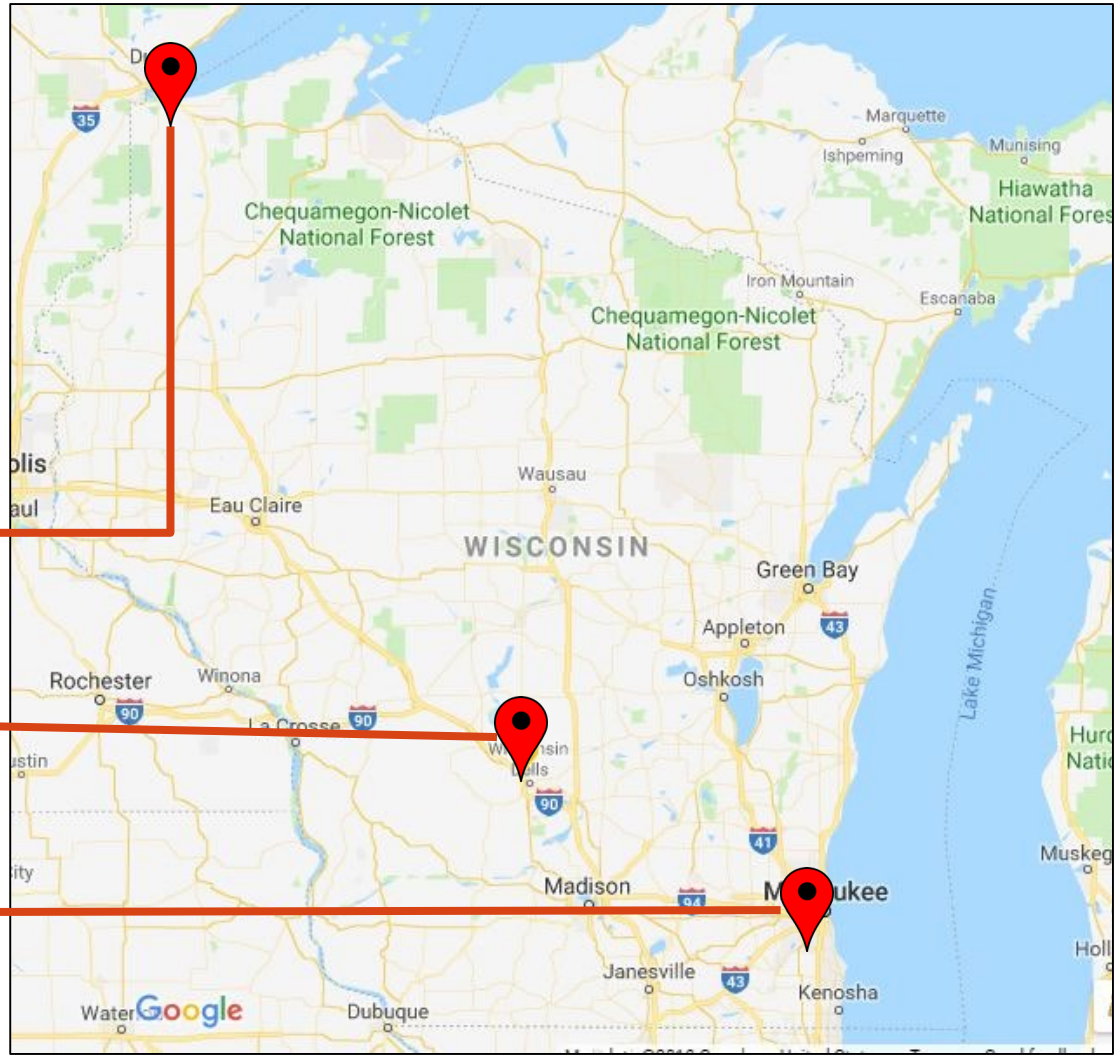
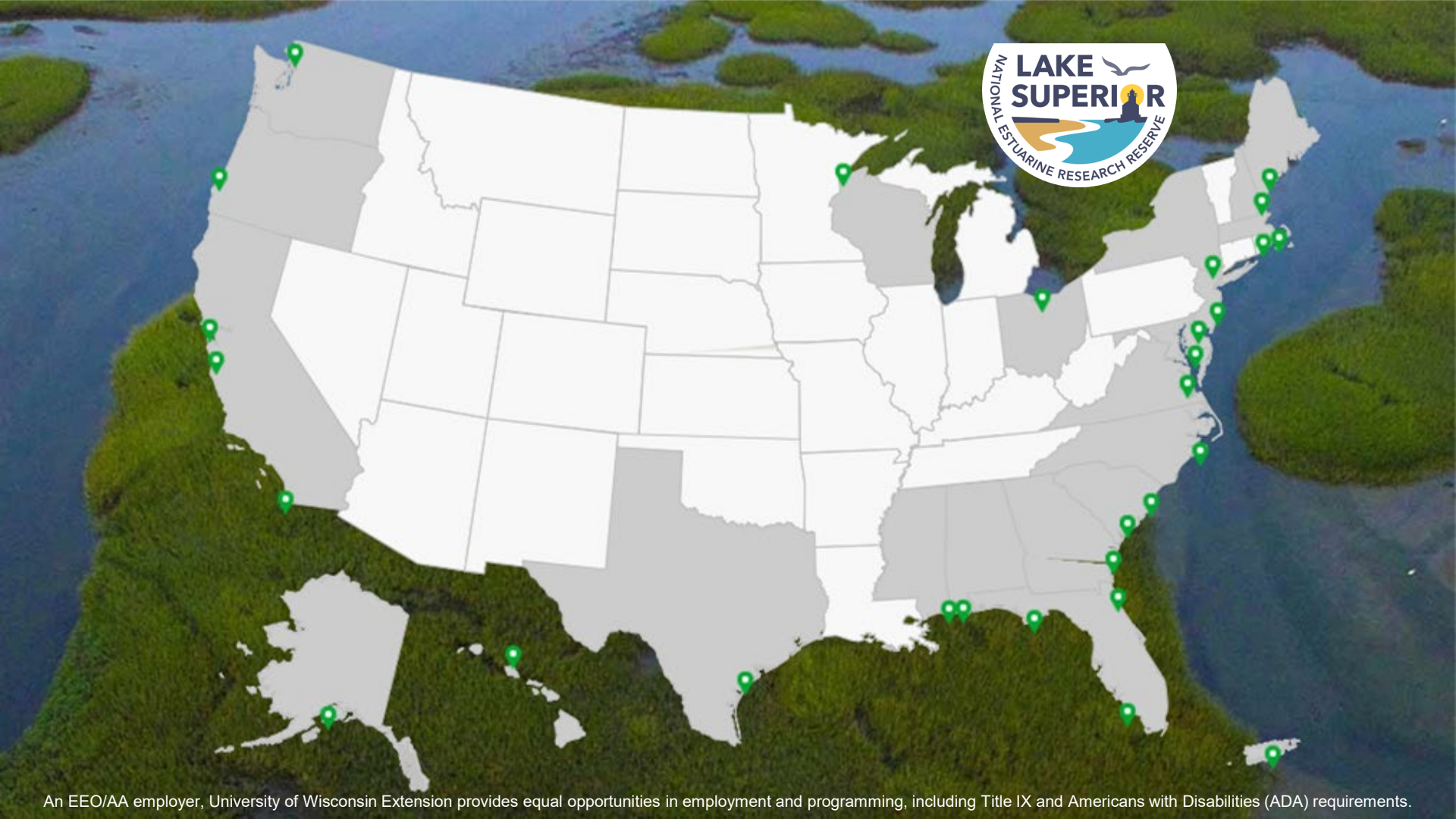
University of Wisconsin-Extension:

Lake Superior Reserve

Upham Woods

Wehr Nature Center






Duluth, MN
Superior, WI
LAKE SUPERIOR
NATIONAL ESTUARINE RESEARCH RESERVE

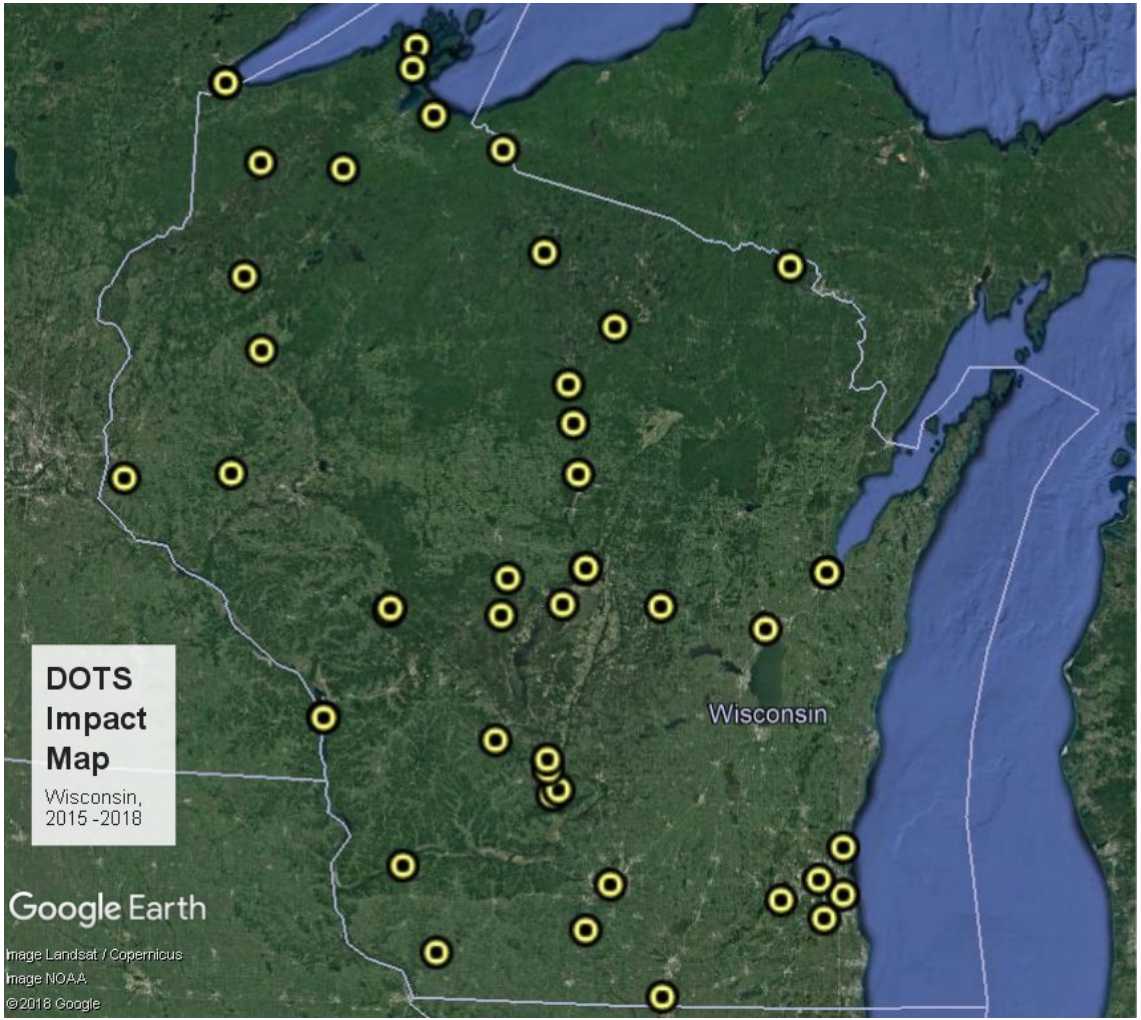

RIVERS
2 LAKE
ACS
We·no·nah


M L

Upham Woods

The Wisconsin Idea Outdoors


DISCOVERY 174



Digital Observation Technology Skills

Statewide Impact

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Student Led Water Quality Monitoring

Developing a sense of place with science and storytelling

"In moving environmental education into the digital age, educators should look to empower youth with the tools and responsibility to examine their surroundings and in encouraging youth to take and use technology outside, educators can capitalize on students collecting their own data sets to develop deeper more meaningful inquiry questions." *Hougham et al., 2017b*

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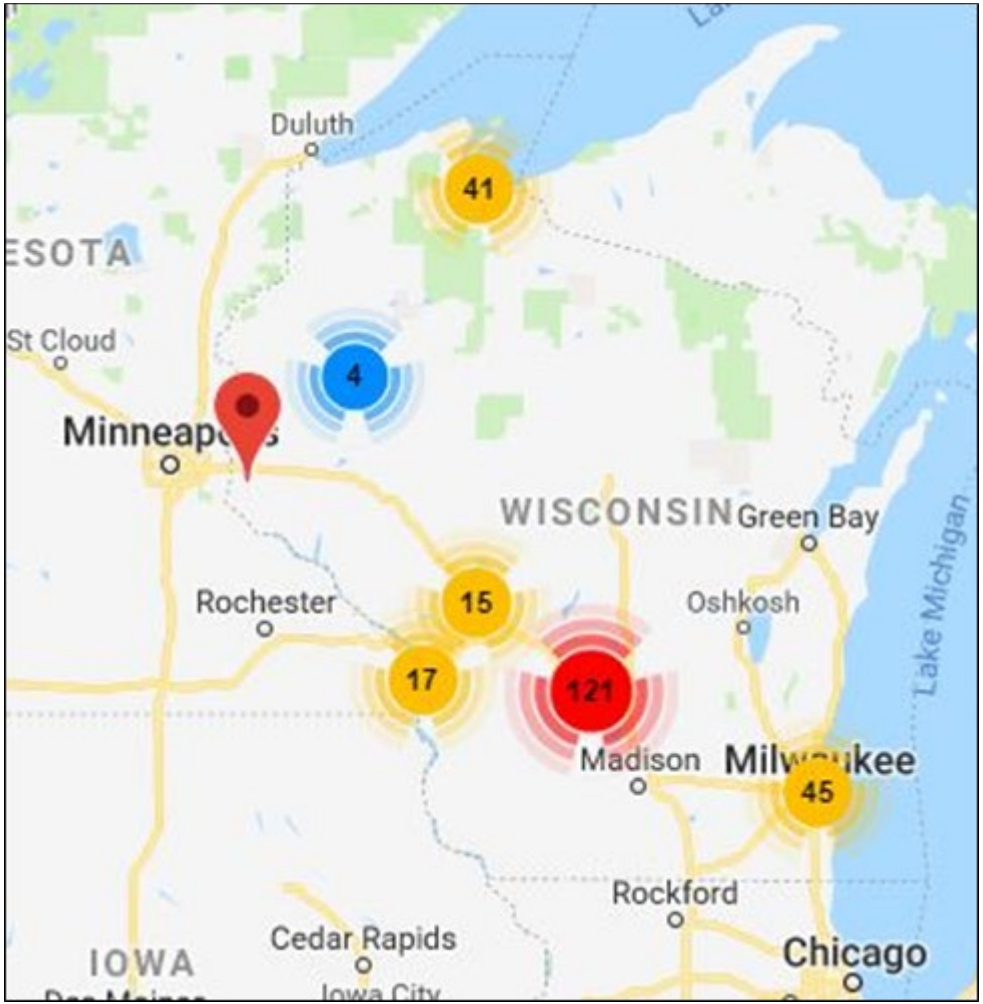

Student Research

Students led water quality research around the state.

https://sites.google.com/view/uphamwoodsdotswatermonitoring/home

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Water Data Summit

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DOTS
Digital Observation Technology Skills

Date: August 3rd, 2017

Team Members: RJ Rivera, Lidiana Rivera, Lorelai Madson, Vivian Madson, Beatrix Madson, Gwenevieve Madson, Olivia Hautanen, Nora Hautanen

URBAN ECOLOGY CENTER

Location: Upham Woods, Wisconsin Dells, Wisconsin

Scientific Story

We investigated two different locations as a part of the water study blitz at Upham Woods. The first location was the Fishing shore on the Wisconsin river, and the second location was a stagnant inlet only 100feet away. We noticed several differences between the two locations.

Fishing Shore	Inlet Water
Clams, Crayfish, Minnows	Turtle, Mosquitoes
No Algae	Algae
Water Temp: 73 F Air Temp: 73.8	Water Temp: 70 F Air Temp: 75.5 F
Sandy	Muddy
Less plant life	More plant life
More animal diversity	Less animal diversity
No canopy	Canopy cover
Low Phosphate level	Medium Phosphate level
Moving water	Stagnant water

For more information, contact Justin Haugham, or check out our website:
justin.haugham@ces.uwex.edu • (608) 254-6461
http://fyi.uwex.edu/environmentaleducation/

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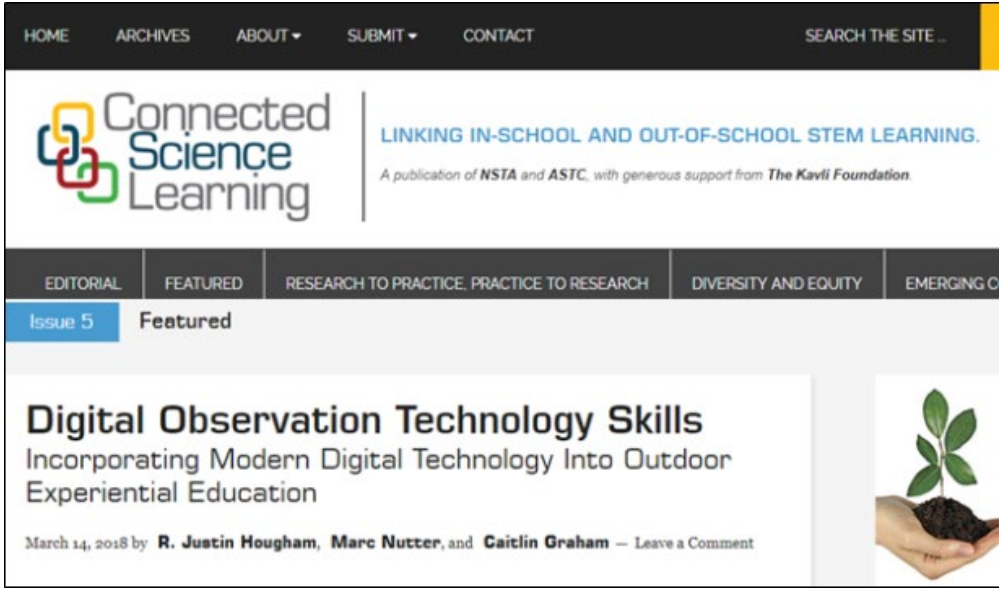
Digital Literacy: Modern Tools for Observation and Inquiry

"DOTS addresses longstanding tensions between modern technology and classical outdoor education by carefully selecting appropriate digital technology for educational purposes and by situating these tools in classical experiential pedagogy...to maintain the inquiry-driven nature of experiential education while incorporating 21st-century learning goals, like digital literacy." *Hougham et al., 2018a*



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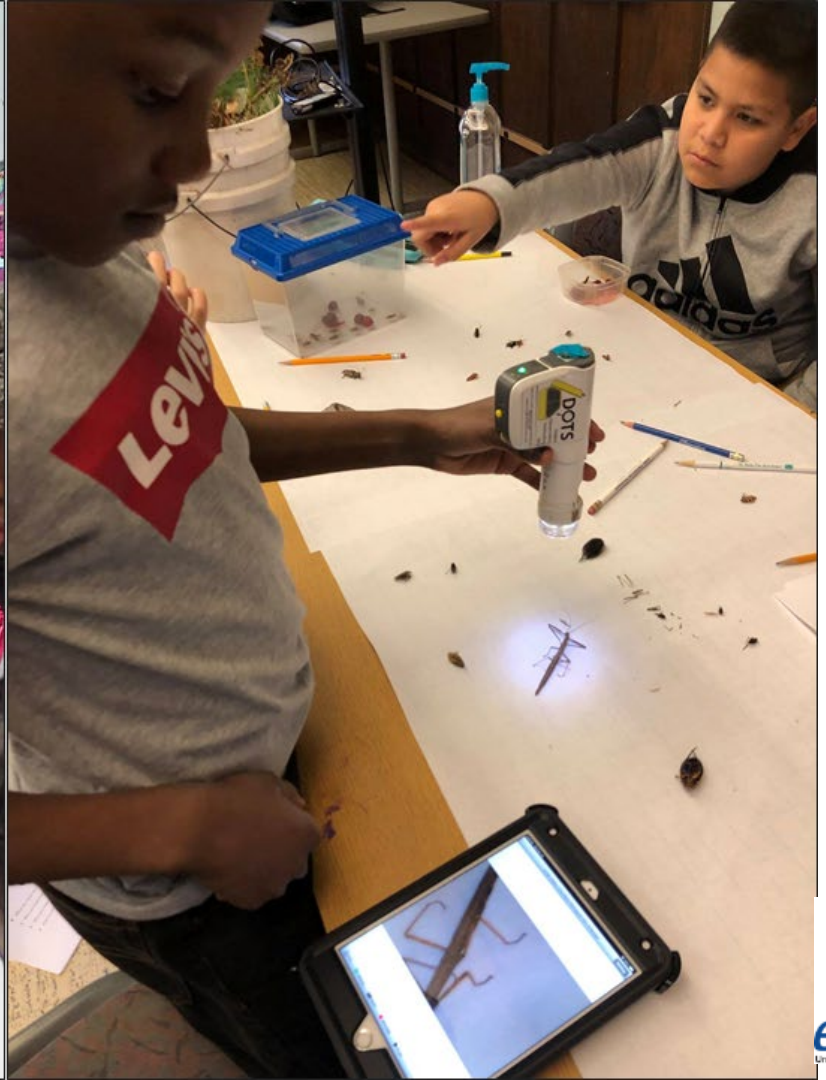

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Enhancing Outdoor Observation with Technology

"EARPOD used an integrated technology program, Digital Observation Technology Skills (DOTS), to engage underserved students in experiential education meant to increase environmental literacy and provide evaluative data for pedagogical development in environmental education...Preliminary results showed that students reported an increase in three main characteristics with regard to technology: confidence in using technologies outdoors, knowledge of available technologies, and knowledge of using different technologies."

Hougham et al., 2018b

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Community Science

A group of people interested in place based observation, studies, and scientific processes with the goal of understanding and addressing local issues.

Community

1. Institutional: informal and formal
2. Students
3. Teachers
4. Adults
5. Friend Groups

Community members connect people to solutions related to their stories.

Science

1. Data collection and documentation
2. Observation
3. Questions
4. Process oriented
5. Experiments

Data connects people to the stories they want to tell.

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Science Strikes Back, a Community Science Fair

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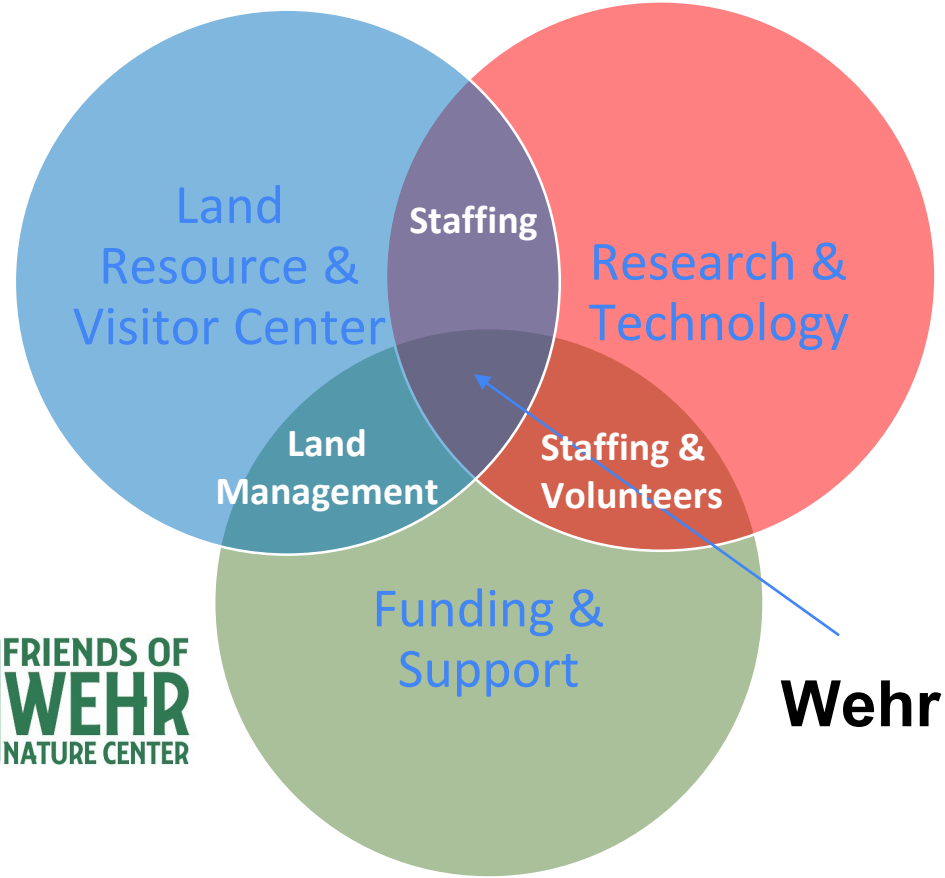
Wehr Nature Center

“A Place for All Seasons
A Place for Everyone”

The mission of Wehr Nature Center is to inspire current and future generations to explore and care for the natural world…

Wehr is built by partnerships

Milwaukee County Parks



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Friends of Wehr Nature Center

Wehr Nature Center

Wehr Nature Center:

100,000+ visitors/year

13,500 volunteer hours/year

Following the water to Lake Michigan:

Watershed Alive Partnership with Milwaukee Metropolitan Sewerage District – Teacher Training

Following the water to Lake Michigan:

Student Explorations