



Amp Up Impact: Aquaculture & Great Lakes Education Resources

Minnesota Sea Grant
& Minnesota's Center for Great Lakes Literacy

Image credit: John Downing

INTRODUCTIONS

Let's get to know each other!

Environmental Literacy & Workforce Development Extension Educator

I design, coordinate, implement and assess accessible education and workforce development programs focused on Minnesota's water resources and blue economy. These programs align with the University of Minnesota Sea Grant's mission and 2024-2027 Strategic Plan. My role emphasizes collaboration with the Sea Grant Center for Great Lakes Literacy (CGLL)

I develop accessible, research-based K-12 education programs that reflect local needs, Minnesota Sea Grant research and community water-related issues:

**water resources coastal resilience blue economy sustainable
fisheries aquaculture maritime transportation**

I build and sustain partnerships to enhance environmental literacy and expand workforce development in Minnesota.



Sea Grant
MINNESOTA

Heidi M.S. Ferris, Ed.D.



INTRODUCTIONS

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Minnesota Sea Grant

Fisheries & Aquaculture Extension Educator

I am responsible for providing outreach and applied research on fisheries and aquaculture. I will work closely with other Minnesota Sea Grant staff, U of M extension educators, and Sea Grant extension educators across the Great Lakes and nation who are involved in related issues.



Julia Farley, Ph.D.



INTRODUCTIONS

Let's get to know each other!

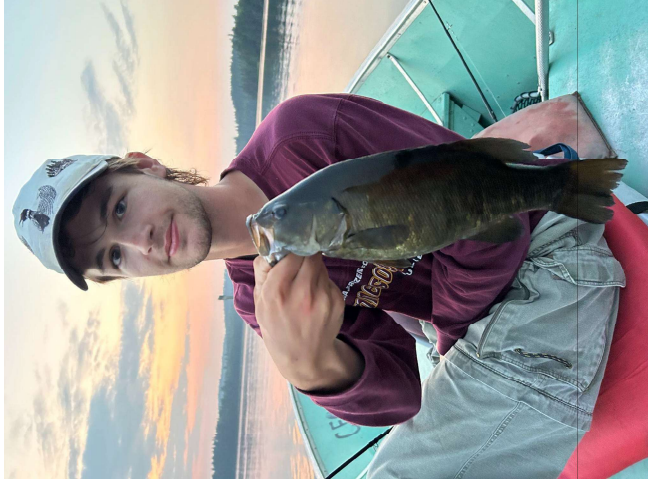


Ryan Bruckner

Minnesota Sea Grant

Fisheries & Aquaculture Intern

I work closely with the University of Minnesota Sea Grant fisheries and aquaculture extension educators and other project staff on fisheries and aquaculture projects like the Egg-to-Market Yellow Perch project and Golden Shiner research.



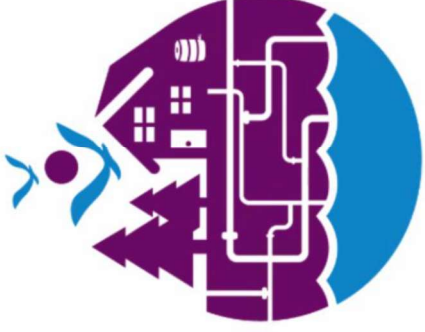
WHAT IS MINNESOTA SEA GRANT?



HEALTHY COASTAL
ECOSYSTEMS



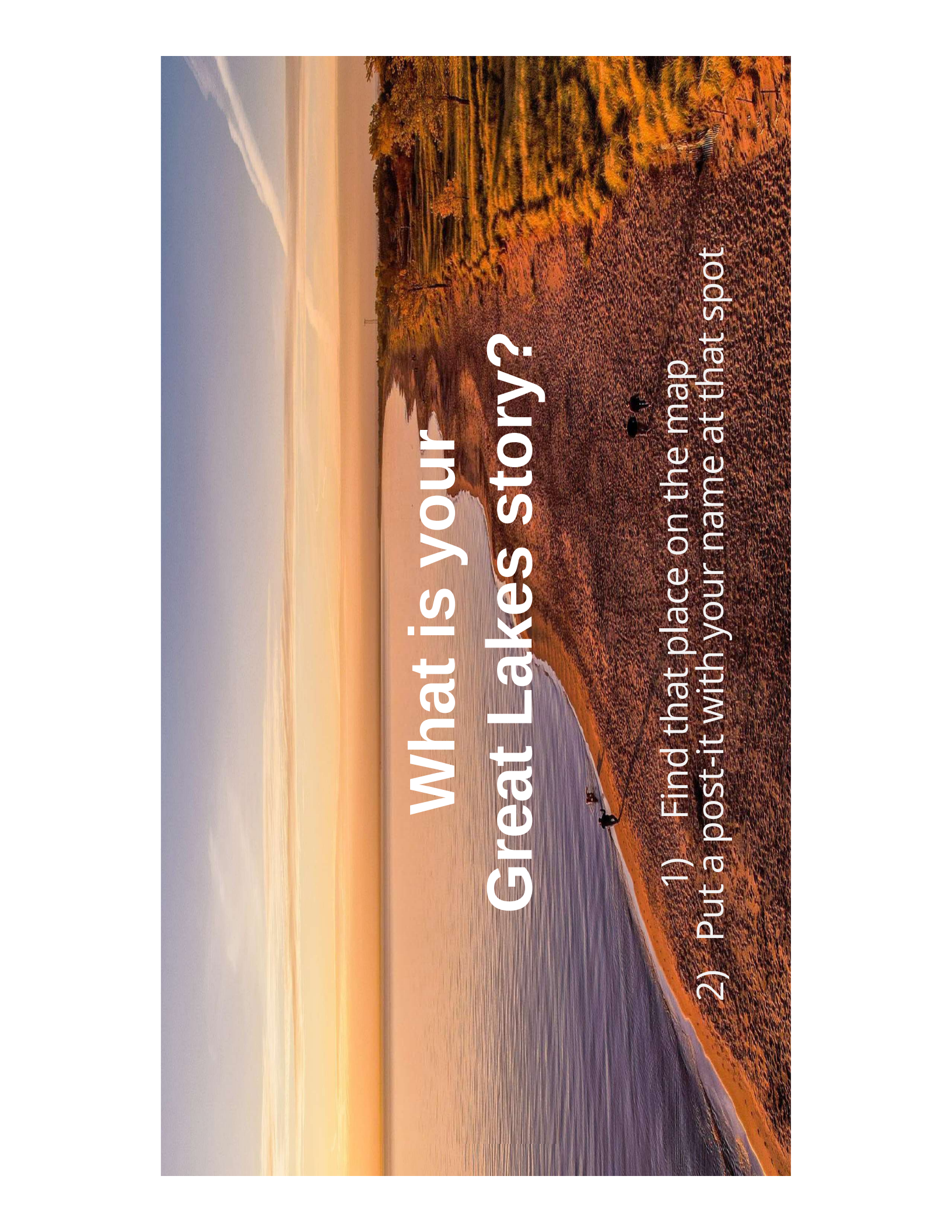
SUSTAINABLE
FISHERIES &
AQUACULTURE



RESILIENT
COMMUNITIES
& ECONOMIES

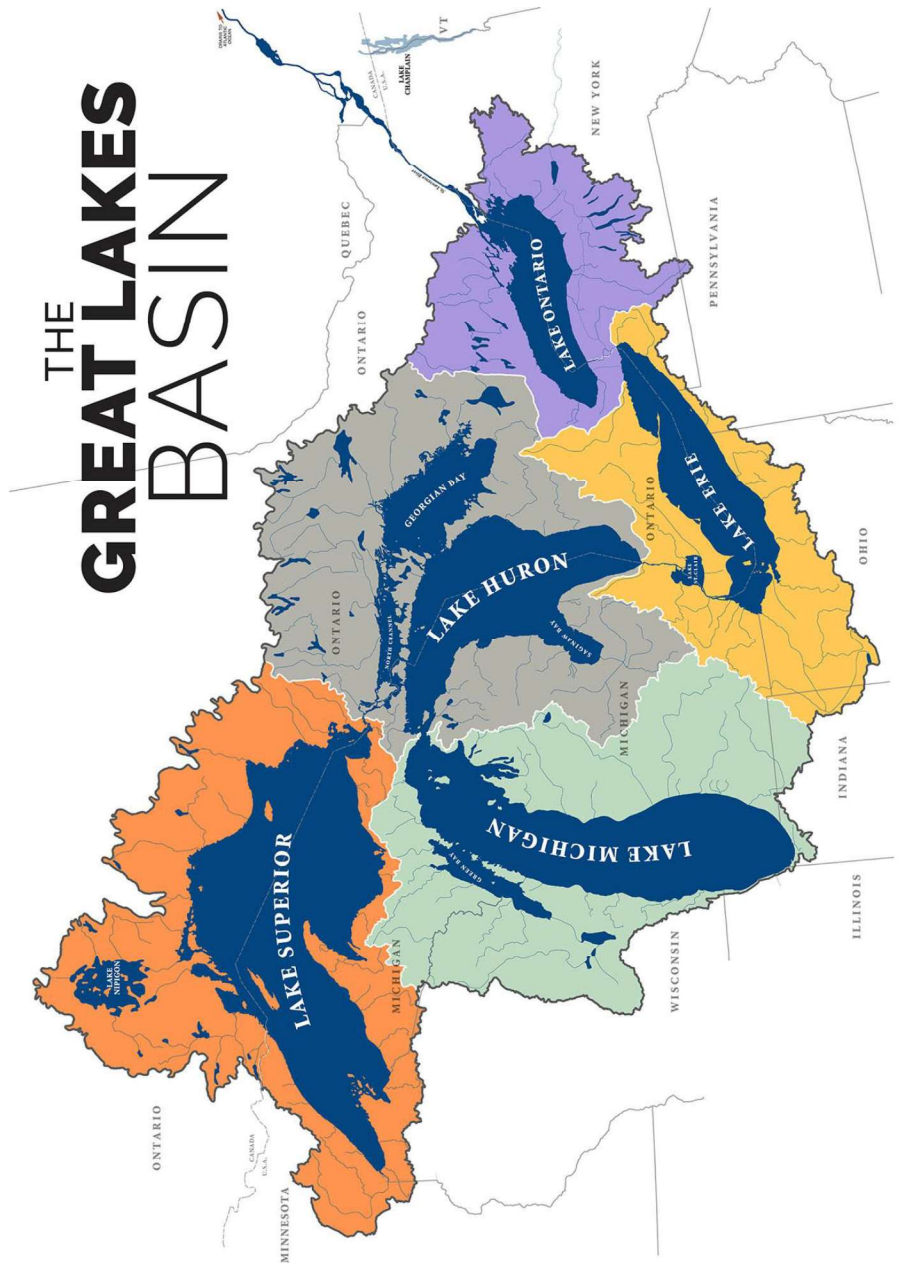


ENVIRONMENTAL
LITERACY &
WORKFORCE
DEVELOPMENT



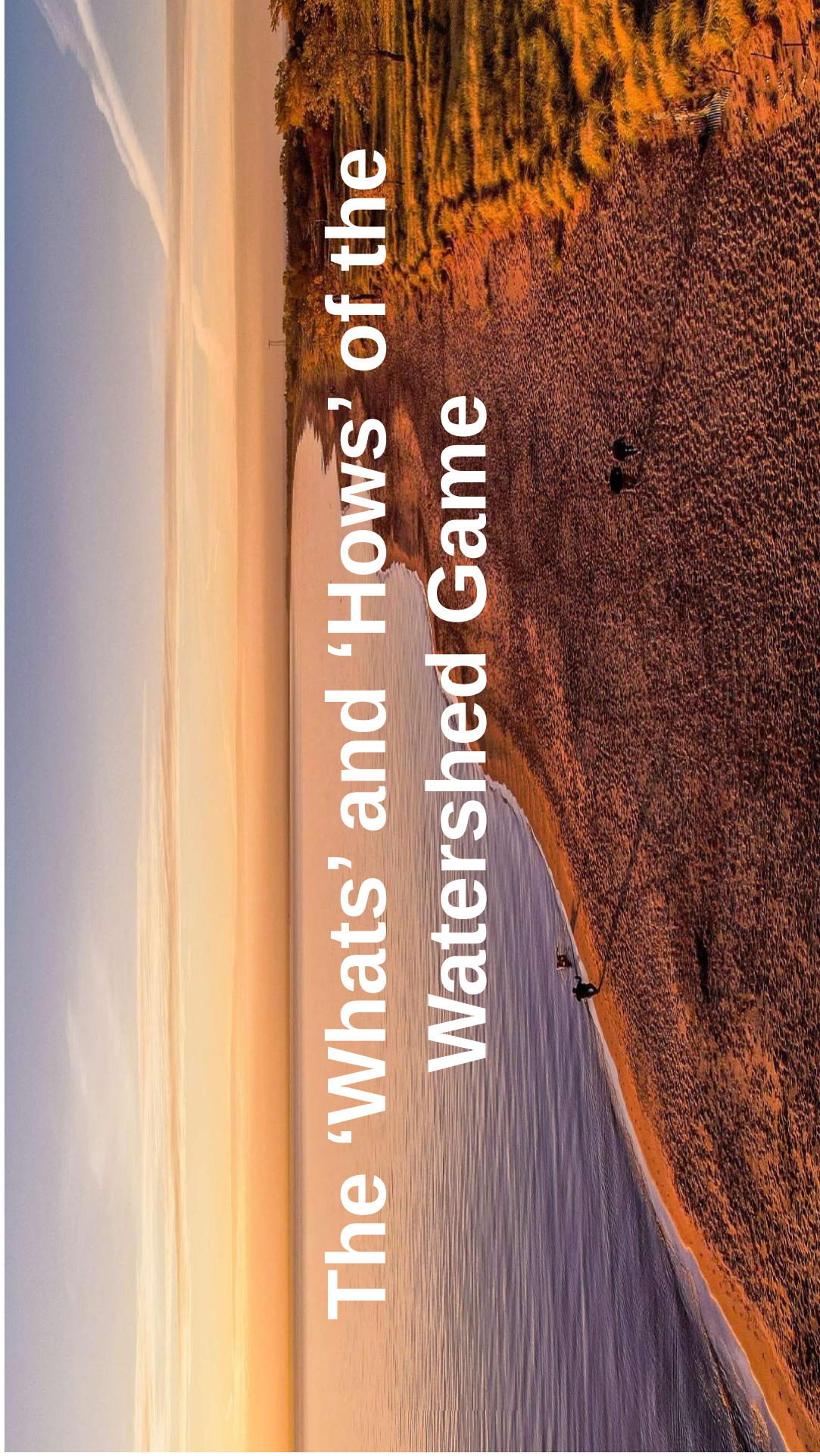
What is your Great Lakes story?

- 1) Find that place on the map
- 2) Put a post-it with your name at that spot



8 Great Lakes Literacy Principles

The 'Whats' and 'Hows' of the Watershed Game



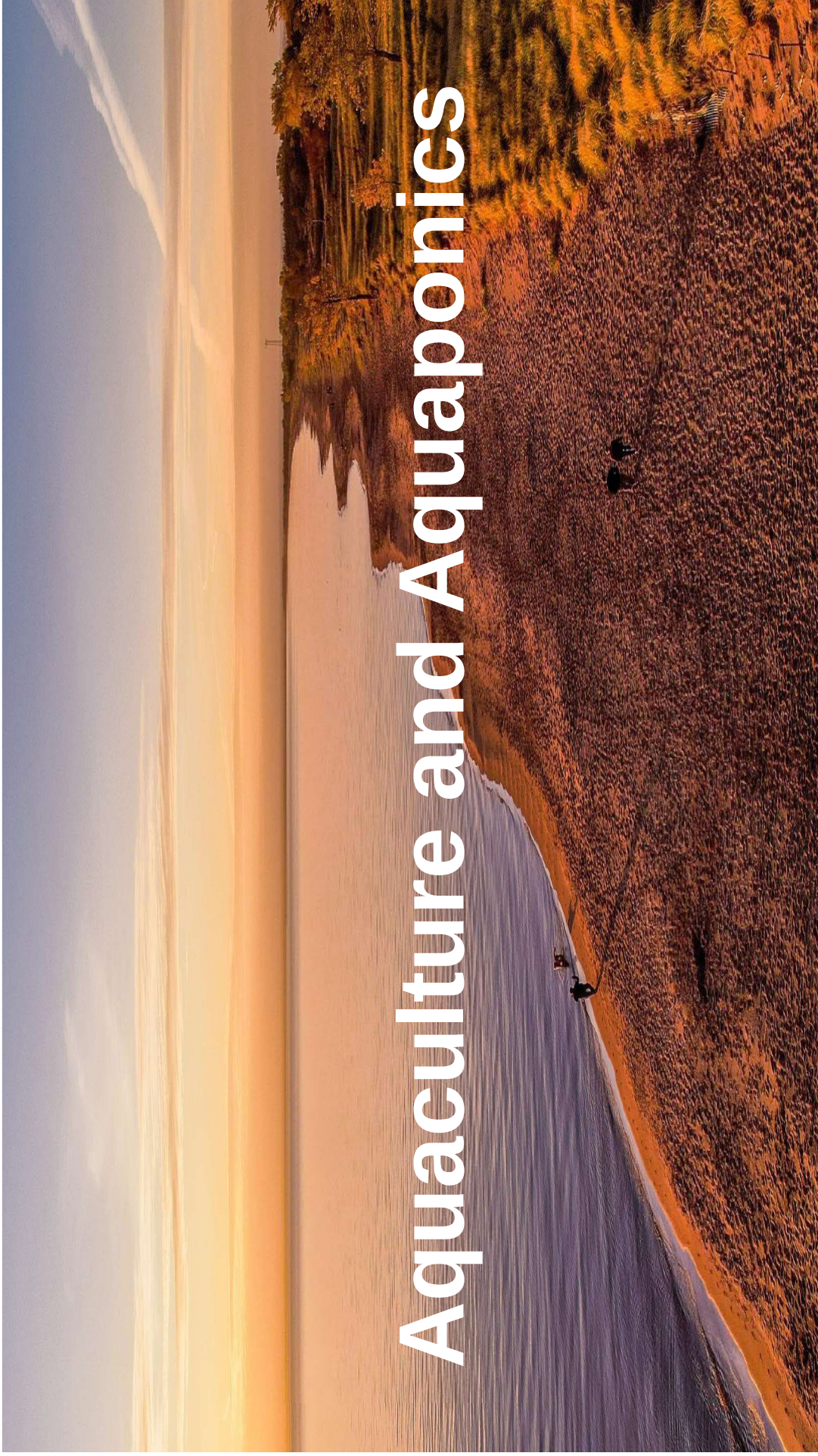
Order the Game



Training Videos



Aquaculture and Aquaponics



What is aquaculture and aquaponics?



Aquaculture + Hydroponics = Aquaponics

Breeding, rearing, and harvesting of fish, shellfish, algae, and other organisms in all types of water environments

Growing plants in a soilless substrate

Combines aquaculture and hydroponics to grow plants and fish in a single system

What do you know about aquaculture and aquaponics?

Virtual Field Trip of MNSG Facilities!





Aquaculture Challenge

Register in October, start in January, end in May

1. Design challenge: design and build an aquaponics system of any size.
2. Monitor challenge: monitor the chemical and biological portions of their aquaponics system. Teams can earn extra points for organized data and automated monitoring.
3. Business challenge: create a business plan targeting aquaculture industry issues and solutions.
4. Outreach challenge: execute an outreach project to share knowledge of aquaculture with local communities.

Image credit: A. Schrank

Image credit: C. Dettman

Golden Shiner in the Classroom



What You Get

Golden Shiner (fish), tank setup, food, data sheets, lesson plans, support from me throughout the process

Your Responsibilities

Participate in the project for at least one semester, collect data on the fish, provide feedback on lesson plans

Email jgreenn@d.umn.edu or see me if you are interested!

Aquaponic Educator Workshop

When: Friday, September 25, 2026 from 1:00 P.M. - 6:00 P.M. CST & Saturday, September 26 from 8:00 A.M. to 4:30 P.M. CST.

Where: University of Minnesota, Saint Paul campus

Who: Formal or informal educator and can support 20 participants.

Cost: Free! + \$250 stipends available to help cover travel or for classroom resources. You will also receive a 10 gallon aquaponics system and several online and printed lesson plan resources!



Other Resources

- Mini-grants for Educators
 - Applications online Nov/Dec
 - 8 awarded \$550-\$600/each
 - Experiential learning & professional development
- Communication
 - MNSG Updates & CGLL Newsletter
 - <https://seagrant.umn.edu/programs/educator-resources>
 - hferris@umn.edu





Explore Minnesota Sea Grant's Education Kits!



Post Survey: How did we do? Whadja' learn?