



In this section

# Understanding Nonpoint Source Pollution and Public Perceptions: A Study of the Black Lake Watershed

Black Lake, Michigan

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## **Project Description:**

As water quality concerns continued to grow within the Black Lake Watershed over the past several years, Tip of the Mitt Watershed Council (TOMWC), based in Petoskey, Michigan, and members of the two Black Lake associations started to advocate for a watershed management plan. The primary purpose of a watershed management plan is to guide watershed coordinators, resource managers, policy makers, and community organizations to restore and protect the quality of lakes, rivers, streams, and wetlands by providing specific recommendations. A significant component of the watershed management planning process is conducting resource inventories that assess many different types of nonpoint source pollution and surveying the watershed residents to understand the perspectives of major stakeholders. Considering this need for insightful data and recommendations for how to manage, mitigate, and effectively adapt to these water quality issues, TOMWC collaborated with the University of Michigan's School for Environment and Sustainability (SEAS). Four SEAS graduate students gathered and analyzed data from watershed

inventories and social indicator surveys and provided concrete recommendations which will directly inform the content and direction of the anticipated Black Lake Watershed management plan and guide actions and protocols of TOMWC.

**Year:**

2024

**Project Status:**

In Progress

**Client Organization:**

Tip of the Mitt Watershed Council

**Students Involved:**

Dana Pflughoeft [Behavior, Education, and Communications], Andrea Behrmann [Ecosystem Science and Management], Maria Di Cresce [Ecosystem Science and Management], and Bailey Greene [Sustainable Systems]

**SEAS Faculty Advisor:**

[Mike Shriberg](#)

**Final Report:**

[Black Lake Watershed Final Report](#)

**Specializations:**

[Behavior, Education, and Communication](#)

[Ecosystem Science and Management](#)

[Sustainable Systems](#)

## **Meet the Team Members**



## **Dana Pflughoeft**

Graduate Student Research Consultant

she/her/hers

[danapflu@umich.edu](mailto:danapflu@umich.edu)

Dana Pflughoeft recently graduated from the University of Michigan's School for Environment and Sustainability with a specialization in Environmental Behavior, Education, and Communications. Throughout graduate school, Dana focused on science communications and increasing access to conserved spaces. She completed her bachelor's degree in Environmental Studies and Political Science at St. Olaf College in Minnesota. Originally from Traverse City, Michigan, Dana feels drawn to water conservation, public lands, shorelines, and trails.



## **Andrea Behrmann**

Graduate Student Research Consultant

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Andrea Behrmann is a 2024 University of Michigan School for Environment and Sustainability (SEAS) graduate with a specialization in Ecosystem Science and Management. Throughout graduate school, Andrea focused on learning different data analytic tools and understanding various ecosystems. She received her BS in Environment with a focus on Marine Ecosystem Management through the university's Program in The Environment (PiTE) that is a collaborative effort between the College of Literature, Science, and the Arts (LSA) and SEAS. Born and raised in

Kalamazoo, MI, Andrea is passionate about water quality and conservation efforts as well as climate advocacy.



## Bailey Greene

Graduate Student Research Consultant

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Bailey Greene graduated from the University of Michigan's School for Environment and Sustainability in 2024 with a master's of science degree specialized in sustainable systems. She specializes in studying and creating sustainable systems with a focus on measuring and mitigating corporate environmental impacts. Bailey completed their bachelor's degree in Zoology and



## Maria Di Cresce

Graduate Student Research Consultant

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Maria Di Cresce is a current SEAS student with a specialization in Ecosystem Science & Management and an anticipated graduation date of May 2025. She graduated with a BS in Environmental Sciences & Sustainability with a minor in Toxicology from Nazareth University. She has a passion for pollution remediation and aquatic ecosystems.



Environmental Biology at Michigan State University and has a passion for protecting ecosystem services.

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## PHOTOGRAPHS FROM THE FIELD

Maria, Dana, Andrea, and Bailey conducted field research for three weeks during the summer of 2023. Through this experience, the graduate students garnered a greater understanding and appreciation for the watershed (and even got to snorkel in Black Lake)!



**Black Lake on a moody afternoon**

**The Graduate Students  
gearing up for a field  
research day**



**Andrea, Bailey, and Dana  
measuring the width of a  
Road/Stream Crossing**



**A view through a  
Road/Stream Crossing**





**Maria examining vegetation and tracking invasive species presence**

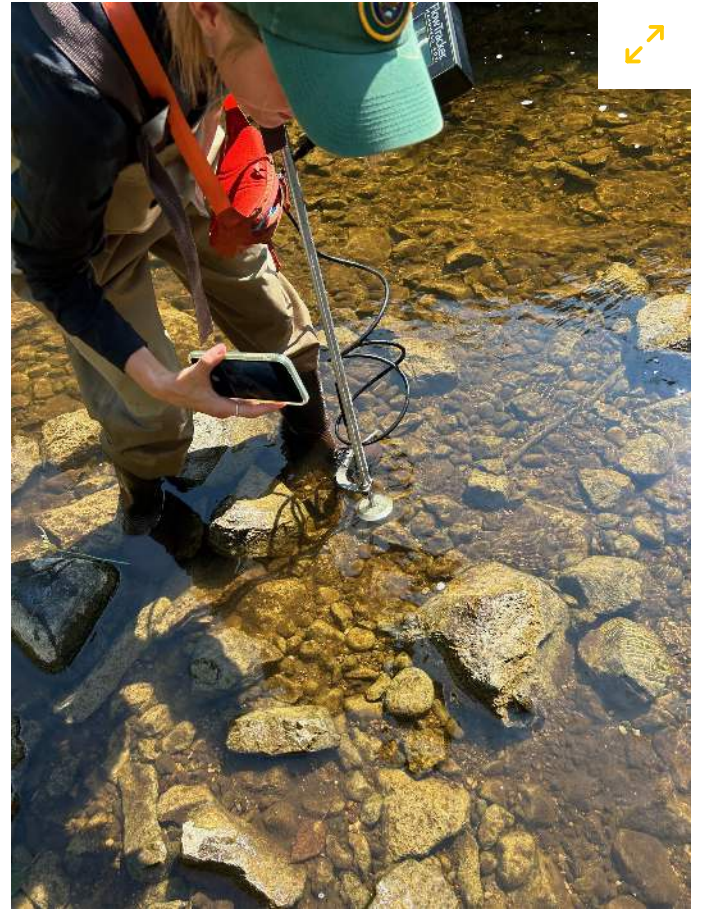


**Andrea measuring the depth of the Rainy River**





Bailey tracking stream bank erosion



Dana measuring water velocity with a velocity meter



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✉ Email us





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