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New York State has 3,400 miles of diverse coastline and is the only state in the U.S. bordering both the Great Lakes and Atlantic Ocean. More than 85% of NY's population lives in a coastal region.



New York Sea Grant regional offices provide innovative research, technical assistance, and outreach on such issues as water quality, coastal resilience, marine & freshwater fisheries, invasive species, algal blooms, aquaculture & seafood, coastal literacy, and shoreline community development.

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NYSG Focus Area
for this project summary:
**Environmental Literacy &
Workforce Development in NY**

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Great Lakes Plankton Workshop

NYSG organized a two-day professional development workshop for teachers to meet researchers and learn about the microscopic world of Great Lakes plankton.

Phytoplankton and zooplankton create the foundation of the Great Lakes freshwater food web, however, these microscopic organisms are often unseen and overlooked in K-12 education. Additionally, many of the existing plankton educational resources focus only on marine species. To develop materials on freshwater species, teachers and educators must have access to the knowledge, equipment, and skills required to create lesson plans and activities that align with New York State learning standards.

New York Sea Grant (NYSG) planned and facilitated a two-day workshop in July 2024 in Buffalo and Lewiston. Participants were trained and practiced collecting plankton from the shores of Niagara River using nets. They learned to identify different plankton species under a microscope and participated in a daphnia (small plankton crustacean) feeding experiment with researchers from Niagara University. They collected plankton samples from aboard the *Miss Buffalo* tourboat on Lake Erie, and worked collaboratively to discuss learning standard alignment and curriculum integration. Each teacher received a plankton net, digital microscope, and other equipment to take back to their classrooms to use with students.

Twenty teachers and educators participated in NYSG's 2024 Great Lakes Plankton Workshop. Prior to this workshop, 52% of participants stated they had no or minimal knowledge of phytoplankton and zooplankton. Following the workshop, 68% stated they now had above-average knowledge of these organisms. Similarly, prior to the workshop, only 29% of participants reported that they were confident in explaining phytoplankton and zooplankton content to their learners; after the workshop 94% of participants reported they were now confident to do so.

The Great Lakes Plankton Workshop was a successful professional development opportunity that engaged teachers in hands-on practice in the field and lab, leading to an increase in their knowledge about an important environmental topic and in their confidence in explaining it to students.

Project Partners/Funders:

- Center for Great Lakes Literacy
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NYSG's 2024 Great Lakes Plankton Workshop. Photos: Nate Drag/NYSG