Introducing Tools to Enhance Harmful Algal Bloom Monitoring Capabilities

AI technology is used to obtain faster testing results when assessing harmful algal bloom events

New York Sea Grant is a joint program of Cornell University, the State University of New York, and the National Oceanic and Atmospheric Administration (NOAA).

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.

NYSG offices

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.

New York Sea Grant Extension
112 Rice Hall, Cornell University
Ithaca, NY 14853
www.nyseagrant.org

NYSG Focus Area for this project summary:
Healthy Coastal NY Ecosystems

Written by
NYSG Marine Fisheries Specialist
Antoinette Clemetson
631-824-4407
aoc5@cornell.edu

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Stringent field monitoring in coastal waters enables managers to make appropriate decisions to minimize risks of exposure to toxic marine algae by the public who consume fishery resources and utilize bathing beaches. Presently, managers lack the capability to conduct real time assessment of harmful algae in impacted waters to inform decisions about area closures.

Water sample is deposited under a special microscope that is synced to the user's cellphone to take pictures. The photos are uploaded to the BloomOptix server for diatom identificaton and cell count analysis. Photo: BloomOptix

New York Sea Grant organized an outreach effort to increase awareness about a new tool developed by BloomOptix and the State University of New York College of Environmental Science and Forestry (ESF) to allow faster testing results to identify harmful algae and estimate cell count in real time.

New York Sea Grant organized a webinar demonstration of a new tool that uses a portable digital microscope that can be linked to a cell phone to send images of water samples to a web-based AI system that carries out the classification (see additional info at website: https://bloomoptix.com/). This technology is intended to be used by citizen science groups and water managers looking to make a rapid determination of the presence of harmful algae. This is the first introduction of the tool for utilization in marine waters, building upon its successful use in freshwater systems in upstate New York, Wisconsin, and Oklahoma. As a result of this outreach, three agencies indicated their desire to collaborate with the researchers to build the AI reference library during the 2024 HAB season. A training workshop and equipment will be provided in Spring 2024.

New York Sea Grant is collaborating with researchers to educate managers about new tools to help keep stakeholders safe from toxic algae and improve monitoring response.

Project Funders:

- BloomOptix
- SUNY College of Environmental Science and Forestry

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