

U.S. IOOS FY24 National Harmful Algal Bloom Observing Network Awards

Alaska Ocean Observing System

FY24 Funded Amount: \$400,000
Continuing NHABON Award

This award will support the Alaska Harmful Algal Bloom Network, purchase an automated environmental sampler (Imaging FlowCytobot) as well as sampling equipment for communities, expand toxin testing for the state, and increase data management and visualization capacity. In addition, this award will support expanded community outreach in the form of a statewide HAB workshop and in-person meetings in communities where HABs are a concern. Finally, AOOS will continue to seek out and test new technologies to detect, monitor, and forecast HABs in Alaska.

Caribbean Coastal Ocean Observing System **Gulf of America Coastal Ocean Observing System** **Southeast Coastal Ocean Observing Regional Association**

FY24 Funded Amount: \$257,000
Continuing NHABON Award

Sargassum inundation events (SIEs) are a widespread issue affecting the Caribbean, the Florida Current, and the Gulf of America (formerly Gulf of Mexico). As a result, IOOS RAs in the Caribbean, U.S. Southeast, and Gulf of America have developed a collaborative program to observe, assess, and forecast SIEs in the region. CARICOOS will continue monitoring the weekly Sargassum biomass influx in La Parguera Marine Reserve and deploy a high-resolution forecast system for the region. The current Sargassum forecast for Puerto Rico and the U.S. Virgin Islands is available at <https://www.caricoos.org/sargassum>. GCOOS will continue gathering and disseminating Sargassum observations along the Texas coastline.

Gulf of America Coastal Ocean Observing System

FY24 Funded Amount: \$25,000
Continuing NHABON Award

To further HABS understanding and prediction, these funds will support a continuing pilot project by supporting the two IFCB's operated by Dr. Darren Henrichs in the Gulf of America (formerly Gulf of Mexico). These IFCBs have been operating in the since 2008, and have created the longest plankton and *Karenia brevis* data record in the entire gulf.

GCOOS will also continue the HABScope program (<https://habscope.gcoos.org/>) using other NOAA funds allocated in FY24.



Great Lakes Observing System

FY24 Funded Amount: \$276,000
Continuing NHABON Award

Harmful algal blooms are a problem in the Great Lakes. Unique to the Great Lakes is the need to keep drinking water safe — more than 19 million Americans rely on the lakes for it. This award will fund the ongoing operation and maintenance of a low-power, long range (LoRa) buoy array and to develop two new LoRa systems to be deployed in Green Bay, all of which are equipped for near real-time HABs and hypoxia data and warnings. GLOS is also partnering with experts to pilot a potential community science tool that leverages a lightweight microscope and paired AI algorithm to evaluate likelihood of HABs in Lake Superior and Lake Erie. Finally, these funds are supporting the operation of a specialized autonomous surface vehicle that provides real-time toxin information in vulnerable areas.

Mid-Atlantic Regional Association Coastal Ocean Observing System

FY24 Funded Amount: \$200,000
Continuing NHABON Award

This award will fund the ingestion of phytoplankton data into EcoTaxa, an international database for the visual study, identification, and classification of plankton. The data is gathered by a new Imaging FlowCytobot, a submersible instrument that captures images of particles within its environment. When fed into EcoTaxa, these images will form the basis of an image library and classifiers for the mid-Atlantic region phytoplankton HUB.

This award will also continue support for the Chesapeake Bay Environmental Forecast System. CBEFS, run out of the Virginia Institute of Marine Science, produces forecasts and nowcasts of the Chesapeake Bay for assessing bay health, particularly in regard to hypoxia.

Northwest Association of Networked Ocean Observing Systems

FY24 Funded Amount: \$430,000
Continuing NHABON Award

This award will support continued data collection and support for the Pacific Northwest Harmful Algal Bloom Bulletin (www.nanoos.org/products/habs/forecasts/home.php). HAB bulletins are critical for communicating early warnings to coastal managers and communities so that they can take immediate action. Critical data supported by this award includes offshore water sampling, beach sampling by tribes and the State of Oregon, sample analysis, and circulation modeling.

This award will also continue to support SoundToxins (<https://soundtoxins.org/>), an environmental sampling partnership who aim to provide early warning of harmful algal bloom events in order to minimize both human health risks and economic losses to Puget Sound fisheries.



Northeastern Regional Association of Coastal Ocean Observing Systems

FY24 Funded Amount: \$375,146
Continuing NHABON Award

This award will expand the capacity to observe HABs in near real-time along the New England coast through a multi-pronged program. Imaging Flow Cytobots (IFCB) will be used in four locations, including one deployment in conjunction with an automated surface vessel. These data sets will be made available in near real-time on the WHOI HABhub (<https://habhub.whoi.edu/>) to inform decisions.

Pacific Islands Ocean Observing System

FY24 Funded Amount: \$405,196
Continuing NHABON Award

This award supports continuing outreach and engagement through the Pacific Ciguatera Network, including ongoing work with the Republic of the Marshall Islands, American Samoa, and Guam. This will also fund more direct work with fishers and community organizations, as well as developing partnerships in the Commonwealth of the Northern Marianas, Palau, and Federated States of Micronesia, prioritizing efforts to support local capabilities. This award will also support water sampling and HAB toxin research.

Southern California Coastal Ocean Observing System **Central & Northern California Ocean Observing System**

FY24 Funded Amount: \$400,000
Continuing NHABON Award

This award supports the operation and maintenance of the California Imaging FlowCytobot Network (CA IFCB Network), an advanced system that monitors phytoplankton in coastal waters. The network comprises 12 state-of-the-art IFCBs deployed permanently and periodically throughout California coastal waters. The IFCBs capture and transmit images of phytoplankton in near real-time, and the application of machine learning algorithms to imagery allows for accurate plankton identification. The network is an automated early warning system for potential Harmful Algal Blooms, critical for enabling rapid response and better decision-making in the state (<https://sccoos.org/ifcb/>). The data are made available on the CalOOS Data Portal (<https://data.caloos.org/#map>) and the Harmful Algal Bloom Data Assembly Center (<https://habdac.portal.axds.co/>) and contribute to the CA HABMAP and related CA HAB Bulletin efforts.



**Southeast Coastal Ocean Observing
Regional Association**

**FY24 Funded Amount: \$215,156
Continuing NHABON Award**

This award supports ongoing water quality and harmful algal bloom monitoring stations in southwest Florida, and helps make the data available to policy makers, resource managers, collaborative researchers, and the public. In addition, it will help support efforts to identify environmental conditions that are conducive to HAB formation in Georgia estuaries, including expansion of the sampling range to determine if the blooms occur upstream within the Savannah River and how far out into the shelf they extend.

To learn more about the National Harmful Algal Bloom Observing Network, visit: <https://ioosassociation.org/nhabon/>

To learn more about NOAA's Harmful Algal Bloom Observing and Forecasting, visit: <https://ioos.noaa.gov/hab-flyer-March25>

