HAB Liaison National Engagement

Key Project Partners: NOAA CoastWatch, NOAA NCCOS HAB-Forecasting Branch, Sea Grant Network
Community Partners: NOAA NCCOS Cooperative Research Program, Federal agencies associated with Interagency Working Group, Students

Harmful algal blooms (HABs) have been reported to occur in the surface waters of all 50 U.S. states and are increasing globally. While the ecological components and implications of HABs may vary across the national landscape, there are significant commonalities. HABs in Lake Erie, the Gulf of Mexico, and the U.S. West Coast have direct impact on public uses of the coast, which in turn affect water dependent businesses. Similarly, issues regarding the effects of HABs on seafood and aquaculture product safety extend across states and regions.

The overall goal of the four-year National HAB Liaison position and project is to advance HAB decision-making by coordination, integration, and transference of knowledge across the nation. A major component of the liaison project is harnessing the Sea Grant network of extension, outreach, and education expertise to augment NCCOS', CW's and IOOS' research outcomes and engagement with end users. Here are examples of national engagement activities undertaken.

1.   Satellite Workshop – In 2022, a workshop was convened during the U.S. Symposium on Harmful Algae (USHABs). The objectives were to provide an opportunity for participants to discuss their HAB detection and forecasting needs, a venue for NCCOS to introduce workshop participants to their HAB remote sensing products, a mechanism for participants to provide feedback to NCCOS about potential products and delivery formats it could develop to address needs, and a forum to foster partnerships for improving HAB detection and forecasting.

Breakout group demonstration during USHAB Workshop

The half-day workshop, attended by 22 participants, featured talks discussing available satellite products as well as operational examples of their use; demonstrations in breakout groups to allow participants to become familiar with remote sensing data and products and their applicability to specific HABs and geographic areas; and group discussion about species of concern, research gaps, and stakeholder needs.

The workshop attracted a broad national audience and provided NCCOS with many new connections and awareness of ongoing monitoring efforts. Additionally, they received guidance on needs for remote sensing tools and products, and several participants requested more assistance to use tools introduced through follow-up email.

2.   CoastWatch Training – NOAA CoastWatch provides satellite derived products for local applications. CoastWatch conducts user training classes on satellite products for technical audiences and works with partners to customize products for regions. In 2020, CoastWatch training transitioned from in person to virtual to accommodate learning during Covid-19. A learning portal was created with video lectures and video or step-by-step based tutorials. Today training is taught virtually, in-person, or through a hybrid approach, and the learning portal continues to be populated with new satellite-based content. The liaison has contributed to the learning portal by developing, co-developing, or field-testing new

lectures and tutorials, including a water quality and two harmful algae lectures and an ArcGIS tutorial. Additionally, the liaison co-organized a training course for Sea Grant and Friends. The six-week course was held virtually in 2023.

3. **HAB Chats –** In 2023 the liaison initiated HAB Chats, a one-hour series dedicated to discussions around harmful algal bloom (HAB) topics of interest, exclusively for Sea Grant colleagues. HAB Chats are structured in two parts; a 30-minute presentation/Q&A is followed by a 30-minute open forum discussion, in which participants share HAB issues, updates, upcoming events, and much more. HAB chats occur every other month and have attracted participation from more than half of the Sea Grant programs, with some regularly participating. In a survey conducted at the end of 2023, participants indicated that HAB chats allows them to learn from and/or collaborate with others (100%), share activities and products (also meetings) (92%) and provide updates from their region (83%). The 2024 HAB Chats format & topics were based on survey results.

4. **HABHRCA Interagency Working Group (IWG) –** The Harmful Algal Bloom and Hypoxia Research and Control Act (HABHRCA) is a congressional mandate for NOAA to advance the scientific understanding and ability to detect, monitor, assess, and predict HAB and hypoxia events. HABHRCA amendments created an Interagency Working Group or IWG, which is composed of 13 collaborating federal agencies. The liaison serves as a NOAA OAR Sea Grant member on the IWG. This role facilitates communication and collaboration and serves to elevate the Sea Grant's unique role within the HABs landscape. In 2024, as a member of the IWG, the liaison coproduced regional vignettes, a component of the next national assessment to congress.

5. **Working with Students –** Though not an identified component of the project, several opportunities to assist students have arose. These include assisting a Ph.D. student from Florida A&M University (see testimonial) with project evaluating red tide respiratory forecast and a UF undergrad with survey questions regarding red tide knowledge, participating in NOAA's CCME for minority students with focus on HABs, and participating on a USHABs panel focused on funding opportunities for students working on HABs.

Testimonial: *"I wanted to express my gratitude for all the assistance you've provided in connecting me with organizations and individuals for my research surveys on HABs. Your support has been invaluable, and I truly appreciate it. I've acknowledged your contribution in my research as a key collaborator in implementing the study. Currently, I'm in the process of analyzing the data collected, and I look forward to sharing the results with you soon."* – Ashley Lacey, MPH, Environmental Science PhD Candidate, Florida A&M University