

The Second Regional Workshop for Harmful Algal Blooms (HABs) in California Coastal Waters

National Oceanic and Atmospheric Administration, California Ocean Science Trust, California Sea Grant and Southern California Coastal Water Research Project

EXECUTIVE SUMMARY

Overview

An inaugural workshop in 2008 of leading HAB research groups, water quality managers, public health managers and animal rescue groups in California led to the formation of the California Harmful Algal Bloom Monitoring and Alert Program (California HABMAP). California HABMAP is an integrated statewide network which coordinates HAB researchers and HAB responders by facilitating information exchange. The ultimate vision for HABMAP is to create a regional prediction and forecasting system, which could be expanded into a U.S. west coast wide HAB regional forecasting system. The first step to implementing a coordinated statewide system was the development of an email listserve to rapidly transmit HAB and oceanographic data to HAB responders. The California HABMAP listserve has provided over 700 emails on current HAB conditions and animal strandings throughout the state of California since April 2008. To assess the value of the information provided through the listserve, outline improvements and impediments to the current information, and evaluate the need and desired output for a forecasting system, the National Oceanic and Atmospheric Administration's Center for Sponsored Coastal Ocean Research and the California Ocean Science Trust convened a workshop of 30 invited participants from various organizations including: water quality management, shellfish management and public health protections, animal rescue communities, and ocean observing networks.

The one-day workshop consisted of a general introduction to the California HABMAP program and two breakout sessions. The breakout sessions divided the participants into three groups of approximately 13 participants with similar foci. Group one consisted of the animal rescue and shellfish communities, group two comprised the water quality and public health communities, and group three contained state and federal agencies. After each breakout session, a summary of each group's findings was presented to the entire group.

The first breakout session was intended to provide feedback on the awareness and use of the information and data shared through the California HABMAP listserve and other California HAB related websites such as the California Department of Public Health (CDPH) plankton and shellfish monitoring program, the Central and Northern Coastal Ocean Observing (CeNCOOS), and the Southern California Ocean Observing System (SCCOOS). The general consensus among groups not directly involved with HAB monitoring was that they were unaware of the data and information provided through the California HABMAP listserve and the OOS websites. Most of the participants relied on the data provided through the CDPH phytoplankton and shellfish monitoring program, or through direct communication (phone and email) with specific groups collecting HAB or standing data in their region.

The second breakout session was focused on outlining improvements to the current information shared and evaluating the need and priorities for a HAB forecasting system. Two major improvements that resonated from all three groups was: 1) the need for interpreted analysis of the HAB data in order to understand the potential impact on human and ecosystem health, and 2) the need for timely data on both

HABs and animal strandings in order to alert the community and respond to ongoing events. There was also a consensus among all groups that prediction and forecasting systems for HABs would be beneficial for responding to events as well as both short and long term planning and asset management.

Conclusion and Recommendations

The workshop participants agreed that the following steps should be implemented in the HABMAP Network:

- Development of a regional predictive system that can forecast potential HAB events was seen as critical for the future direction of HABMAP. This regional predictive system would help managers make crucial decisions on how to respond to HAB events and how to mitigate their impacts.
- Provide an interpretive synopsis when an event is occurring rather than providing quantitative data in order to facilitate assessment by non-expert users. HABMAP should develop common thresholds and formats for such alerts among data collectors. Automate alerts to be triggered only during events based on threshold levels of data (such as toxic species presence, toxin concentrations, contamination of shellfish, marine wildlife strandings). Alert based information should provide details on types of impact and actions needed to resolve issues.
- Provide real-time stranding information on all animals (birds, sea lions, dolphins, otters, etc.) to allow for more coordinated sampling efforts to assist with the assessment and evaluation of potential HAB impacts on resources and ecosystems. Develop and validate affordable toxin tests for species such as birds and sea otters and easy to use field tests to prescreen animals in the field. Follow-up with toxin analysis results and/or diagnosis on cause of stranding or death.
- Include freshwater toxin information (such as microcystins) to provide a more holistic picture since many of the marine mammal illnesses observed are not limited to toxins that originate in marine habitats. Coordinate and partner with a nascent freshwater HAB group the State Water Resources Control Board has started in order to provide more data on land-sea toxin exchange.
- Enable customization and visualization of HABMAP data particularly when an event begins in order to visualize spatial and historical context to determine intensity of the event. SCCOOS and CeNCOOS have agreed to work together to develop a single statewide display.
- Increase linkage to other data types that provide context such as nutrient loading information, marine mammal strandings, prey source information, oceanographic data, etc. Combine all relevant data into a common portal (website) with the capability to visualize multiple types of data on one graph.

Full Text

ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/620_SecondRegionalHABSworshop.pdf