Agenda

WHAT: Harmful Algal Blooms (HABs) – State Debrief and Public Discussion on Short and Long-Term Goals for Rhode Island

WHEN: December 16, 2016 ** 2:30PM-5:00PM **

WHERE: Hazard Rooms A & B, Coastal Institute Building, University of Rhode Island, Graduate School of Oceanography campus, 220 South Ferry Road, Narragansett, RI

WHO: Presented by RI DEM in coordination with RI DOH Food Safety Program and State Health Laboratory.

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Introductions and Updates (10min)

- Welcome and Introductions
- Purpose and Goals of the meeting
- Upcoming meetings related to HABs

Debrief on 2016 HAB Event (20min)

- Presentation on plankton and shellfish monitoring and responses during 2016 *Pseudo-nitzschia spp. (PN)* monitoring and key finding in RI and other states in our region.

Questions/comments from participants (10min)

Presentation of draft revisions to RI HAB monitoring plan (30min)

- Analysis of available data RIDEM and Fox Island PN data
- Plankton monitoring plan (species, locations and frequency)
- Shellfish monitoring plan
- Summary of RIDOH HAB identification and toxicant screening/analysis capabilities
- Plankton concentration threshold concentrations and monitoring/management responses

Questions/Comments from participants (10min)

Short Term HAB Research needs for Rhode Island (20 min)

- Plankton Monitoring, ID and enumeration: Establish protocols for reporting bloom observations, strengthening data collection and sharing
- Shellfish collection

- Toxicity analysis (screening kits and analytical testing)
- Continued coordination with other states in our region.
- Monitoring offshore waters (routine and in response to events).

Group Discussion (15min)

Longer Term HAB Research Needs (15min)

- Review of the 2016 CA Report recommendations
- DEM's recommendations
- Rhode Island Sea Grant – Responsive HAB Research funding available in 2017

Group Discussion (15 min)

- Anything missing?
- Do these recommendations fit within the RI context?
- What's unique about RI?
- What's of highest priority?

Wrap-up and Adjourn (10 min)

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For Discussion of Longer Term Research Needs

The California Ocean Science Trust, an independent, non-profit organization that brings together governments, scientists, and citizens recently completed a report entitled: Framing the Scientific Opportunities on Harmful Algal Blooms and California Fisheries Scientific Insights, Recommendations and Guidance for California Developed by a working group of the Ocean Protection Council Science Advisory Team and California Ocean Science Trust October 2016 ("2016 CA Report") http://www.oceansciencetrust.org/wp-content/uploads/2016/10/HABs-and-CA-Fisheries-Science-Guidance-10.25.16.pdf

Some key findings regarding the current state of scientific understanding of HABs:

"Phytoplankton growth and biomass accumulation (i.e., blooms) is a complex interplay of temperature, nutrient and light availability, and interactions with other organisms such as zooplankton grazers and bacteria. Scientists are still working to understand the environmental drivers of HABs, including when events occur, physiological responses of phytoplankton, and the oceanographic conditions that lead to highly toxic bloom events rather than benign phytoplankton blooms (Anderson et al., 2015)."

"In general, monitoring and HAB research are not well funded globally. By necessity, the standard approach most regions have taken is to characterize the effects of a massive bloom after it has already manifested. As such, there are major gaps in our understanding

of basic physiological characteristics and environmental drivers of key toxin-producing species, let alone how they respond to climate change and other stressors. This has made it very difficult to identify the myriad factors that lead to blooms."

The 2016 CA Report identified a series of recommendations, which are offered for consideration and discussion since Rhode Island's needs are similar:

"Recommendation 1: Continue to build out a robust, cost-effective, and flexible monitoring program that can be responsive to future HAB events, and that considers impacted communities."

"Recommendation 2: Pursue efforts to better understand offshore bloom and bloom timelines"

"Recommendation 3: Advance predictive modeling tools and better link models and model outputs to monitoring and management."

"Recommendation 4: Improve basic understanding of the ecophysiology of marine HAB species"

"Recommendation 5: Improve understanding of how biotoxins move through food webs"

"Recommendation 6: Advance research on the relationship between HABs and human health." (In particular chronic exposure to low domoic acid levels that do not produce outward signs of toxicity)."

<u>Additional DEM identified longer term needs:</u>

Recommendation 7: Develop information on economic impacts to local fishermen, aquaculturists, and shellfish markets from current and future HAB occurrences in RI state waters. This information will be useful in case of prolonged closures that could precipitate the need for federal mitigation assistance. Additionally, this information will create the context for a cost benefit analysis to consider in combination with recommendation 1 above.

Recommendation 8: Identify future HAB plankton species of concern which may impact our area due to climate change, for use in a more robust and adaptable HAB monitoring program.