

Photo credit: NOAA, TPWD, FWRI, WHOI

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NOAA HAB-OFS Newsletter

Welcome to our NOAA HAB-OFS Quarterly Newsletter. We are always happy to hear from you so please send your topic suggestions, questions, comments, and feedback to hab@noaa.gov.

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Our HAB Forecasts Have Ventured into the Social Networking Realm

Spread the word: NOAA's Harmful Algal Bloom Operational Forecast System (HAB-OFS) is now on Facebook!! Since joining in September, our HAB-OFS team has used Facebook to increase awareness of our public conditions reports, serve as a source of general information about HABs, and provide a forum for scientific discussion to keep people interested in, and talking about, HABs all year long. The page is updated regularly with current HAB conditions in the Gulf of Mexico, HAB-OFS news, relevant facts, and more, so check it out!



In order for this outreach effort to be successful, we need to spread the word so please visit www.facebook.com/Habredtidewatchnoaagov to like NOAA's HAB-OFS on Facebook and share our posts! For more information, please contact hab@noaa.gov.

HAB-OFS Team Travels to Florida, Gathers Partner Feedback

In mid-August, members of the NOAA Harmful Algal Bloom Operational Forecast System (HAB-OFS) team traveled to Florida to meet with our state partners and bulletin subscribers. During the full day HAB-OFS Florida Bulletin Meeting held on August 14th, the HAB-OFS teams engaged with attendees to gather feedback, identify ways to improve communication, and discuss possible product enhancements and development needs. These discussions continued over the next few days, as the HAB-OFS team was lucky enough to visit the sites of several of our partners. During the visit to the National Weather Service's Weather Forecast Office Tampa Bay Area headquarters, our team discussed ways to integrate NWS products to improve our current forecasts and outreach capabilities. The main trip highlights were our visits to Mote Marine Laboratory (MML) and Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute (FWRI), which included laboratory tours, observation of field sample collection and analysis, education about their exciting research projects, and follow-up discussions. The visit to MML also included a trip to the beach to meet two of the lifeguards who supply observations to MML for their daily beach conditions reports, essential data for validating our respiratory impact forecasts.

Our team emerged from this highly productive series of meetings energized and hopeful. We have begun working to address each of the tasks on our long list of action items and have already made progress in incorporating several changes. One of the concerns expressed was a need to improve communication between the HAB-OFS team and our Florida partners. Based on specific recommendations, we drafted a communication protocol which will continue to be refined. In addition, some of the language used in the weekly bulletins has been modified to improve clarity. Of course, some action items will take a bit longer to address; meeting attendees expressed a desire to improve how the HAB bulletin data is displayed, a goal our team shares. To facilitate this, we are exploring the possibility of designing a customizable and interactive sampling map. The HAB-OFS team also discussed requirements to improve HAB forecast quality. Our future goal is to forecast respiratory impacts daily, on a beach-by-beach level. In support of this, product developments are needed, including test kits for detecting the toxin produced by *Karenia brevis* more quickly and at a lower cost. We will



From right: Kate Derner, Edward Davis, Adria Schneck-Scott, and Karen Kavanaugh (HAB-OFS) learning about water sample collection from Mote scientists, including Senior Scientist, Barb Kirkpatrick (at left).

(continued from page 1) keep you all updated on our progress.

Thank you to all who made these meetings and visits possible, especially to our gracious hosts, NOAA's Marine Fisheries Service and National Weather Service, Mote Marine Laboratory, and FWC's Fish and Wildlife Research Institute! Even if you were unable to attend, your feedback is always welcome. Please email us at hab@noaa.gov anytime.

Understanding *Karenia brevis* Cell Concentration Categories

The HAB bulletin contains four major components: a conditions report, analysis, ocean color chlorophyll imagery, and a wind analysis. While the ocean color imagery provides a helpful look at areas of anomalously high chlorophyll, many non-harmful algal blooms also produce high chlorophyll concentrations. Furthermore, *Karenia brevis* cannot be reliably detected in satellite imagery until it reaches concentrations of 50,000 cells/L or greater. Thus, in situ sampling data must be combined with chlorophyll imagery to confirm the presence of *K. brevis* (as shown in Figure 1).

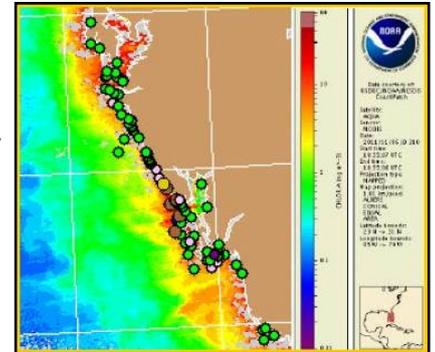


Figure 1. *K. brevis* cell concentration sample data is plotted on MODIS ocean color imagery provided in the HAB-OFS bulletin.

The cell concentrations identified in water samples are summarized in the analysis section of the bulletin and plotted on the chlorophyll images that appear on the first and last page of the bulletin. Our HAB forecasts are based in part on this cell concentration information, taking into account cell count values, physical conditions, bloom detection ability, and impacts associated with each concentration level. These differences are explained in the table below (Figure 2). Since respiratory irritation and other impacts vary from location to location depending upon the bloom intensity in the area and wind conditions, our HAB forecasts must take this variation into account as well. More information about potential impacts, including additional resources, is available in the FAQ section provided at <http://tidesandcurrents.noaa.gov/hab/faq.html>.

Cell Concentrations and Associated Impacts			
Concentration Category	Cell Count (Cells/L)	Bulletin Map Symbol	Possible Impacts Expected
Not Present	0	●	• None
Present	1,000 cells or less	○	• None
Very low a	>1,000 to <5,000	●	• None
Very low b	5,000 to 10,000	●	• Shellfish bed closures
Low a	>10,000 to <50,000	●	• Bloom level concentrations • Bloom initiation
Low b	50,000 to 100,000	●	• Features visible in satellite imagery
Medium	>100,000 to 1,000,000	●	• Mild-moderate respiratory irritation • Dead fish
High	>1,000,000	●	• Low-high respiratory irritation • Dead fish • Discolored water

Figure 2. The differences between each cell concentration category are vital to our HAB forecasts. Our cell concentration scale was adopted from the classification scheme originally designed by the Florida Fish and Wildlife Conservation Commission Fish and Wildlife Research Institute (FWRI).

Cell count data for the HAB-OFS bulletins are provided by FWRI, Mote Marine Laboratory (MML), the Alabama Department of Public Health, and the Texas Parks and Wildlife Department (TPWD). For a full list of sample providers and additional information on cell concentration categories, please see the HAB-OFS bulletin guide: http://tidesandcurrents.noaa.gov/hab/habfs_bulletin_guide.pdf.

Many Thanks to our Partners and Data Providers

<http://tidesandcurrents.noaa.gov/hab/contributors.html>

This newsletter was written and designed by:

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Please send us your feedback and topic suggestions:

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