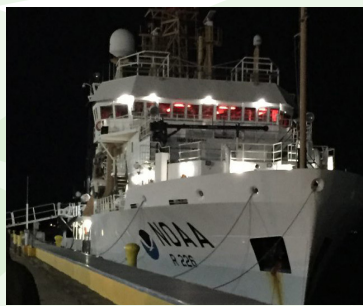




News from

NOAA in the North Atlantic



Photos from NOAA's NCCOS Harmful Algal Bloom Research that occurred in the Gulf of Maine in November 2016.



NART Newsletter

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Winter 2017

NOAA Responds to 2016 Gulf of Maine Harmful Algal Blooms and Prepares for 2017

During the Fall 2016, two notable harmful algal events occurred in the Northeast region. *Cochlodinium polykrikoides* or “rust tide” blooms were documented in waters from New York through Massachusetts and at elevated densities. Rust tide can cause shellfish to stop filtering, which in turn halts growth and can be lethal to shellfish. Rust tide’s emergence as a threat on the U.S. East Coast is a relatively recent phenomenon with events increasing in frequency since 2012.

In addition, a toxic *Pseudo-nitzschia* bloom, unprecedented in its intensity, scale and duration, forced the closure of shellfish beds across a good portion of Maine, Rhode Island, and Massachusetts. Certain *Pseudo-nitzschia* species can produce domoic acid, a biotoxin that can accumulate in shellfish, sardines, and anchovies. Eating seafood contaminated with domoic acid can cause amnesic shellfish poisoning, a public health concern that can lead to death in severe cases.

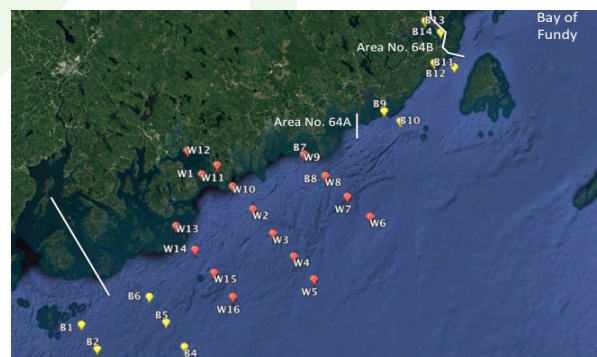
Initially seen in September in Maine waters, toxic *Pseudo-nitzschia* blooms produced domoic acid levels in shellfish which exceeded and remained above the regulatory limit for the first time ever. Several weeks later high *Pseudo-nitzschia* abundance also occurred in Rhode Island and Massachusetts. Both states instituted precautionary shellfish harvesting closures while conducting toxin analyses. NOAA’s National Centers for Coastal Ocean Science (NCCOS) Harmful Algal Bloom Event Response Program provided funding to the Woods Hole Oceanographic Institution (WHOI) and the Bigelow Laboratory for Ocean Sciences to support rapid sampling and mapping of the extent and toxicity of the bloom and oceanographic conditions which may have triggered the bloom. Results were shared with shellfish managers to inform decisions on shellfish harvest closures and openings. Weekly coordination calls between Maine, Rhode Island, and Massachusetts, WHOI, and NCCOS benefited responses of all impacted states.

“About five years ago, NCCOS and partners documented the presence of *Pseudo-nitzschia* species capable of producing toxins in Northeast waters and alerted shellfish managers to this potential threat,” said Dr. Quay Dortch NCCOS HAB Program Coordinator. “Research advances supported in large part by NOAA have made better detection technologies and monitoring tools available and added capacity that directly benefited efforts to rapidly respond to last Fall’s unprecedented bloom.”

NOAA, state and industry partners in the region are reviewing efforts from 2016 to facilitate better responses to anticipated future HAB events. At the recent Northeast Aquaculture Conference, NOAA (NMFS and NOS/NCCOS) fostered dialogue on this topic between agency, state, academic, and aquaculture industry representatives. As disruptions of aquaculture operations by HAB events are expected to increase, new partnerships with the industry are being explored.

NOAA and partners also continued preparing for the 2017 Gulf of Maine *Alexandrium* or Red Tide season. Annual blooms of the alga can produce toxins that can accumulate in shellfish. States in the region rigorously monitor for algal toxins in shellfish to protect public health and minimize economic impacts on the region’s shellfish industry.

Last November, NOAA and WHOI scientists completed their annual *Alexandrium* cyst sampling survey using the NOAA Ship *Pisces*, marking the fourth year of NOAA support for this joint effort. The team collected sediment core samples during the cruise in the Gulf of Maine. These core sample help determine the abundance of *Alexandrium* cysts, which falls to the bottom of the Gulf at the end of a bloom. Their germination in the spring restarts the *Alexandrium* bloom. Researchers are now determining the abundance of *Alexandrium* cysts present in these samples; data that will initiate models used to produce the 2017 Gulf of Maine Red Tide Forecast. NOAA is actively working to transition cyst cruises, predictive models, and other forecasting components into routine agency operations as part of the NOAA Operational HAB Forecasting System. Contact: Marc.Suddleson@noaa.gov



Multiple mapping cruises took place in early October (general extent shown above), covering both waters where shellfish closures have occurred and waters without closures but where blooms were present. Credit: K. Hubbard

NOAA in the Mid-Atlantic

More than two dozen attendees from four different NOAA line offices identified best practices, gaps and opportunities to increase NOAA's support for urban issues in the Mid-Atlantic. This NART-sponsored event was held in Philadelphia, PA on December 1 and was the first meeting of its kind since 2008.



Resilience in a Changing Environment was the focus for the meeting, with the context being on what NOAA is doing relating to urban issues. The Mid-Atlantic is one of the most densely populated areas in the nation and continues to grow rapidly. Because of this growth, there are many competing uses of the region's resources that affect the environment, coastal economies, and society. During the meeting, participants explored four topic areas: aquaculture, ecological forecasting, habitat protection and restoration, and social and economic issues. These topics have many intersections that participants discussed throughout the full-day meeting. Ideas were developed for new possible cross-line office actions/connections that NOAA can take to better serve constituents in these locations and in particular under-served communities.

"This meeting was important for rallying our NOAA expertise in the Mid-Atlantic around topics of large common interest. Discussions were focused and goal driven. Next we take what we have learned about each other, and the pressing environmental concerns in the urban Mid-Atlantic and turn those into collaborative science," said Dr. Thomas Noji, Chief of the Ecosystems and Aquaculture Division at the Northeast Fisheries Science Center. He and Suzanne Skelley, Director of the Cooperative Oxford Laboratory for the National Center's for Coastal Ocean Science, were among the planners of the meeting.

The NART looks forward to next steps from NOAA in the Mid-Atlantic as well as a possible meeting in FY18.

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Fisheries, Satellite and Environmental Data Workshop

"It was great meeting people there [NEFSC Lab in Narragansett, RI] and learning the use and needs of NOAA Fisheries of NCEI datasets. Thanks for making it happen."
- Dr. Hauai-Min Zhang

Dr. Zhang, NOAA's National Environmental Data Center (NCEI) Oceanographic Science and Development Branch, echoed the sentiments of many participants at the November 29 Fisheries, Satellite and Environmental Data Workshop. This NART-sponsored workshop was held in Narragansett, RI and was led by the Northeast Fisheries Science Center (NEFSC). It included presentations about satellite products available at the East Coast Node of NOAA CoastWatch, environmental data at NCEI, and an introduction to other satellite data products in development at NEFSC. Brief presentations from NEFSC scientists described their current projects and highlighted fisheries' satellite/environmental data needs.

Three working groups emerged from the workshop. The first will focus on data specific needs of fisheries scientists and will look at options for data delivery tools. The data products working group will develop a data "cheat sheet" that will include descriptions of existing data products, where to get them and who to contact. This group will also formally identify fisheries-specific data product needs and create use cases for new product development. The third working group will work towards developing a bottom temperature product for the Northeast Continental Shelf region.

This workshop successfully connected people and resources across line offices to address regional data needs and products. In addition, there is interest in having a follow-up workshop mid-FY'18 to discuss the progress of the current working groups and to identify additional collaborative projects.

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Did You Know?

Northeast & Mid-Atlantic Ocean Plans

On December 7, the National Ocean Council (NOC) finalized the Nation's first ocean plans, taking a historic step toward fulfilling President Obama's commitment to healthy ocean ecosystems and a strong, sustainable marine economy. The two regional plans, the Northeast Ocean Plan and the Mid-Atlantic Ocean Action Plan, promote the use of integrated ocean data and best practices for informed and efficient management of the Nation's shared marine resources. This approach is designed to work across all levels of government and to advance economic, environmental, and cultural priorities within each region. In addition to years of historic collaboration among states, tribes, Federal agencies, and Fishery Management Councils, the Plans are a result of extensive participation and input from marine stakeholders representing fishing, recreation, energy, transportation, telecommunications, and many other interests.

In order to improve access to ocean information, both Plans build on a foundation of thousands of new maps that are publicly accessible through the Northeast and Mid-Atlantic Data Portals. This extraordinary new generation of data products has been developed to include a vast array of marine resources, including ecosystem information on 150 species of marine mammals, seabirds, and fish, and a wide range of information on human activities including fishing, recreation, shipping, and renewable energy. The data portals allow



scientists, stakeholders, and the public to easily obtain and use information about the marine environment and engage in decision-making processes. The new data products developed for the Plans make the data portals an even more powerful tool for everyone with an interest in the ocean environment.

In addition to making new data and information available, the Plans support efficient and responsive government by describing best management practices to guide effective interagency coordination, and ensuring that agencies use the data to inform planning and environmental review of new activities. The Plans also will support healthy ocean ecosystems by describing and initiating a process to identify ecologically significant areas.

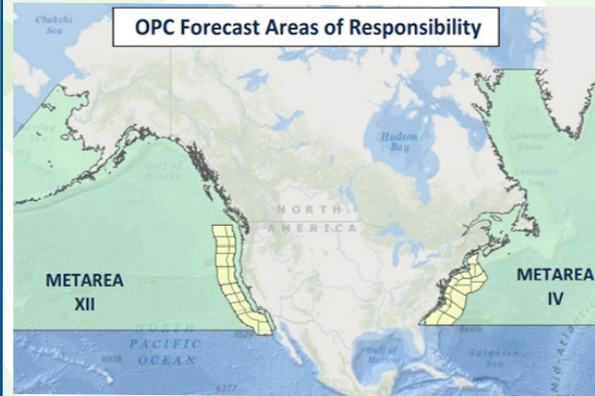
For more information check out:

Northeast Plan: <http://neoceanplanning.org/>
Mid-Atlantic Plan: <http://midatlanticocean.org/>

Contact: Betsy.Nicholson@noaa.gov or Kevin.Chu@noaa.gov

NOAA Place in the North Atlantic Profile

Ocean Prediction Center



The Ocean Prediction Center (OPC), was established in 1995, however, the basis for OPC's mission can be traced back to the sinking of the Titanic in April 1912. In response to that tragedy, an international commission was formed to determine requirements for safer ocean voyages.

OPC's Ocean Forecast Branch issues warnings and forecasts in print (bulletins) and graphical formats, on a 24x7 basis up to five days in advance. Over 150 of these products are issued daily. OPC covers the North Atlantic Ocean from the west coast of Europe to the U.S. and Canadian east coast and the North Pacific Ocean from the U.S. and Canadian west coast to the east coast of Asia. The weather forecasts and warnings for these areas primarily ensure the safety of ocean-crossing commercial ships and other vessels on the high seas. Imbedded in these high seas areas are smaller offshore zones off the Atlantic and Pacific coasts. These zones extend from near the coast seaward to just beyond the U.S. Exclusive Economic Zones, out to about 250 nm. OPC services ensure the safety of the extensive commercial and recreational fishing, boating, and shipping activities in these offshore waters.

OPC is located at the NOAA Center for Weather and Climate Prediction in College Park, MD. It has a staff of 27 federal employees, 2 contracted employees, and 1 NOAA Corps officer. Thomas Cuff is the Director.

For more information about OPC visit: <http://www.opc.ncep.noaa.gov/>

NOAA People in the North Atlantic Region

LCDR James Brinkley

Regional Coordinator for the NART

LCDR Brinkley is a NOAA Commissioned Officer with a background in meteorology and public administration. He serves as a maritime operational specialist providing environmental intelligence to NOAA to advance our Nation's natural security. He was commissioned in March 2005 and has completed tours at the National Ice Center in the Washington, DC area, served aboard NOAA Ship *Ronald H. Brown* based in Charleston, South Carolina, forecasted tropical weather out of the National Hurricane Center in Miami, Florida, and served as Executive Officer aboard NOAA Ship *Okeanos Explorer* based in Davisville, Rhode Island.

What are your duties and areas of responsibility?

On January 30th, I start an assignment as NOAA's North Atlantic Regional Team Coordinator. The Regional Coordinator helps improve the value and visibility of NOAA in the region through an extensive collaboration network.

What do you consider your most significant achievements as a NOAA employee?

There are two notable events in my career that stand out. One was being on duty at the National Hurricane Center during Sandy's landfall. My tenure at NHC was almost entirely devoted to helping implement a graphic that could easily communicate threats from storm surge. I consider it some of the most important work I've ever undertaken. This is a project that has been years in the making and required great oversight to see its successful transition. I'm proud to have been a part of the team at one time during its implementation. A very close second was standing bridge watch in the waters off Pearl Harbor during the 75th anniversary while conducting submersible operations on a sunken Japanese mini-sub. Being in the presence of such an arti-

fact provided an reaffirmed sense of duty as a commissioned officer. I feel enormously fortunate to have been apart of team that provided live footage that was seen around the world to millions of viewers and garnished so many favorable comments.



How does what you do impact the public and why is it important?

Our oceans remain our last terrestrial frontier - to understand, manage, and protect the ocean and its resources, it is critical to support a program rooted in ocean exploration. The use of technology to explore, discover, inform, educate, and motivate supports key NOAA, national, and international goals related to a better understanding of the ocean that will benefit current and future generations.

What is your favorite part of your job that makes you feel most fulfilled?

I get to stand among the front lines of exploration and work among some of the most prestigious names in any number of scientific fields. I enjoy being given the opportunity to travel and that I face new challenges everyday. Seldom does one day repeat the next.

What is your favorite motto? And/or your favorite hobby?

Motto: Miracles immediately...the impossible takes a little longer.

Hobby: I enjoy civil aviation, cooking pit fire BBQ, and auto racing. Those hobbies seem to appeal to both sides of my brain and provide an ideal outlet to step back and relax when time permits.

What would you recommend to those who want to begin a career at NOAA?

Working for NOAA is the best thing that ever happened to me. It has given me glimpses into a number of dream jobs that I had never once considered. Because NOAA's role is so broad, I recommend that any prospective applicant consider taking a role that allows you to fit your personal life, supports your professional interest, allows you to demonstrate your potential, and keeps you engaged. For me, that seems to have been the perfect recipe for success.

NART Background

The NART is one of eight regional teams created by NOAA's Regional Collaboration effort. It is composed of 18 members from five line offices and is currently led by Jason Tuell. LCDR James Brinkley is on assignment as the NART Regional Coordinator. For more information on team members and activities visit: http://www.regions.noaa.gov/north_atlantic