Phytoplankton Monitoring Network

National Coastal Data Development Center
www.ncddc.noaa.gov

Data management supporting regional volunteer phytoplankton monitoring efforts

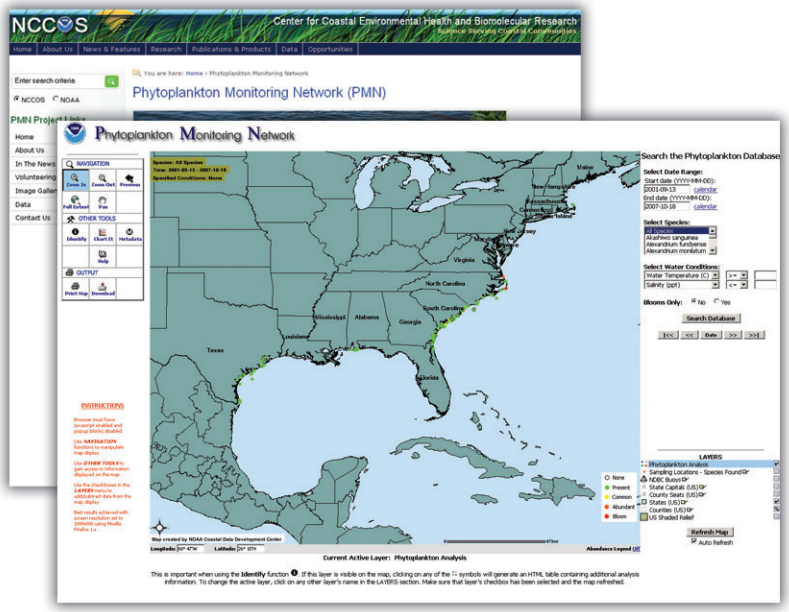
The Phytoplankton Monitoring Network (PMN) is an outreach program for monitoring marine phytoplankton and harmful algal blooms. Marine phytoplankton are single-celled aquatic plants or microalgae that form the base of the ocean's food chain, but large numbers of toxic phytoplankton occasionally grow rapidly and create a harmful algal bloom. The estimated negative economic impact of blooms on fishing, recreation, and public health in the United States averages $75 million annually.

Developed within NOAA's Marine Biotoxin Program and located at the Center for Coastal Environmental Health and Biomolecular Research in Charleston, SC, the PMN's mission is to promote a better understanding of harmful algal blooms by way of volunteer monitoring. Since its inception in 2001, PMN has expanded to more than 300 sites throughout the coastal United States (including Alaska and Hawaii), and the Caribbean. Volunteer groups are trained by NOAA to collect data. These groups have found more than 120 harmful algal bloom events, including several toxic events that threaten public safety. Volunteers include grades 4-12, colleges and universities, aquariums, state parks, national estuarine research reserves, national marine sanctuaries, museums, nonprofit organizations, master naturalists, master gardeners, and independent volunteers.

NOAA's National Coastal Data Development Center partnered with the PMN to create an Internet-based data-management system that makes it easier for the volunteers to provide their observations. Volunteers use a password-protected data entry tool that offers such features as gross error checking to improve data accuracy. After uploading their data to the website, volunteers can then visualize and analyze their own data, as well as data from other volunteers, by using an Interactive Map Service hosted by the National Coastal Data Development Center (http://www.ncddc.noaa.gov/website/PMN/viewer.htm). In addition to the observations provided by the volunteers, the map also provides real-time ocean temperature data from NOAA data buoys, allowing students to make testable predictions about phytoplankton occurrences prior to sampling. Finally, the volunteers' observations are uploaded from the PMN data entry website to NOAA's National Oceanographic Data Center for archival, ensuring long-term access to this unique data set.

Online mapping interface

Through the online map interface, you can select to plot the abundance of a particular phytoplankton species being recorded in the database. Views can be further refined by inputting specific timeframes, specific species, and/or specific water conditions, such as water temperature or salinity.



Project Partners:

- Center for Coastal Environmental Health and Biomolecular Research
- NOAA's National Ocean Service

For more information:

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- Please visit our website: **http://www.chbr.noaa.gov/PMN**

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