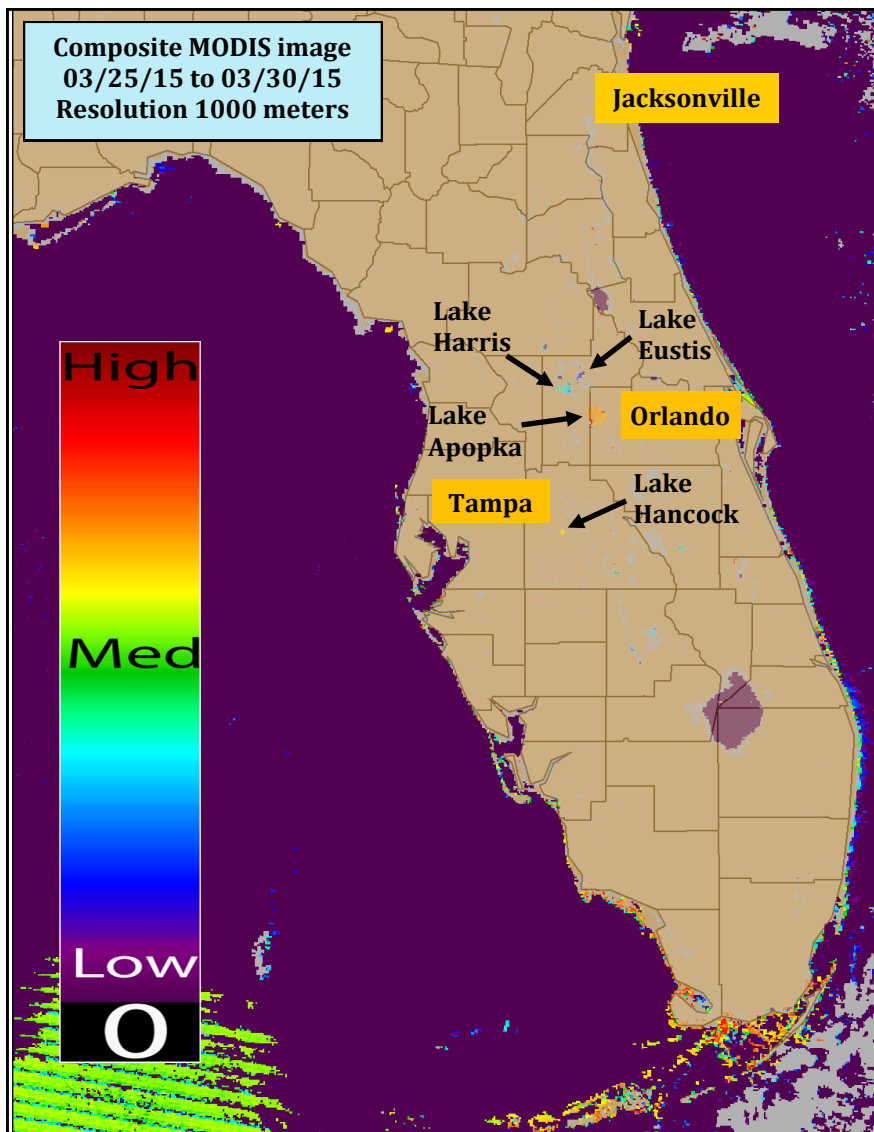


To report an illness related to a freshwater, estuarine, marine toxin or harmful algal bloom, please contact the Florida Poison Information Center at 1-800-222-1222.

Images/data are obtained from Florida Fish and Wildlife Research Institute, Florida Water Management Districts, National Oceanic and Atmospheric Administration (NOAA), NOAA National Climatic Data Centers and National Weather Centers. This report was produced through a collaboration between the Florida Department of Health Water Toxins Program (WTP) and the NOAA Center for Coastal Monitoring and Assessment.

Composite MODIS image  
03/25/15 to 03/30/15  
Resolution 1000 meters



## CyanoHAB Conditions Report

- As indicated in the true color image on page 2, cloud cover was present around various areas of the state throughout the imagery period (03/25/2015-03/30/2015).
- Lake Eustis (Lake County) displayed low estimated elevated chlorophyll-a concentrations.
- Lake Harris (Lake County) displayed medium estimated elevated chlorophyll-a concentrations.
- Lake Apopka (Orange/Lake Counties) displayed medium estimated elevated chlorophyll-a concentrations.
- Lake Hancock (Polk County) displayed medium estimated elevated chlorophyll-a concentrations.

## Cyanobacteria and Algae Blooms: Review of Health and Environmental Data from the Harmful Algal Bloom-Related Illness Surveillance System (HABISS) 2007-2011

*toxins*

By Lorraine C. Backer, Deana Manassaram-Baptiste, Rebecca LePrell, and Birgit Bolton

*Toxins* 2015, 7, 1048-1064; doi:10.3390/toxins7041048

**Abstract:** Algae and cyanobacteria are present in all aquatic environments. We do not have a good sense of the extent of human and animal exposures to cyanobacteria or their toxins, nor do we understand the public health impacts from acute exposures associated with recreational activities or chronic exposures associated with drinking water. We describe the Harmful Algal Bloom-related Illness Surveillance System (HABISS) and summarize the collected reports describing bloom events and associated adverse human and animal health events. For the period of 2007-2011, Departments of Health and/or Environment from 11 states funded by the National Center for Environmental Health (NCEH), Centers for Disease Control and Prevention contributed reports for 4534 events. For 2007, states contributed 173 reports from historical data. The states participating in the HABISS program built response capacity through targeted public outreach and prevention activities, including supporting routine cyanobacteria monitoring for public recreation waters. During 2007-2010, states used monitoring data to support 196 public health advisories or beach closures. The information recorded in HABISS and the application of these data to develop a wide range of public health prevention and response activities indicate that cyanobacteria and algae blooms are an environmental public health issue that needs continuing attention. The full text is available at <http://www.mdpi.com/2072-6651/7/4/1048>.

## Marine Update: *Karenia brevis* Bloom

**Red Tide Status - FWC/FWRI 4/3/2015:** *Karenia brevis*, the Florida red tide organism, was found in background concentrations in one sample collected alongshore of Charlotte County and in one sample collected alongshore of Escambia County. Additional samples collected throughout Florida this week did not contain *K. brevis*. For additional information, see <http://myfwc.com/research/redtide/statewide/>.

**Red Tide Health Effects - NOAA 3/30/2015:** *Karenia brevis* ranges from not present to background concentrations along the coast of southwest Florida, and is not present in the Florida Keys. No respiratory irritation is expected alongshore southwest Florida Monday, March 30 through Monday, April 6.

Check [http://tidesandcurrents.noaa.gov/hab/beach\\_conditions.html](http://tidesandcurrents.noaa.gov/hab/beach_conditions.html) for recent, local observations.

MODIS Images display a chlorophyll-a index generated with a Moderate Resolution Imaging Spectroradiometer provided by the National Aeronautics and Space Administration (NASA)

Very low likelihood of a bloom



May indicate clouds or missing data



Low estimated chlorophyll-a concentrations



Medium estimated chlorophyll-a concentrations



Higher estimated chlorophyll-a concentrations



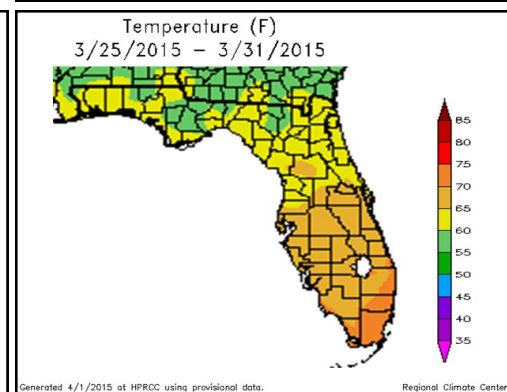
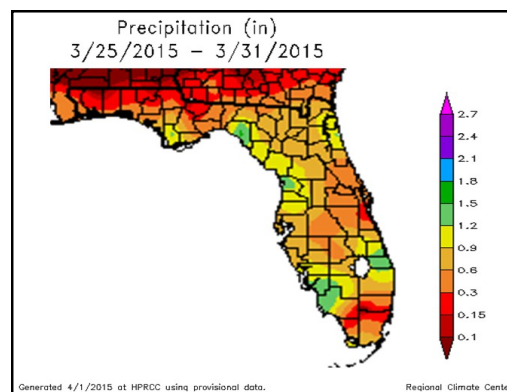
## Interpreting Moderate Resolution Imaging Spectroradiometer Data

- The Moderate Resolution Imaging Spectroradiometer (MODIS) is deployed by NASA onboard the Terra (EOS AM) and Aqua (EOS PM) satellite. It passes over the Earth, collecting new imagery every 1-2 days.
- This imagery is used as a surveillance tool. Data collected by the MODIS sensor are used to generate a chlorophyll-a index, which is used to forecast harmful algal blooms. The results are not specific to any one HABs species, and should be followed-up with onsite field observations. Data is only suggestive of a potential HAB event.
- MODIS uses a spectral band that is much coarser than MERIS; therefore, only select larger water bodies in FL are visible using this technology.
- MODIS is better at depicting low to medium chlorophyll-a concentrations. Once a potential bloom is depicted, a switch in algorithms may be used to improve the visibility. MODIS has a few spectral bands, which have higher resolution that are more comparable to MERIS. However, these bands do not cover all of FL.
- Several environmental factors may affect how results can be interpreted. For example, areas with abundant aquatic vegetation may present with a high chlorophyll-a index resulting in a false positive bloom reading.
- The sensor identifies biomass near the surface (in the upper few feet of water). As a result, it may underestimate the total biomass for blooms that are mixed or dispersed through the water column.
- While patches of red or warm colors may indicate higher chlorophyll-a concentrations, these data have not been verified in most cases using ground-truth methods.

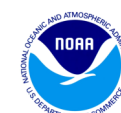
## Weather Conditions: Precipitation and Temperature - 03/25/15 to 03/31/15

- Weather conditions can impact the duration and location of blooms and the satellite imagery shown in this report may no longer be relevant.
- Images represent the last image taken with a realization that blooms may have moved, dissipated or intensified.
- Cloud coverage can obscure imagery and create patches or gray areas on map and obscure bloom detection.

MODIS True Color Image  
March 29, 2015



To review HABs satellite reports in the Gulf of Mexico and marine waters visit the NOAA Harmful Algal Bloom Operational Forecast System bulletin archive at:  
<http://tidesandcurrents.noaa.gov/hab/bulletins.html>



For Individual Weather Station Data, visit:  
<http://www.sercc.com/climate>

For information, please contact:  
Laura Morse, Public Health Toxicology Program, at 850.245.4444 x 2080 or [laura.morse@flhealth.gov](mailto:laura.morse@flhealth.gov)