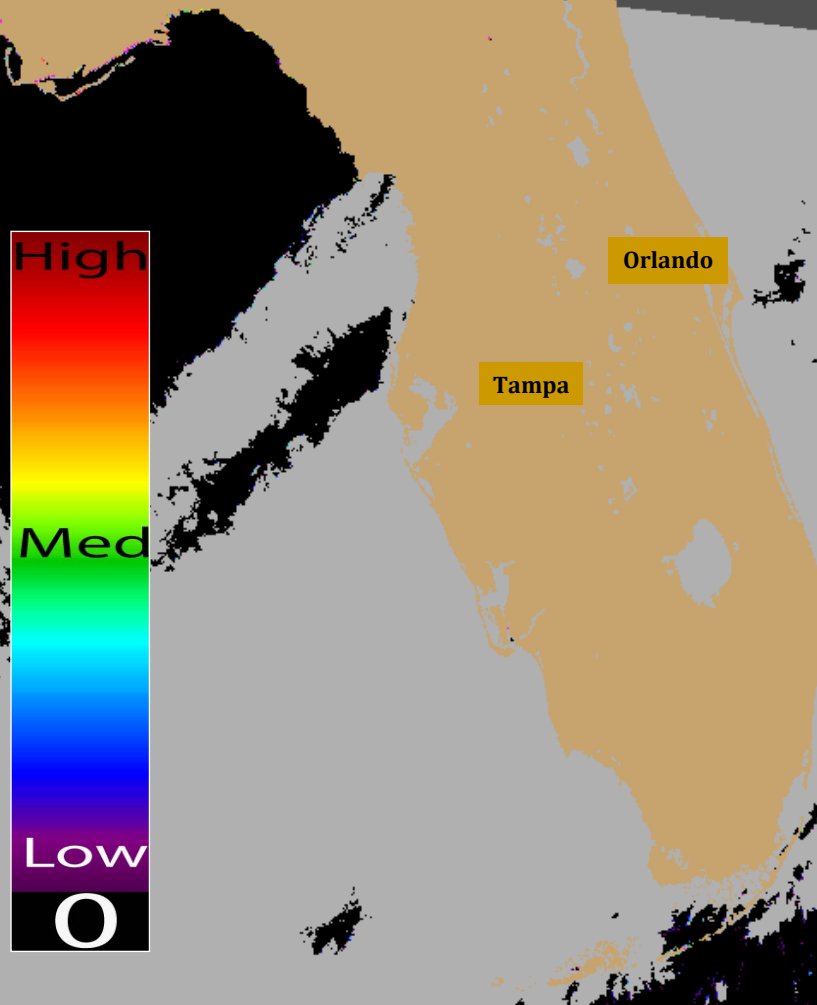


To report an illness related to a freshwater, estuarine, marine toxin or harmful algal bloom, please contact the Florida Poison Information Center at 1-800-222-1222. Images/data obtained from Florida Fish and Wildlife Research Institute, Florida Water Management Districts, National Oceanic and Atmospheric Administration (NOAA), NOAA National Climatic Data Centers and National Weather Centers. Support to produce this report from NOAA/NASA Contract NNH08ZDA001N.

January 14, 2014  
MODIS Aqua  
Resolution 1100 meters



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

## CyanoHAB Conditions Report

- Due to significant cloud cover over much of the state (see true color image on page 2), no usable MODIS image is available for this week's bulletin.

## New Research on Monitoring and Detection of Cyanobacteria



### State Inland HAB Discussion Group Webinar: New Research on Monitoring and Detection of Cyanobacteria and Cyanotoxins — January 14, 2014

#### PRESENTERS

Dr. S. Morton: [Citizen Scientist Monitoring HABs and Changes in Environmental Conditions](#)  
 Dr. Richard Stumpf: [Remote Sensing of Lake Harmful Algal Blooms, What we've Learned](#)  
 Donna Francy, M.S.: [Molecular Methods for Detecting and Quantifying Cyanobacteria](#)

Presentations and the contact information for the presenters are posted here:  
<http://www2.epa.gov/nutrient-policy-data/webinar-january-14-2014>

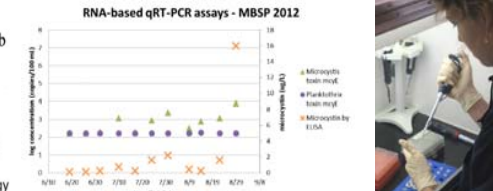
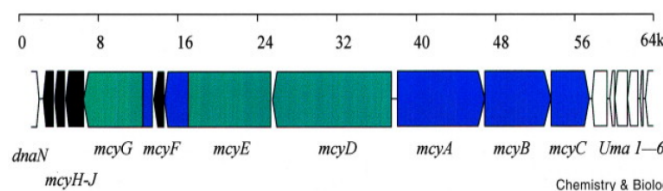
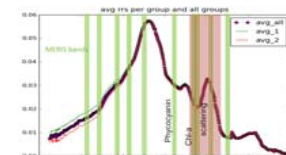
#### PHYTOPLANKTON IMPORTANCE



#### Remote sensing reflectance

$$R = f b_p / a$$

$$[\text{absorption}] a = a_w + a_{\text{phyto}} + a_{\text{sed}} + a_{\text{dissolved}}$$



**\*\* Due to background levels of *K. brevis* off Florida's SW coast, status reports for Florida red tide will be suspended until bloom conditions reoccur.**

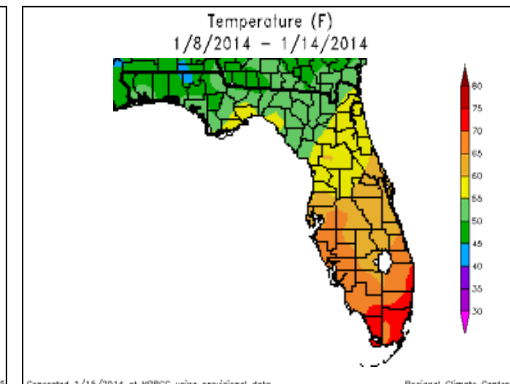
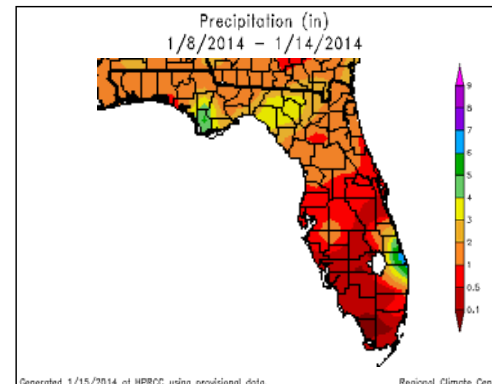
## Interpreting Moderate Resolution Imaging Spectroradiometer Data

- 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 which 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 so 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 although 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 Chl-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 - 01/08/14 to 01/14/14

- 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.

January 14, 2014 MODIS Aqua True Color Image



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/perspectives>

For information, please contact:  
Andrew Reich, Public Health Toxicology Program at  
850.245.4187 or  
[andy.reich@flhealth.gov](mailto:andy.reich@flhealth.gov)