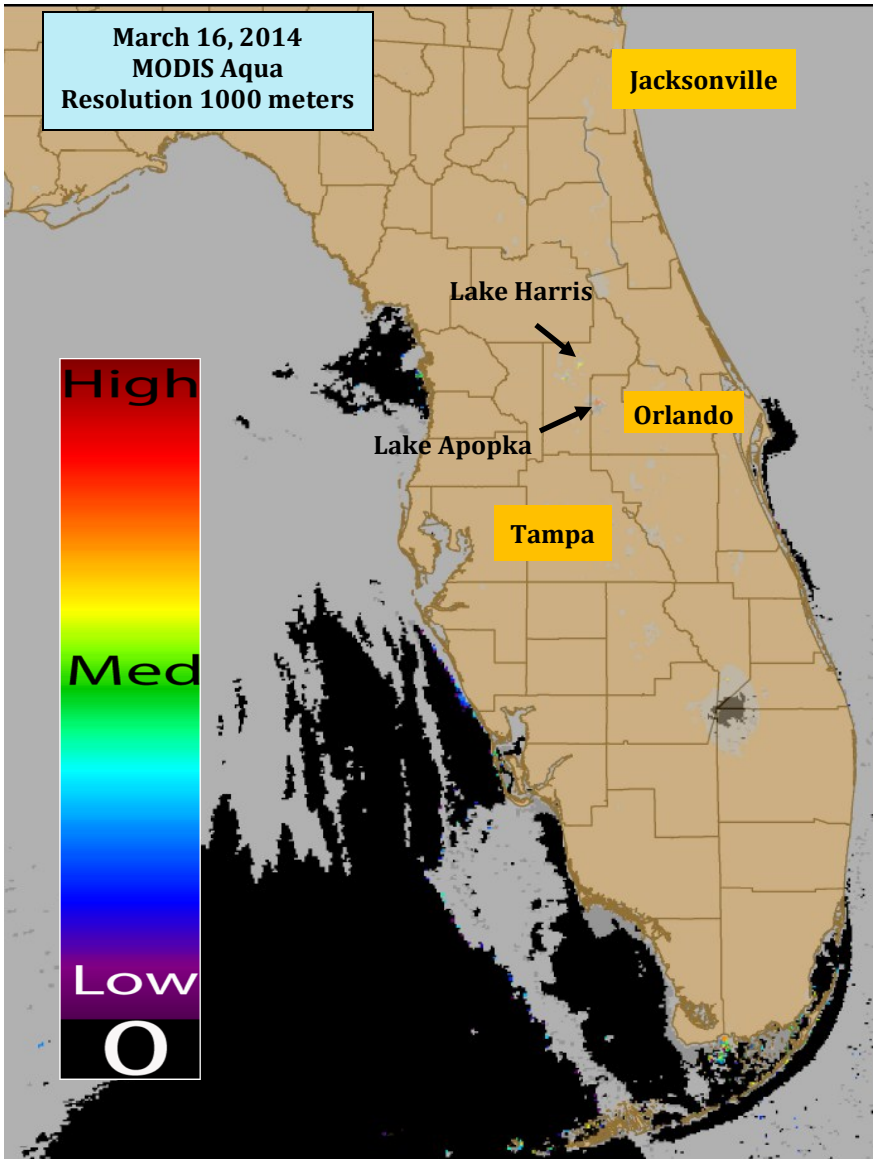
# Inland Harmful Algal Blooms Health Bulletin: March 20, 2014

***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.




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

- Lake Apopka (Orange/Lake Counties) displayed a high estimated elevated chlorophyll-a concentration.
- Lake Harris (Lake County) displayed medium estimated elevated chlorophyll-a concentrations.

## Volusia County considers limiting fertilizer ...

THE DAYTONA BEACH NEWS-JOURNAL
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### Volusia County considers limiting fertilizer to protect waterways

March 15, 2014 - The Volusia County Council will consider following the lead of cities and counties along the Indian River Lagoon system by adopting a countywide fertilizer ordinance at its April 3 meeting. For now, based on a March 6 council vote, the county expects to approve a model ordinance provided by the state of Florida. However, county officials also will ask the state to review two more restrictive items that could be added to the ordinance: a requirement for slow-release fertilizer and a ban on phosphorus. The purpose of the ordinance, county officials said, would be to protect the quality of the groundwater and waterways, such as Mosquito Lagoon, St. Johns River and the springs: Blue, Gemini, Green and DeLeon. County environmental officials said studies have shown excessive amounts of nitrogen and phosphate found in fertilizers can have harmful impacts in springs and other waterways. The Council voted five to one in favor of the changes at its March 6 meeting. Councilman Josh Wagner, who originally proposed the fertilizer ordinance, voted against the ordinance, saying he wanted to see exemptions for licensed applicators, such as lawn maintenance companies. That same day, the Brevard County Commission voted unanimously to adopt a more restrictive fertilizer ordinance, after a lengthy contentious debate. The Brevard action follows votes by other cities and counties over the past six months as local governments reacted to the developing crisis in the Indian River Lagoon system. Since 2011 the Lagoon has experienced waves of heavy toxic algae blooms, the loss of 47,000 acres of sea grass and the unexplained deaths of hundreds of dolphins, manatees and pelicans. The new Brevard ordinance banned the use of fertilizers with nitrogen or phosphorus on landscape plants and turf grass between June 1 and Sept. 30, expanded the fertilizer-free zone along waterways from 10 to 15 feet, stipulated that only no phosphate fertilizer can be applied to turf or landscape plants without a soils deficiency test and eliminated an exemption for golf courses, parks and athletic fields....For the complete article, see [http://www.news-journalonline.com/article/20140315/NEWS/140319524?p=all&tc=pgall](http://www.news-journalonline.com/article/20140315/NEWS/140319524?p=all&tc=pgall)

**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.**

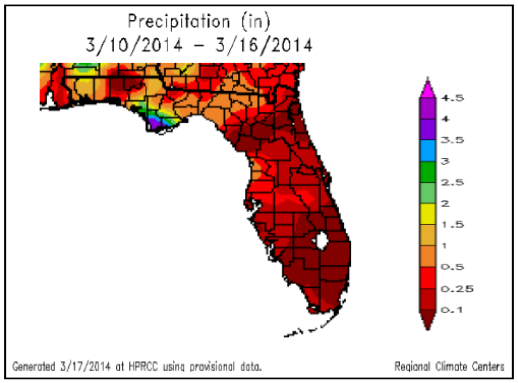
# Interpreting Moderate Resolution Imaging Spectroradiometer Data

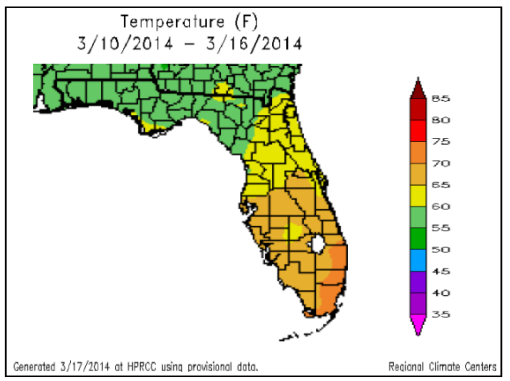
- The Moderate Resolution Imaging Spectroradiometer (MODIS) is deployed by NASA onboard the Terra (EOS AM) and Aqua (EOS PM) satellite. It passes over the earth, collecting new imagery every 1-2 days.
- This imagery is used as a surveillance tool. Data collected by the MODIS sensor are used to generate 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 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 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 - 03/10/14 to 03/16/14

- 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.

**March 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: Laura Morse, Public Health Toxicology Program at 850.245.4444 x 2080 or laura.morse@flhealth.gov