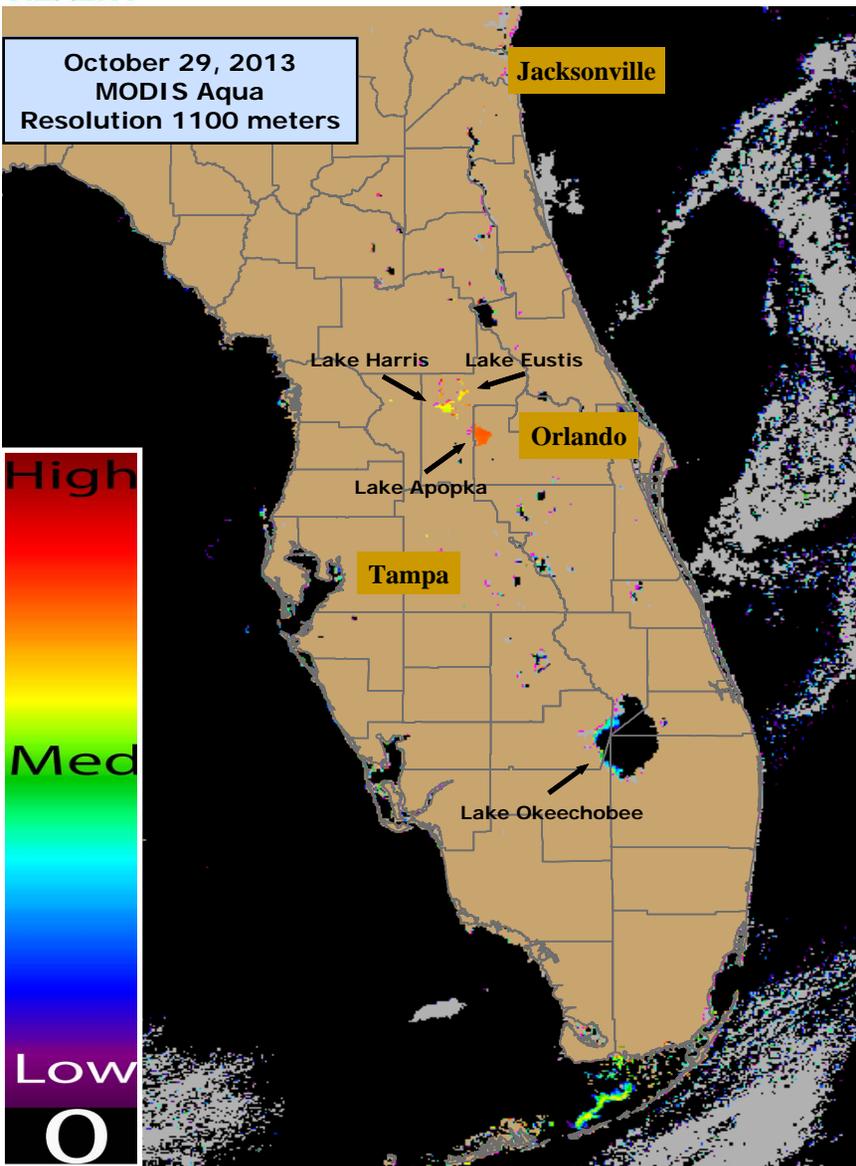


To report an illness related to a marine toxin or algal bloom contact the Florida Poison Information Center at 1-800-222-1222.

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

Inland CyanoHAB Conditions Report

- Lake Apopka (Orange and Lake Counties) displayed high estimated elevated chlorophyll-a concentrations.
- Lakes Harris and Eustis (Lake County) displayed medium estimated elevated chlorophyll-a concentrations.

Blooms Bite the Hand That Feeds Them



Science 25 October 2013:
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DOI: 10.1126/science.1245276



In recent decades, nutrient over-enrichment (eutrophication) and climate-change effects have led to a rise in toxin-producing cyanobacterial harmful algal blooms (CyanoHABs) in freshwater systems worldwide. Microcystin, the most ubiquitous cyanotoxin, is a serious drinking water threat due to its potent liver toxicity and carcinogenic potential. The distribution of microcystin synthetase (*mcy*) genes across many genera suggests that production of this metabolite was a widely shared trait early in cyanobacterial evolution. However, not all cyanobacterial strains have retained this pathway. There is growing evidence that oxidative stressors in high-irradiance surface waters, where blooms accumulate, select for toxigenic strains over their nontoxic counterparts. E-mail: hans_paerl@unc.edu

FDACS Closes Shellfish Area # 5602 due to *K. brevis*

The Florida Department of Agriculture and Consumer Services (DACS) is temporarily closing the following shellfish area at sunset on Wednesday 10/30/13 for the harvest of oysters, clams, and mussels. [In this context, shellfish does not include scallops, shrimp, or crabs.] #5602 Lemon Bay Shellfish Harvest Area CHARLOTTE/SARASOTA; Basis for Action: Precautionary emergency closure due to possible presence of red tide and conditions defined in Chapter 5L-1.003(8), Florida Administrative Code. If you have any further questions concerning the closure of shellfish harvesting areas please contact Chad Evers or Yamilet Santana at (941) 613-0954.

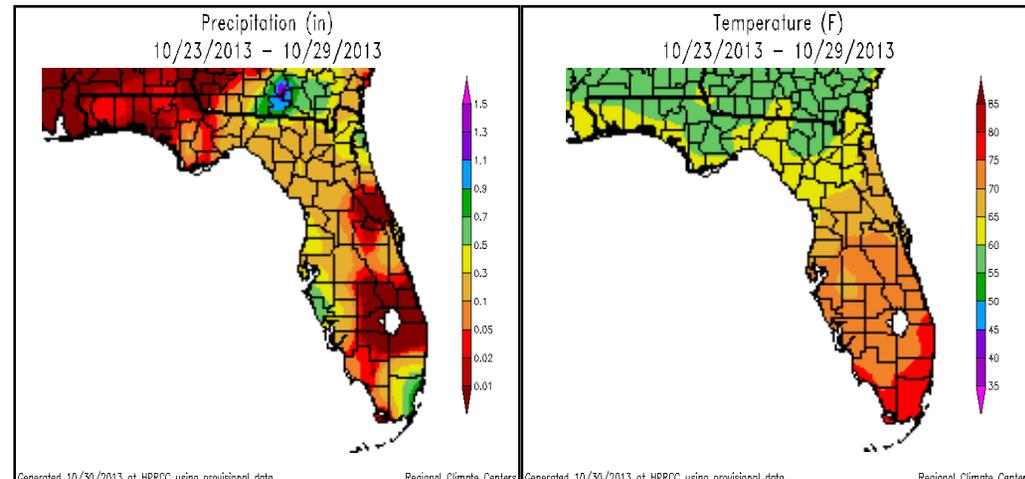
Interpreting Moderate Resolution Imaging Spectroradiometer Data

- 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 - 10/23/13 to 10/29/13

- 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.

October 28, 2013
MODIS Aqua True Color Images



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/>



For Individual Weather Station Data-Visit:
<http://www.sercc.com/perspectives>

Questions about the bulletin or suggestions- Contact
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