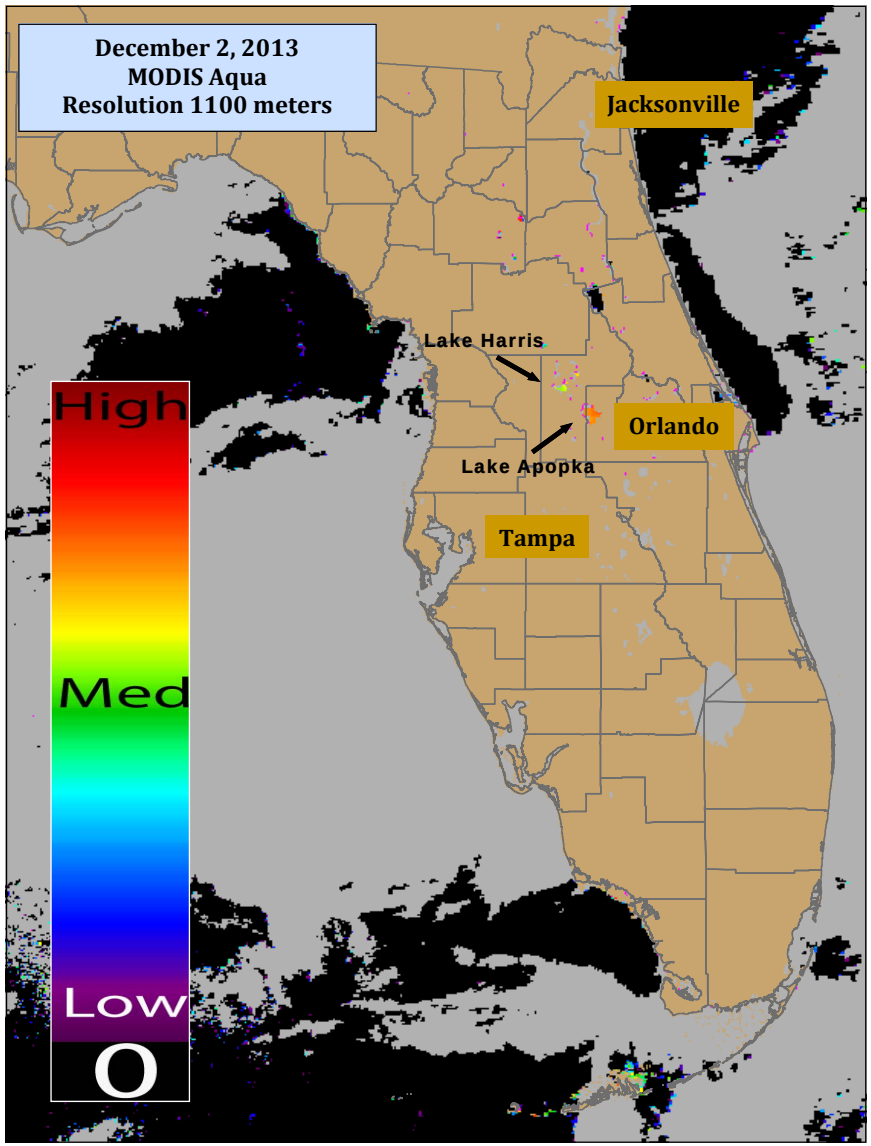
Inland Harmful Algal Blooms Health Bulletin: December 5, 2013

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

Ocean Biology Processing Group (OBPG)

The OceanColor data facility at GSFC archives and distributes ocean color data from several sensors, including MODIS Aqua, SeaWiFS, OCTS, and CZCS, as well as sea surface temperature data from Terra and Aqua MODIS. SeaWiFS data access is restricted to authorized users; new users can request authorization using an online application form.

Data Access: OceanColor provides access to data and information through the OceanColor Web. Users can visually search the ocean color data archive and directly download and/or order data from single files to the entire mission using the Level 1 and 2 Browser. Using the Level 3 Browser, users may also browse the entire Level 3 global ocean color data set for many parameters and time periods and download either PNG images or digital data in HDF format. In addition, the OceanColor Project maintains several FTP sites containing the most popular data products including the complete Level 3 data archive. **Specialty:** Ocean Biology; Ocean Color; Biogeochemistry; Sea Surface Temperature. See https://earthdata.nasa.gov/data/data-centers/obpg

K. brevis Florida Red Tide: SW Florida Coast

FWRI/FWC (November 27, 2013) A bloom of *Karenia brevis* ... was detected this week in, along and offshore of southern Lee to northern Collier County with levels ranging from background to medium concentrations. ... Respiratory irritation and a fish kill were reported at the Delnor-Wiggins State Park (Collier County). Fish kills were also reported inside of northern Charlotte Harbor, stretching from Pirate Harbor on the east side to Cape Haze on the west side and north to Punta Gorda Isles. For NOAA Gulf of Mexico HAB Bulletin visit: http://tidesandcurrents.noaa.gov/hab/bulletins.html].

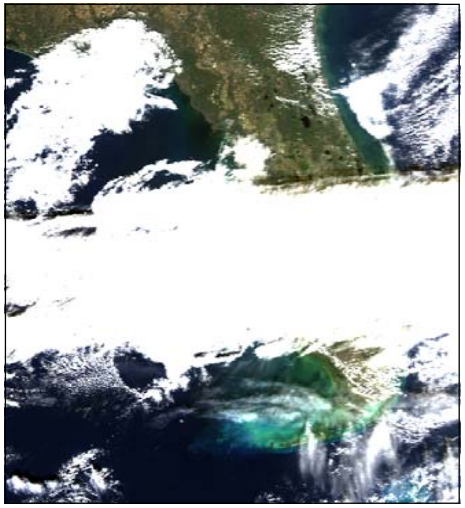
Interpreting Moderate Resolution Imaging Spectroradiometer Data

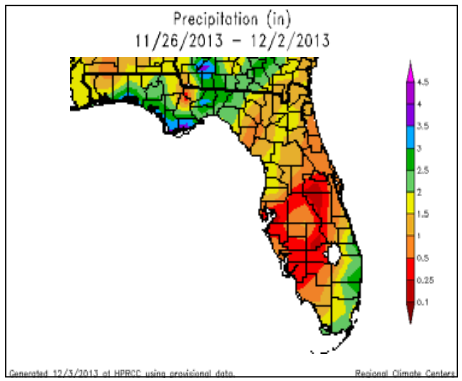
- The Moderate Resolution Imaging Spectroradiometer (MODIS) is deployed by NASA onboard the Terra (EOS AM) and Aqua (EOS PM) satellite. It passes over the earth, collecting new imagery every 1-2 days.
- This imagery is used as a surveillance tool. Data collected by the MODIS sensor are used to generate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

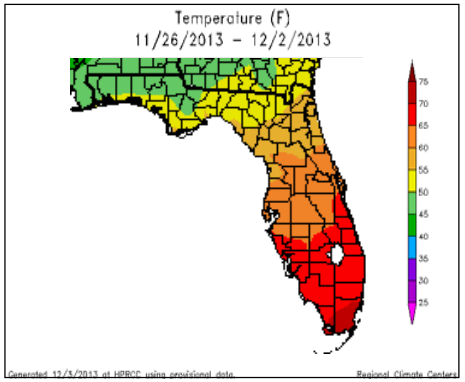
Weather Conditions: Precipitation and Temperature - 11/26/13 to 12/02/13

- 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.

December 2, 2013
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