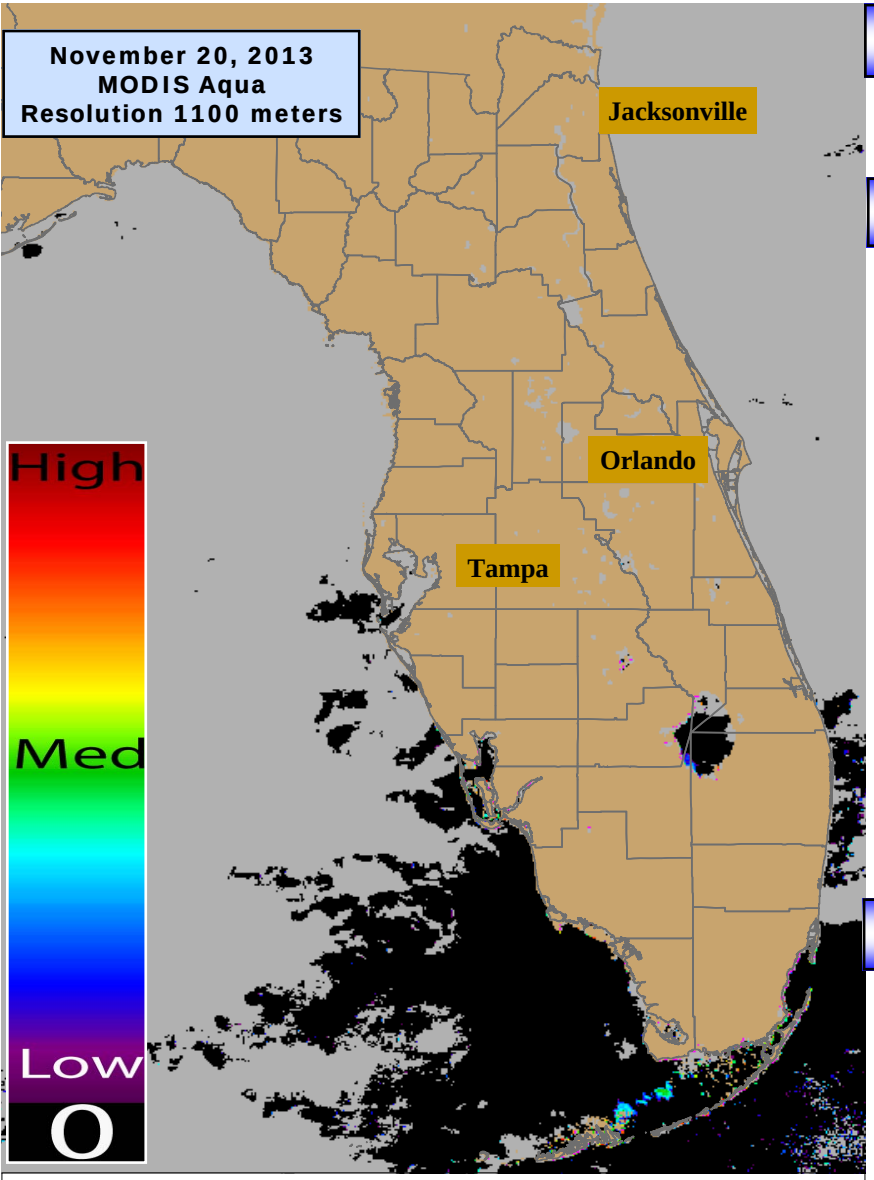
Inland Harmful Algal Blooms Health Bulletin: November 21, 2013

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

- Large water features in Florida were unremarkable on the 1100 meter resolution MODIS Aqua image.

Indian River Lagoon Superbloom Research Grant

SPACE COAST DAILY .com

November 19, 2013

Kevin Johnson, Florida Tech Associate Professor of oceanography and environmental science ...has received $250,000 from the St. Johns River Water Management District. He will track the factors affecting the Indian River Lagoon (IRL) superbloom in the northern lagoon. "Algae should be eaten by herbivores, but IRL algae have been blooming out of control in spite of grazers," said Johnson. "My research will focus on the distribution and abundance of herbivores in the field and on lab tests to examine the diets and feeding rates of grazers, including their potential to consume nuisance algae." ... Johnson is currently conducting field monitoring of critical sites between Melbourne and Titusville, sampling zooplankton fortnightly with the hope of better understanding the grazers in the algal bloom ecosystem. See: http://spacecoastdaily.com/2013/11/florida-techs-johnson-earns-grant-to-study-lagoon/

K. brevis Florida Red Tide: SW Florida Coast

FWRI/FWC (November 15, 2013) *Karenia brevis* was detected in water samples collected this week ranging from background to medium concentrations at several locations in and alongshore of southern Charlotte County south to mid Lee County with the highest concentrations reported south of Cabbage Key (Pine Island Sound System, Lee County). One sample collected offshore of northern Sarasota County contained very low concentrations of *K. brevis*. Additional samples collected in Florida waters this week did not contain *K. brevis*. [For NOAA Gulf of Mexico HAB Bulletin visit: http://tidesandcurrents.noaa.gov/hab/bulletins.html].

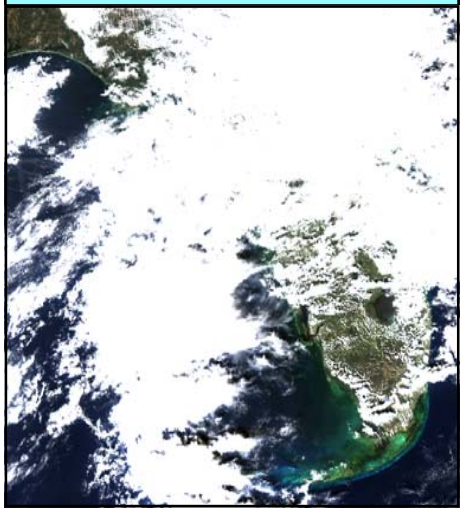
Interpreting Moderate Resolution Imaging Spectroradiometer Data

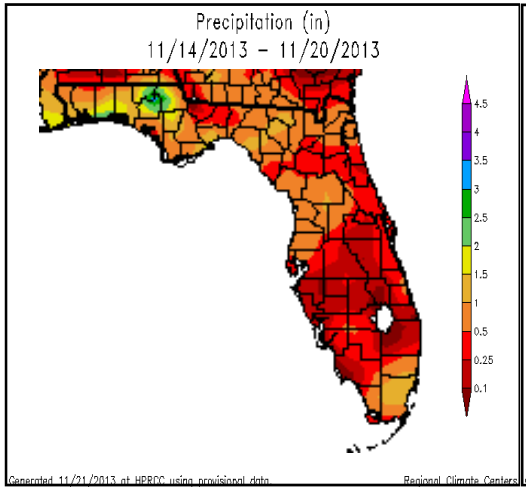
- The Moderate Resolution Imaging Spectroradiometer (MODIS) is deployed by NASA onboard the Terra (EOS AM) and Aqua (EOS PM) satellite. It passes over the earth, collecting new imagery every 1-2 days.
- This imagery is used as a surveillance tool. Data collected by the MODIS sensor are used to generate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

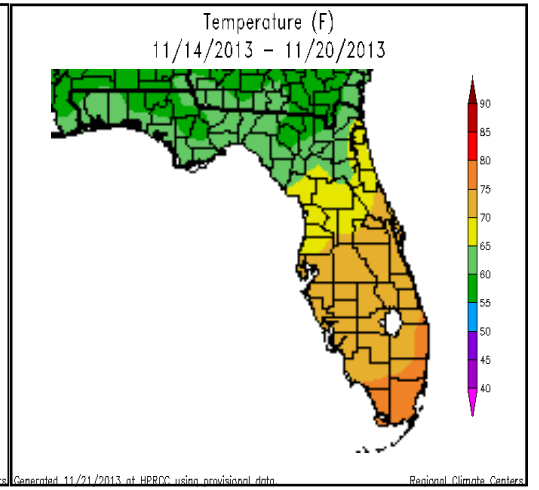
Weather Conditions: Precipitation and Temperature - 11/14/13 to 11/20/13

- 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.

November 20, 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/

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

Questions about the bulletin or suggestions- Contact
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