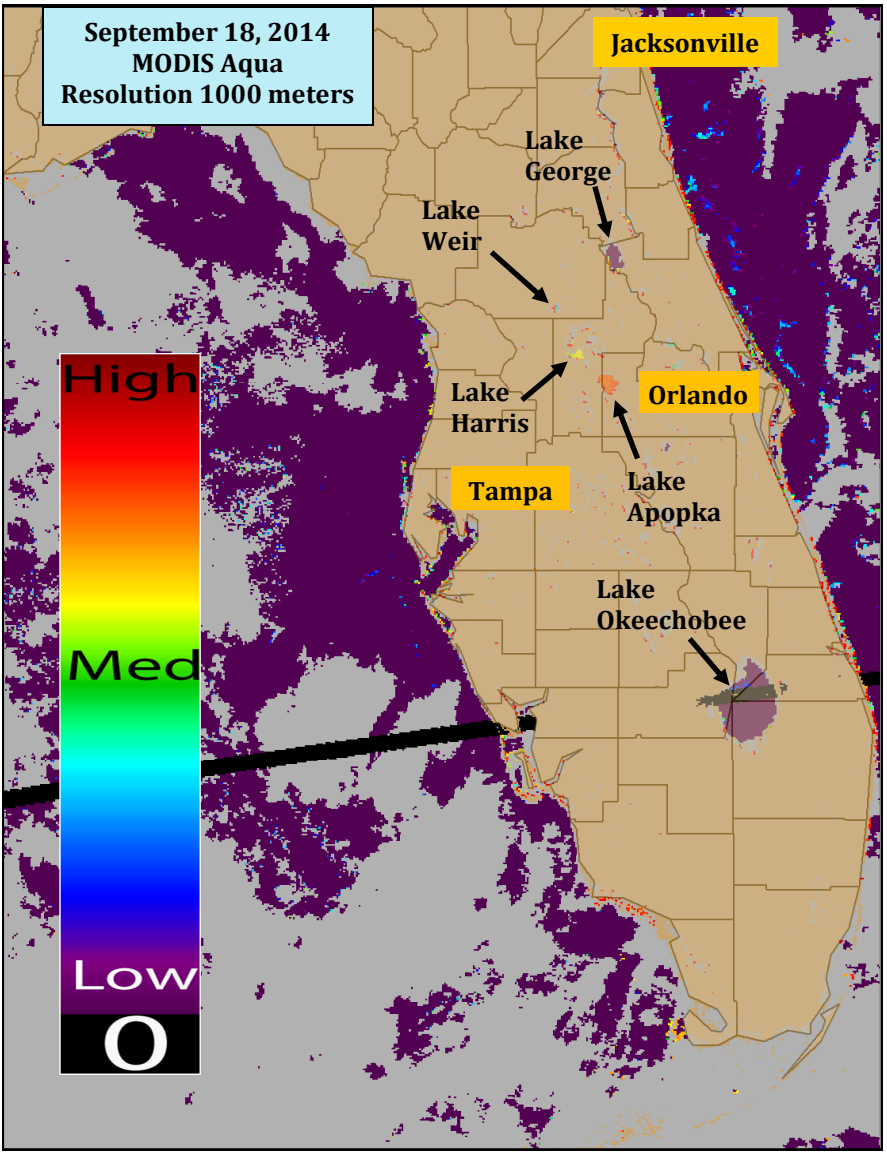
Inland Harmful Algal Blooms Health Bulletin: September 19, 2014

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 are 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 comes 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

- Cloud cover obscured much of the state, making data collection and interpretation difficult.
- Glint was also present around the state.
- Lake George (Volusia/Putnam Counties) displayed low estimated elevated chlorophyll-a concentrations.
- Lake Harris (Lake County) displayed medium estimated elevated chlorophyll-a concentrations.
- Lake Weir (Marion County) displayed medium to high estimated elevated chlorophyll-a concentrations.
- Lake Apopka (Orange/Lake Counties) displayed high estimated elevated chlorophyll-a concentrations.
- Lake Okeechobee (Okeechobee/Glades/Hendry/Palm Beach/Martin Counties) displayed low to medium estimated elevated chlorophyll-a concentrations.

FLORIDA'S SPRINGS RECEIVE $69 MILLION BOOST

DEP Press Office | Released: Sept. 11, 2014

TALLAHASSEE – On Wednesday, the Joint Legislative Budget Commission approved the Florida Department of Environmental Protection's proposed $69 million in springs projects leveraged by the $30 million Governor Scott secured in the "It's Your Money Tax Cut Budget." This approval brings the total investment in springs projects to more than $100 million in the last two years….The project plan is a collaborative effort with the department, water management districts, community leaders and local stakeholders. The contributions and cooperation of these agencies and individuals have been crucial throughout the development process. Combining efforts and resources from various agencies across Florida allows for more efficient and comprehensive water restoration….The objective of the project plan is to effectively address water quality and water quantity by supporting both urban and agricultural projects across geographic regions of the state where springs occur in the natural landscape. The projects were selected based on pollutant reduction, water quantity conservation, cost effectiveness and available matching grant funding. The complete article, including the list of approved projects, is available at http://content.govdelivery.com/accounts/FLDEP/bulletins/ceecdc.

Marine Update: *Karenia brevis* Bloom

Red Tide Status – FWC/FWRI 9/19/2014: : A patchy bloom of *K. brevis* continues in the northeast Gulf of Mexico. Satellite images from the Optical Oceanography Laboratory at the University of South Florida show a surface bloom approximately 5 to 35 miles offshore, dependent on location, between Taylor and Pasco counties, and less than 3 miles offshore of Cedar Key (Levy County). Concentrations of the red tide organism in these areas range from background to medium. Fish kills have been reported off Horseshoe Beach (Dixie County) and approximately 9-12 miles offshore of Keaton Beach (Taylor County), as well as offshore in the bloom area. No human respiratory irritation has been reported alongshore the west coast of Florida; however, respiratory irritation is possible in the bloom areas. Forecasts by the USF-FWC Collaboration for Prediction of Red Tides for the next three days show offshore movement of surface waters and onshore movement of bottom waters for the bloom patch located at the coast near Levy County. Offshore of Pasco and Hernando Counties, the surface patch is predicted to move WNW, and bottom waters are predicted to move SE towards the coast. The patch located south between Wakulla and Taylor counties and ESE of Franklin County is predicted to move west towards the coast.

Red Tide Health Effects – NOAA 9/18/2014: Over the past few days, observed winds may have promoted southerly transport of the offshore surface *K. brevis* concentrations. Forecasted winds Saturday through Monday may promote northerly transport of offshore surface *K. brevis* concentrations. Forecasted winds will increase the potential for respiratory irritation Thursday, September 18, and Monday, September 22, at the coast of Levy County. No respiratory irritation is expected alongshore from Manatee to Monroe County Thursday, September 18 through Monday, September 22.

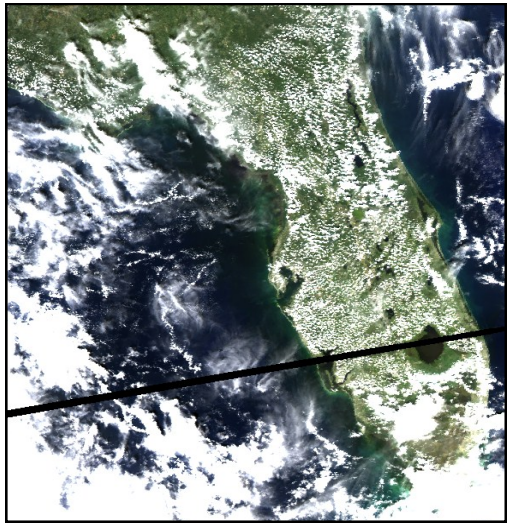
Interpreting Moderate Resolution Imaging Spectroradiometer Data

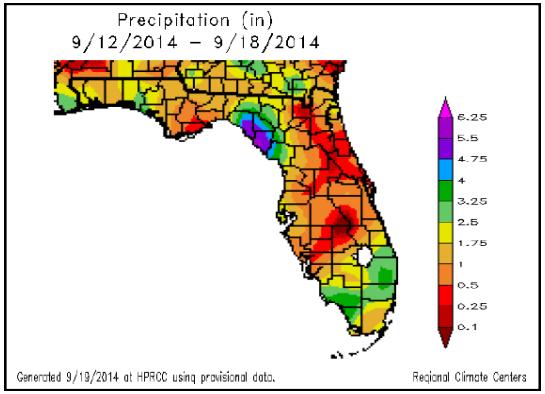
- The Moderate Resolution Imaging Spectroradiometer (MODIS) is deployed by NASA onboard the Terra (EOS AM) and Aqua (EOS PM) satellite. It passes over the Earth, collecting new imagery every 1-2 days.
- This imagery is used as a surveillance tool. Data collected by the MODIS sensor are used to generate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

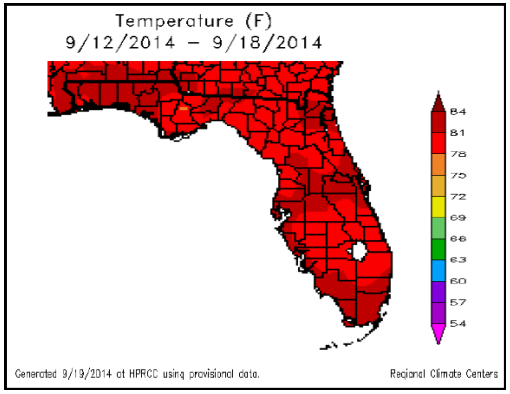
Weather Conditions: Precipitation and Temperature - 09/12/14 to 09/18/14

- 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.

September 18, 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/climate

For information, please contact: Laura Morse, Public Health Toxicology Program, at 850.245.4444 x 2080 or laura.morse@flhealth.gov