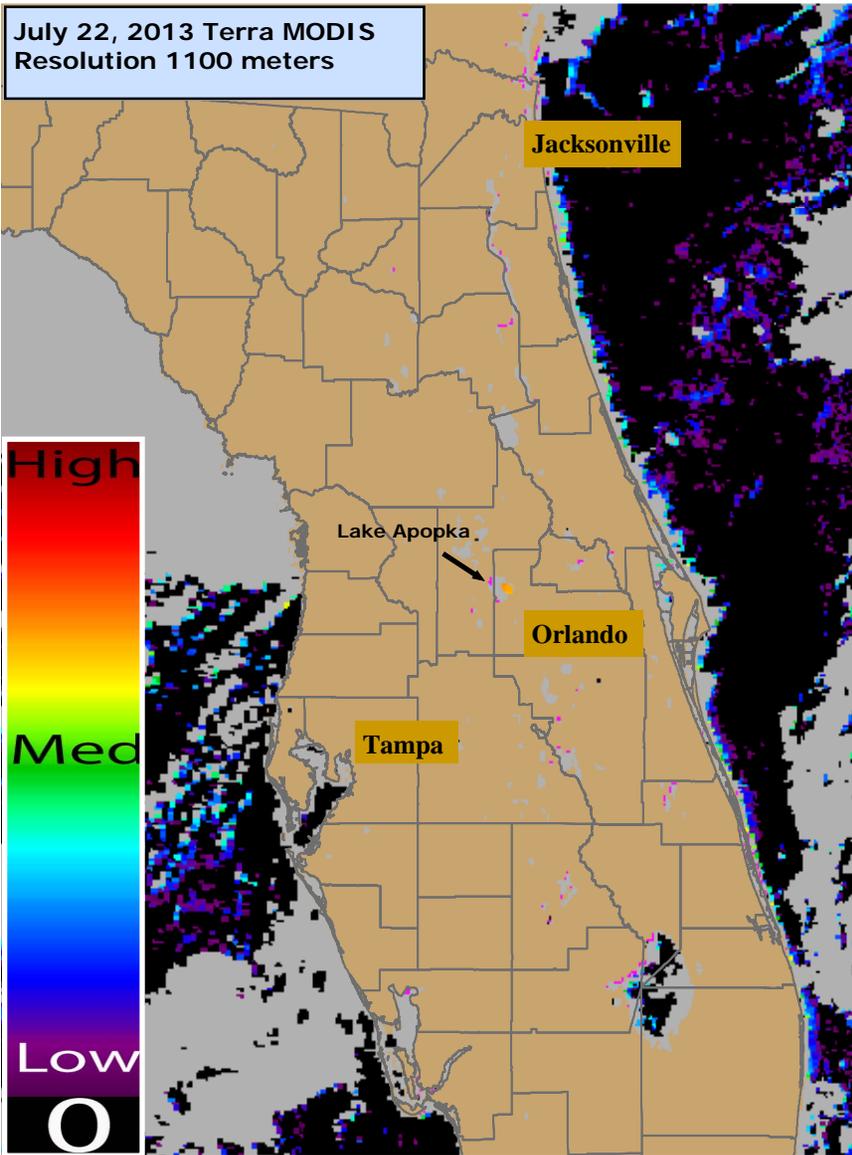


To report an illness related to a marine toxin or algal bloom contact the Florida Poison Information Center at 1-800-222-1222.

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

Clouds Continue to Limit Assessment of Inland HABs Conditions

- Lake Apopka (Orange and Lake Counties) displayed medium/high estimated elevated chlorophyll-a concentrations.
- Other large water features in Florida were unremarkable on the 1100 meter resolution MODIS image.

Toxicological Summary ... Health Effects of Six Cyanotoxins



TOXICOLOGICAL SUMMARY AND SUGGESTED ACTION LEVELS TO REDUCE POTENTIAL ADVERSE HEALTH EFFECTS OF SIX CYANOTOXINS: FINAL REPORT May 2012

The California Environmental Protection Agency Office of Environmental Health Hazard Assessment (OEHHA) conducted a risk assessment to determine the cyanotoxin concentrations at which no adverse effects are expected to occur.

The risk assessment includes two parts: toxicity assessment and exposure assessment. Toxicity assessments are conducted on specific chemicals. A toxicity assessment has two parts – identifying the type of hazard and evaluating the dose response. There is sufficient toxicological information to develop reference levels that reflect the degree of toxicity for six cyanotoxins: anatoxin-a, cylindrospermopsin and the four microcystins; LA, LR, RR, and YR.

OEHHA computed health-based water concentration levels (also known as "action levels"), for people, pets and livestock. Health based concentrations in sport fish and shellfish were also computed. [Excerpted and edited by A. Reich]

See: http://www.swrcb.ca.gov/water_issues/programs/peer_review/docs/calif_cyanotoxins/cyanotoxins_rspns053112.pdf

**** Due to background levels of *K. brevis* off Florida's SW coast, status reports for Florida red tide will be suspended until bloom concentrations re-occur.**

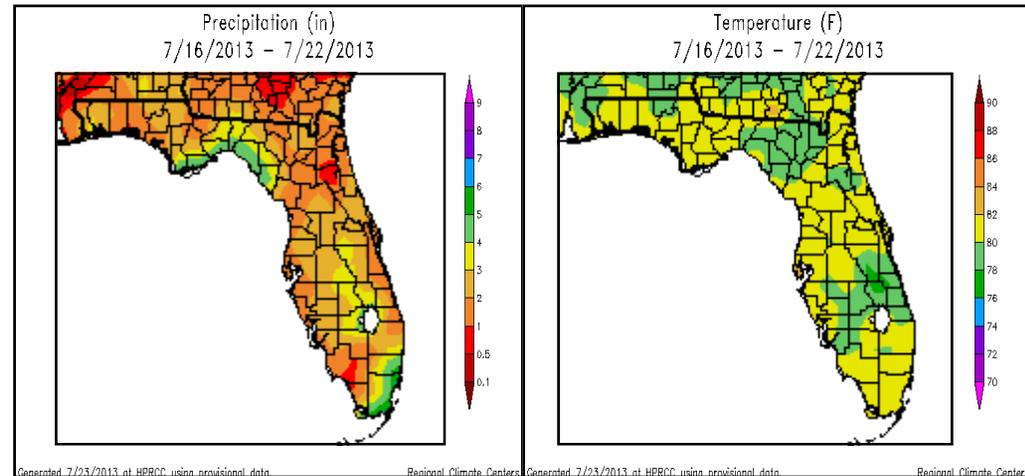
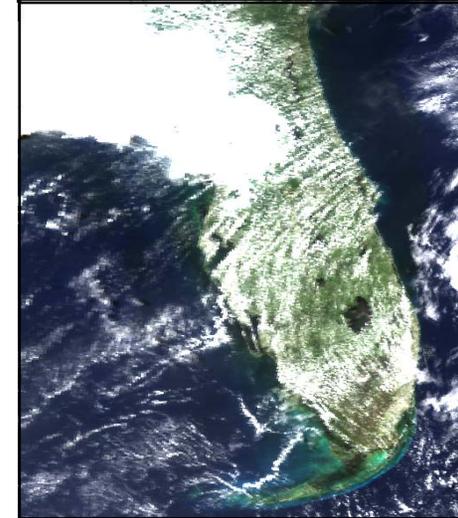
Interpreting Moderate Resolution Imaging Spectroradiometer Data

- 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: Temperature and Precipitation - 7/16/13 to 7/22/13

- 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.

July 22, 2013
MODIS 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>

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