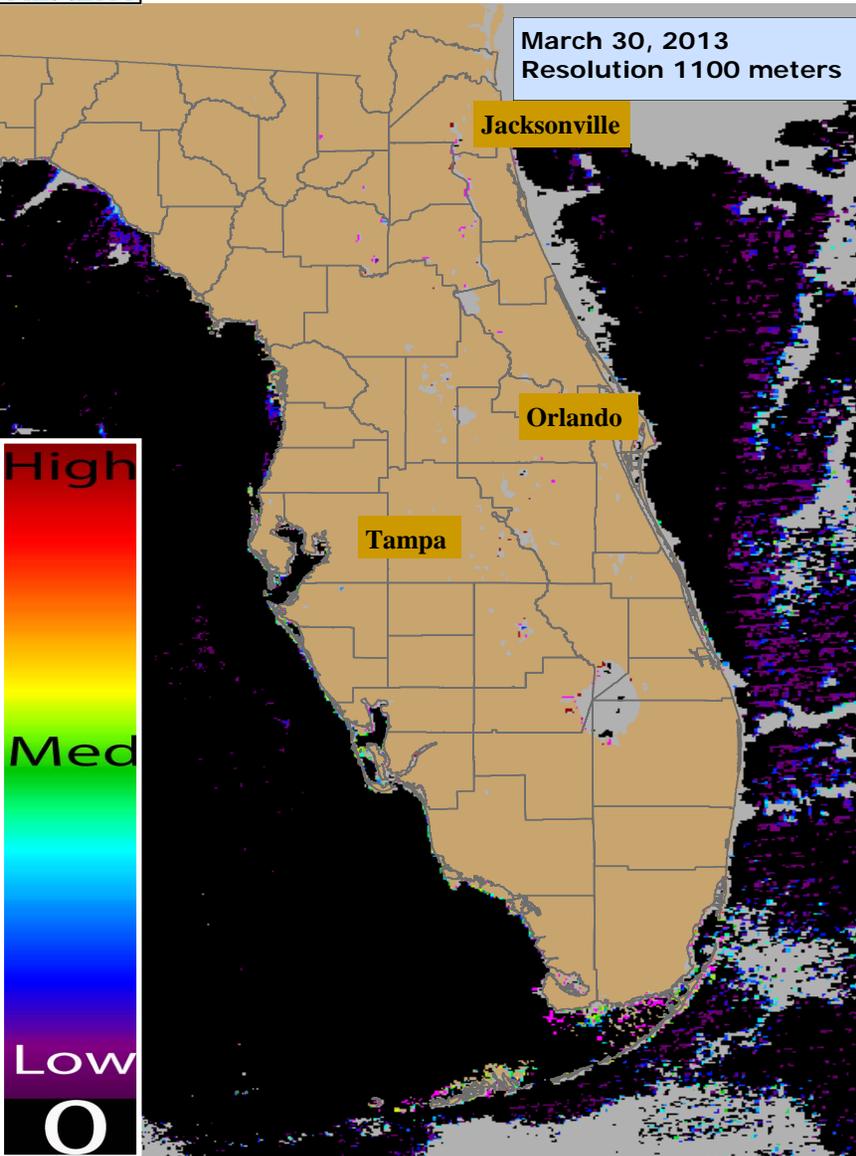


To report an illness related to a marine toxin or algal bloom contact the Florida Poison Information Center at 1-800-222-1222. Images/data obtained from Florida Fish and Wildlife Research Institute, Florida Water Management Districts, National Oceanic and Atmospheric Administration (NOAA), NOAA National Climatic Data Centers and National Weather Centers. Support to produce this report from NOAA/NASA Contract NNH08ZDA001N.



March 30, 2013
Resolution 1100 meters

Jacksonville

Orlando

Tampa

High
Med
Low
0

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 HABs Conditions Report: April 4, 2013

- Lake Apopka (Orange and Lake Counties), the Harris Chain of Lakes (Lake County) and other large water features in Florida were unremarkable on the 1100 meter resolution MODIS image for this week.

Record-setting Algal Bloom in Lake Erie



In 2011, Lake Erie experienced the largest harmful algal bloom in its recorded history, with a peak intensity over three times greater than any previously observed bloom. Michalak et al show that long-term trends in agricultural practices are consistent with increasing phosphorus loading to the western basin of the lake, and that these trends, coupled with meteorological conditions in spring 2011, produced record-breaking nutrient loads. An extended period of weak lake circulation then led to abnormally long residence times that incubated the bloom, and warm and quiescent conditions after bloom onset allowed algae to remain near the top of the water column and prevented flushing of nutrients from the system ... we can therefore expect this bloom to be a harbinger of future blooms in Lake Erie. See <http://www.pnas.org/content/early/2013/03/28/1216006110.full.pdf>

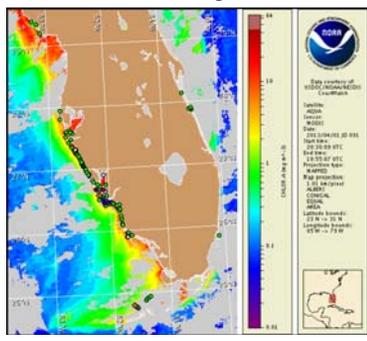
Marine Update: *K. brevis* bloom spotty off SW Florida

Red Tide Update - FWRI/FWC (April 3): *Karenia brevis* was detected this week in spotty locations throughout southwest Florida. Of the 55 samples analyzed from the area this week, 8 were found to contain concentrations ranging from background (Sarasota, Charlotte, Lee and Collier counties) to low (lower Florida Keys – Monroe County). See:

<http://myfwc.com/research/redtide/events/status/statewide/>

NOAA Conditions Report - (April 4): Background to low concentrations of *K. brevis* are present along- and offshore southwest Florida. In the bay regions of northern and central Lee County, patchy very low respiratory impacts are possible today through Monday. No respiratory impacts are expected elsewhere alongshore southwest Florida, including the Florida Keys. Variable winds forecasted today through Monday, April 8, may reduce the potential for transport of *K. brevis* concentrations. To read the full NOAA conditions report, 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 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.

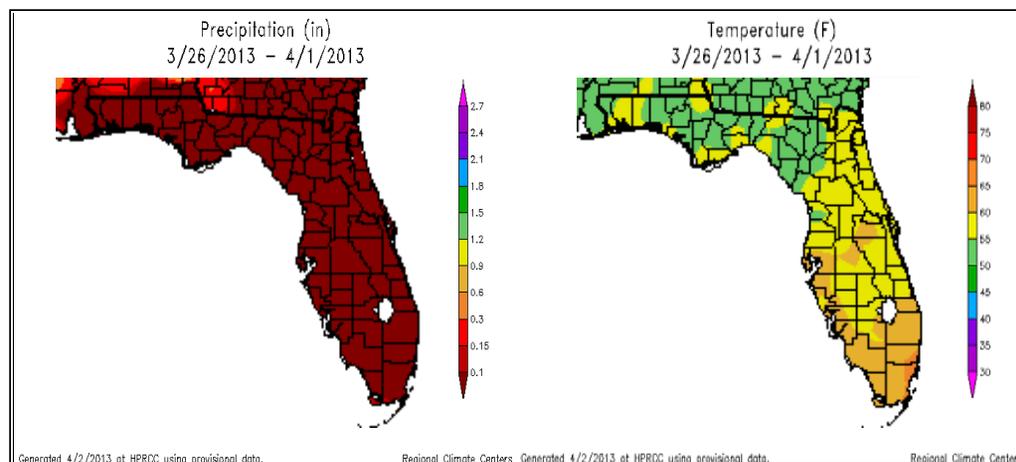
Weather Conditions: 3/26/13 to 4/1/13 Temperature and Precipitation



March 30, 2013
MODIS True Color Image



- 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.



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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