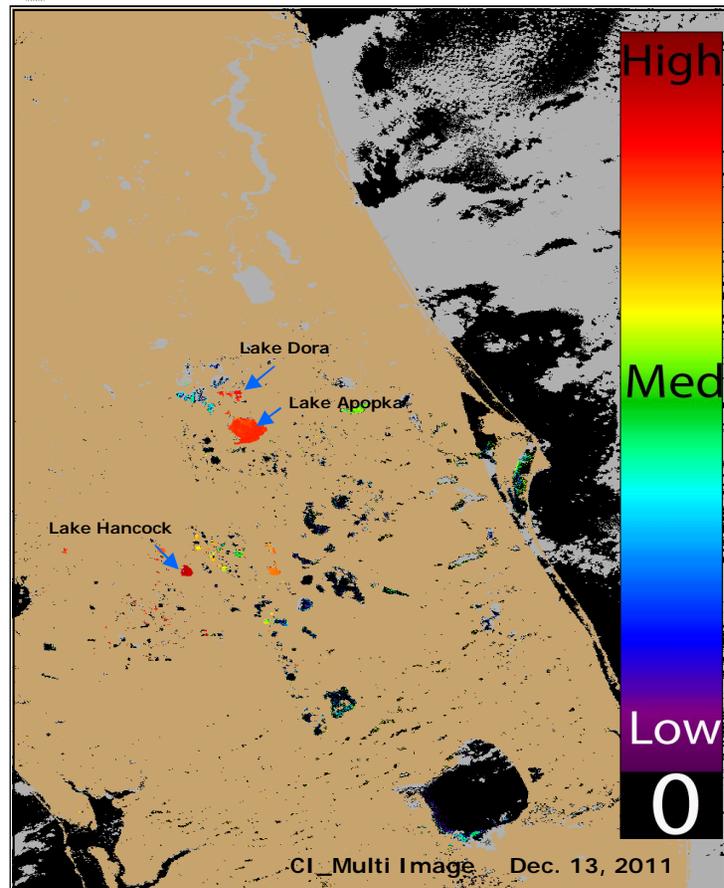


To report an illness related to a marine toxin or algal bloom please contact the Florida Poison Information Center-Miami Aquatic Toxins Hotline at 1-888-232-8635. For questions about the report: please contact Becky Lazensky, FL-DOH, at 352-955-1900. Images/data were obtained from Florida Water Management Districts, The National Oceanic and Atmospheric Administration (NOAA), NOAA National Climatic Data Centers and National Weather Centers. Support to produce this report was received through a NOAA/NASA Agreement (Number: NNH08ZDA001N)



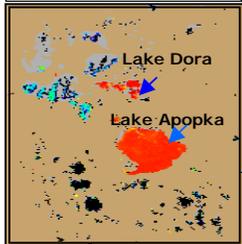
CI_Multi Image Dec. 13, 2011

If your agency has field sampling data on the regions shown in red, these data can be used to help validate the MERIS imagery. Contact Becky Lazensky at: 352-955-1900 to participate in future FDOH validation efforts.

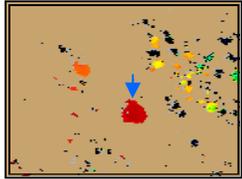
CyanoHabs Conditions Report: Dec. 13

- The areas in the Dec. 13th MERIS imagery which displayed elevated estimated cyanobacteria concentrations were located in central Florida
- Lake Dora and Lake Apopka continued to display high estimated concentrations
- Lake Hancock displayed a high estimated cyanobacteria concentration
- Lake Marion and Lake Pierce both displayed elevated estimated cyanobacteria concentrations

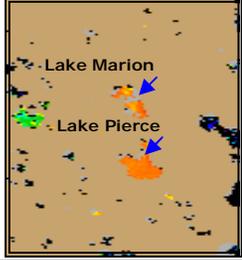
Lake Dora and Apopka



Lake Hancock



Lake Marion and Pierce



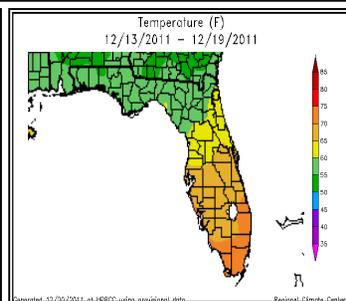
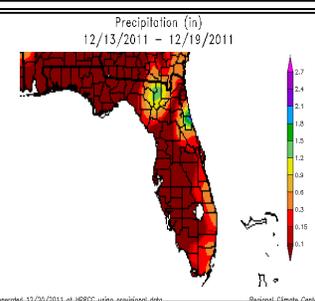
Background Information on MERIS By: Becky Lazensky, MPH

The Medium Resolution Imaging Spectrometer (MERIS) is one of many instruments located onboard the European Space Agency (ESA) ENVISAT satellite. The polar orbiting, earth observation satellite is designed to provide an enhanced capability for remote sensing observation from space. Atmosphere, ocean, land, and ice data are collected.

Envisat was first launched in 2002. Most of the sensors onboard can provide full coverage of the earth every 1-3 days.



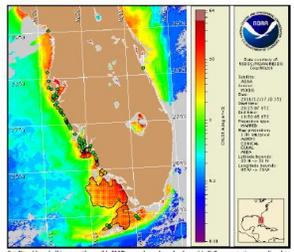
Resource: <http://envisat.esa.int/earth/www/object/>



The MERIS Satellite Images above display a cyanobacteria index generated with a Medium Resolution Imaging Spectrometer (MERIS) satellite provided by the European Space Agency & NOAA.

- Very low likelihood of a bloom
- May indicate clouds or missing data
- Low cyanobacteria concentrations
- Medium cyanobacteria concentrations
- Probable bloom or higher cyanobacteria concentrations

Non CyanoHABS & Health Report: Southwest FL *K. brevis* Bloom: Dec. 19, 2011



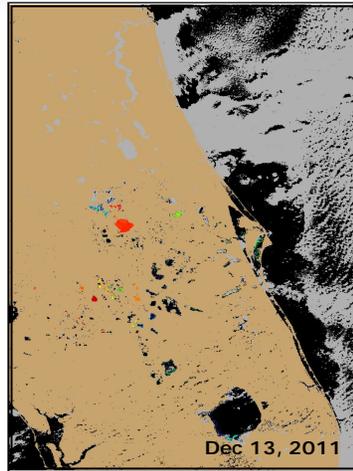
Gulf of Mexico Harmful Algal Bloom Bulletin Region: SW Florida
Date: December 19, 2011
NOAA Ocean Service, NOAA
Satellite and Information Service,
NOAA National Weather Service

Confirmed Species: *Karenia brevis*
Bloom Boundary (FWRI / FWC): Southern Pine Island Sound/San Carlos Bay region of Lee County and alongshore and offshore central and southern Lee County, Collier County and northern Monroe County. Patchy high impacts are possible today through Dec. 21st in central Lee County (coastal Sanibel Island region) and in the Marco Island region of central Collier County.
Forecast through Dec. 21st: Winds will increase the potential for impacts in the coastal Sanibel Island region of central Lee County and in the Marco Island region of central Collier County. Southerly transport of the bloom is possible today through Dec. 21st.
Fish kills: Reported in southern Lee County and Collier County.
Health Effects: Respiratory irritation has been associated with this bloom.
To Report a Fish Kill: Call the FWRI/FWC Fish Kill Hotline at 1-800-636-0511
Visit FWRI/FWC for Updates: <http://myfwc.com/research/redtide/events/status/>

Interpreting Medium Resolution Imaging Spectrometer Satellite Imagery



- The medium resolution imaging spectrometer (MERIS) is located on the Envisat satellite deployed by the European Space Agency.
- The cyanobacterial index algorithm shown in this report is designed to identify high biomass algal blooms caused by cyanobacteria. However, the current algorithm tends to have false positives, so other blooms may be "flagged". NOAA is currently testing new algorithms that are more specific to cyanobacteria.
- Data can be used to estimate near surface cyanobacteria concentrations which are an indication that algal blooms may be present.
- The mathematical algorithms used to generate the satellite images can vary, resulting in some models having a higher likelihood of detecting surface blooms.
- While patches of red or warm colors may indicate a bloom, these data have not been verified in most cases using ground-truth methods. Data collected by the satellite is considered experimental.
- Only portions of Florida are in the satellite's current coverage area.



- Several environmental factors may affect how results can be interpreted. For example, areas with abundant aquatic plant vegetation may present with a high cyanobacteria index on the color spectrum, resulting in a false positive bloom reading.
- The satellite identifies the 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. Turbidity does not otherwise influence the algorithms. The satellite imagery does not display the species of algae present.
- Cloud coverage can obscure imagery and create patches or gray areas on map and obscure bloom detection.
- 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.

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/climateinfo/historical/historical_fl.html

Questions about the report or suggestions: You can contact Becky Lazensky, MPH
352-955-1900
Becky_Lazensky@doh.state.fl.us