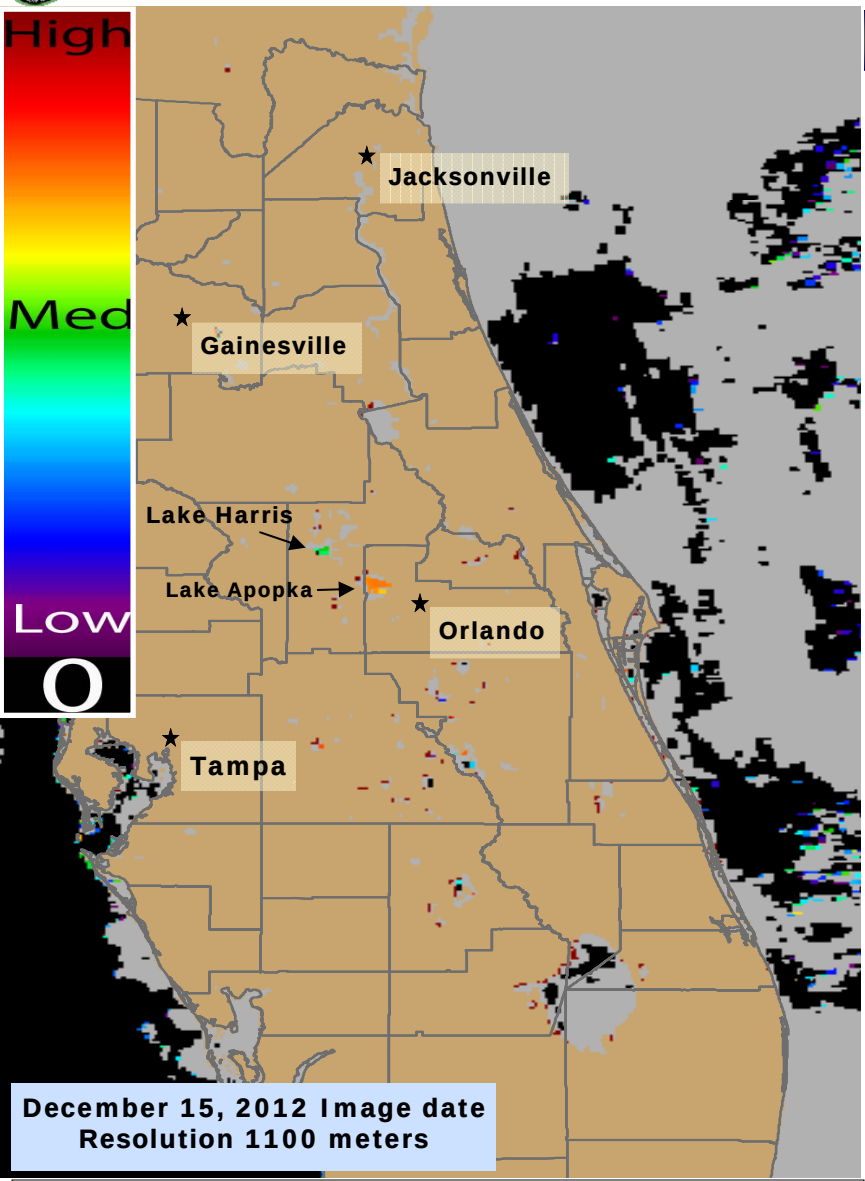
Inland Harmful Algal Blooms Health Bulletin: Dec 20, 2012

To report an illness related to a marine toxin or algal bloom please contact the Florida Poison Information Center-Miami Aquatic Toxins Hotline at 1-800-222-1222.
For questions about the report: contact Andrew Reich, FL-DOH, at 850.245.4187. 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)



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: December 20, 2012

- Lake Apopka (Orange/Lake Counties) had medium to high estimated chlorophyll-a concentrations.
- Lake Harris (Lake County) had medium estimated chlorophyll-a concentrations.
- Cloudy conditions over Florida obscured imagery in much

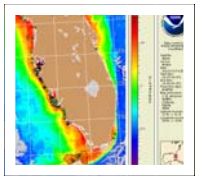

Lake Harris


Lake Apopka

FDOH documentation of Cyanobacteria-Related Illness

The Florida Department of Health, along with its state agency and NGO partners, evaluates reports of illness potentially related to cyanobacteria exposures. The Aquatic Toxins Program has developed a module within the FDOH's electronic database (Merlin) to document human health effects related to cyanobacterial bloom exposures. Merlin is used by FDOH to track reportable diseases and report these conditions to CDC. The CyanoHAB module accepts variables including personal identifiers, exposure histories, and clinical information which are stored within this HIPAA-protected, confidential database. Public health epidemiologists in Florida access this shared module using an outbreak ID number and enter new suspected and confirmed case reports of human illnesses attributed to HAB events.

Marine Update: *K brevis* bloom in Gulf 12/19/12



Midweek Red Tide Update (FWC/FWRI): *Karenia brevis*, the Florida red tide organism, has been detected in water samples analyzed so far this week in concentrations ranging from very low to medium alongshore of Sarasota County. Background to very low concentrations were detected in Tampa Bay (Pinellas and Manatee counties) and patches of very low to low concentrations were found alongshore of Charlotte, Lee and Collier counties. In other areas of Florida, samples collected inshore of Santa Rosa, Bay and Gulf counties, in the Indian River Lagoon (Brevard County) and alongshore of Monroe and Dade counties, did not contain *K. brevis*.
(see http://myfwc.com/research/redtide/events/status/statewide/#Midweek)

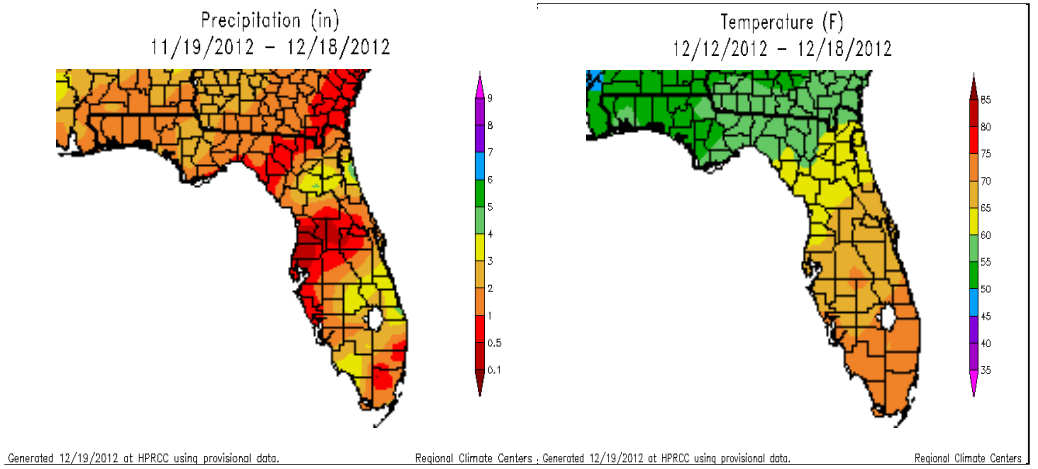
NOAA HAB Bulletin 12-20-12: Very low to medium concentrations of *Karenia brevis* (commonly known as Florida Red Tide) are present along- and offshore southwest Florida from southern Pinellas to Monroe counties including offshore on the gulfside of the lower Florida Keys. Patchy high respiratory impacts are possible today alongshore Sarasota and southern Lee counties with patchy very low respiratory impacts possible Friday through Monday.
(see 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 courser than MERIS, therefore only select larger water bodies in FL are visible using this technology.
- MODIS is better as 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 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: 12/12/12 to 12/18/12 Temperature and Precipitation

- 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

Questions about the bulletin or suggestions- Contact
Andrew Reich, MS, MSPH
850.245.4187
andy_reich@doh.state.fl.us