Gulf of Mexico Harmful Algal Bloom Bulletin

Monday, December 10, 2018

NOAA National Ocean Service
NOAA Satellite and Information Service
NOAA National Weather Service

Instructions for viewing this geospatial pdf are available at: https://go.usa.gov/xn9g2.

The image above is the top layer in a series of maps for 12-10-18 to 12-13-18 displaying the highest level of potential respiratory irritation forecasts in each region.

Region: Southwest Florida

Conditions Report

Not present to medium concentrations of *Karenia brevis* (commonly known as red tide) are present along- and offshore portions of southwest Florida, and not present in the Florida Keys. *K. brevis* concentrations are patchy in nature and levels of respiratory irritation will vary locally based upon nearby bloom concentrations, ocean currents, and wind speed and direction.

Recently Reported Impacts (Listed by County):

**Respiratory irritation:** Manatee, Sarasota, Collier

**Dead fish:** Manatee, Sarasota, Collier

Definition of respiratory irritation levels.

<table>
<thead>
<tr>
<th>RESPIRATORY IRRITATION LEVEL</th>
<th>AFFECTED POPULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>X</td>
</tr>
<tr>
<td>Very low</td>
<td>X</td>
</tr>
<tr>
<td>Low</td>
<td>X</td>
</tr>
<tr>
<td>Moderate</td>
<td>X</td>
</tr>
<tr>
<td>High</td>
<td>X</td>
</tr>
</tbody>
</table>

Additional Resources

Health Information:

**Florida Department of Health:**

**Other resources:** https://go.usa.gov/xQNWp

Recent, Local Observations and Data:

**Mote Marine Laboratory Daily Beach Conditions:**
http://visitbeaches.org

**Florida Fish and Wildlife Conservation Commission:**
http://myfwc.com/redtidestatus
The table lists the highest level of potential respiratory irritation forecast. *K. brevis* concentrations are patchy in nature and levels of respiratory irritation will vary locally based upon nearby bloom concentrations, ocean currents, and wind speed and direction.

Cells are marked ‘none’ if *K. brevis* was detected, but no respiratory irritation is forecasted in the region. Cells are blank if no *K. brevis* has been detected in the region.
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Wind conditions from Vaca Key, FL

Wind conditions from Venice Pier, FL

Wind speed and direction are averaged over 12 hours from buoy measurements. Length of line indicates speed; angle indicates direction. Red indicates that the wind direction favors upwelling near the coast. Values to the left of the dotted vertical line are measured values; values to the right are forecasts. Wind observation and forecast data provided by NOAA's National Weather Service (NWS). A text summary of the marine forecast by region is available from NWS at https://go.usa.gov/xnx4y.
**Analysis**

**Summary of Recent Water Samples:**

*K. brevis* Cell Concentrations:

**Range:** Not Present through Medium  
**Date:** 11/30-12/06  
**Source:** FWRI, MML, SCHD, CCPCD

**Imagery:**

In the recent ensemble imagery (MODIS Aqua, 12/7), patches of elevated to very high chlorophyll (2 to >20 µg/L) with some optical characteristics of *K. brevis* are visible along- and offshore from Pinellas to Monroe counties, and extending southwest from the coast towards the Florida Keys.

**Forecasts:**

Offshore winds forecast Monday through Thursday (12/10-13) will minimize the potential for respiratory irritation at the coast of southwest Florida and will promote the southward transport of surface *K. brevis* concentrations.

Davis, Ludema

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*Karenia brevis* cells concentration sampling data from: 11/30/18 through 12/06/18. Cell count data are provided by Florida FWC Fish and Wildlife Research Institute. For a list of sample providers and a key to the cell concentration categories, please see the HAB-OFS bulletin guide: https://tidesandcurrents.noaa.gov/hab/hab_publication/GOMX_HAB_Bulletin_Guide.pdf. Detailed sample information can be obtained through the Florida FWC Fish and Wildlife Research Institute: http://myfwc.com/REDTIDESTATUS.

MODIS Aqua satellite chlorophyll image (12/07/18) with possible *K. brevis* HAB areas shown by red polygon(s).
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Verified and suspected HAB areas shown in red. Other areas with K. brevis optical characteristics shown in yellow (see p. 4 analysis for interpretation).

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MODIS Aqua satellite chlorophyll image (12/07/18).