Gulf of Mexico Harmful Algal Bloom Bulletin

Conditions Report

Not present to background concentrations of Karenia brevis (commonly known as red tide) are present along- and offshore portions of southwest Florida, and are 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
Dead fish: Lee

Definition of respiratory irritation levels.

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

<table>
<thead>
<tr>
<th>State Name</th>
<th>County Region</th>
<th>Mon 12/31</th>
<th>Tue 01/01</th>
<th>Wed 01/02</th>
<th>Thu 01/03</th>
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<tbody>
<tr>
<td>Florida</td>
<td>Central LEE County-Bay Regions</td>
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<td>Southern LEE County-Gulf Coast</td>
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<td>Southern LEE County-Bay Regions</td>
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<td>Northern COLLIER County-Gulf Coast</td>
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<td>Central COLLIER County-Gulf Coast</td>
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<td>Northern MONROE County-Gulf Coast</td>
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<td></td>
<td>UPPER KEYS-Oceanside</td>
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<td>UPPER KEYS and FLORIDA BAY-Gulfside</td>
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<td>MIDDLE KEYS-Oceanside</td>
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<td>LOWER KEYS-Oceanside</td>
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<td>LOWER KEYS-Gulfside</td>
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</table>
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.
Summary of Recent Water Samples:

**K. brevis Cell Concentrations:**

**Range:** Not Present through Background  
**Date:** 12/21-12/27  
**Source:** FWRI, MML, SCHD, CCPCD

**Imagery:**

In recent ensemble imagery (MODIS Aqua, 12/30), patches of elevated to very high chlorophyll (2 to >20 µg/L) with some optical characteristics of *K. brevis* are visible offshore central Collier County, extending southwest towards the Florida Keys.

**Forecasts:**

Variable winds forecast today through Thursday (12/31-1/3) will minimize the transport of surface *K. brevis* concentrations.

Davis, Yang

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*K. brevis* cell concentration mapping data from: 12/21/18 through 12/27/18. 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/REDDTIDESTATUS.

MODIS Aqua satellite chlorophyll image (12/30/18) 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).