



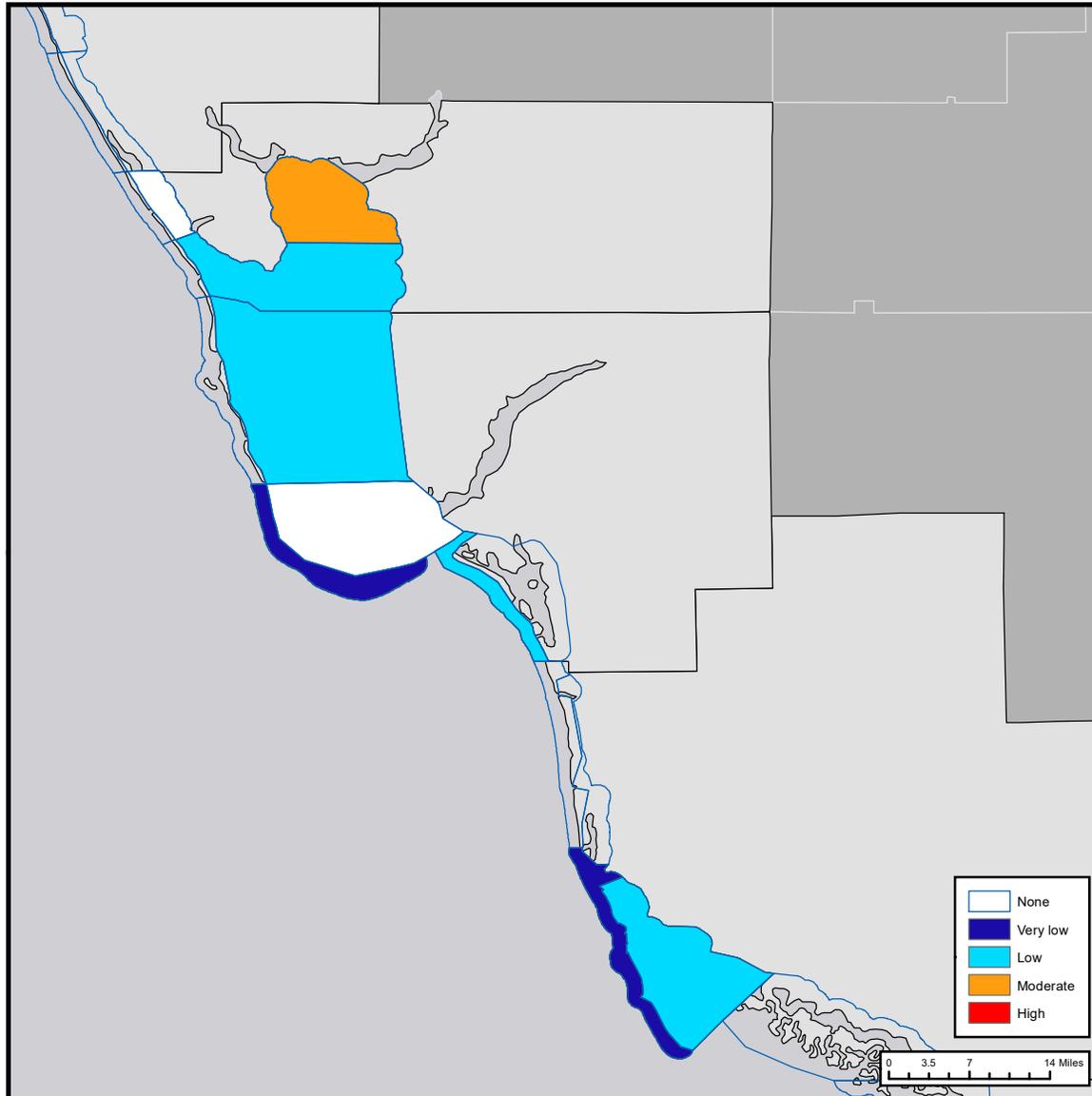
# Gulf of Mexico Harmful Algal Bloom Bulletin

Monday, December 16, 2019  
 NOAA National Ocean Service  
 NOAA Satellite and Information Service  
 NOAA National Weather Service

## Region: Southwest Florida



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 12-16-19 to 12-19-19 displaying the highest level of potential respiratory irritation forecasts in each region.

## 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 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:** Lee  
**Dead fish:** Charlotte

### Definition of respiratory irritation levels.

RESPIRATORY IRRITATION LEVEL	AFFECTED POPULATION				
	NONE	CHRONIC RESPIRATORY CONDITION	SENSITIVE TO RED TIDE	GENERAL PUBLIC (MILD SYMPTOMS)	GENERAL PUBLIC (INTENSE SYMPTOMS)
None	X				
Very low		X			
Low		X	X		
Moderate		X	X	X	
High		X	X	X	X

## Additional Resources

### Health Information:

**Florida Department of Health:**  
<http://www.floridahealth.gov/environmental-health/aquatic-toxins/harmful-algae-blooms/index.html>  
**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>

State Name	County Region	Mon 12/16	Tue 12/17	Wed 12/18	Thu 12/19			
Florida								
	DIXIE County-Gulf Coast							
	LEVY County-Gulf Coast							
	CITRUS County-Gulf Coast							
	HERNANDO County-Gulf Coast							
	Northern PASCO County-Gulf Coast							
	Southern PASCO County-Gulf Coast							
	Northern PINELLAS County-Gulf Coast							
	Northern PINELLAS County-Bay Regions							
	Northern PINELLAS County, Upper Bay Area-Bay Regions							
	Southern PINELLAS County-Gulf Coast							
	Southern PINELLAS County-Bay Regions							
	PINELLAS and Northern MANATEE County-Bay Regions							
	South MANATEE County-Gulf Coast							
	South MANATEE County-Bay Regions							
	North SARASOTA County-Gulf Coast							
	North SARASOTA County-Bay Regions							
	Southern SARASOTA County-Gulf Coast							
	Southern SARASOTA County-Bay Regions							
	North CHARLOTTE County-Gulf Coast							
	North CHARLOTTE County-Bay Regions	none	none	none	none			
	Southern CHARLOTTE County-Gulf Coast							
	Southern CHARLOTTE County-Bay Regions	low	low	low	low			
	Upper CHARLOTTE Harbor-Bay Regions	moderate	moderate	moderate	moderate			
	Northern LEE County-Gulf Coast							
	Northern LEE County-Bay Regions	low	low	low	low			
	Central LEE County-Gulf Coast	very low	low	very low	very low			

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.

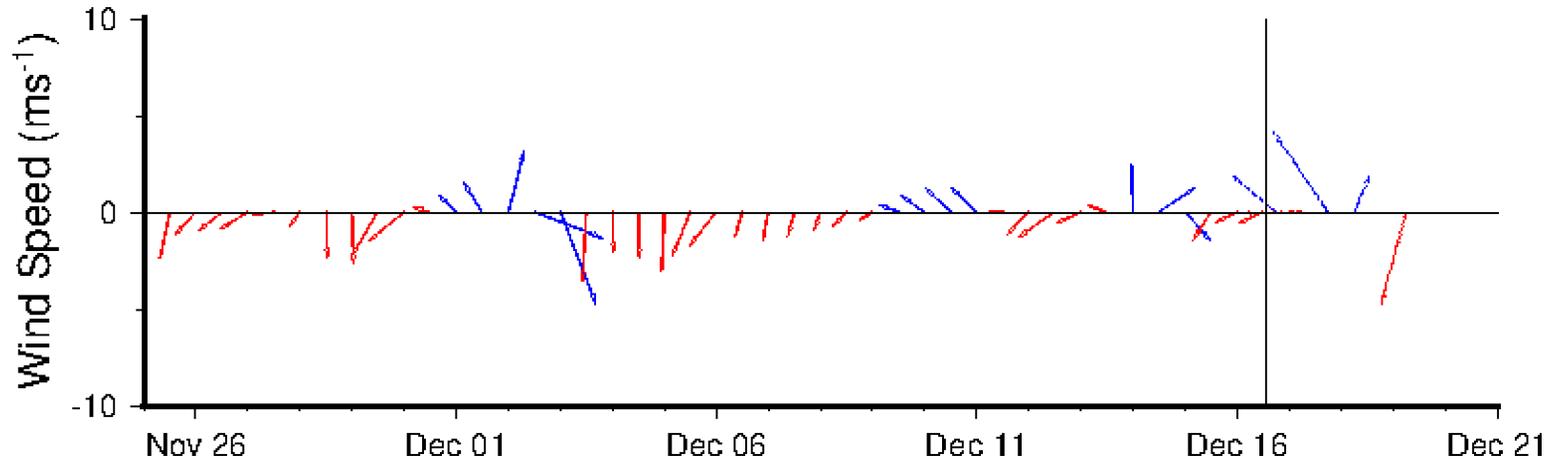
Cells are marked 'none' if *K. brevis* was detected, but no respiratory irritation is forecasted in the region. Cells are blank if no *K. brevis* has been detected in the region.

State Name	County Region	Mon 12/16	Tue 12/17	Wed 12/18	Thu 12/19			
Florida								
	Central LEE County-Bay Regions	none	none	none	none			
	Southern LEE County-Gulf Coast	low	low	very low	very low			
	Southern LEE County-Bay Regions							
	Northern COLLIER County-Gulf Coast							
	Northern COLLIER County-Bay Regions							
	Central COLLIER County-Gulf Coast	very low	very low	very low	very low			
	Central COLLIER County-Bay Regions	low	low	low	low			
	Southern COLLIER County-Gulf Coast							
	Northern MONROE County-Gulf Coast							
	Southern MONROE County-Gulf Coast							
	UPPER KEYS-Oceanside							
	UPPER KEYS and FLORIDA BAY-Gulfside							
	MIDDLE KEYS-Oceanside							
	MIDDLE KEYS-Gulfside							
	LOWER KEYS-Oceanside							
	LOWER KEYS-Gulfside							

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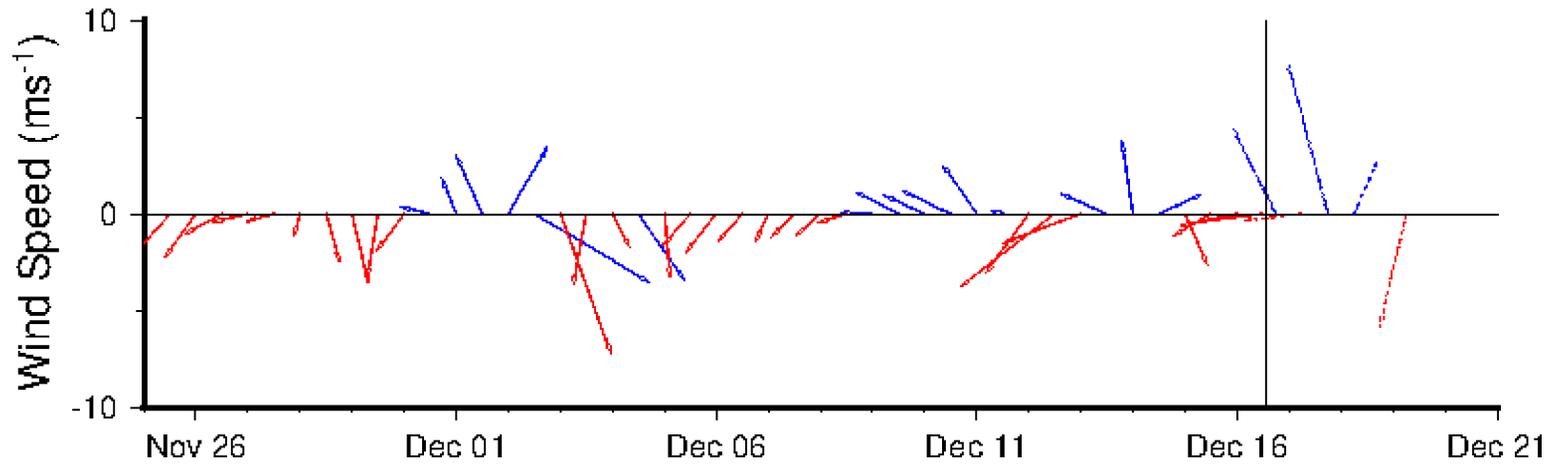
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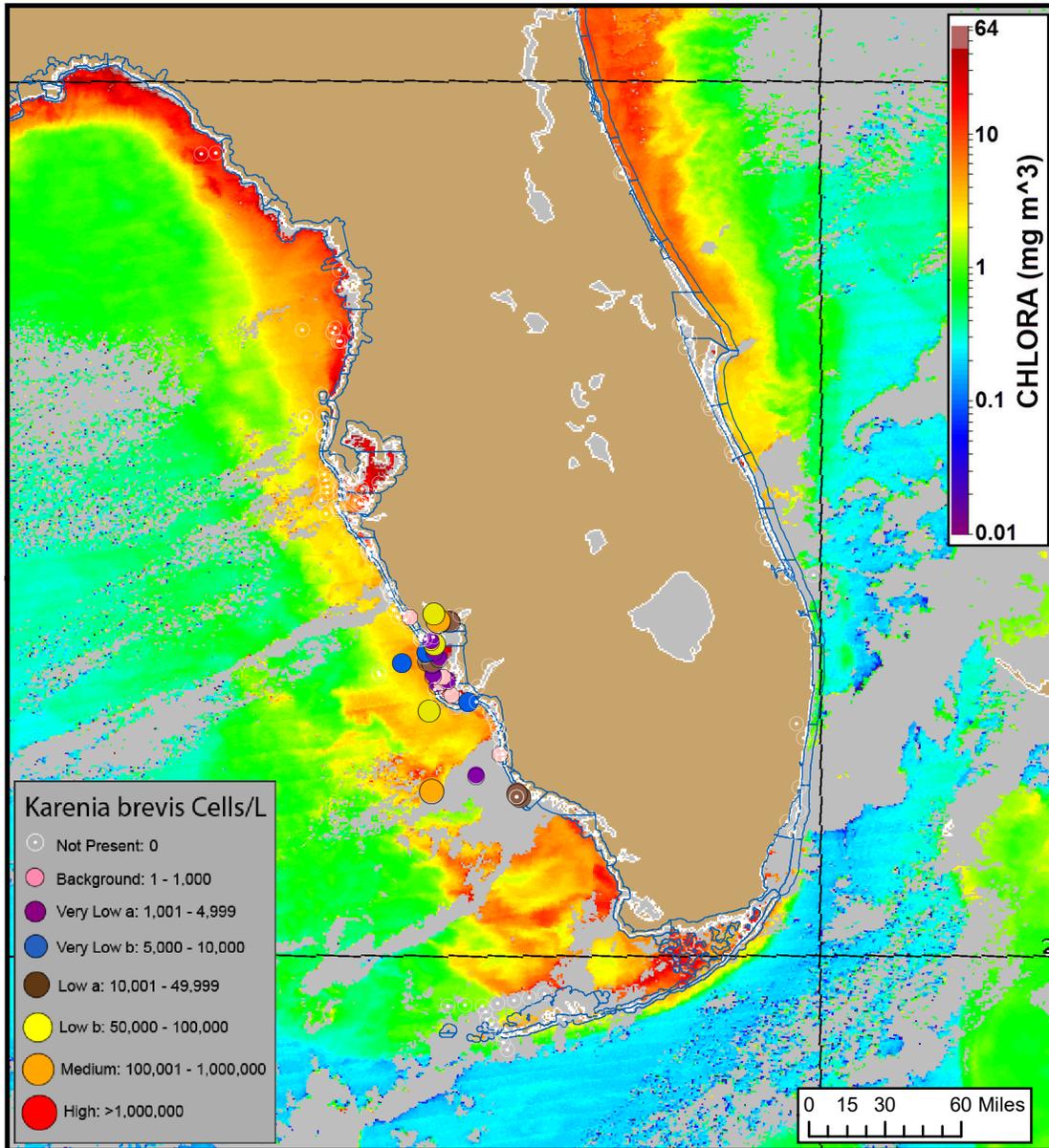
**Wind conditions from Naples, FL**



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 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://www.weather.gov/marine/sttheastmz>.

**Wind conditions from Venice Pier, FL**





## Analysis

### Summary of Recent Water Samples:

#### ***K. brevis* Cell Concentrations:**

**Range:** Not Present through Medium

**Date:** 12/06-12/13

**Source:** FWRI, MML, SCHD, CCPCD

### Imagery:

Recent ensemble imagery (MODIS Aqua, 12/14) is obscured by clouds alongshore Collier County, preventing analysis of that region. Visible chlorophyll continues to decrease alongshore southwest Florida, matching the decrease in *K. brevis* concentrations. Patches of elevated chlorophyll (2 to 8  $\mu\text{g/L}$ ) are present alongshore southwest Florida from Pinellas to Lee counties, but they do not contain the optical characteristics of *K. brevis*.

### Forecasts:

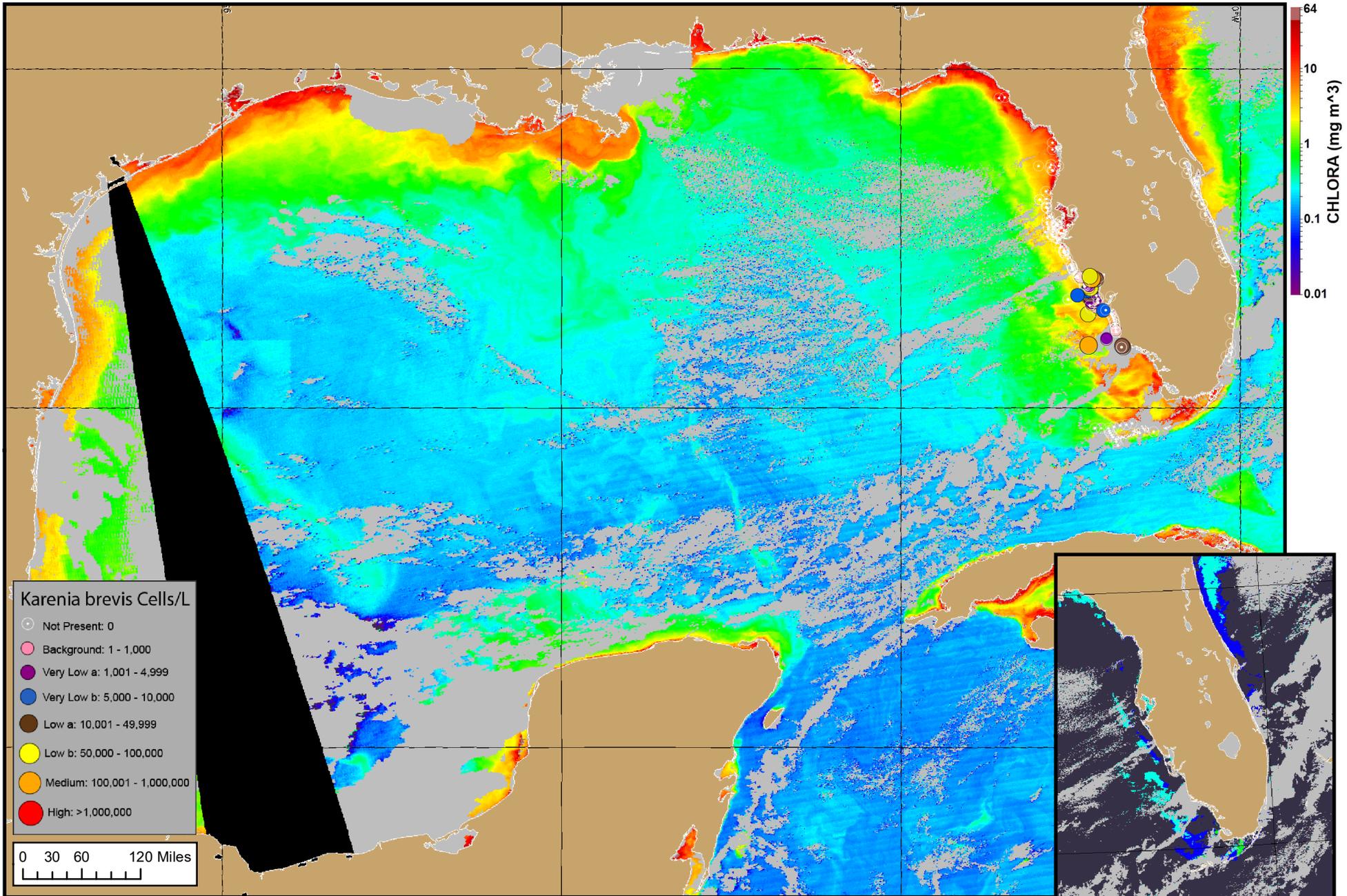
Variable winds (5-25 kn) forecast today through Thursday (12/16-19) will minimize transport of surface *K. brevis* concentrations. Offshore winds forecast Wednesday and Thursday will minimize the potential for respiratory irritation at the coast.

Davis, Jima

*Karenia brevis* cell concentration sampling data from: 12/06/19 through 12/13/19. 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](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 (12/14/19) 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).