



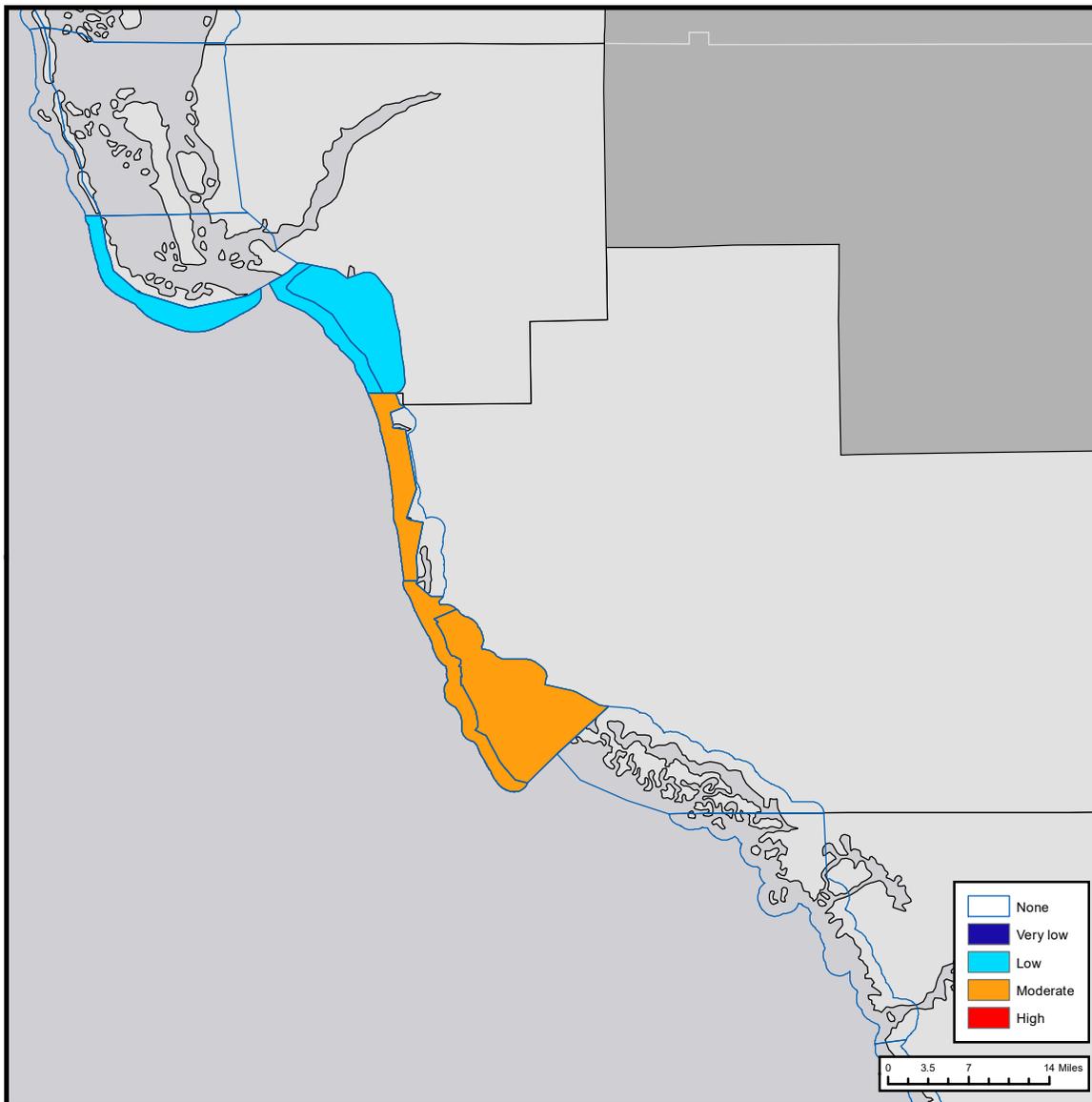
Gulf of Mexico Harmful Algal Bloom Bulletin

Tuesday, October 15, 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 10-15-19 to 10-17-19 displaying the highest level of potential respiratory irritation forecasts in each region.

Conditions Report

Not present to high 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: Collier
Dead fish: Lee, Collier

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	Tue 10/15	Wed 10/16	Thu 10/17				
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	none	none	none				
	South MANATEE County-Bay Regions	none	none	none				
	North SARASOTA County-Gulf Coast	none	none	none				
	North SARASOTA County-Bay Regions	none	none	none				
	Southern SARASOTA County-Gulf Coast							
	Southern SARASOTA County-Bay Regions							
	North CHARLOTTE County-Gulf Coast							
	North CHARLOTTE County-Bay Regions							
	Southern CHARLOTTE County-Gulf Coast							
	Southern CHARLOTTE County-Bay Regions							
	Upper CHARLOTTE Harbor-Bay Regions							
	Northern LEE County-Gulf Coast							
	Northern LEE County-Bay Regions							
	Central LEE County-Gulf Coast	low	moderate	moderate				

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.

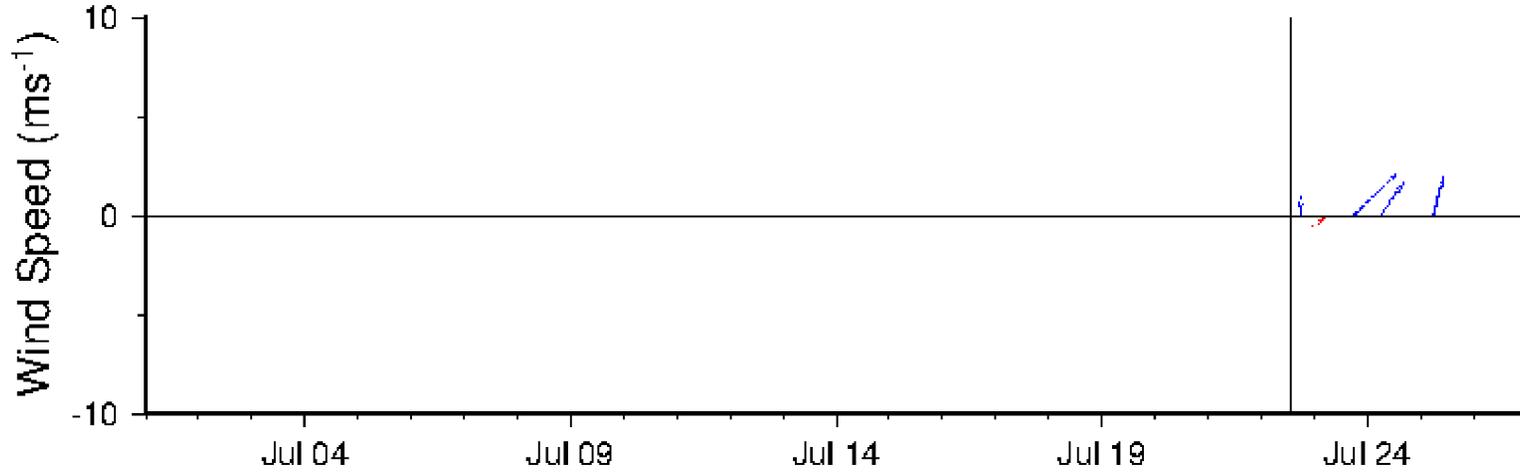
Cells are marked 'none' if *K. brevis* was detected, but no respiratory irritation is forecasted in the region. Cells are blank if no *K. brevis* has been detected in the region.

State Name	County Region	Tue 10/15	Wed 10/16	Thu 10/17				
Florida								
	Central LEE County-Bay Regions							
	Southern LEE County-Gulf Coast	low	moderate	moderate				
	Southern LEE County-Bay Regions	low	low	low				
	Northern COLLIER County-Gulf Coast	moderate	moderate	moderate				
	Northern COLLIER County-Bay Regions							
	Central COLLIER County-Gulf Coast	moderate	moderate	moderate				
	Central COLLIER County-Bay Regions	moderate	moderate	moderate				
	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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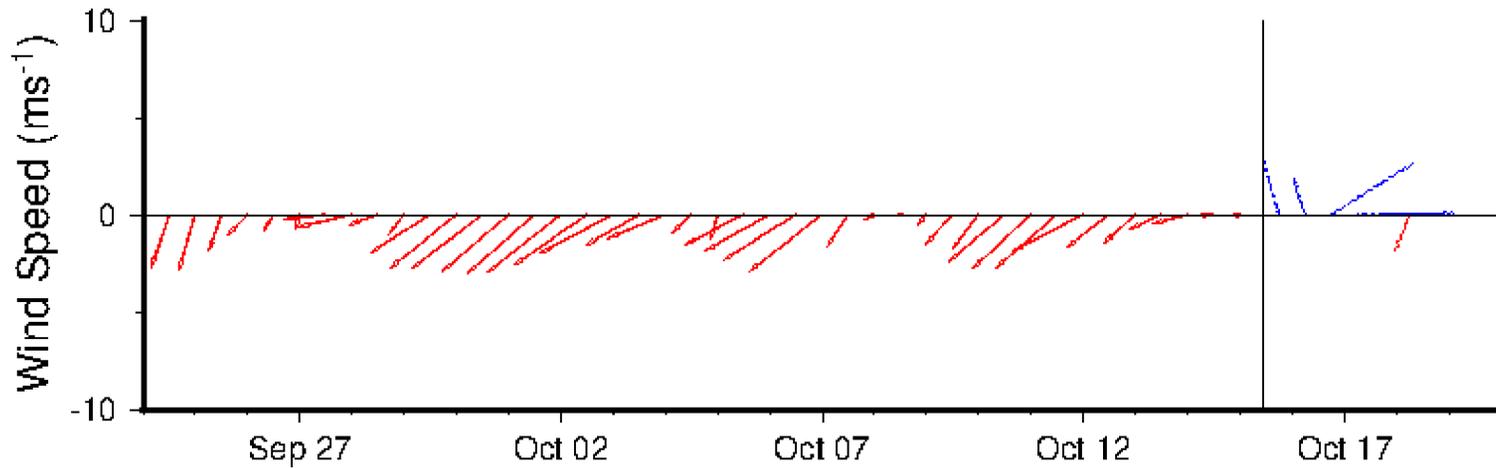
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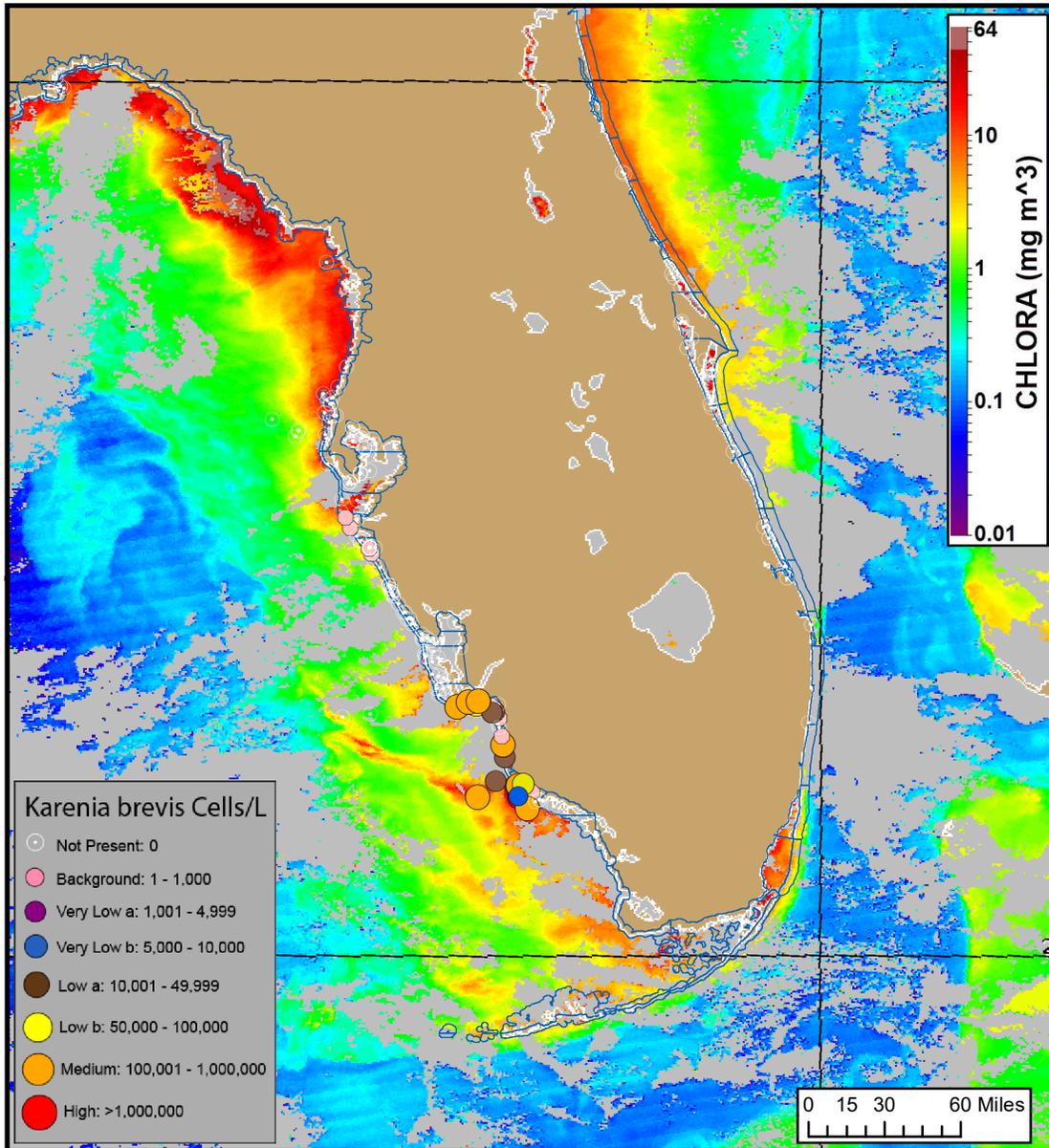
Wind conditions from Naples, FL



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/stheastmz>.

Wind conditions from Venice Pier, FL





Analysis

Summary of Recent Water Samples:

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

Range: Not Present through High

Date: 10/05-10/14

Source: FWRI, MML, SCHD, CCPCD

Imagery:

Recent satellite imagery (MODIS Aqua, 10/13) is mostly obscured by clouds alongshore southwest Florida, limiting analysis. Patches of elevated to very high chlorophyll (2 to >20 $\mu\text{g/L}$) are present alongshore the southwest Florida coast from Pinellas to Collier counties. A patch of chlorophyll with the optical characteristics of *K. brevis* is present alongshore central Collier County, extending offshore up to 18 miles northwest of Marco Island. Imagery alongshore central and southern Lee County, where recent sampling has indicated an increase in *K. brevis* concentrations, has been obscured by clouds for the last several days, preventing analysis.

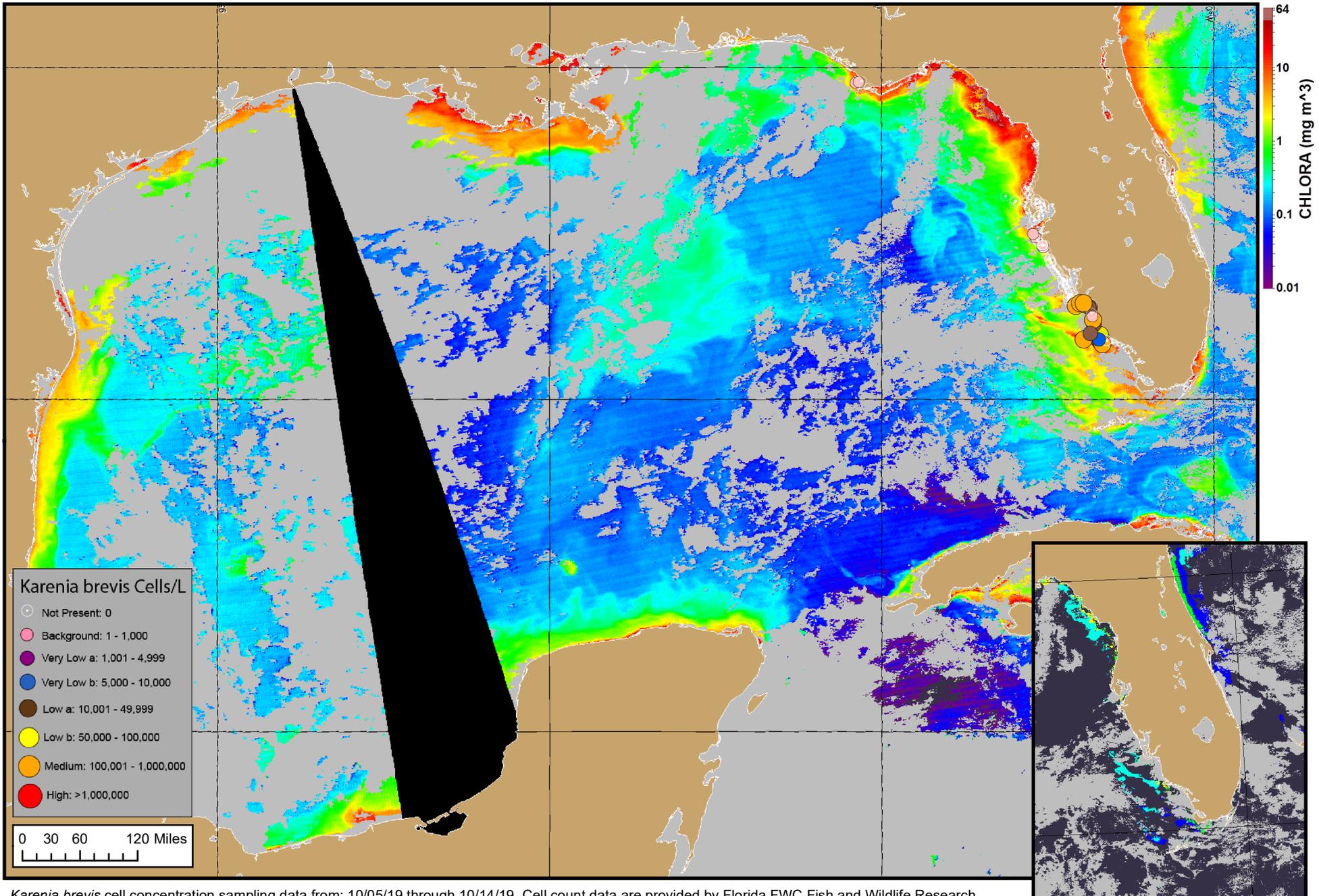
Forecasts:

Onshore winds (5-12 kn) forecast today through Thursday (10/15-17) will increase the potential for respiratory irritation at the coast and promote the onshore transport of surface *K. brevis* concentrations.

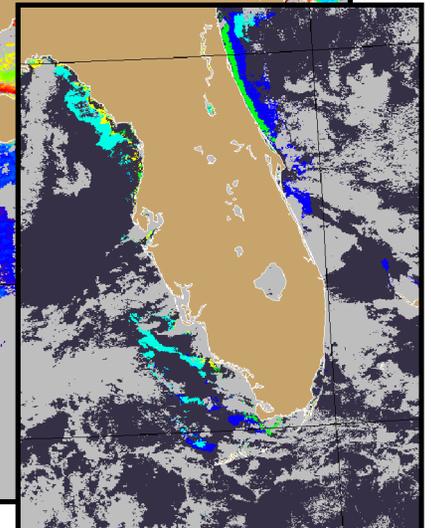
Davis, Keeney

Karenia brevis cell concentration sampling data from: 10/05/19 through 10/14/19. 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. Detailed sample information can be obtained through the Florida FWC Fish and Wildlife Research Institute: <http://myfwc.com/REDTIDESTATUS>.

MODIS Aqua satellite chlorophyll image (10/13/19) 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).