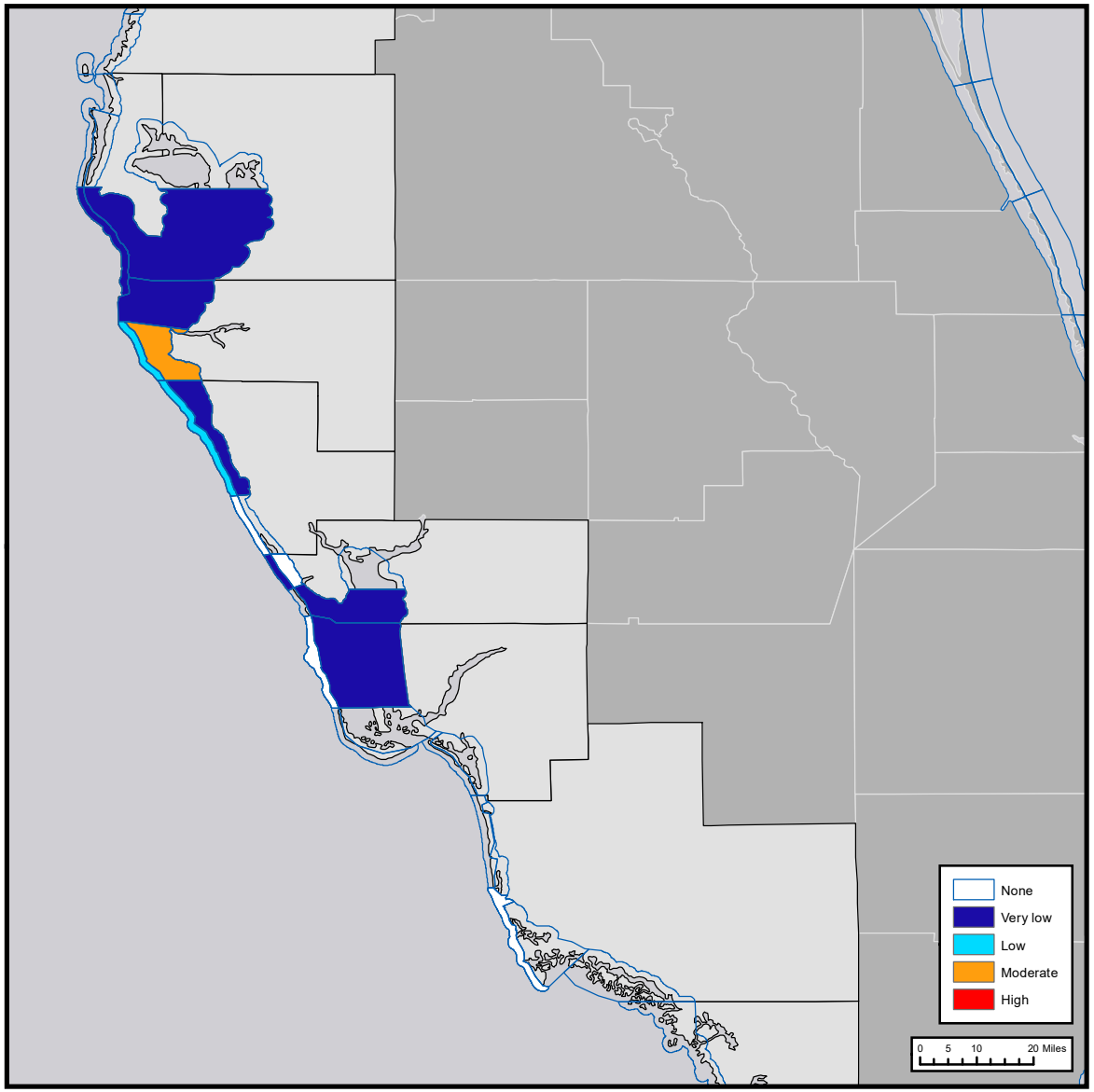
Gulf of Mexico Harmful Algal Bloom Bulletin

Thursday, December 20, 2018
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 12-20-18 to 12-24-18 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 present in very low concentrations offshore 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
Dead fish: None

Definition of respiratory irritation levels.

	AFFECTED POPULATION				
RESPIRATORY IRRITATION LEVEL	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/red-tide.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	Thu 12/20	Fri 12/21	Sat 12/22	Sun 12/23	Mon 12/24		
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	very low	very low	very low	none	none		
	Southern PINELLAS County-Bay Regions	very low	very low	very low	none	none		
	PINELLAS and Northern MANATEE County-Bay Regions	very low	very low	very low	none	none		
	South MANATEE County-Gulf Coast	low	low	very low	very low	very low		
	South MANATEE County-Bay Regions	moderate	moderate	moderate	moderate	moderate		
	North SARASOTA County-Gulf Coast	low	low	none	none	none		
	North SARASOTA County-Bay Regions	very low	very low	very low	very low	very low		
	Southern SARASOTA County-Gulf Coast	none	none	none	none	none		
	Southern SARASOTA County-Bay Regions							
	North CHARLOTTE County-Gulf Coast	very low	very low	none	none	none		
	North CHARLOTTE County-Bay Regions	none	none	none	none	none		
	Southern CHARLOTTE County-Gulf Coast							
	Southern CHARLOTTE County-Bay Regions	very low	very low	very low	very low	very low		
	Upper CHARLOTTE Harbor-Bay Regions							
	Northern LEE County-Gulf Coast	none	none	none	none	none		
	Northern LEE County-Bay Regions	very low	very low	very low	very low	very low		
	Central LEE County-Gulf Coast							

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	Thu 12/20	Fri 12/21	Sat 12/22	Sun 12/23	Mon 12/24		
Florida								
	Central LEE County-Bay Regions							
	Southern LEE County-Gulf Coast							
	Southern LEE County-Bay Regions							
	Northern COLLIER County-Gulf Coast							
	Northern COLLIER County-Bay Regions							
	Central COLLIER County-Gulf Coast	none	none	none	none	none		
	Central COLLIER County-Bay Regions							
	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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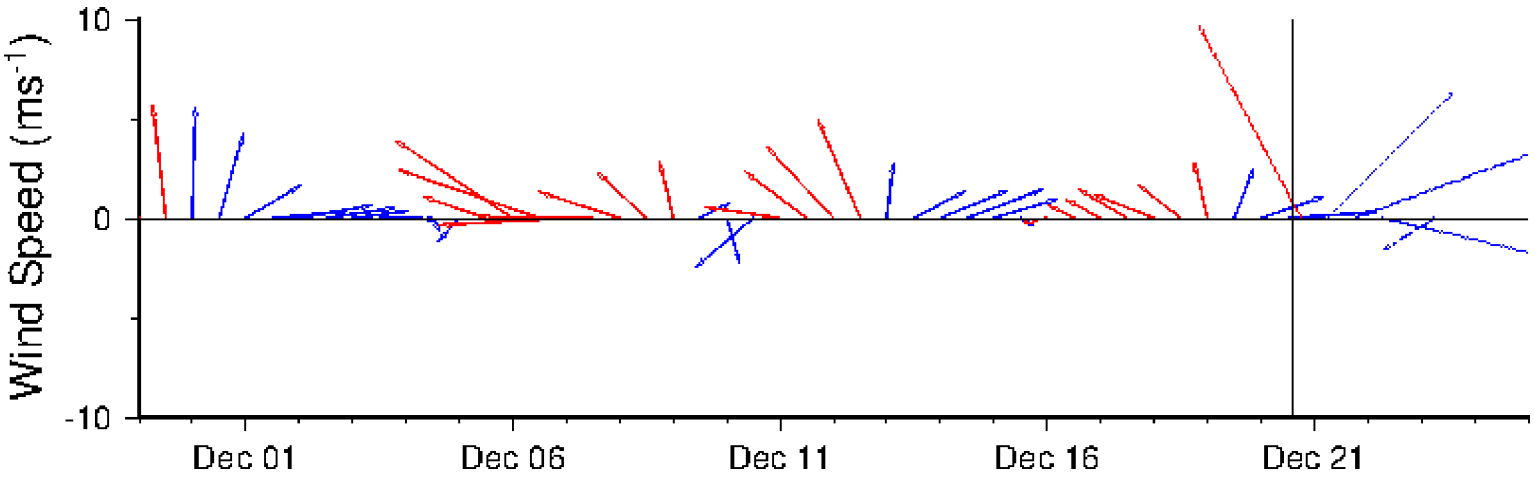
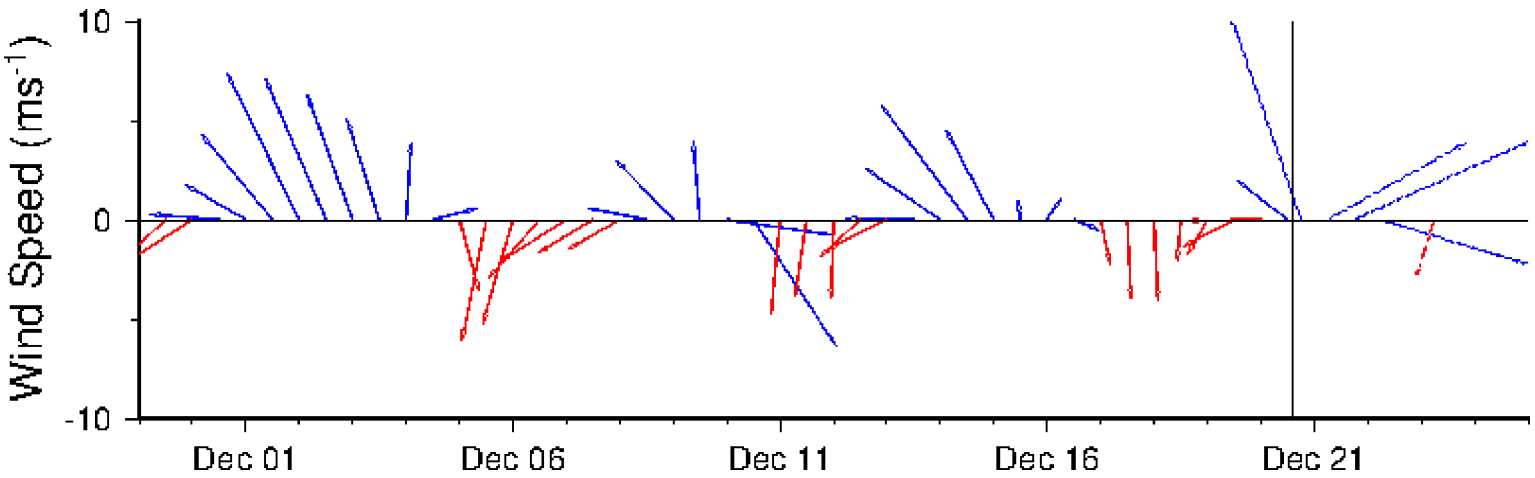
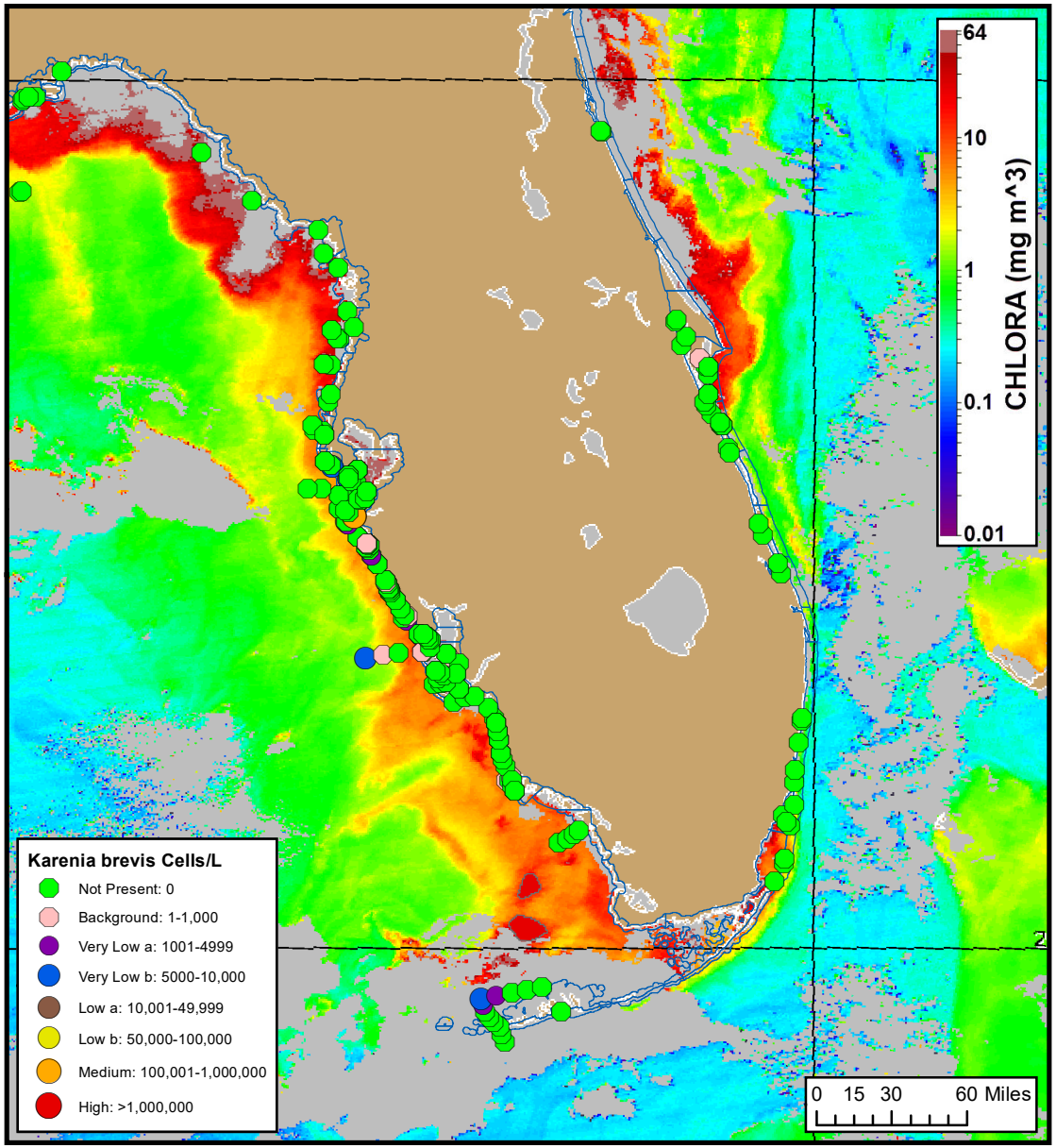
Wind conditions from Vaca Key, FL



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.

Wind conditions from Venice Pier, FL





Karenia brevis cell concentration sampling data from: 12/10/18 through 12/19/18. 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 (12/18/18) with possible *K. brevis* HAB areas shown by red polygon(s).

Analysis

Summary of Recent Water Samples:

***K. brevis* Cell Concentrations:**
Range: Not Present through High
Date: 12/10-12/19
Source: FWRI, MML, SCHD, CCPCD

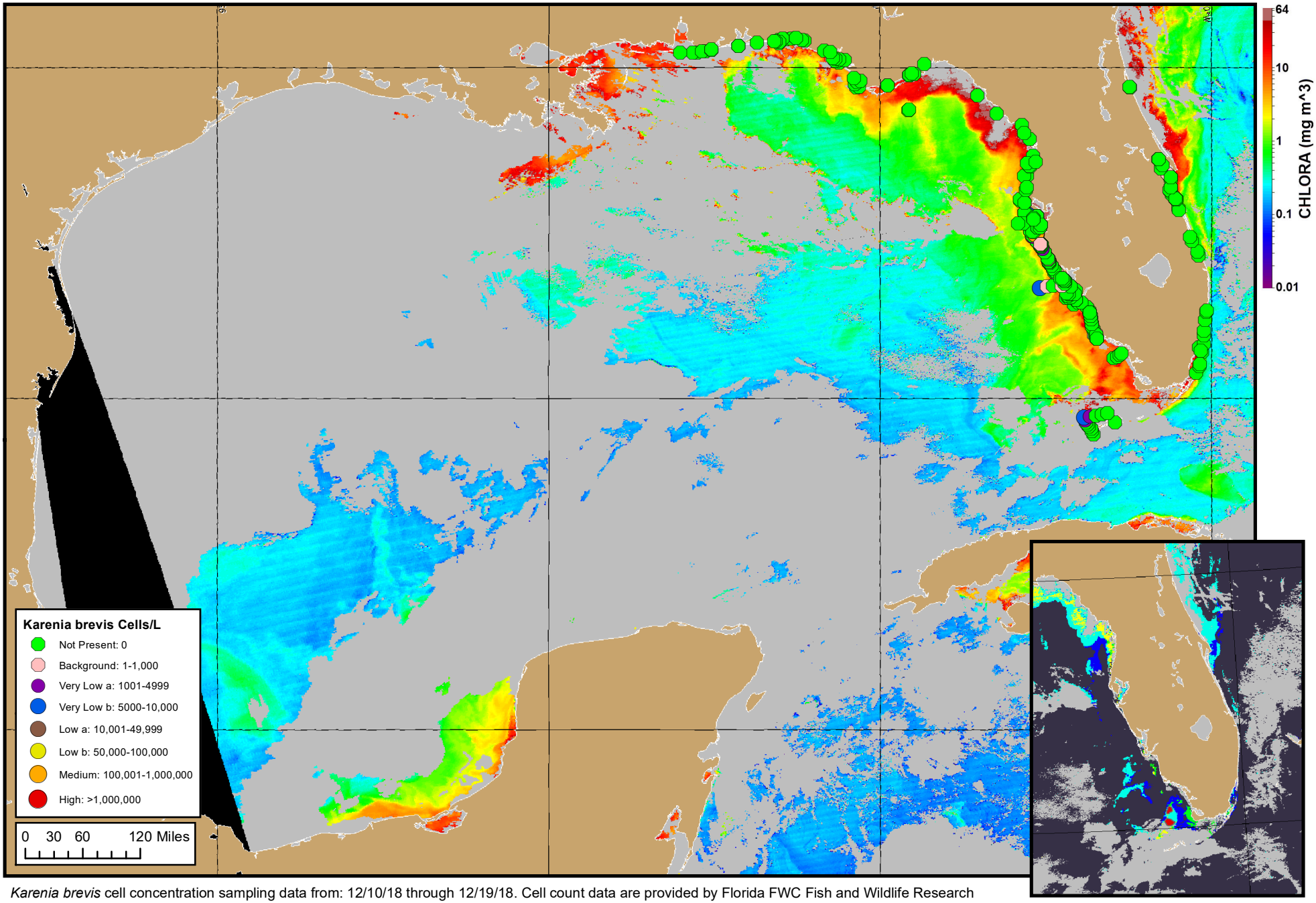
Imagery:

In recent ensemble imagery (MODIS Aqua, 12/18), patches of elevated to very high chlorophyll (2 to >20 µg/L) with some optical characteristics of *K. brevis* are visible 4 to 70 miles offshore Lee and Collier counties, and alongshore Cape Sable in Monroe County. An anomaly with the optical characteristics of *K. brevis* is visible 30 miles south of Marco Island, extending southwest towards the lower Florida keys.

Forecasts:

Winds forecast today through Friday (12/20-21) may increase the potential for respiratory irritation at the coast. Offshore winds Saturday and Monday (12/22-24) will decrease the potential for respiratory irritation at the coast and promote the southerly transport of surface *K.brevis* concentrations.

Ludema, Yang



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

Verified and suspected HAB areas shown in red. Other areas with *K. brevis* optical characteristics shown in yellow (see p. 4 analysis for interpretation).