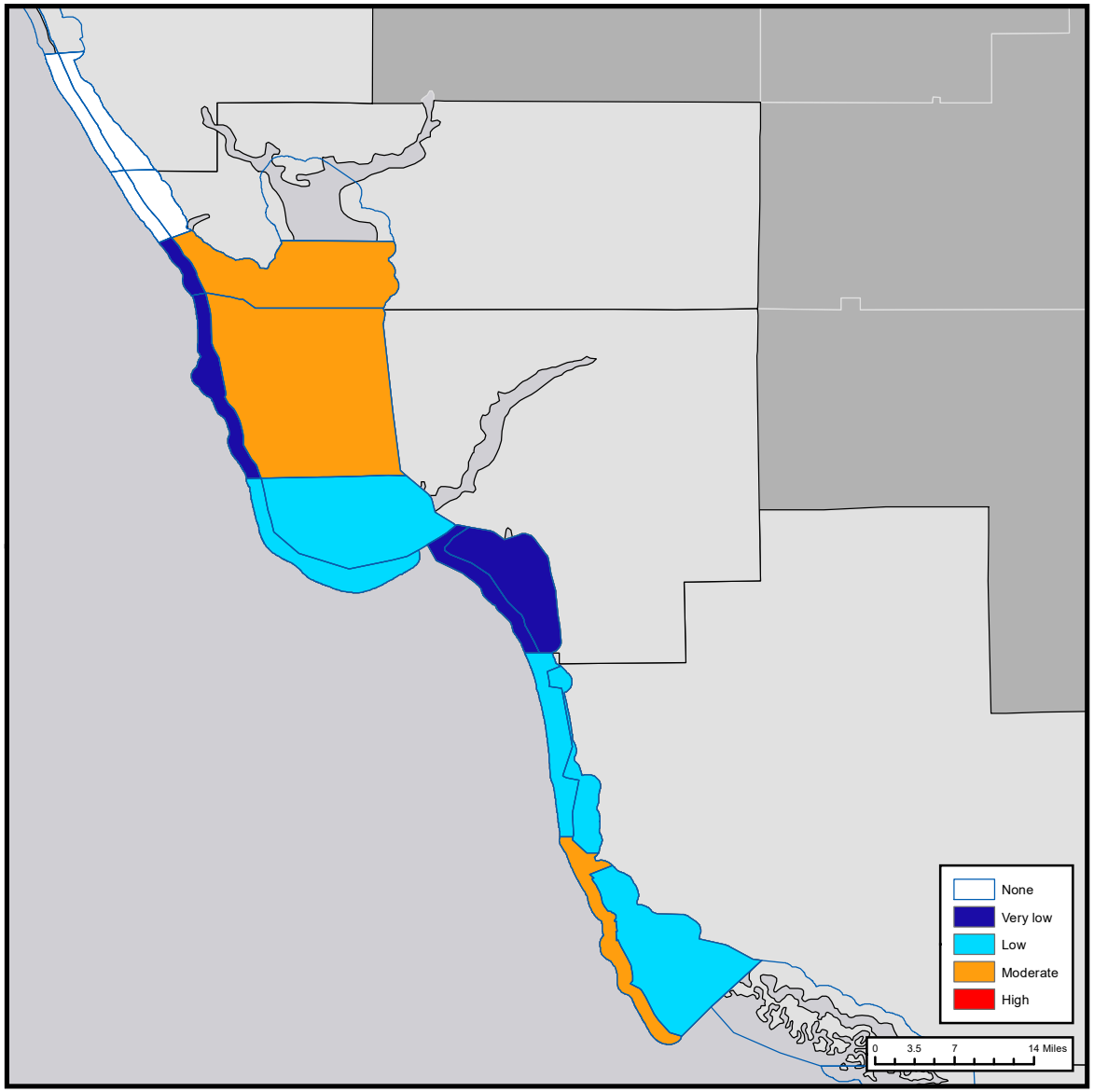
Gulf of Mexico Harmful Algal Bloom Bulletin

Monday, December 9, 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 12-09-19 to 12-12-19 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, Collier
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/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 12/09	Tue 12/10	Wed 12/11	Thu 12/12			
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	none	none	none	none			
	Southern SARASOTA County-Bay Regions	none	none	none	none			
	North CHARLOTTE County-Gulf Coast	none	none	none	none			
	North CHARLOTTE County-Bay Regions	none	none	none	none			
	Southern CHARLOTTE County-Gulf Coast	very low	very low	very low	very low			
	Southern CHARLOTTE County-Bay Regions	moderate	moderate	moderate	moderate			
	Upper CHARLOTTE Harbor-Bay Regions	moderate	moderate	moderate	moderate			
	Northern LEE County-Gulf Coast	very low	very low	very low	very low			
	Northern LEE County-Bay Regions	moderate	moderate	moderate	moderate			
	Central LEE County-Gulf Coast	low	low	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 12/09	Tue 12/10	Wed 12/11	Thu 12/12			
Florida								
	Central LEE County-Bay Regions	low	low	low	low			
	Southern LEE County-Gulf Coast	very low	very low	very low	very low			
	Southern LEE County-Bay Regions	very low	very low	very low	very low			
	Northern COLLIER County-Gulf Coast	low	very low	low	very low			
	Northern COLLIER County-Bay Regions	low	low	low	low			
	Central COLLIER County-Gulf Coast	moderate	moderate	moderate	moderate			
	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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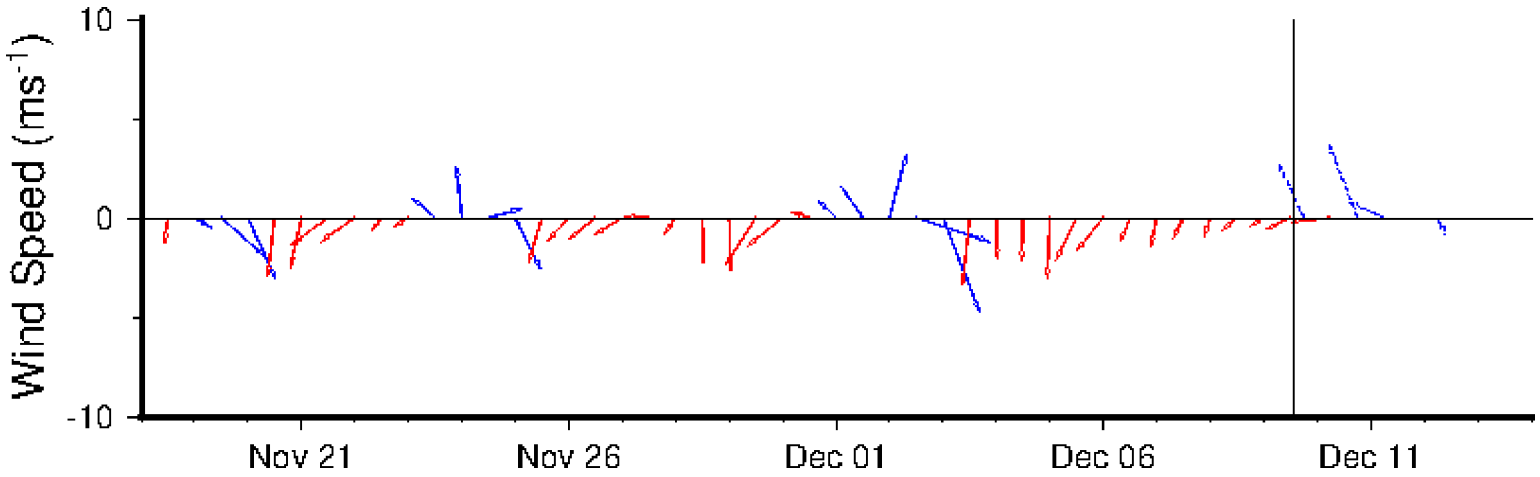
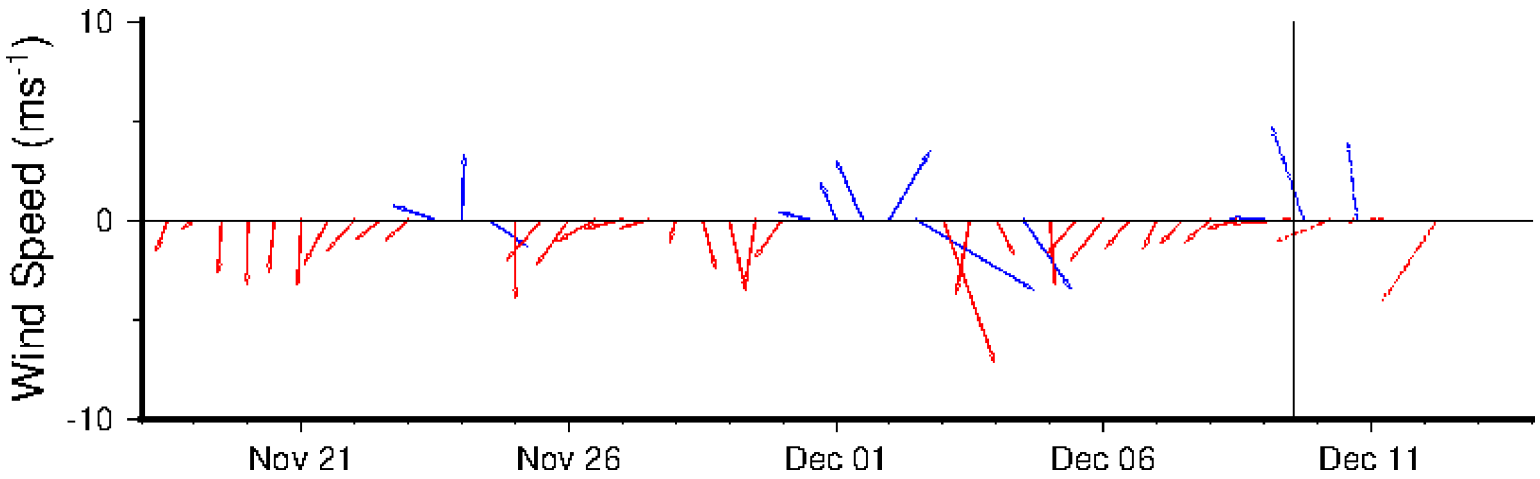
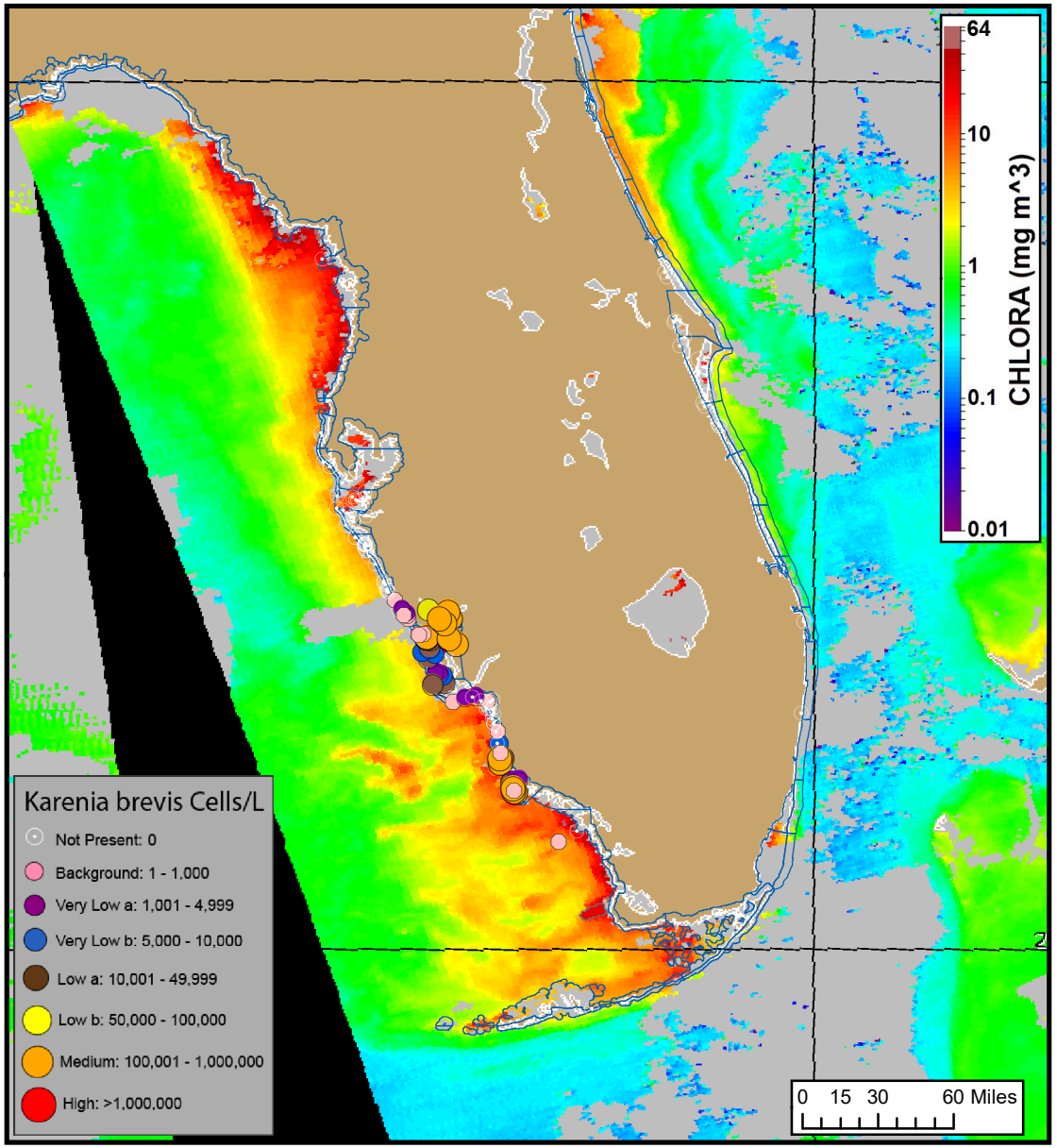
Wind conditions from Naples, FL



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





Karenia brevis cell concentration sampling data from: 11/29/19 through 12/05/19. 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 (12/06/19) 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 Medium
Date: 11/29-12/05
Source: FWRI, MML, SCHD, CCPCD

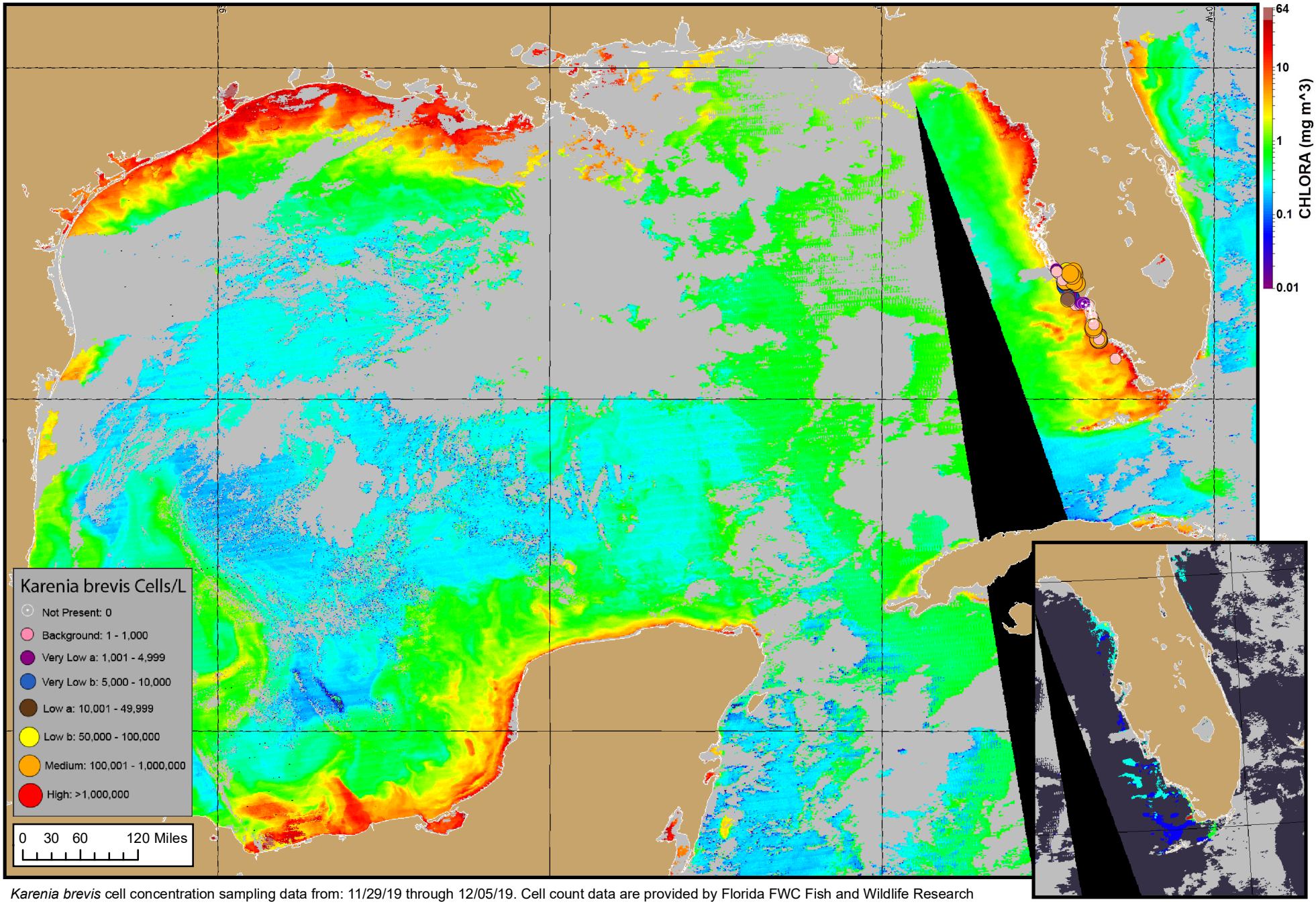
Imagery:

Recent ensemble imagery (MODIS Aqua, 12/6) is obscured by clouds alongshore Charlotte County, limiting analysis in this region. Patches of elevated to high chlorophyll (2 to 13 µg/L) with some of the optical characteristics of *K. brevis* are present alongshore southwest Florida from Sarasota to Monroe counties, corresponding with recent sampling and beach reports indicating a reduction in overall *K. brevis* bloom concentrations. A patch of very high chlorophyll (18 to >20 µg/L) with the optical characteristics of *K. brevis* is present alongshore Collier County where bloom concentrations remain.

Forecasts:

Variable alongshore winds (5-15 kn) forecast today through Wednesday (12/9-11) will decrease potential for transport of surface *K. brevis* concentrations, but may increase the potential for respiratory irritation at the coast and in bay regions where bloom concentrations are most dense.

Keeney, Jima



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MODIS Aqua satellite chlorophyll image (12/06/19).

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