

The Gulf of Mexico Harmful Algal Bloom Forecast

Revised 05/03/2021

Providing information and forecasts on *Karenia brevis* (red tide) in the Gulf of Mexico

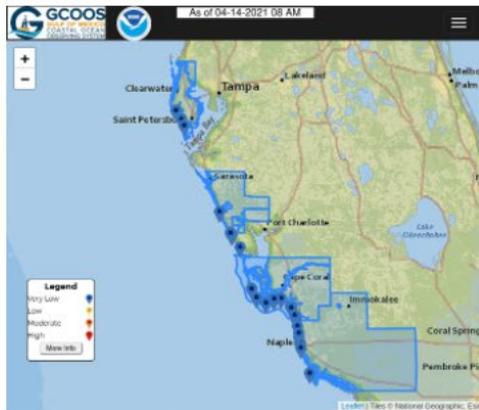


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Florida - Current Conditions

Alert *Karenia brevis* has been observed along the coast above respiratory irritation risk levels so there may be a risk of respiratory irritation at this time in CHARLOTTE and COLLIER counties. Impacts vary by beach and with wind direction. Check links below for detailed forecasts.

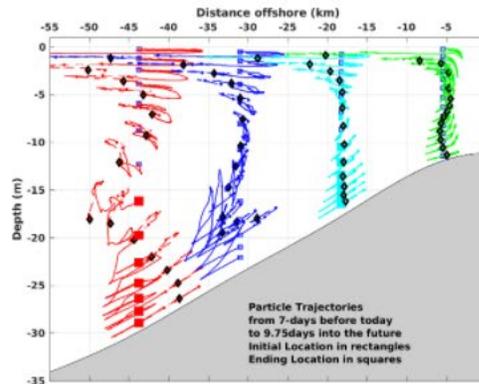
Alert statement on current respiratory irritation conditions, bloom location and extent, and likelihood of intensification.



Respiratory Forecast

Modeled forecast of respiratory irritation at individual beach locations, based on field samples of *Karenia brevis* concentration, wind speed, and direction.

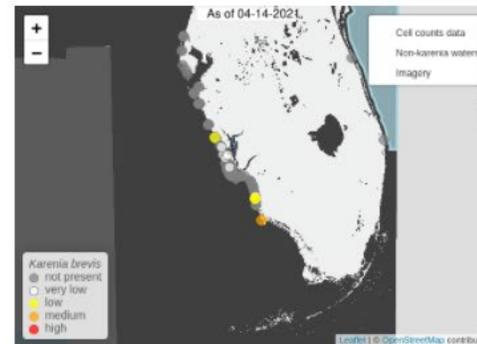
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Intensification Forecast

Model results estimating the likelihood of bloom initiation or intensification along the coast of Southwest Florida, due to an accumulation of cells at the coast.

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Satellite Imagery

Real-time imagery from the Ocean Land Color Imager (OLCI) showing bloom location and extent.

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Real-Time view (i.e. current conditions) of the risk of respiratory irritation, bloom location and extent and likelihood of intensification.

Click on the "View Product" buttons for detailed information on the respiratory forecasts for the next 30 hrs; the likelihood of intensification; and the position of the bloom based on chlorophyll fluorescence imagery and cell counts information.

+
Siesta Beach
×

Sample Source: FWRI
Sample Taken: 2021/04/12 03:00 PM EDT
Model Run: 2021-04-14 08:00:00

Forecast			
Time	Risk	Wind Speed	Wind Dir
2021/04/14 11:00 AM EDT	Moderate	8 knots	SE
2021/04/14 02:00 PM EDT	Moderate	8 knots	SSW
2021/04/14 05:00 PM EDT	Moderate	8 knots	SW
2021/04/14 08:00 PM EDT	Low	4 knots	WSW
2021/04/14 11:00 PM EDT	Low	1 knots	WSW
2021/04/15 02:00 AM EDT	Low	2 knots	S
2021/04/15 05:00 AM EDT	Low	5 knots	S
2021/04/15 08:00 AM EDT	Moderate	6 knots	SSE
2021/04/15 11:00 AM EDT	Moderate	11 knots	S
2021/04/15 02:00 PM EDT	Moderate	13 knots	SSW

Legend

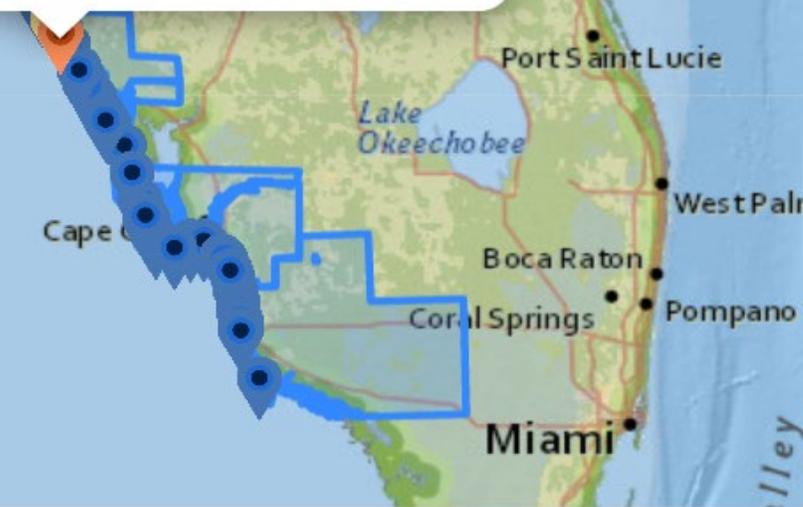
Very Low

Low

Moderate

High

More Info



The **Respiratory Forecast** provides an estimate of the risk of respiratory irritation at individual beaches over the next 30 hours. It is updated every 3 hours.

The **marker pins** show where we have data and their color shows the expected condition now.

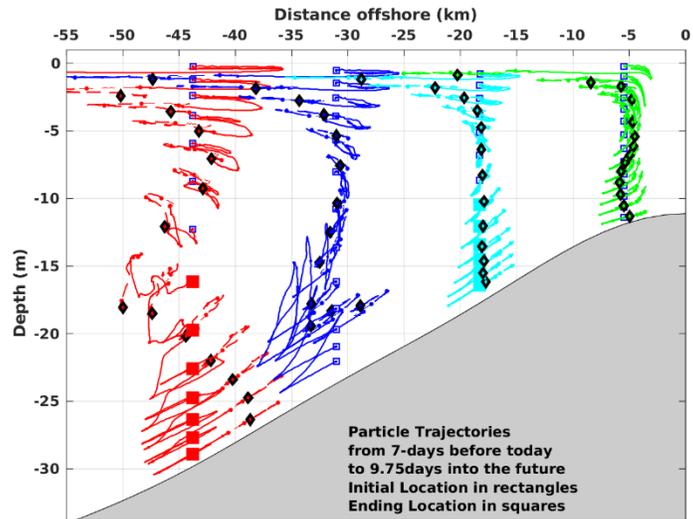
More info on the legend opens a page that explains the respiratory risk potential, which is based on *K. brevis* cell concentration, wind direction and wind speed

Click on a **marker pin** to get a popup for the forecast at each beach for every 3 hrs. The colors and labels in the popup match the **legend**.

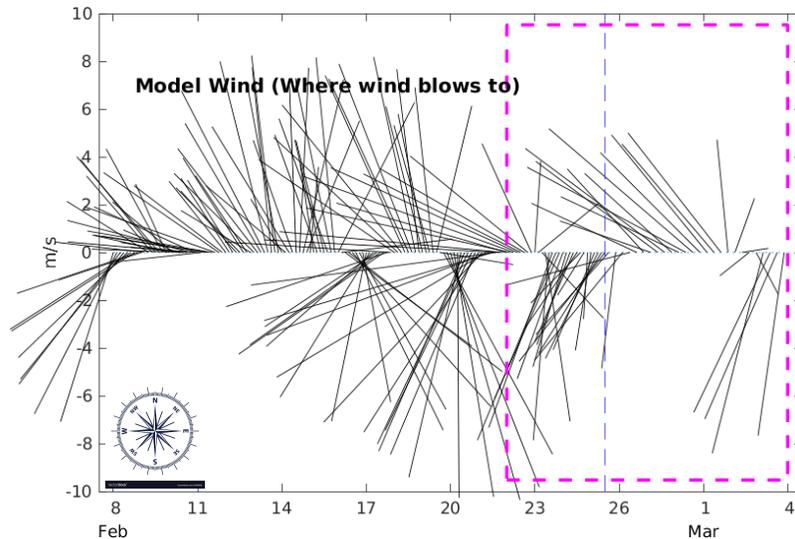
Wind dir(direction) is the direction that the wind blows from (the direction you are facing when you feel the wind on your face).

Forecast of Initial Intensification of the bloom along the coast

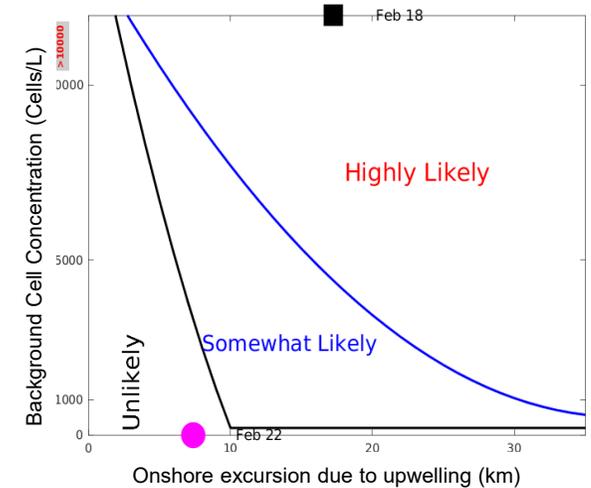
The **Intensification Forecast** is based on modeled circulation of the Gulf. Offshore winds push surface water offshore, which causes water near the bottom to move toward the coast, and come up at the shore, called “upwelling”. *Karenia* usually starts growing near the bottom offshore. Upwelling is responsible for bloom formation and intensification at the coast when the bloom is developed.



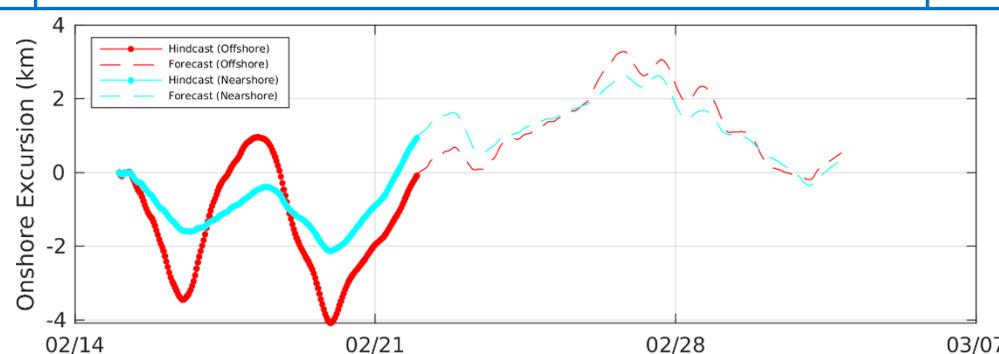
Animation shows the movement of particles (*K. brevis* cells) onshore and offshore at different depth layers. Blue boxes show the starting point and black diamonds the final position. Upwelling favorable winds from the north drive surface water offshore, bring cells to the coast in the bottom waters. “0” distance represents the location at the beach.



Observed and modeled (purple dashed box) winds. Lines point to the direction the wind is blowing to.



Model to determine whether intensification is likely. The location of the filled circle shows likely intensification based on the onshore movement and cell concentration.



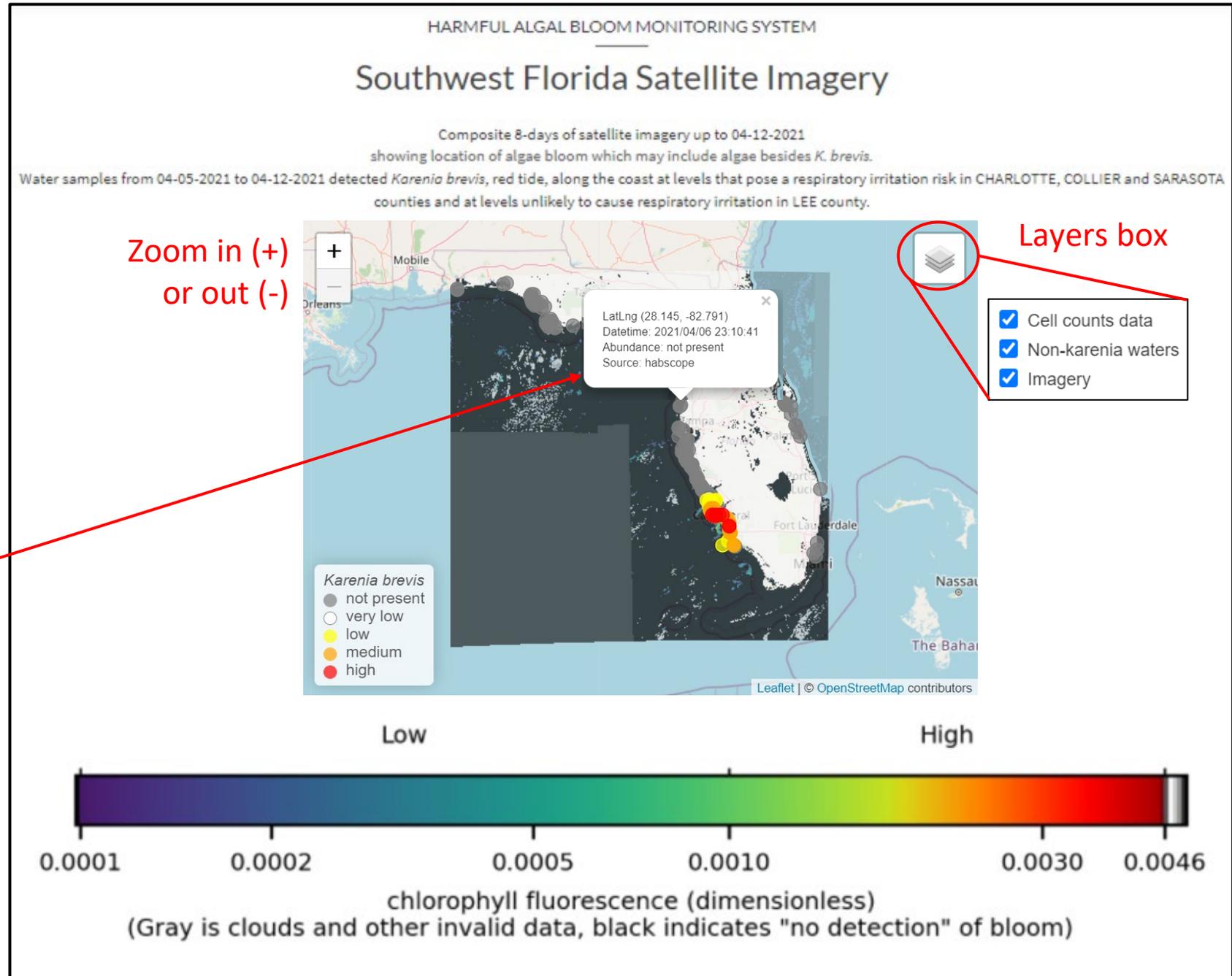
Movement toward the coast (positive) and offshore (negative). >10 km is somewhat favorable; >20 km moderately favorable; and >30 km highly favorable.

Satellite imagery showing fluorescence caused by chlorophyll-a. The algorithm is not specific to *K. brevis*, but *K. brevis* is the most common algae on the SW Florida coast.

Colored circles show *K. brevis* cell concentrations in seawater samples (from several sources), provide more information, and help confirm the presence of blooms.

The **layers box** on the top right allows you to turn off and on cell counts, imagery or the masks which hide areas where *K. brevis* is unlikely to occur.

If you **click on a circle**, the date and source is shown. If you click elsewhere, you get the latitude and longitude of the center of the “hand” that you are using to scroll around the window.

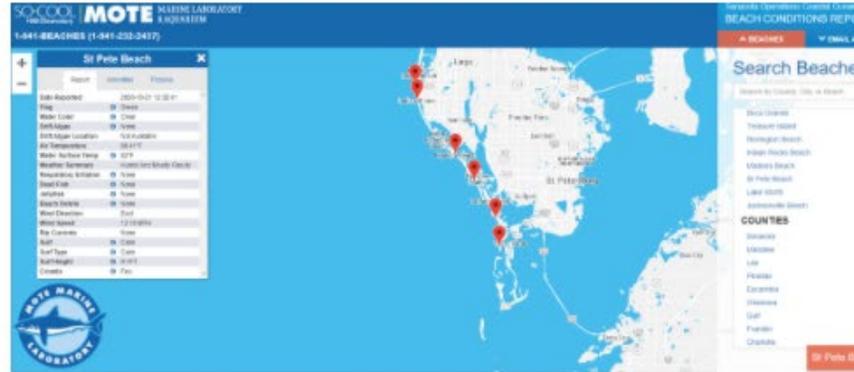


Other Current Information

The bottom boxes provide links to current information from other sources. Unlike, the top row of tools, the images shown here are examples, and do not show current conditions.

The **Beach Conditions Reporting System** at Mote Marine Lab provides nearly daily (or twice daily) reports of various conditions at the beach, including respiratory irritation, waves, water color, etc.

The **State of Florida Observations** gives current Red Tide Status, and links to additional maps and graphics



Beach Conditions Reporting System

Provides today's conditions at multiple beaches along the west coast of Florida, this includes respiratory irritation, rip currents, wind, and others.

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State of Florida Observations

Concentration of *K. brevis* cells provided by Florida state monitoring programs, from water samples over the last 8 days.

[View Product](#)