

Gulf of Mexico Harmful Algal Bloom (HAB) Bulletin Survey

NOTE: The final version for the web-based survey software will feature better images than the ones used here.

This is a voluntary survey.

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995 unless the information collection has a currently valid OMB Control Number. The approved OMB Control Number for this information collection is 0648-0342. Without this approval, we could not conduct this information collection. Public reporting for this information collection is estimated to be approximately 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. All responses to this information collection are voluntary. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the NOAA National Ocean Service, National Centers for Coastal Ocean Science, Attn: Lonnie Gonsalves, 1305 East West Hwy., Rm 8325, Silver Spring, MD 20910.

Thank you for taking the time to respond to this survey!

This survey is designed to collect information on the use and usefulness of the Gulf of Mexico Harmful Algal Bloom (HAB) Bulletins. The Bulletin is sent out twice per week to provide information on HABs in the Gulf of Mexico region.

This survey should take no more than 10 minutes to complete and will provide NOAA with valuable feedback on how the Bulletin is used and how it can be improved.

1. How would you describe the sector you work in (i.e., how you might receive or use the Bulletin)?

- Federal government
- State government
- Local government
- Commercial sector
- Non-profit
- Academic/Research
- Private citizen

2. Which area of the Gulf of Mexico do you use the Bulletin for?

- Southwest Florida
- Northwest Florida to Louisiana
- Texas

3. Which of the following frequencies best describes how often do you consult the HAB Bulletins?

- Weekly or more frequently
- Every other week
- Monthly
- Every other month
- 1-2 times per year
- Never [Skip to Q28.]

4. Do you use the Bulletin for any of the following types of advisories or decision-making?

	Yes	No
Beach closures or advisories		
Fish or shellfish consumption		
Recreational fishing decisions/advisories		
Other health advisories (not listed above)		
Other: _____		

5. How useful is the Bulletin in each of these uses for your purpose?

(Only asked for the ones selected in Q4..)

	Not at all useful	Minimally useful	Moderately useful	Very useful
Beach closures or advisories				
Fish or shellfish consumption				
Recreational fishing decisions/advisories				
Other health advisories (not listed above)				
Other: _____				

6. How would you describe the extent to which the Bulletin is your primary/only source of information?

- I have other sources of information that I prefer
- I use multiple sources of information on HABs, including the NOAA HAB Bulletin
- I rely primarily on the Bulletin for information on HABs

If respondent indicated one of the two Florida regions in Q2., they are asked Q - Q.



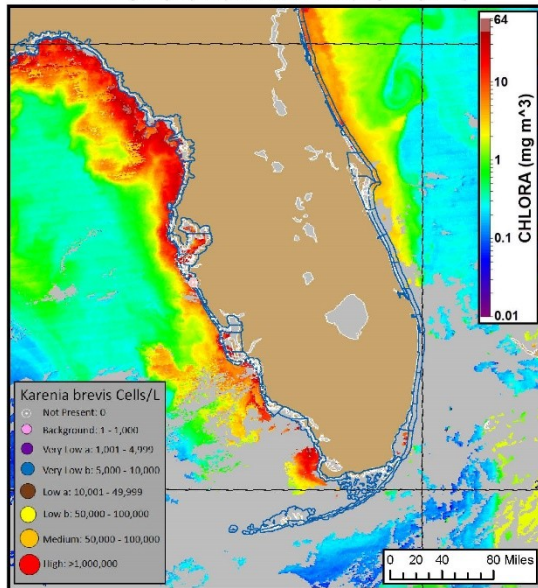
Gulf of Mexico Harmful Algal Bloom Bulletin

Monday, September 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>.



Karenia brevis cell concentration sampling data from: 08/30/19 through 09/05/19. 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/REDTIDESSTATUS>.

MODIS Aqua satellite chlorophyll image (09/07/19) with possible *K. brevis* HAB areas shown by red polygon(s).

Conditions Report

Not present to background 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. No respiratory irritation associated with *Karenia brevis* (commonly known as red tide) is expected in this region.

Analysis

Imagery:

In recent ensemble imagery (MODIS Aqua, 9/7), patches of elevated to very high chlorophyll (2 to >20 µg/L) with some of the optical characteristics of *K. brevis* are visible alongshore southwest Florida.

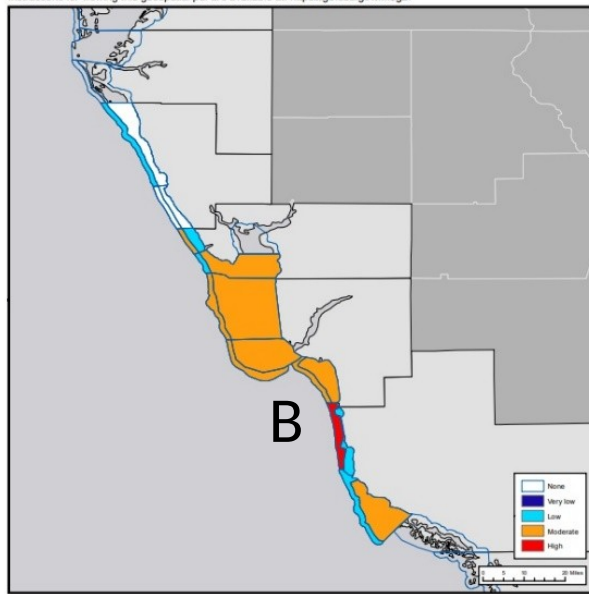
Forecasts:

Upwelling favorable winds forecast Tuesday through Saturday (9/10-14) will promote the potential for bloom formation at the coast of southwest Florida.

Davis, Keeney

7. The image {above} shows the Conditions Report, Analysis (including Bloom Formation forecast), and interactive Satellite Image map in the Bulletin when there is no *Karenia brevis* bloom present. How useful do you find this part of the Bulletin when there is no bloom?

- Very useful
- Useful
- Minimally useful
- Not useful
- Not applicable/something I don't use



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: Sarasota, Lee, Collier
 Dead fish: Sarasota, 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>

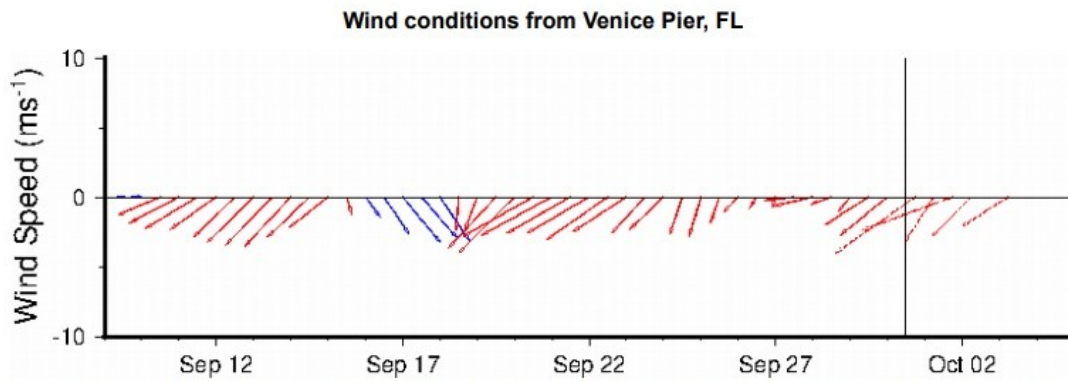
The image {above} shows the Conditions Report (“A”) and interactive Respiratory Irritation forecast (“B”) map in the Bulletin.

8. How useful do find the Conditions Report (“A”)?

- Very useful
- Useful
- Minimally useful
- Not useful
- Not applicable/something I don't use

9. How useful do find the interactive Respiratory Irritation forecast (“B”)?

- Very useful
- Useful
- Minimally useful
- Not useful
- Not applicable/something I don't use



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>.

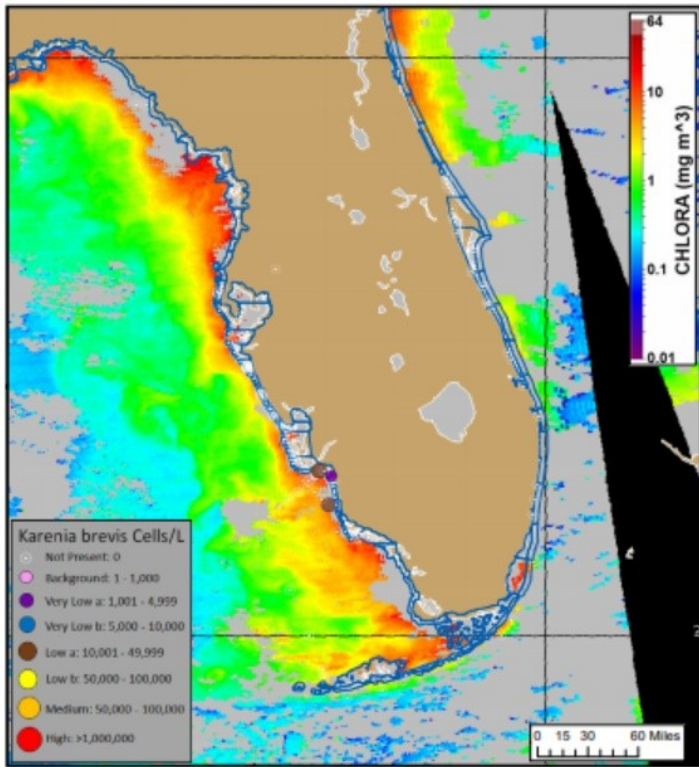
10. The image {above} shows the Wind Conditions information in the Bulletin. How useful do you find this part of the Bulletin?

- Very useful
- Useful
- Minimally useful
- Not useful
- Not applicable/something I don't use

State Name	County Region	Mon 09/30	Tue 10/01	Wed 10/02	Thu 10/03
Florida					
	Central LEE County-Bay Regions				
	Southern LEE County-Gulf Coast				
	Southern LEE County-Bay Regions	none	none	none	none
	Northern COLLIER County-Gulf Coast	very low	very low	very low	very low
	Northern COLLIER County-Bay Regions				
	Central COLLIER County-Gulf Coast				

11. The image {above} shows the County and Region-specific Respiratory Irritation forecast information in the Bulletin. How useful do you find this part of the Bulletin?

- Very useful
- Useful
- Minimally useful
- Not useful
- Not applicable/something I don't use



Analysis

Summary of Recent Water Samples:

K. brevis Cell Concentrations:

Range: Not present to Low
Date: 09/24-09/30
Source: FWRI, MML, SCHD, CCPCD

Imagery:

Recent satellite imagery (MODIS Aqua, 9/28) is partially obscured by clouds, limiting analysis at the coast of southwest Florida. Elevated to high chlorophyll (2 to 15 µg/L) with some of the optical characteristics of *K. brevis* are present in a patch alongshore Manatee County and in a separate patch along- and offshore Lee and Collier counties which corresponds with recent reports of fish kills and respiratory irritation.

Forecasts:

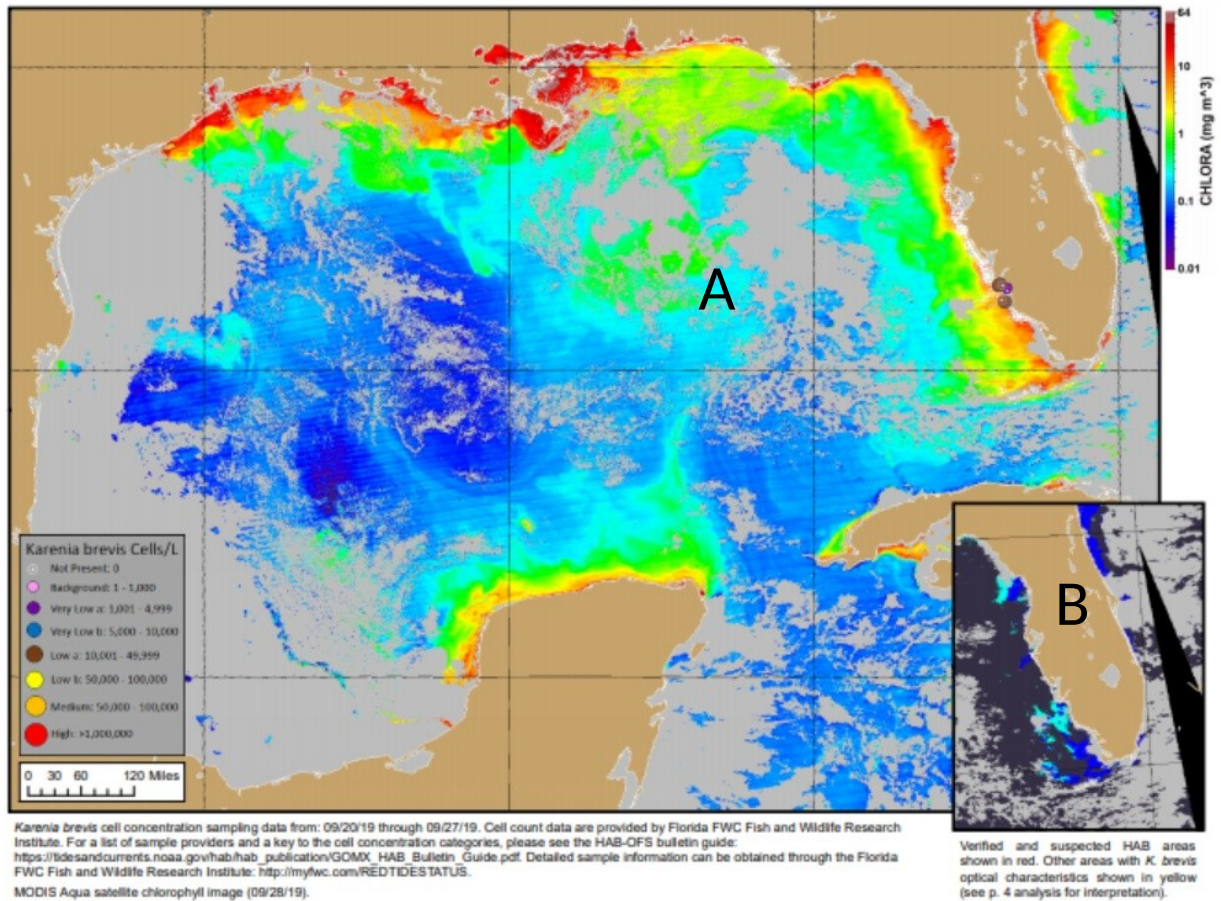
The persistent offshore winds (10-15 kn) forecast today through Thursday (9/30-10/3) will reduce the potential for respiratory irritation and bloom intensification at the coast. Forecast winds will promote the potential for northward transport of *K. brevis* today through Thursday.

Jima, Davis

Karenia brevis cell concentration sampling data from: 09/20/19 through 09/27/19. 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://idesandcurrents.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 (09/28/19) with possible *K. brevis* HAB areas shown by red polygon(s).

12. The image {above} shows the Analysis information in the Bulletin. How useful do you find this part of the Bulletin?

- Very useful
- Useful
- Minimally useful
- Not useful
- Not applicable/something I don't use



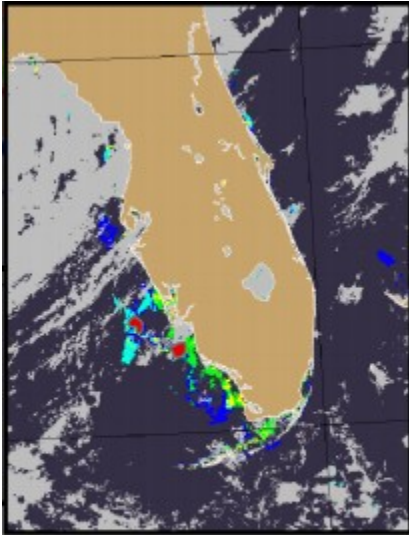
The image {above} shows the Gulf-wide information (“A”) and the Chlorophyll anomaly (“B”).

13. How useful do you find the Gulf-wide information (“A”)?

- Very useful
- Useful
- Minimally useful
- Not useful
- Not applicable/something I don't use

14. How useful do you find the Chlorophyll anomaly (“B”)?

- Very useful
- Useful
- Minimally useful
- Not useful
- Not applicable/something I don't use



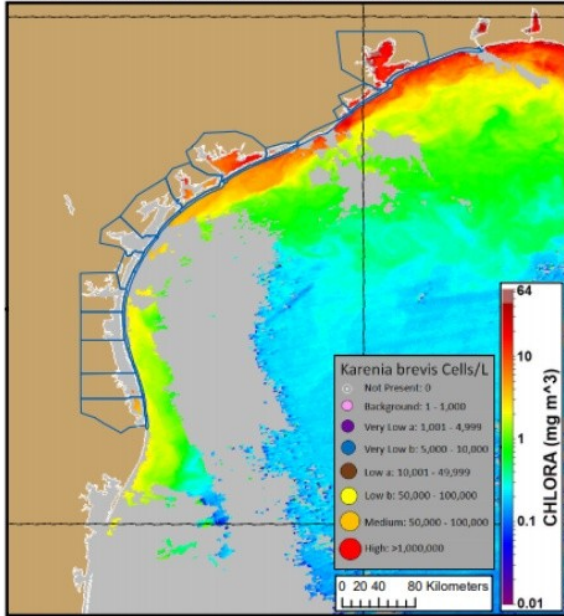
Verified and suspected HAB areas shown in red. Other areas with *K. brevis* optical characteristics shown in yellow (see p. 4 analysis for interpretation).

15. The image {above} shows a satellite image in the Bulletin highlighting the verified and suspected HAB areas. How useful do you find this part of the Bulletin?

- Very useful
- Useful
- Minimally useful
- Not useful
- Not applicable/something I don't use

If respondent indicated Texas in Q2., they are asked Q - Q.

Instructions for viewing this geospatial pdf are available at: <https://go.usa.gov/xn9g2>.



Karenia brevis cell concentration sampling data from: 11/02/19 through 11/07/19. Cell count data are provided by Texas Parks and Wildlife Department. For a list of sample providers and a key to the cell concentration categories, please see the HAB-OFS bulletin guide: https://idesandcurrents.noaa.gov/hab/hab_publication/GOMX_HAB_Bulletin_Guide.pdf. Detailed sample information can be obtained through the Texas Parks and Wildlife Department at: <http://www.tpwd.state.tx.us/landwater/water/enviroconcerns/hab/redtide/status.phtml>.

MODIS Aqua satellite chlorophyll image (11/10/19) with possible *K. brevis* HAB areas shown by

Conditions Report

Not present to background concentrations of *Karenia brevis* (commonly known as red tide) are present alongshore portions of the Texas coast. No respiratory irritation associated with *K. brevis* is expected in this region.

Analysis

Imagery:

Recent ensemble imagery (MODIS Aqua, 11/10) is partially obscured by clouds alongshore from San Jose Island to Baffin Bay, limiting analysis. Patches of elevated to very high chlorophyll (2 to >20 µg/L) with some of the optical characteristics of *K. brevis* are present north of the clouded area to Sabine Pass. Elevated chlorophyll in this region is likely due to the resuspension of benthic chlorophyll and sediments along the coast.

Keeney, Davis

16. The image {above} shows the Conditions Report, Analysis, and interactive Satellite Image map in the Bulletin when there is no *Karenia brevis* bloom present. How useful do you find this part of the Bulletin when there is no bloom?

- Very useful
- Useful
- Minimally useful
- Not useful
- Not applicable/something I don't use



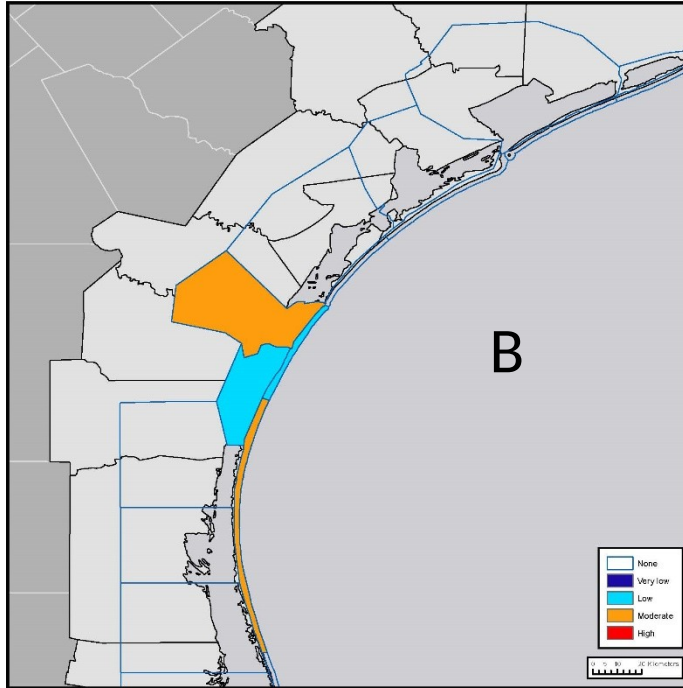
Gulf of Mexico Harmful Algal Bloom Bulletin

Monday, September 17, 2018
 NOAA National Ocean Service
 NOAA Satellite and Information Service
 NOAA National Weather Service

Region: Texas



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 09-17-18 to 09-20-18 displaying the highest level of potential respiratory irritation forecasts in each region.

Conditions Report

Very low to medium concentrations of *Karenia brevis* (commonly known as red tide) are present along- and offshore portions of the Texas coast from the Port Aransas/Muskeget Island region to the Rio Grande region. *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 Forecast Region):

Respiratory irritation: Port Aransas to Padre Island
National Seashore
Dead fish: None

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:

Texas Department of State Health Services:
<http://www.dshs.texas.gov/seafood/harmful-algal-blooms.aspx>
Other resources: <https://go.usa.gov/xQNWp>

Recent Local Observations and Data:

Texas Parks and Wildlife Department Red Tide Status:
<https://tpwd.texas.gov/landwater/water/enviroconcerns/hab>

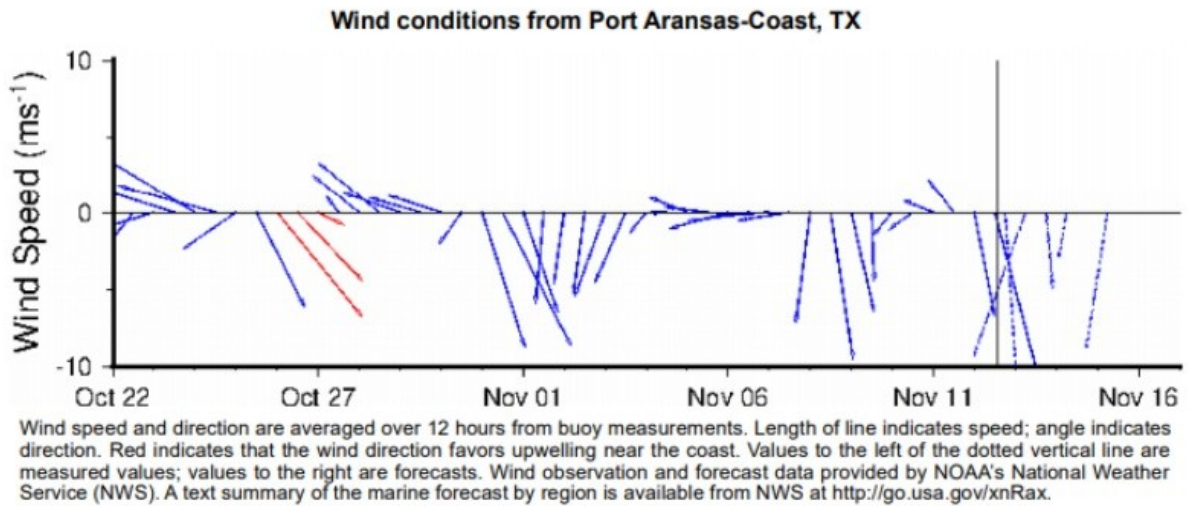
The image {above} shows the Conditions Report (“A”) and interactive Respiratory Irritation forecast map (“B”) in the Bulletin.

17. How useful do you find the Conditions Report (“A”)?

- Very useful
- Useful
- Minimally useful
- Not useful
- Not applicable/something I don't use

18. How useful do you find the interactive Respiratory Irritation forecast map (“B”)?

- Very useful
- Useful
- Minimally useful
- Not useful
- Not applicable/something I don't use



19. The image {above} shows the Wind Conditions information in the Bulletin. How useful do you find this part of the Bulletin?

- Very useful
- Useful
- Minimally useful
- Not useful
- Not applicable/something I don't use

20.

Texas p. 2-1

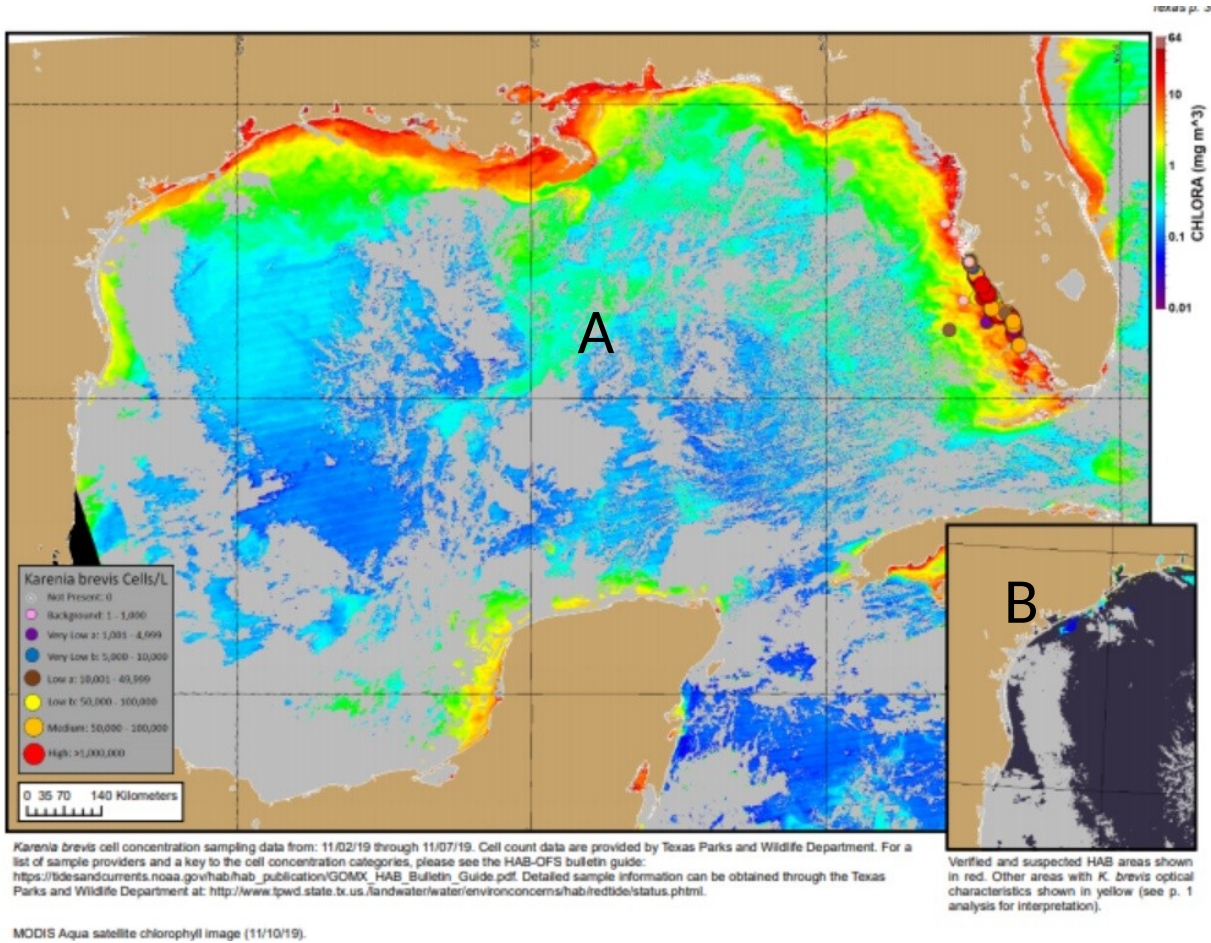
State Name	Region	Mon 09/17	Tue 09/18	Wed 09/19	Thu 09/20			
Texas								
	HIGH ISLAND to SABINE PASS-Gulf Coast							
	BOLIVAR PENINSULA-Gulf Coast							
	GALVESTON BAY-Bay Regions	none	none	none	none			
	GALVESTON ISLAND-Gulf Coast							
	WEST BAY-Bay Regions							
	CHRISTMAS BAY-Bay Regions							
	SAN LUIS PASS to SARGENT BEACH-Gulf Coast							
	EAST MATAGORDA BAY-Bay Regions							
	SARGENT BEACH to COLORADO RIVER MOUTH-Gulf Coast							
	MATAGORDA BAY-Bay Regions							
	MATAGORDA PENINSULA-Gulf Coast							
	SAN ANTONIO BAY/ESPIRITU SANTO BAY-Bay Regions							
	MATAGORDA ISLAND-Gulf Coast							
	ARANSAS BAY to ARANSAS PASS-Bay Regions							
	SAN JOSE ISLAND-Gulf Coast							
	CORPUS CHRISTI BAY-Bay Regions	moderate	moderate	moderate	moderate			
	PORT ARANSAS/MUSTANG ISLAND to PINS-Gulf Coast	low	low	low	low			
	UPPER LAGUNA MADRE-Bay Regions	low	low	low	low			
	PADRE ISLAND NATIONAL SEASHORE (PINS)-Gulf Coast	moderate	moderate	moderate	moderate			
	BAFFIN BAY to LAND CUT-Bay Regions							
	LAND CUT-Bay Regions							
	LAGUNA MADRE-Land Cut to Bennie's Shack-Bay Regions							
	LAGUNA MADRE-Bennie's Shack to Cullen Channel-Bay Regions							
	LOWER LAGUNA MADRE to LAGUNA VISTA-Bay Regions							
	MANSFIELD PASS to BEACH ACCESS 6-Gulf Coast							
	BEACH ACCESS 6 to RIO GRANDE-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.

The image {above} shows the Region-specific Respiratory Irritation forecast information in the Bulletin. How useful do you find this part of the Bulletin?

- Very useful
- Useful
- Minimally useful
- Not useful
- Not applicable/something I don't use



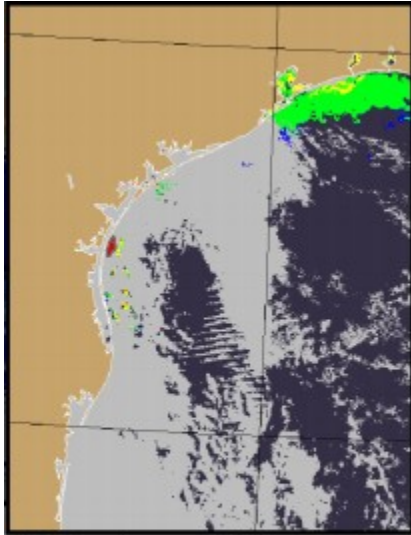
The image {above} shows the Gulf-wide information (“A”) and the Chlorophyll anomaly (“B”).

21. How useful do you find the Gulf-wide information (“A”)?

- Very useful
- Useful
- Minimally useful
- Not useful
- Not applicable/something I don't use

22. How useful do you find the Chlorophyll anomaly (“B”)?

- Very useful
- Useful
- Minimally useful
- Not useful
- Not applicable/something I don't use



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

23. The image {above} shows a satellite image in the Bulletin highlighting the verified and suspected HAB areas. How useful do you find this part of the Bulletin?

- Very useful
- Useful
- Minimally useful
- Not useful
- Not applicable/something I don't use

24. If NOAA were to add the following elements to the Bulletin, how useful would these new elements be to you?

Potential New Element	Not useful	Minimally useful	Useful	Very useful
Real-time wind forecasts				
Interactive web maps				
Time slider to view the samples and forecasts by day				
Export data (ex. satellite imagery)				

25. To what extent do you agree with each of the following statements?

The Bulletin...	Strongly disagree	Disagree	Agree	Strongly Agree	Don't Know
Is easy to read					
Is understandable					
Provides actionable information					
Is usually correct in its forecast					
Is sent too frequently					
Is not sent frequently enough					

26. You indicated that the Bulletin was not {category from above with a “strongly disagree” or “disagree”}, are there ways in which it can be improved?

Note: There would be 6 of these questions that would only appear when the respondent selects a “strongly disagree” or “disagree” to one of the above.

{Open-Ended}

27. Overall, how satisfied are you with the Gulf of Mexico HAB Bulletin?

- Not at all satisfied
- Somewhat satisfied
- Moderately satisfied
- Very satisfied

[Q28. is only asked of those who said “Rarely/Never” on Q3.]

28. You said you “rarely/never” read the Bulletin. Why is that? (Select all that apply)

- Not relevant for me
- The information is too complex
- The information is too simple
- I/my workplace generates HABs-related data
- Don't like the format

[Q29. is asked of everyone.]

29. Is there a feature or additional type of information that you need for your decision-making that is not provided?

{Open-ended}

30. Overall, are there ways in which NOAA can improve the HAB Bulletin?

{Open-ended}