

Lake Erie 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 Lake Erie Harmful Algal Bloom (HAB) Bulletin from 2009-2019. The Bulletin is sent out twice per week during the summer to early fall to provide information on HABs in the western Lake Erie basin.

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 best 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. For which state(s) or province do you use the Lake Erie HAB Bulletin? (Check all that apply)

- Ohio
- Michigan
- Indiana
- Pennsylvania
- New York
- Ontario Province

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 Q18.]

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

	Yes	No
Beach closures		
Drinking water advisories/decisions		
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				
Drinking water advisories/decisions				
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



Lake Erie Harmful Algal Bloom Bulletin

29 August, 2019, Bulletin 18

Analysis

The *Microcystis* cyanobacteria bloom continues in the western basin of Lake Erie. Recent satellite imagery (8/28) shows the bloom extending from Maumee Bay north along the Michigan coast, to Brest Bay, east along the Ohio coast to the Marblehead Peninsula, and offshore through the Bass Islands. Observed conditions (8/26-28) promoted southeast transport and mixing of surface bloom concentrations, which are no longer visible near the Ontario coast. Sampling has been delayed this week due to weather, but measured toxin concentrations may still be exceeding the recreational threshold where the bloom is most dense (appearing green from a boat). *Keep pets and yourself out of the water in areas where scum is forming.* The persistent cyanobacteria bloom in Sandusky Bay continues. No other blooms are present in Lake Erie.

Forecasts

Winds (5-26 kn) forecast today through Sunday (8/29-9/1) will promote mixing and northern transport of surface *Microcystis* concentrations along the Michigan coast. -Davis, Keeney

Additional Resources

To find a safe place for recreation, visit the Ohio DOH "BeachGuard" site: <http://publicapps.odh.ohio.gov/beachguardpublic/>
Ohio EPA's site on harmful algal blooms: <http://epa.ohio.gov/HAB-Algae>
NOAA's GLERL provides additional HAB data here: http://www.glerl.noaa.gov/res/HABs_and_Hypoxia

7. The image {above} shows the Bloom Analysis 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 images below are "GeoPDF". Please visit <https://go.usa.gov/xReTC> for instructions on viewing longitude and latitude.

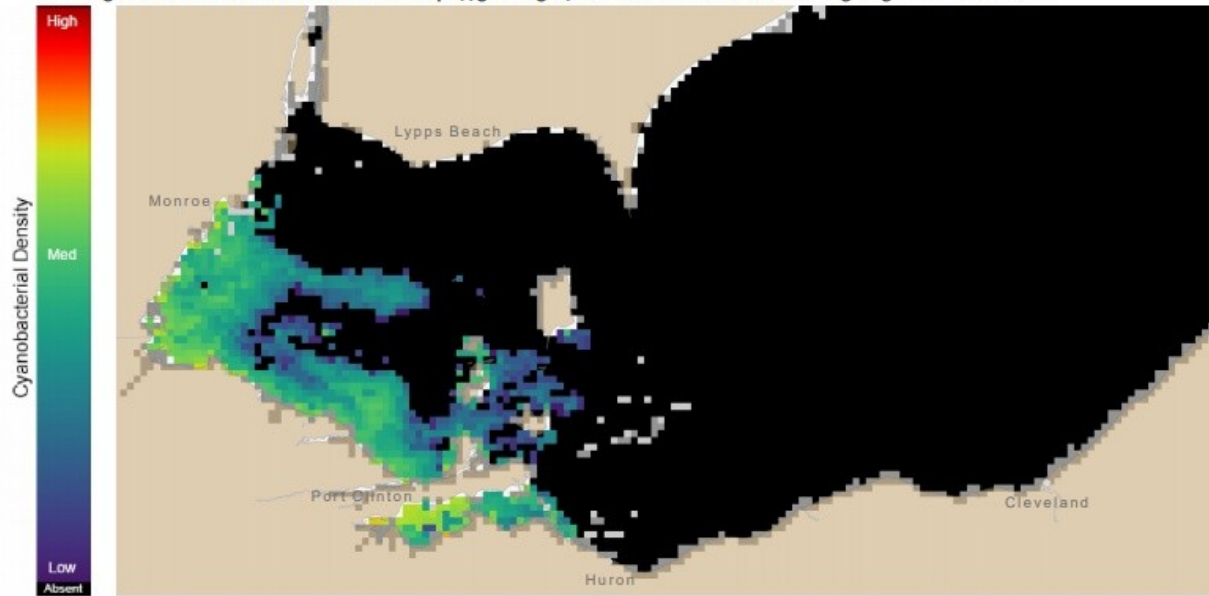


Figure 1. Cyanobacterial Index from NASA MODIS-Terra data collected 28 August, 2019 at 11:11 EST. Grey indicates clouds or missing data. The estimated threshold for cyanobacteria detection is 20,000 cells/mL.

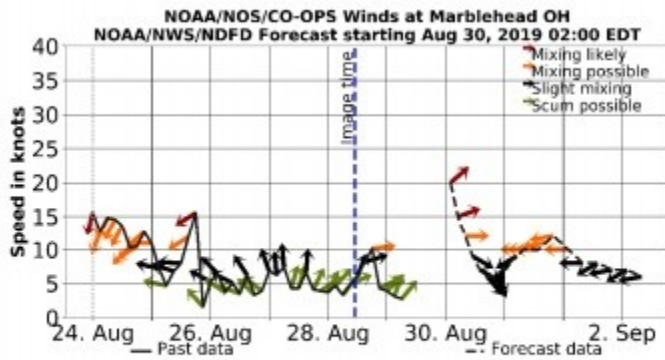
8. The image {above} shows Satellite Imagery for the western/central basin of Lake Erie in the Bulletin. How useful do you find this part of the Bulletin?

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



Figure 2. Cyanobacterial Index from NASA MODIS-Terra data collected 28 August, 2019 at 11:11.

9. The image {above} shows Satellite Imagery for the entirety of Lake Erie 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



Wind speed and direction from Marblehead, OH. Blooms mix through the water column at wind speeds greater than 15 knots (or 7.7 m/s).

10. The image {above} shows the Mixing Forecast 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

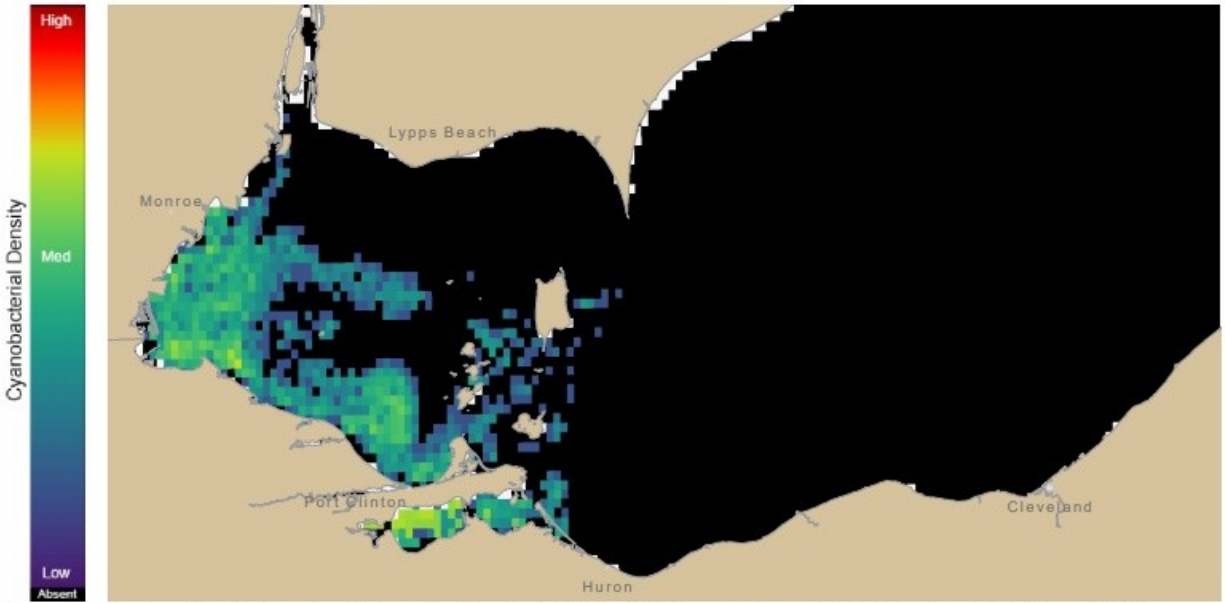


Figure 3. Nowcast position of bloom for 29 August, 2019 using LEOS modelled currents to move the bloom from the 28 August, 2019

11. The image {above} shows the Transport Nowcast 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

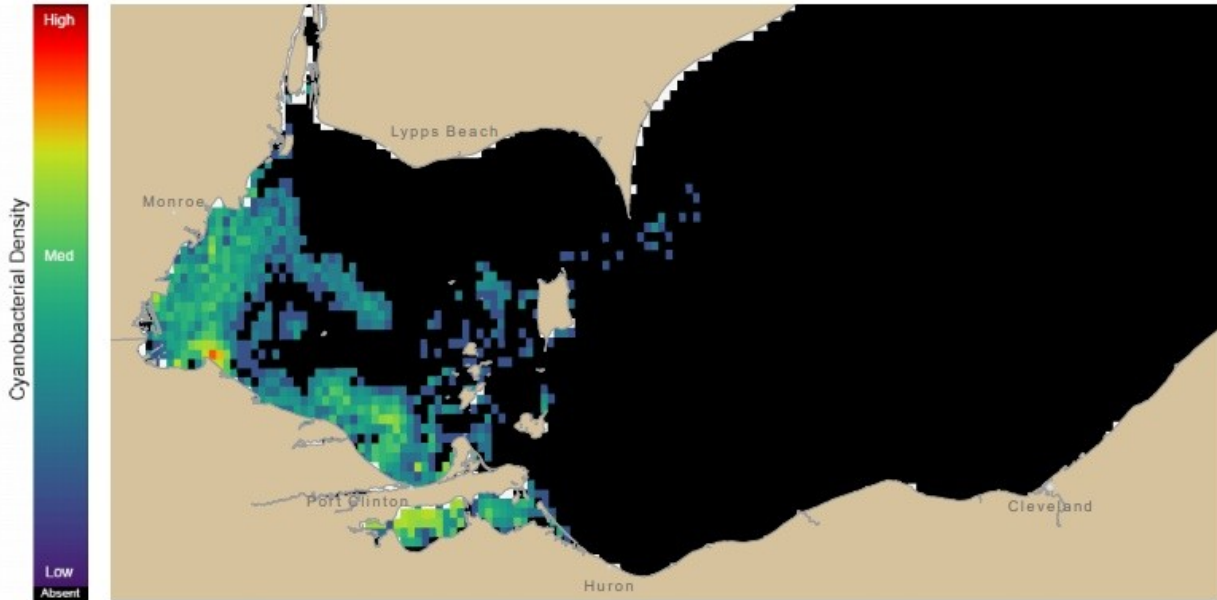
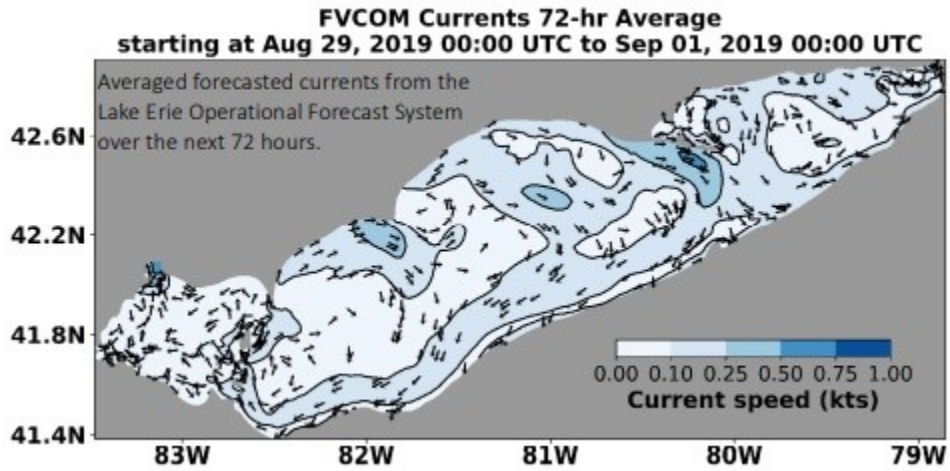


Figure 4. Forecast position of bloom for 01 September, 2019 using LEOFS modelled currents to move the bloom from the 28 August, 2019

12. The image {above} shows the Transport Forecast 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



13. The image {above} shows the Current Forecast 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

14. 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 data				
Animated transport forecast				
Plot of forecast for vertical distribution of bloom in water column				
Forecast surface water temperature				
Export data (i.e. satellite imagery)				

15. 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					

16. 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}

17. Overall, how satisfied are you with the Lake Erie HAB Bulletin?

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

[Q18. is only asked of those who said "Rarely/Never" on Q3.]

18. 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

[Q19. is asked of everyone.]

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

{Open-ended}

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

{Open-ended}