

# Updates from the NHDES Cyanobacteria Program

June 5, 2025 Lakes Congress

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(603) 848-1905





# Thanks Kate!





# Good water quality...



Supports  
recreation



Protects  
public health



Provides habitat for  
fish and wildlife



Supports local  
businesses



Protects property  
values



... all reasons to work to prevent blooms.

# Cyanotoxins

- Affect people, pets and wildlife
- Exposure through ingestion
  - Drinking water
  - Swimming
  - Food
- Exposure through inhalation
- Acute and chronic toxicity
- Documented potential symptoms:
  - Skin irritation
  - Eye and nose irritation
  - Fatigue
  - Fever
  - Nausea, vomiting, diarrhea
  - Tingling, numbness, seizures
  - Nervous system and organ failure



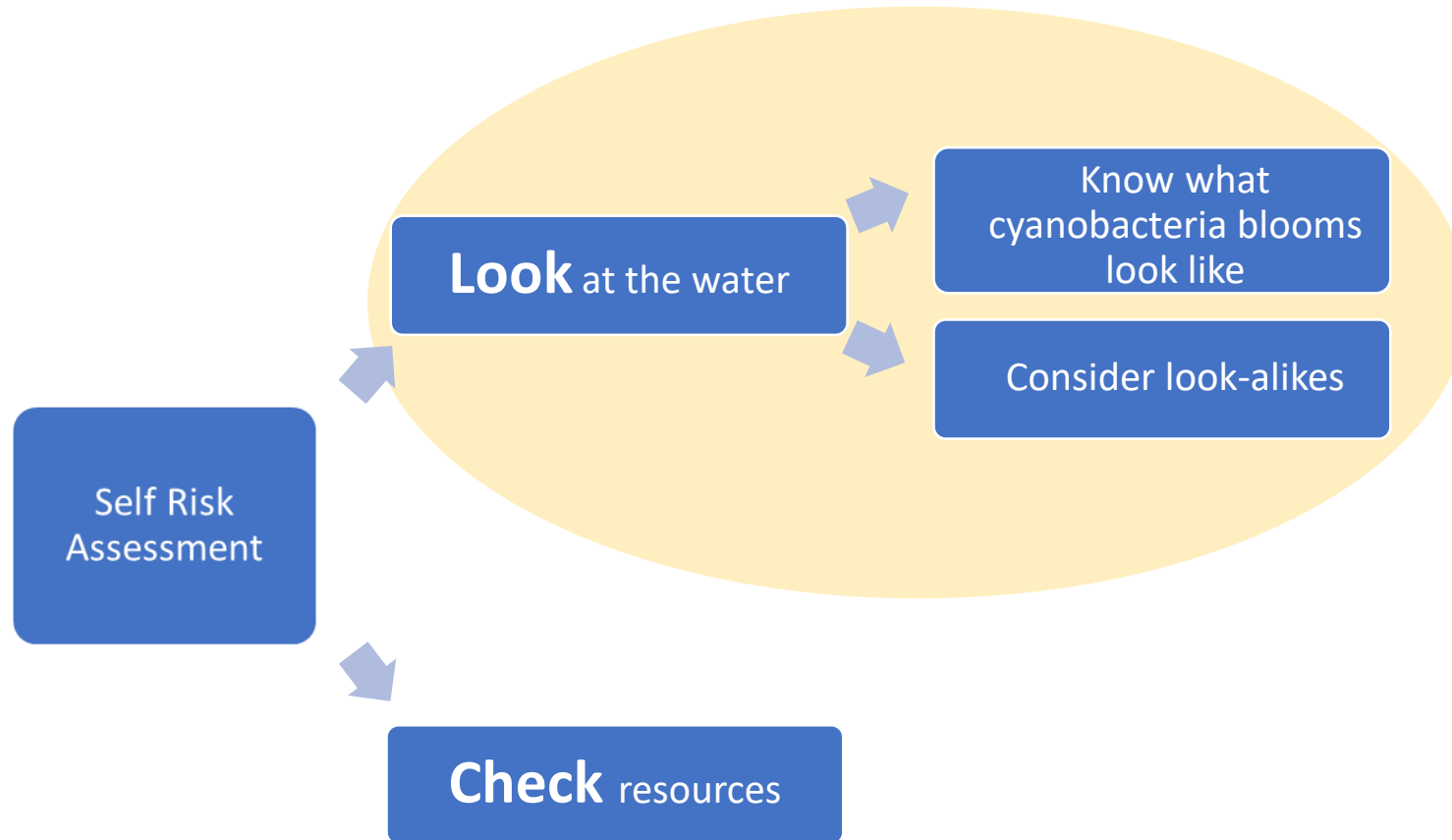


# NHDES Cyanobacteria Updates (Outline)

- Cyanobacteria risk assessment
  - **Look** at the water
  - **Check** Healthy Swimming Mapper
  - **Report** blooms
    - Waterbody-specific emails
- 2025 Cyanobacteria Program
- 2024 monitoring results
- Questions



# Conduct your own Cyanobacteria Risk Assessment



**Report** a bloom: <https://arcg.is/1e8Tfy>



## CYANOBACTERIA



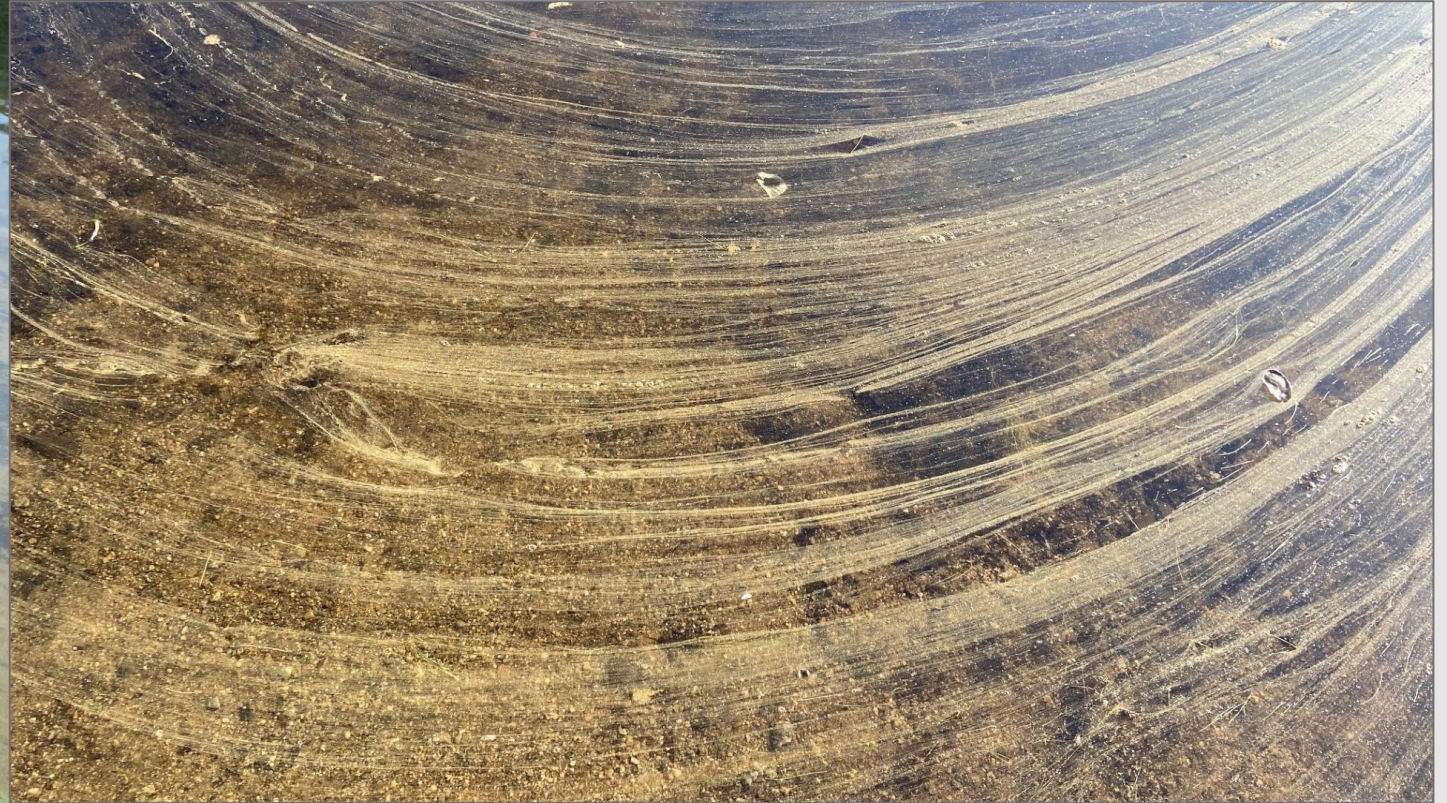


## CYANOBACTERIA





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CYANOBACTERIA





## CYANOBACTERIA



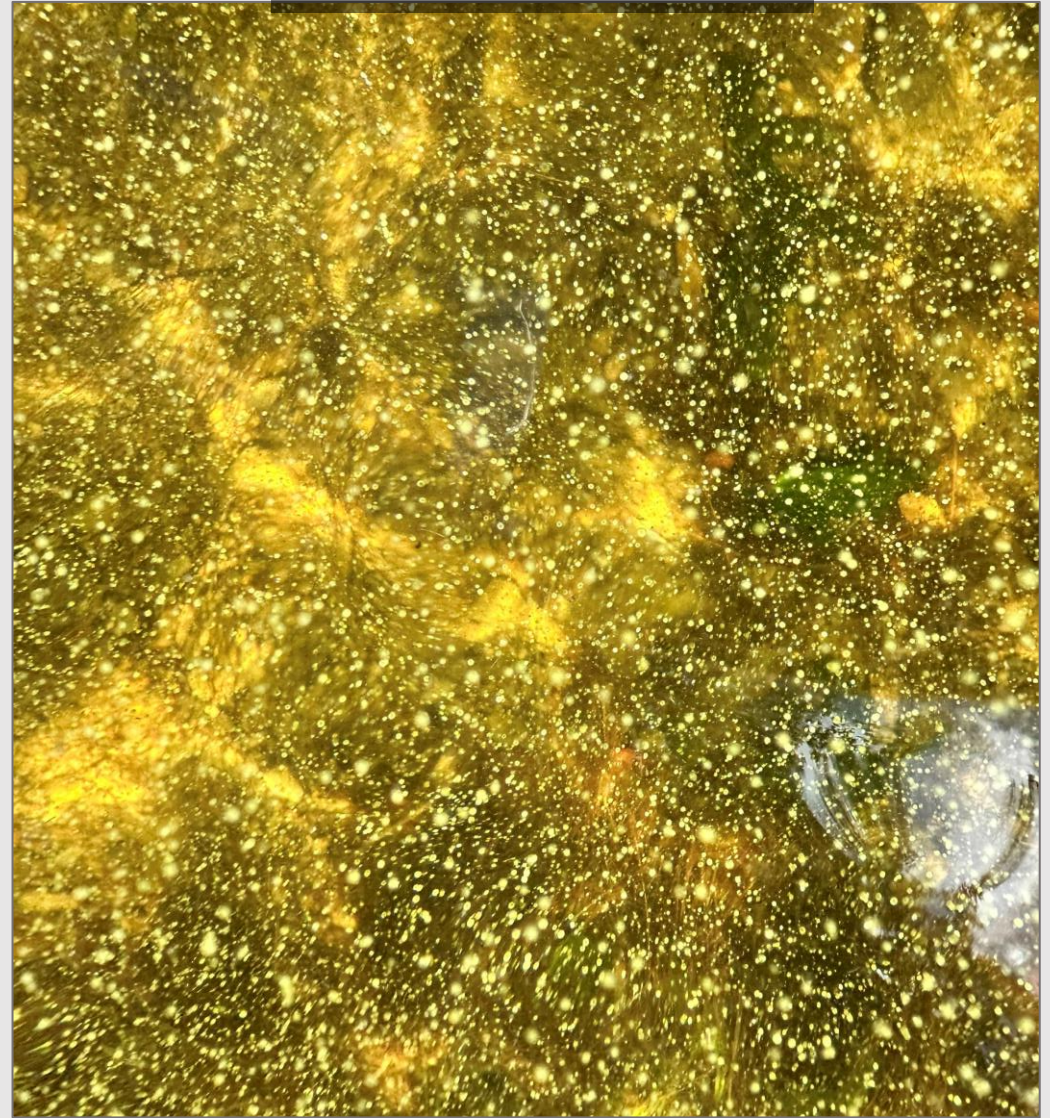


## CYANOBACTERIA

Low Risk



High Risk

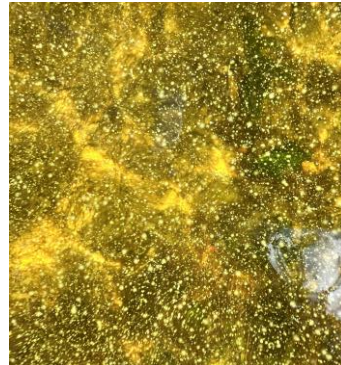
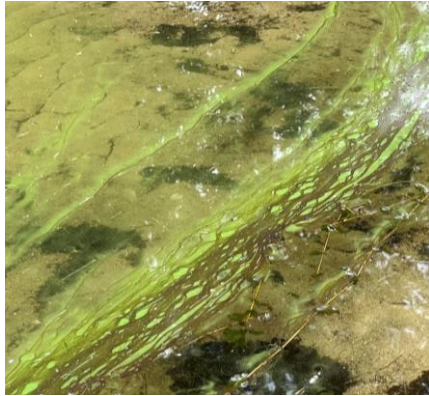
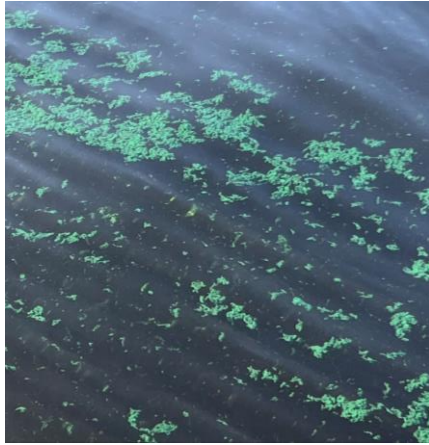


Gloeotrichia



# Report a bloom: <https://arcg.is/1e8Tfy>

## CYANOBACTERIA



- Rapid growth
- Blooms change often and quickly
  - Move in the water column
  - Move to another part of the lake
  - Can last for a single day, or a full summer



# Look-alikes

## Green Filamentous Algae

SAFE ✓





# Look-alikes

Duck Weed



SAFE ✓



# Look-alikes

Pine Pollen



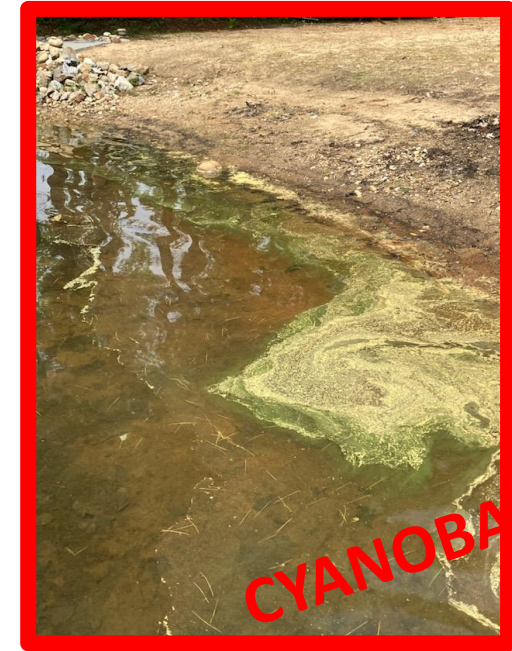
SAFE ✓





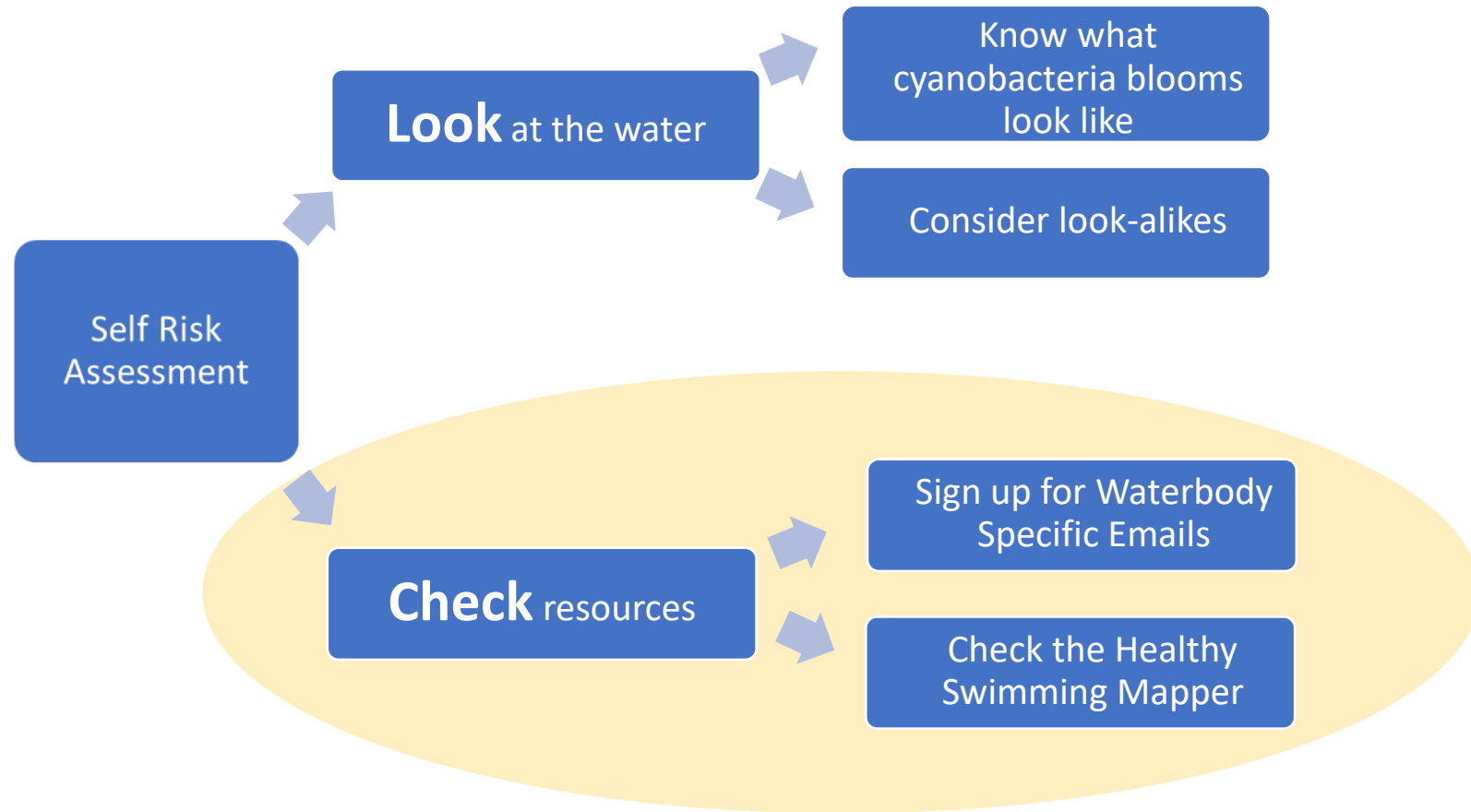
# Look-alikes

Pine Pollen






# Conduct your own Cyanobacteria Risk Assessment



**Report a bloom:** <https://arcg.is/1e8Tfy>



# Cyanobacteria communication



NEW HAMPSHIRE  
DEPARTMENT OF  
**Environmental  
Services**

Sign up to get Waterbody-Specific  
Cyanobacteria Updates!

To receive cyanobacteria updates on a specific waterbody, fill out your information and add the waterbody name and town the waterbody is located in. To sign up for multiple waterbodies, list them in the Waterbody section, as well as the corresponding towns in the Waterbody Town section. For Winnepesaukee updates, please specify the town(s). Your title can be anything from "resident" to "president of the lake association." You will receive notices when Warnings or Alerts are issued, with results of resampling, and when Warnings are removed.

\* Email

First Name

Last Name

Phone Number

\* Waterbody Town

Title (President of LA, VLAP vol, Health Officer)

\* Waterbody

Sign Up

**WATERBODY SPECIFIC UPDATES**

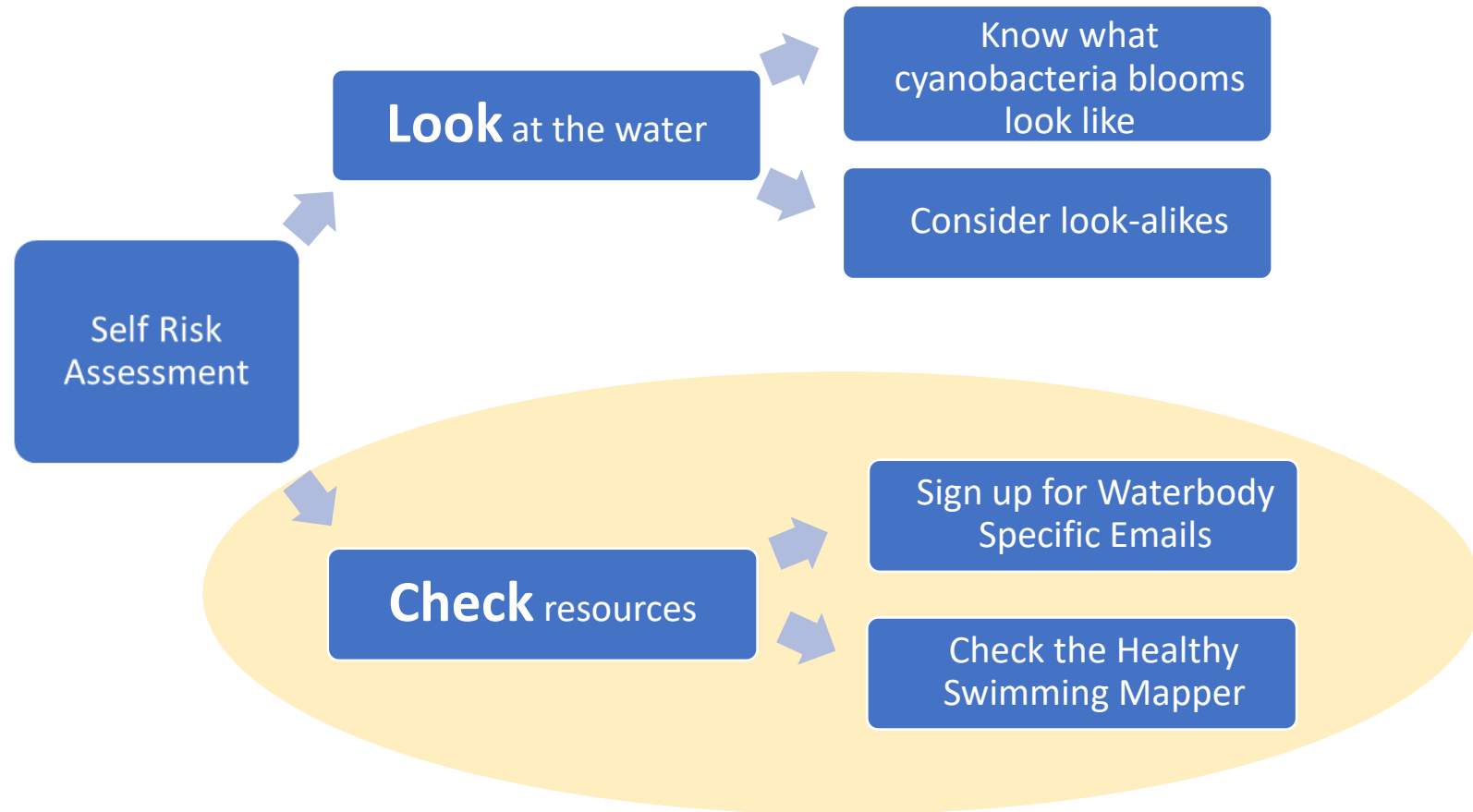
- Information shared immediately
- Targeting specific communities
- More details and resampling



[Sign up for waterbody specific updates](#)



# Conduct your own Cyanobacteria Risk Assessment




**Report a bloom:** <https://arcg.is/1e8Tfy>



# Whole waterbody search (any lake)

Healthy Swimming Mapper



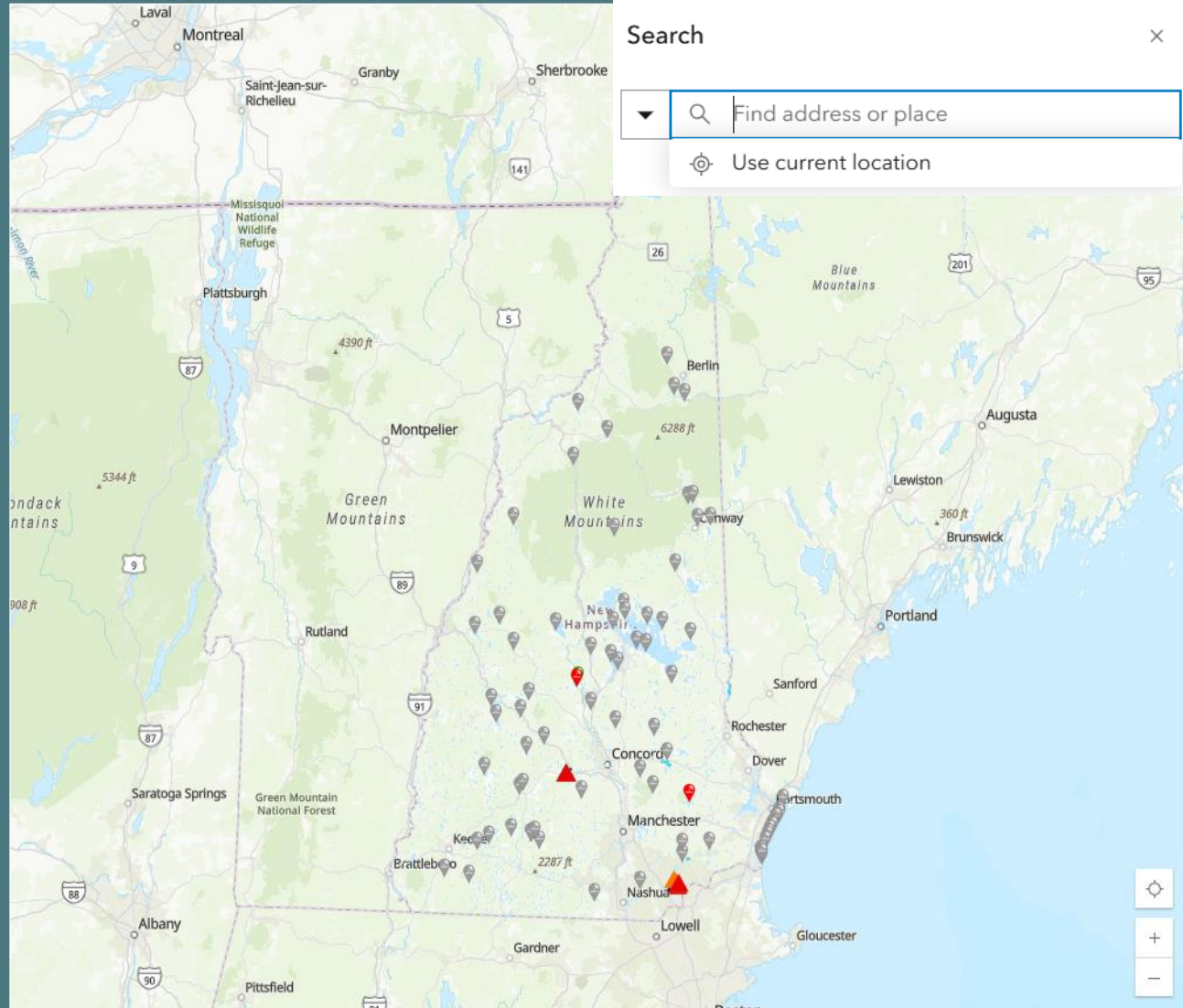
Search

▼

Find address or place

📍

Use current location



Current Fecal Bacteria Advisories

📍

LaGace Beach issued on 6/3/2025

📍

Pawtuckaway State Park Beach issued on 6/5/2025

Last update: 59 seconds ago

Current Cyanobacteria Watches

Northwood Lake, Northwood, Deerfield - issued on 6/2/2025

Angle Pond, Hampstead - issued on 6/3/2025

Northeast Pond, Milton - issued on 6/3/2025

Last update: 59 seconds ago

Current Cyanobacteria Warnings

Hopkinton Dike Elm Brook, Hopkinton - issued on 5/27/2025

Arlington Mill Reservoir, Salem - issued on 5/29/2025

Last update: 59 seconds ago

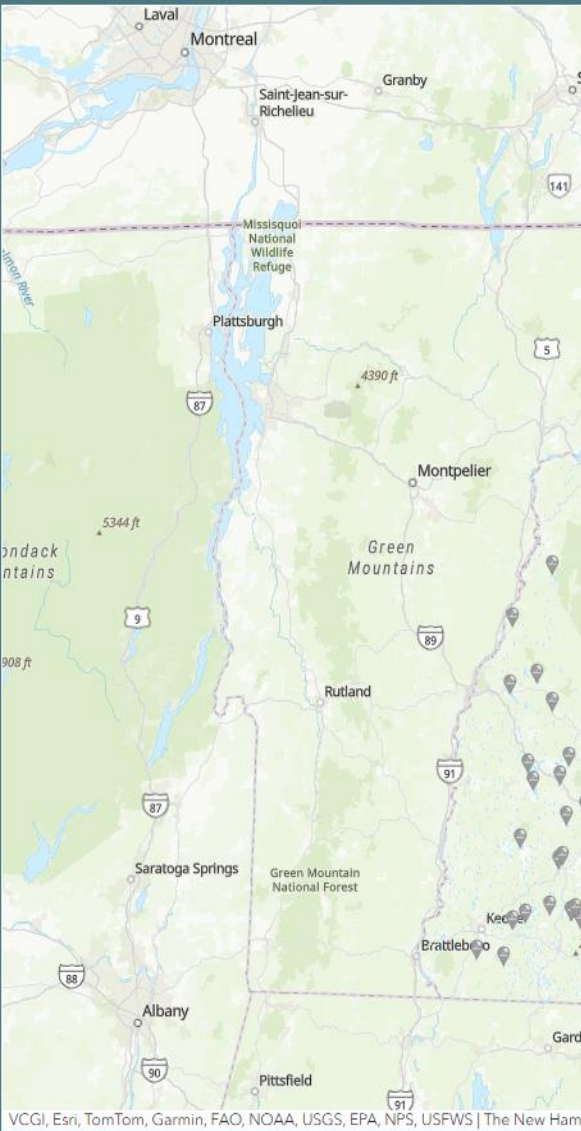
VCGL, Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, NPS, USFWS | The New Hampshire Department of Environmental Services, Watershed Management Bureau, ...

Powered by Esri



# Whole waterbody search (any lake)

## Healthy Swimming Mapper



VCGI, Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, NPS, USFWS | The New Ham

### Search



#### CyanoHAB Program: Waterbody Name

Little Lake Sunapee

#### ArcGIS World Geocoding Service

Little Lake, FL, USA

Little Lake Sunapee, New London, NH, USA

Little Lake X, FL, USA

Little Lake Weir, FL, USA

Little Lake City, FL, USA

Little Lake Bryan, FL, USA

### Current Fecal Bacteria Advisories



LaGace Beach issued on 6/3/2025



Pawtuckaway State Park Beach issued on 6/5/2025

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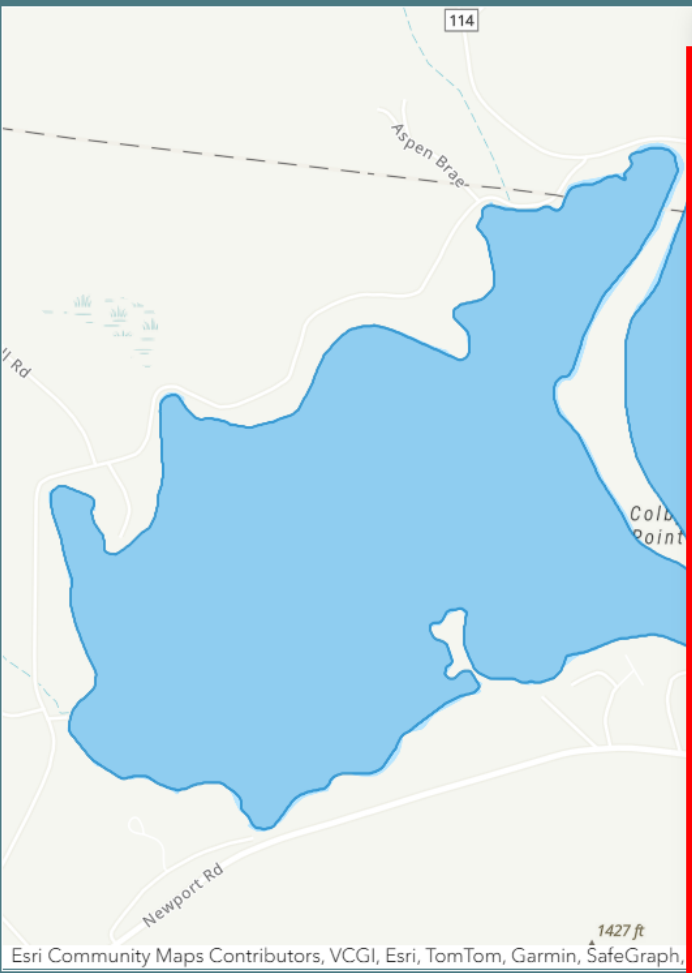


# Whole waterbody search (any lake)

## Healthy Swimming Mapper



### NHDES Cyanobacteria Program Summary Dashboard - NEW 2025



Map showing Little Lake Sunapee and surrounding roads (114, Newport Rd, Cold Point Rd).

Search

#### Little Lake Sunapee

Zoom to Pan

Status	No bloom reported
Town	New London
Most Recent Sampling Date	
Date Issued	
Bloom Description	
Initial Cyanobacteria Identified	
Initial Total Cyanobacteria Density (cells/mL)	
2025 Warning History	No Warnings issued
Cyanobacteria Bloom History	View

Sign up to get [cyanobacteria emails](#) for this waterbody.

### Current Fecal Bacteria Advisories

No current advisories

Last update: 35 minutes ago

### Current Cyanobacteria Watches

Arlington Mill Reservoir, Salem - issued on 5/15/2025

Last update: 35 minutes ago

### Current Cyanobacteria Warnings


No current warnings

Last update: 35 minutes ago



# Lakes with current warning or watch – whole waterbody information

Healthy Swimming Mapper



Esri Community Maps Contributors, Town of Salem, NH, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc.

Arlington Mill Reservoir

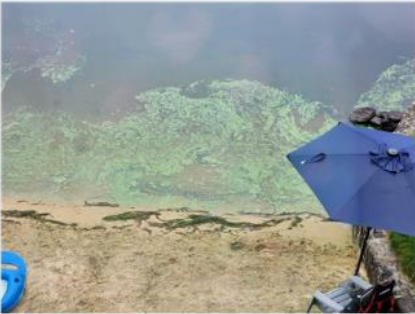
Zoom to

Pan

Status	Warning
Town	Salem
Most Recent Sampling Date	5/29/2025
Date Issued	5/29/2025
Bloom Description	Green surface streaks along the shoreline
Initial Cyanobacteria Identified	150,000
Initial Total Cyanobacteria Density (cells/mL)	Dolichospermum
2025 Warning History	5/29/25-Current
Cyanobacteria Bloom History	View

Sign up to get [cyanobacteria emails](#) for this waterbody.

Image taken 5/28



Current Fecal Bacteria Advisories

LaGace Beach issued on 6/3/2025

Pawtuckaway State Park Beach issued on 6/5/2025

Current Cyanobacteria Watches

Northwood Lake, Northwood, Deerfield - issued on 6/2/2025

Angle Pond, Hampstead - issued on 6/3/2025

Northeast Pond, Milton - issued on 6/3/2025

Last update: 30 seconds ago

Current Cyanobacteria Warnings

Hopkinton Dike Elm Brook, Hopkinton - issued on 5/27/2025

Arlington Mill Reservoir, Salem - issued on 5/29/2025

Last update: 30 seconds ago



Information  
from Individual  
Bloom  
Sightings  
  
(Bloom  
Reports)

[Healthy Swimming  
Mapper](#)

## Welcome to the NH Healthy Swimming Mapper

This mapper shows current cyanobacteria bloom activity on New Hampshire's waterbodies and active fecal bacteria advisories at New Hampshire's public beaches. A beach or waterbody with an active advisory, warning, or watch is not closed for use by the public.

### Cyanobacteria HAB Program

Reported cyanobacteria blooms are indicated on the map as followed:

- ▲ - A photo report was reviewed and likely cyanobacteria but no sample collected
- ▲ - A sample was collected, and the cyanobacteria cell density was approaching but did not exceed 70,000 cells/mL
- ▲ - A sample was collected, and the cyanobacteria cell density exceeded 70,000 cells/mL

**Warnings** and **watches** are listed on the right side. A warning is issued on a waterbody when samples exceeds 70,000 cells/mL at multiple locations. A watch may be issued based only on a photo, when the cyanobacteria density is approaching 70,000 cells/mL, only one sample exceeds 70,000 cells/mL, or the bloom material has passed.

*Reports provide information from a static point in time and may not reflect current conditions. Cyanobacteria blooms are extremely dynamic, and a visual assessment is always recommended prior to recreating in a waterbody or letting your pet in the water. NHDES advises the public to avoid contact with the water in areas where bloom material is observed as well as restricting pet access of the water.*

### Beach Inspection Program

The mapper includes fecal bacteria advisories issued by the NHDES Beach Inspection Program. An advisory is issued when a water sample contains fecal bacteria levels that exceed the state criteria, indicating unsafe swimming conditions. Beaches on the mapper are identified as:

- 📍 - Routinely sampled by NHDES
- 📍 - Fecal bacteria advisory issued by NHDES

*No beach is sampled every day, so advisories do not provide a daily protection. Please be cautious when swimming in any natural waterbody as pathogenic organisms may be present and avoid swallowing any water.*

☐ Don't show this message again

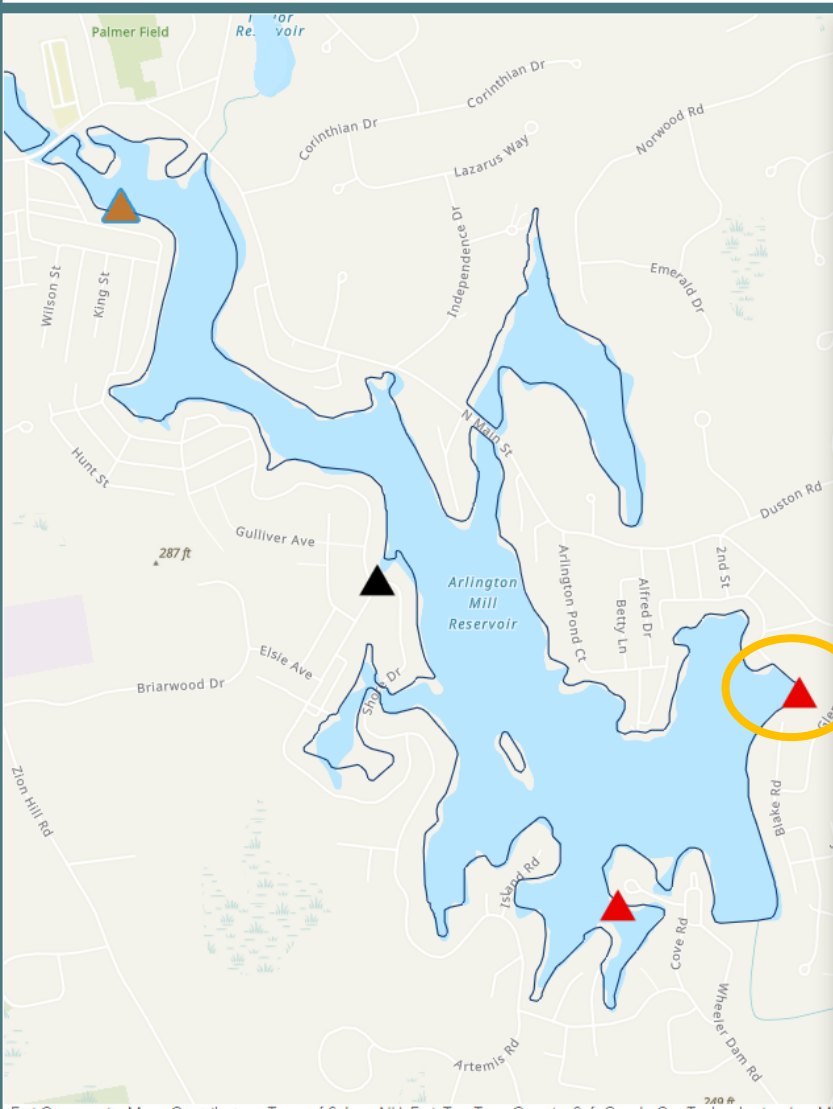
Close





# Information from Individual Sightings (Bloom Reports)

## Healthy Swimming Mapper



### Cyanobacteria Bloom Report: Arlington Mill Pond

Zoom to Pan

This is a specific cyanobacteria bloom location as reported to NHDES. Harmful cyanobacteria blooms may be present in other areas. Bloom material can quickly move around a waterbody based on wind, wave, and boat action. Avoid contact with areas experiencing blooms, especially keeping children and pets out.

Date bloom observed	3/19/2025
Where on the waterbody is the bloom located?	Shoreline
Observer Vantage Point	Standing on the shoreline
What percentage of the waterbody are you able to observe at this vantage point (approximately)?	5% or less
What size is the bloom?	5% or less
How does the bloom appear?	Surface scum - mostly scattered thin ribbons of material on the surface
Sampling Information	50,000 cells/mL



## Current Fecal Bacteria Advisories

- LaGace Beach issued on 6/3/2025
- Pawtuckaway State Park Beach issued on 6/5/2025

Last update: 9 seconds ago

## Current Cyanobacteria Watches

- Northwood Lake, Northwood, Deerfield - issued on 6/2/2025
- Angle Pond, Hampstead - issued on 6/3/2025
- Northeast Pond, Milton - issued on 6/3/2025

Last update: 9 seconds ago

## Current Cyanobacteria Warnings

- Hopkinton Dike Elm Brook, Hopkinton - issued on 5/27/2025
- Arlington Mill Reservoir, Salem - issued on 5/29/2025

Last update: 9 seconds ago



# Note the difference...

Clicking on a point = 1 sighting (bloom report)

**Cyanobacteria Bloom Report: Arlington Mill Pond**

This is a specific cyanobacteria bloom location as reported to NHDES. Harmful cyanobacteria blooms may be present in other areas. Bloom material can quickly move around a waterbody based on wind, wave, and boat action. Avoid contact with areas experiencing blooms, especially keeping children and pets out.

Date bloom observed	3/19/2025
Where on the waterbody is the bloom located?	Shoreline
Observer Vantage Point	Standing on the shoreline
What percentage of the waterbody are you able to observe at this vantage point (approximately)?	5% or less
What size is the bloom?	5% or less
How does the bloom appear?	Surface scum - mostly scattered thin ribbons of material on the surface
Sampling Information	50,000 cells/mL

Image taken 5/28

Clicking on warning = whole waterbody

**Arlington Mill Reservoir**

Status	Warning
Town	Salem
Most Recent Sampling Date	5/29/2025
Date Issued	5/29/2025
Bloom Description	Green surface streaks along the shoreline
Initial Cyanobacteria Identified	150,000
Initial Total Cyanobacteria Density (cells/mL)	Dolichospermum
2025 Warning History	5/29/25-Current
Cyanobacteria Bloom History	View

Sign up to get [cyanobacteria emails](#) for this waterbody.

Image taken 5/28

**Current Fecal Bacteria Advisories**

- LaGace Beach issued on 6/3/2025
- Pawtuckaway State Park Beach issued on 6/5/2025

Last update: 30 seconds ago

**Current Cyanobacteria Watches**

- Northwood Lake, Northwood, Deerfield - issued on 6/2/2025
- Angle Pond, Hampstead - issued on 6/3/2025
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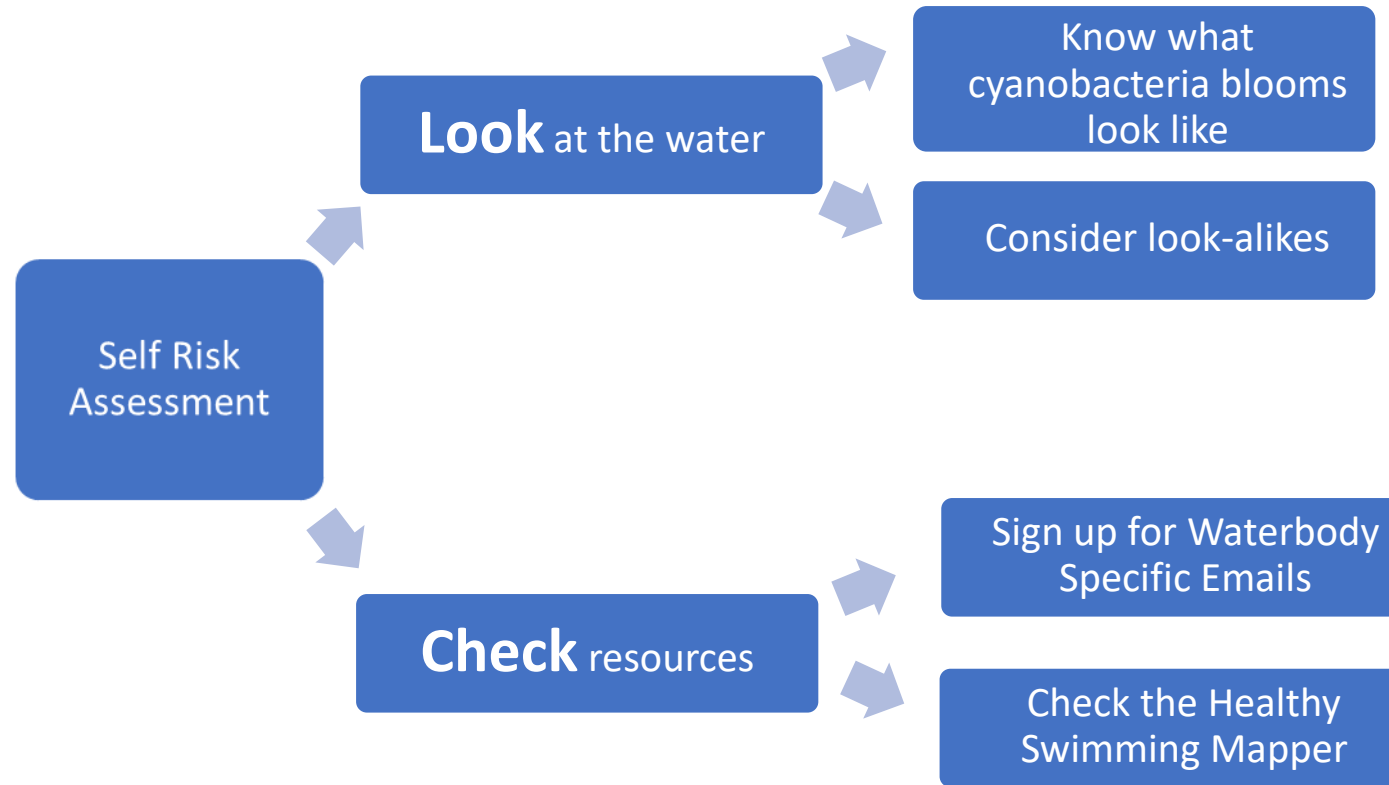
Last update: 30 seconds ago

**Current Cyanobacteria Warnings**

- Hopkinton Dike Elm Brook, Hopkinton - issued on 5/27/2025
- Arlington Mill Reservoir, Salem - issued on 5/29/2025**



# Conduct your own Cyanobacteria Risk Assessment



**Report** a bloom: <https://arcg.is/1e8Tfy>



# What should our lake association communicate about blooms?



- **Look:** Always perform a cyanobacteria risk assessment before recreating or letting dogs and kids in the water



- **Check** the Healthy Swimming Mapper for the most up-to-date information on bloom sightings
- **Report** suspected blooms (it's fast and easy!)
- Sign up for emails from NHDES if you want information on warnings and watches on a specific waterbody.



# NHDES Cyanobacteria Updates (Outline)

- Cyanobacteria risk assessment
  - **Look** at the water
  - **Check** Healthy Swimming Mapper
  - **Report** blooms
    - Waterbody-specific emails
- 2025 Cyanobacteria Program
- 2024 monitoring results
- Questions





# What to expect from NHDES this year

## Changes for 2025

- Bloom reports on Healthy Swimming Mapper (HSM)
- No statewide weekly update emails
  - Just check the HSM
- Multiple samples needed to issue a warning
- New cyanobacteria signs
  - No red warning sign anymore

## Not changing

- Importance of cyanobacteria risk assessment
- HSM as a resource
- Waterbody-specific emails available
- Bloom report form
- Sample collection process
- NHDES analysis process
- Cell count threshold for warnings





BE ON THE LOOKOUT FOR

# CYANOBACTERIA BLOOMS

## LOOK Do you see discoloration or unusual growth?

Cyanobacteria can look like clouds, scum, mats, streaks or clumps along the shore or in the water.



Current cyanobacteria warnings and watches are updated online on the NHDES Healthy Swimming Mapper.

Go online to see current conditions. **CHECK**

## REPORT See a potential bloom? Report it.

Do not wade, swim or let pets in the water near the suspected bloom. Always wash with clean water after any contact.

Check conditions before:



Cyanobacteria HAB Program | [HAB@des.nh.gov](mailto:HAB@des.nh.gov) | (603) 848-8094



# 2024 By The Numbers



**541**  
Reports



**772**  
Samples Reviewed



**66**  
Warnings Issued  
**43**  
waterbodies



**71**  
Watches Issued  
**46**  
Waterbodies



**235**  
Samples Analyzed for  
Toxins



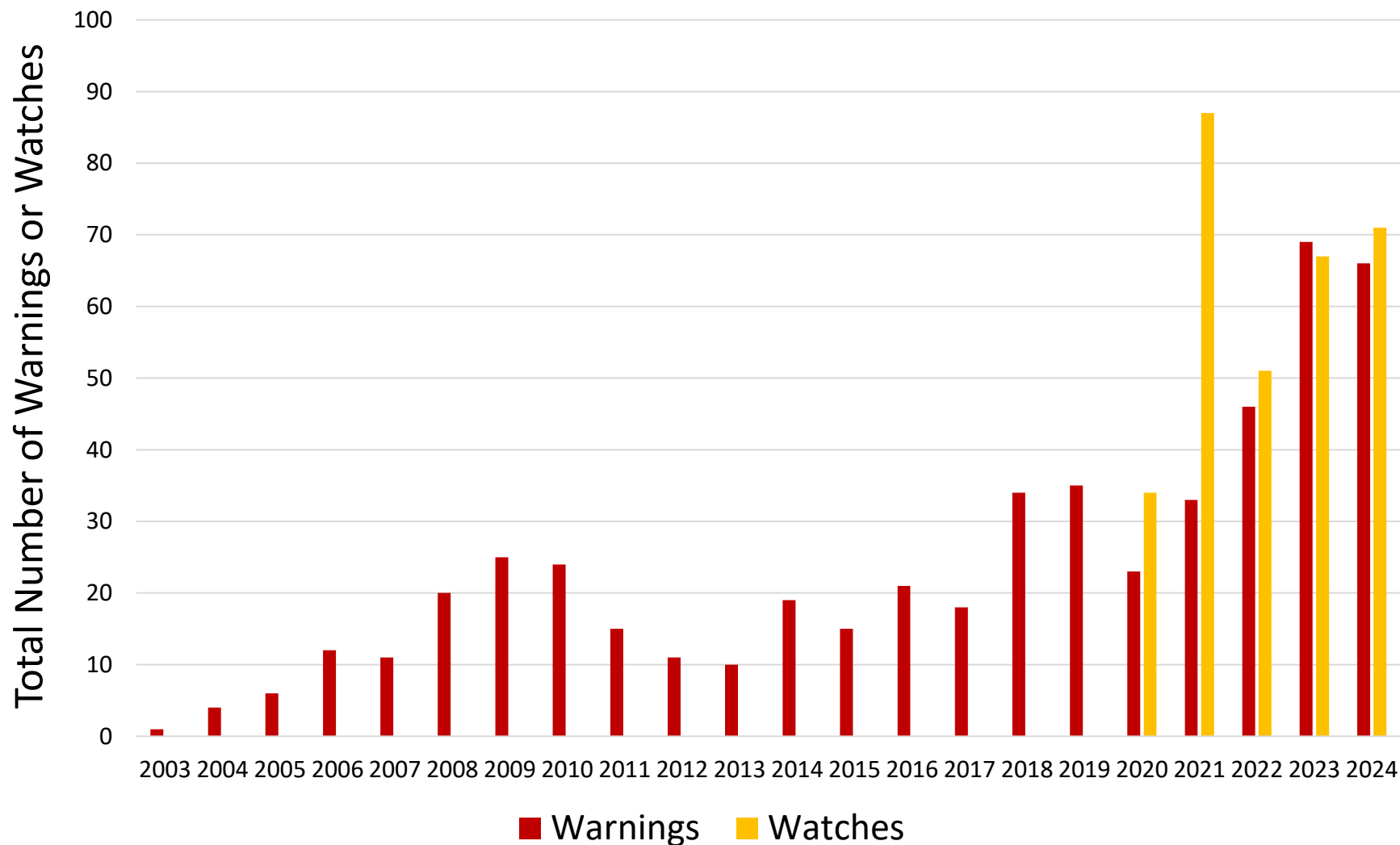
**4** Toxins Analyzed

Microcystin  
Anatoxin  
Cylindrospermopsin  
BMAA



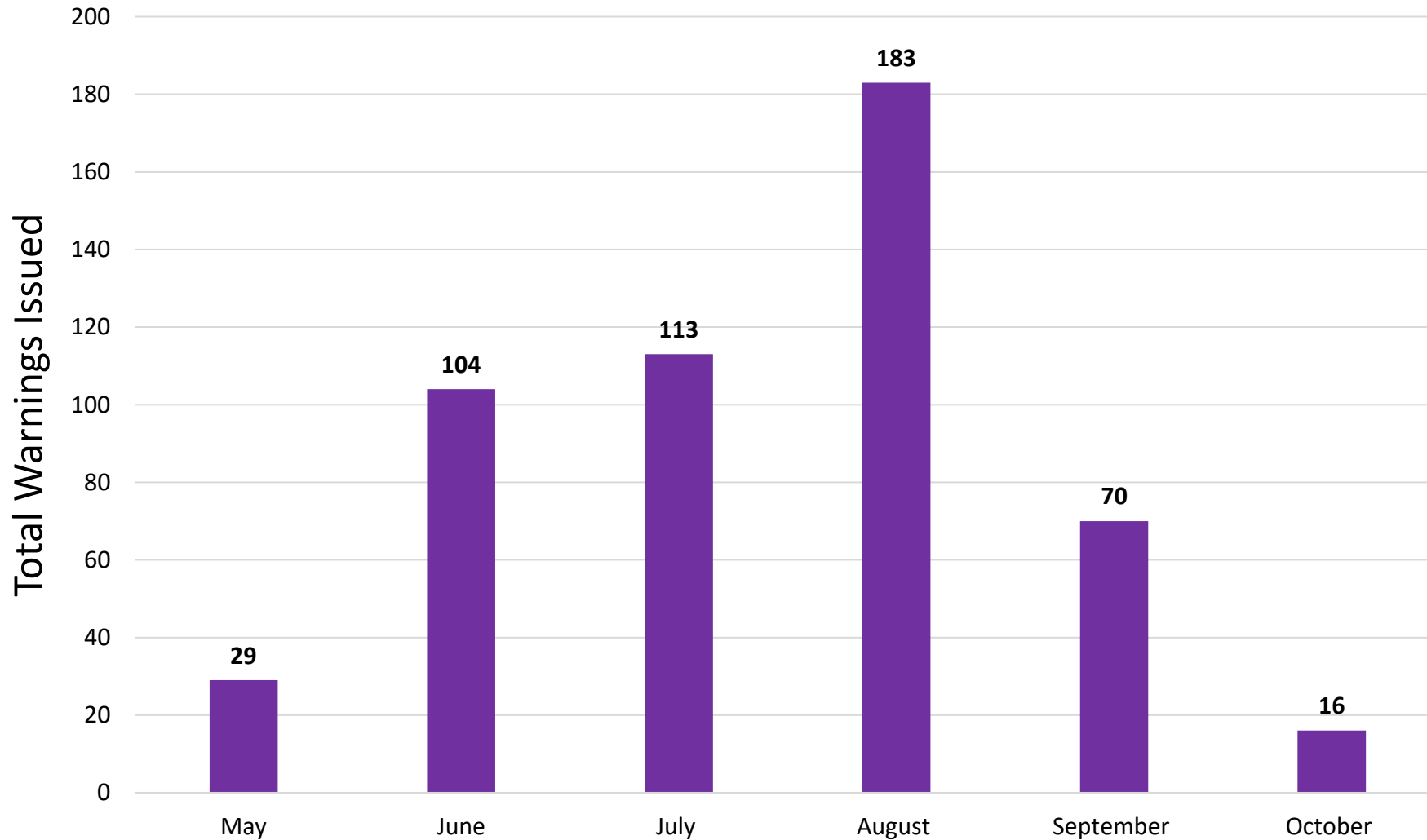


# NH Cyanobacteria Warnings and Watches



- Increasing number
- Reaction-based program
  - Increased public awareness
  - More reports = more warnings

# Warning Seasonality 2003-2024

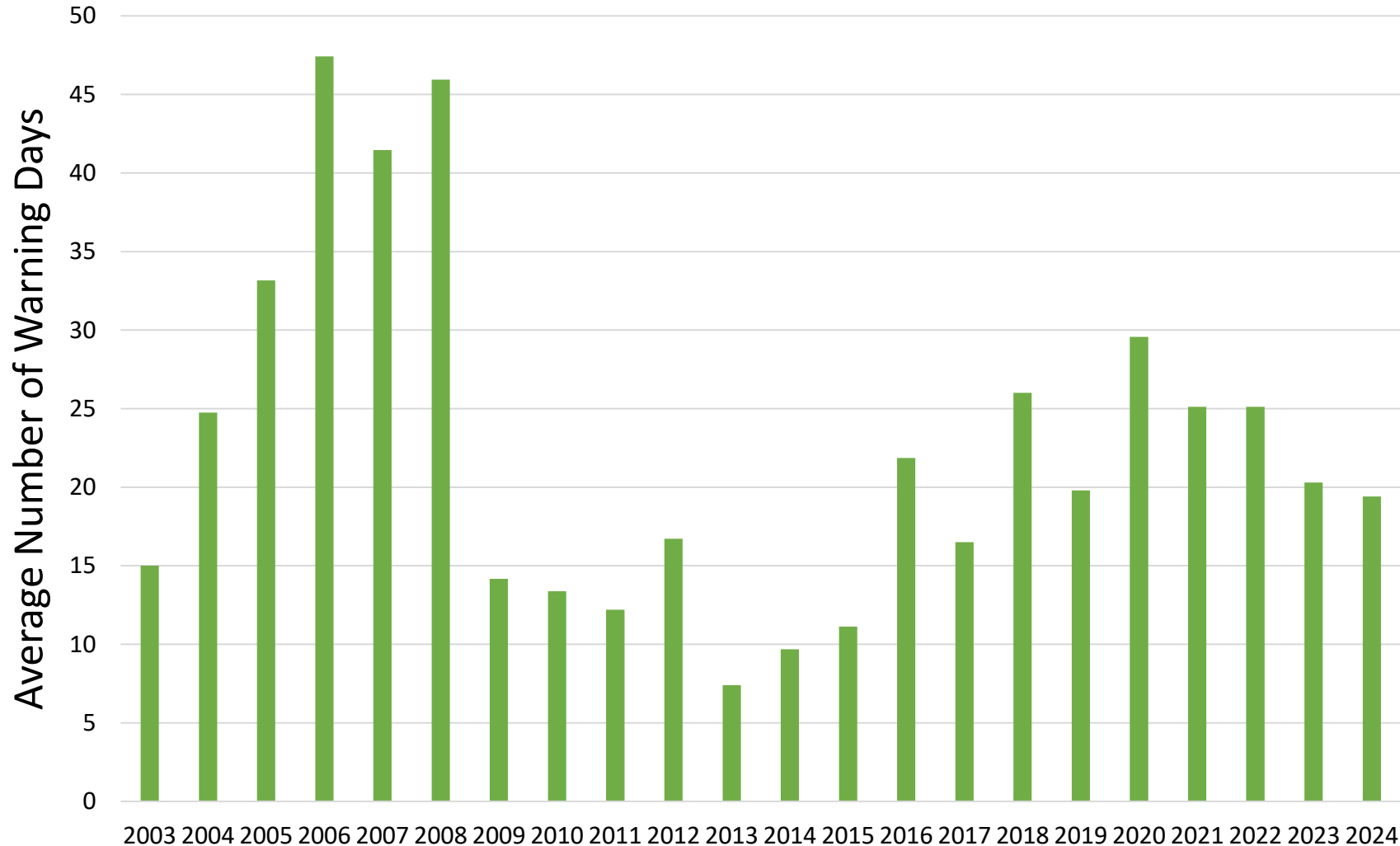


- Warnings issued from May 15<sup>th</sup> to October 15<sup>th</sup>
- Most warnings issued during peak summer recreation
- They can bloom under ice!





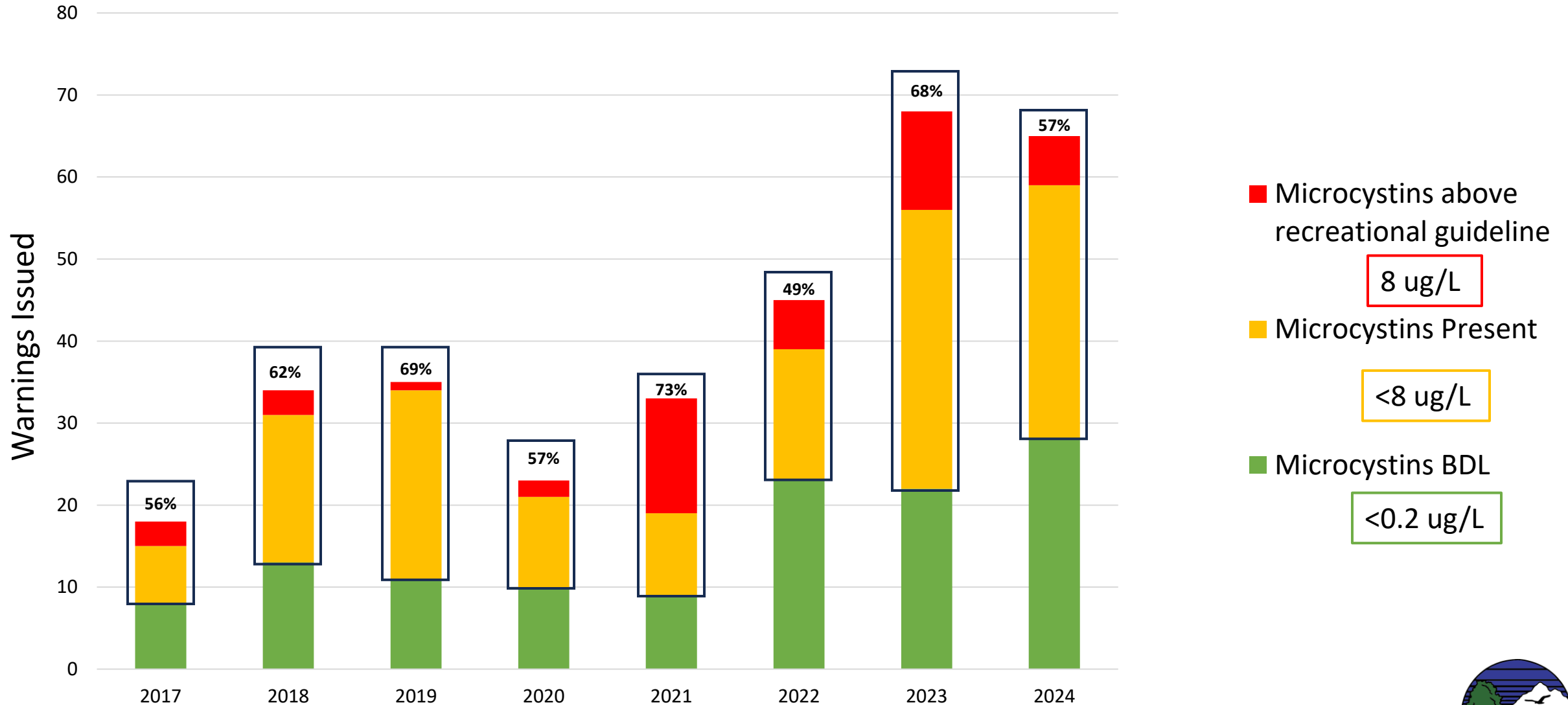
# “How long is this bloom going to last?”



- Many factors
  - Waterbody
  - Nutrient inputs
  - Weather
- In the last 5 years:
  - Shortest warning was 2 days
  - Longest warning was 132 days
  - Average warning length is 23 days

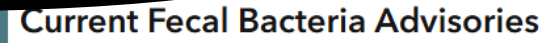
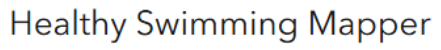
# “How toxic is this bloom?”

An example from one toxin



*\*This graph shows microcystins only. Other toxins not included.*





Last update: 1 hour ago

## Current Cyanobacteria Watches

Last update: 1 hour ago

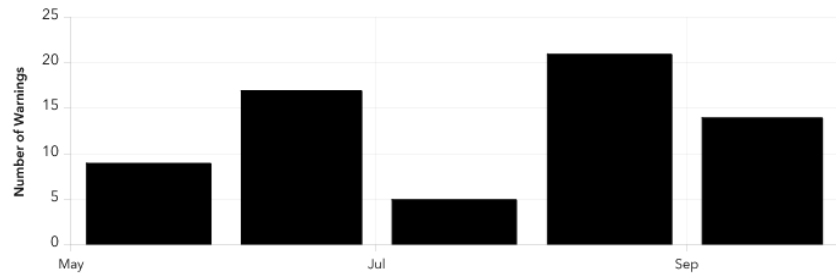
## Current Cyanobacteria Warnings

Last update: 1 hour ago

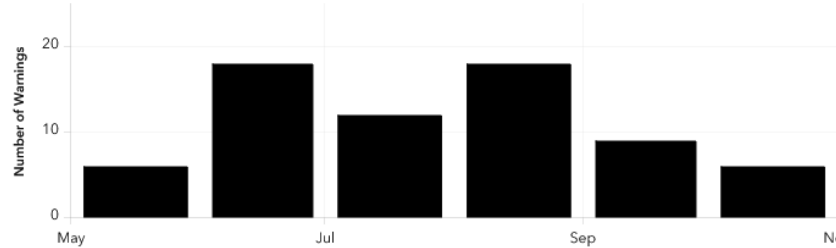
NHDES CyanoHAB Program Records (2003-2023)

Earliest Warning Issued: 5/16/2023  
Final Warning Date: 12/14/2023  
Most Warnings in a Year: 69, 2023  
Most Waterbodies Effected within a Year: 46, 2023  
Total Number of Waterbodies with Warnings: 122  
Most Warnings Issued in a Month: 18, 2023 June and August  
Average Warning Length (2017-2023): 24 days  
Monthly Program Records  
May: 6, 2023  
June: 18, 2023  
July: 12, 2023  
August: 18, 2023  
September: 9, 2022 and 2023  
October: 6, 2023

2024 Warnings Issued by Month



2023 Warnings Issued by Month



Active Warnings

0

Total 2024 Warnings

66

Waterbodies with Warnings in 2024

43

2024 Cyanobacteria Warnings (Active)

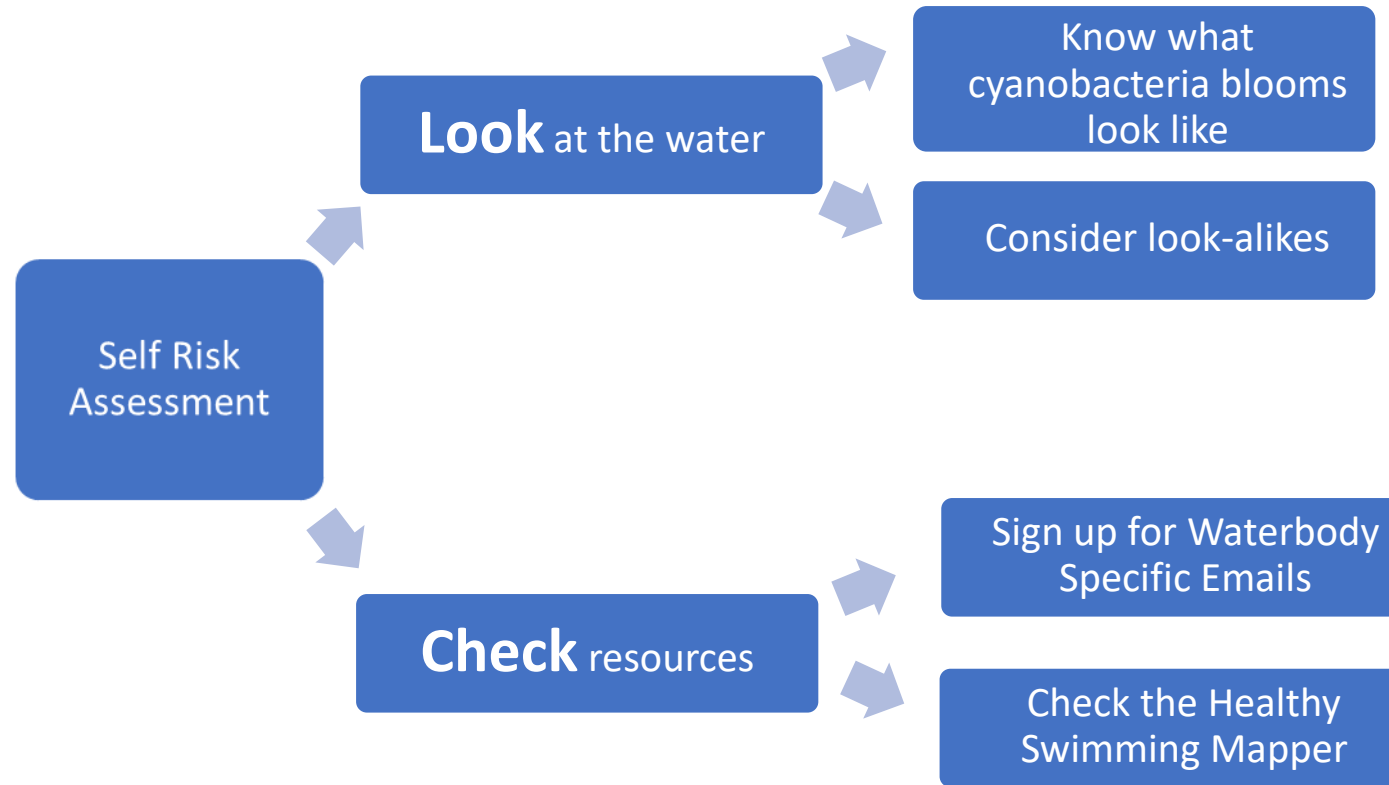
No Active 2024 Warnings

2024 Cyanobacteria Warnings (Closed)

- Little Lake Sunapee, New London (9/18/2024 - 9/25/2024) : 7 days
- Webster Lake, Franklin (9/18/2024 - 10/2/2024) : 14 days
- Arlington Mill Pond, Salem (9/17/2024 - 11/5/2024) : 49 days
- Sunrise Lake, Middleton (9/16/2024 - 9/24/2024) : 8 days
- White Oak Pond, Holderness (9/16/2024 - 9/23/2024) : 7 days
- Tucker Pond, Salisbury (9/13/2024 - 10/10/2024) : 27 days
- Baptist Pond, Springfield (9/13/2024 - 9/19/2024) : 6 days
- Shaws Pond, New Durham (9/12/2024 - 9/18/2024) : 6 days
- Locke Lake, Barnstead (9/11/2024 - 10/16/2024) : 35 days
- Lake Monomonac, Rindge (9/5/2024 - 9/25/2024) : 20 days
- Lake Warren, Alstead (9/4/2024 - 9/19/2024) : 15 days
- Jenness Pond, Northwood (9/4/2024 - 9/11/2024) : 7 days
- Halfmoon Lake, Alton / Barnstead (9/4/2024 - 9/10/2024) : 6 days
- Lake Ivanhoe, Wakefield (9/3/2024 - 10/16/2024) : 43 days
- Emerson Pond, Rindge (8/29/2024 - 9/18/2024) : 20 days
- Lake Winnepesaukee Governor's Island (8/27/2024 - 9/5/2024) : 9 days
- Lake Winnepesaukee The Broads (8/27/2024 - 9/5/2024) : 9 days
- Pool Pond, Rindge (8/27/2024 - 9/4/2024) : 8 days
- Lake Wentworth, Wolfeboro (8/26/2024 - 9/11/2024) : 16 days



# Conduct your own Cyanobacteria Risk Assessment

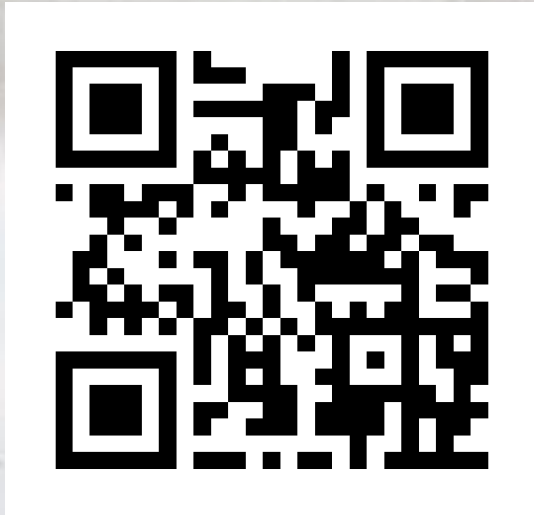


**Report** a bloom: <https://arcg.is/1e8Tfy>

# Thank you! Questions?

**Report a bloom:**

<https://arcg.is/1e8Tfy>



**Healthy Swimming Mapper:**

<https://www.des.nh.gov/water/healthy-swimming/healthy-swimming-mapper>



**General questions:**

[HAB@des.nh.gov](mailto:HAB@des.nh.gov)



# Look-alikes

## Iron Bacteria



SAFE ✓



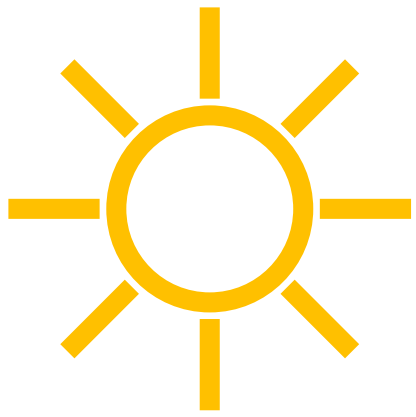
# Look-alikes

Lake Foam

SAFE ✓



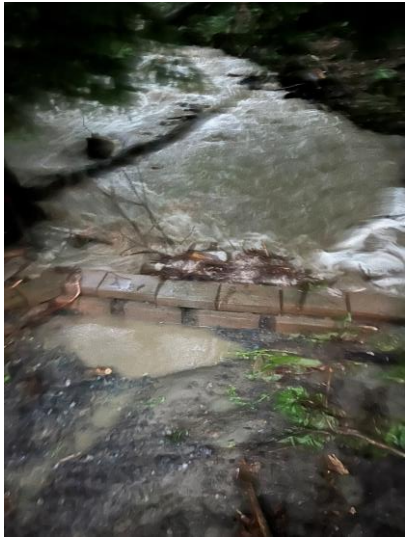
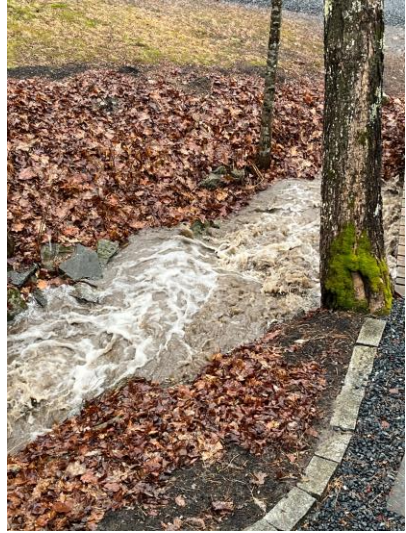




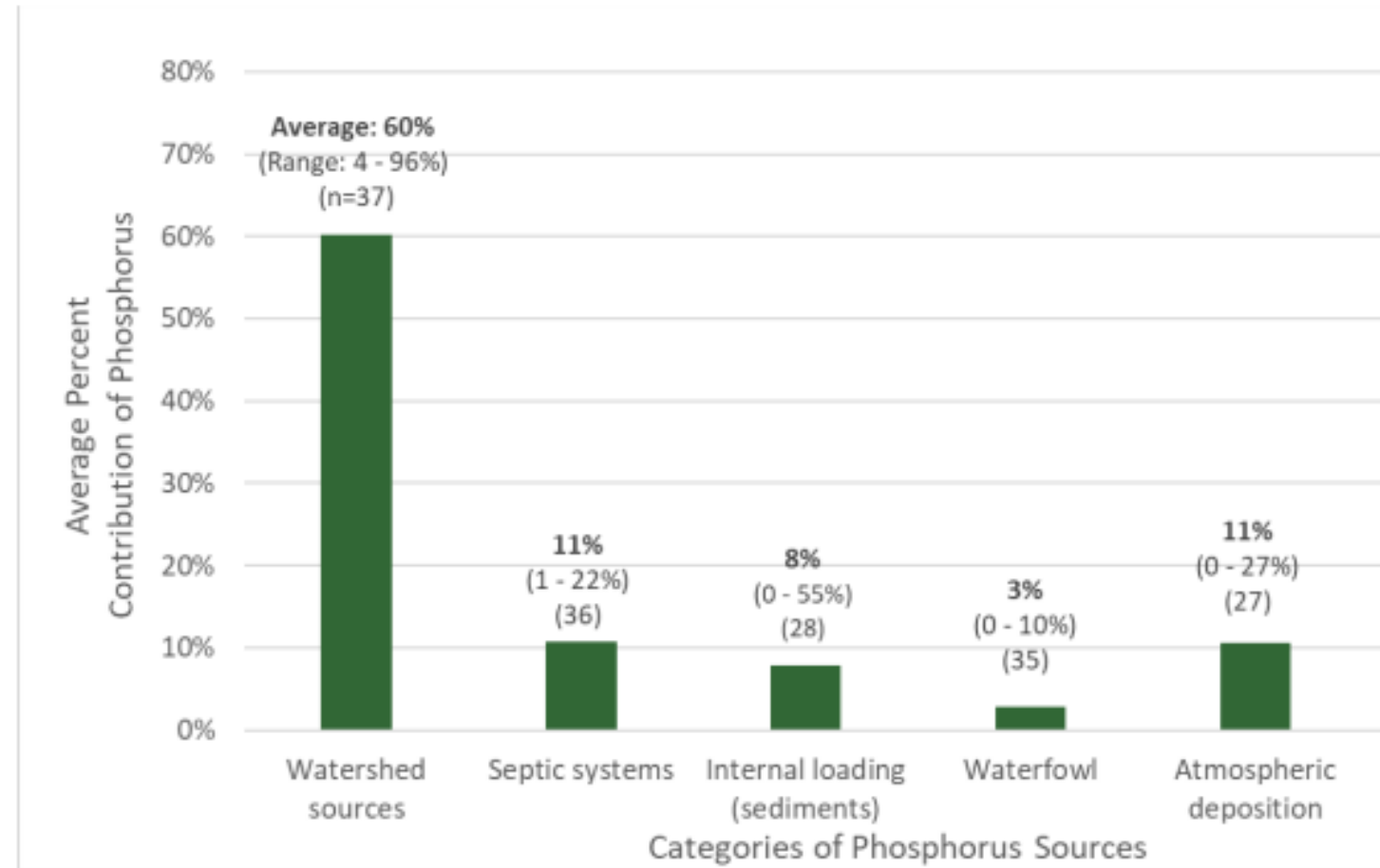
# What creates a bloom?

Sunlight + More Nutrients (P) + Warm Water  
= Cyanobacteria Bloom





# Where does the phosphorus come from?





# What can a homeowner do?

1. Reduce erosion
2. Vegetate your shoreline
3. Maintain your septic system
4. Be careful with fertilizer
5. Spread the word



See NHDES' [homeowner cyanobacteria webinar](#) for more detail