

Weird & Wacky – New Hampshire's Lakes and the Summer of 2023



Hosted by & Presented by NH LAKES Andrea LaMoreaux, August 9, 2023



How many lakes & ponds are there in New Hampshire?





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There are approximately 1,000!



What is the difference between a lake and a pond?







Loon Lake, Plymouth 45 acres, 29 feet at deepest

Loon Pond, Gilmanton 49 acres in area, 45 feet at deepest

There's something for nearly everyone when it comes to our lakes & ponds!

NHLAKES







and and













So what's going on THIS summer at our lakes?



This summer:



Rainfall, flooding, and high water!



Last summer:

Current Map	Maps	Data	Summary	About	Conditions & Outlooks	En Español	NADM
lew Han	npshir	e					Home > New Hampshire
		A 1			Map released: Thurs. July 14, 2022		
			5		Data valid	l: July 12, 2022	2 at 8 a.m. EDT
			5		Intensity		
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					D3 (Extreme Drought)		
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	۲				The Droug	tht Monitor focuses	on broad-scale conditions.
					Local cono	litions may vary. Se	e accompanying text
					summary	for forecast statem	ients.

Most of the state was is in a moderate drought.







Property damage, floating debris, and a dam failure!









Lots of sediment and other pollutants have been washed into our lakes.



Septic system leach field flooding has added nutrients and bacteria into our lakes.



What are the State and local communities doing?



DOS.NH.GOV As More Rain Arrives, Boaters Asked To Be Attentive To Conditions On New Hampshire's Lakes And Ponds



Be Aware of Water Quality Challenges and Risks After Heavy Rainfall CONCORD, NH – The above average rainfall New Hampshire has experienced this month is ca...

Calls from state, local advocates for 300-foot safe passage while water is high By ADAM DRAPCHO, THE LACONIA DAILY SUN Jul 17, 2023 Updated 15 hrs ago 🔹 0



Under the stone bridge in Alton Bay, boats are normally able to pass freely, but the current high water levels of Lake Winnipessukee are preventing safe passage. (Jon Decker/The Laconia Daily Sun photo)



"What about an emergency no-wake order?"





No Wake Order - Silver Lake

BELMONT, New Hampshire – Pursuant to NH RSA 270:132, the New Hampshire State Police - Marine Patrol has instituted a No Wake order on Silver Lake in Belmont. This order will remain in effect until the lake level drops below 467.0 feet above sea level. The gauge at the Department of Environmental Services, Silver Lake station will be used to make this determination.

The Marine Patrol urges all boaters throughout the state to be aware of their wakes and use caution when operating in channels or close to shore.



What local communities are doing!





We ask the community to help us protect Lake Sunapee and its watershed.

With your commitment to the LSPA Temporary No Wake Pledge, we can all achieve the following benefits:



What is NH LAKES doing?



Share your concerns about high water from flooding with us at: https://s.pointerpro.com/lakelevel



ADVISORY

High levels of BACTERIA have been detected in this WATER.

N.H. Dept. of Environmental Services

WATER CURRENTLY NOT SUITABLE FOR WADING **OR SWIMMING!**

Exposure to this water may cause nausea, vomiting, diarrhea, or fever. Children, the elderly and others with sensitive immune systems are especially vulnerable.

All current advisories posted at www.des.nh.gov. Click "beach advisory" in left column

CONTACT INFORMATION:

NHDES Beach Program 29 Hazen Dr.; Concord, NH (603) 271-0698 beaches@des.nh.gov



ADVISORY

High levels of potentially toxic **CYANOBACTERIA** have been identified in this water

WATER CURRENTLY NOT SUITABLE FOR WADING **OR SWIMMING!**

All current advisories posted at www.des.nh.gov. Click "beach advisory" in left column

CONTACT INFORMATION: **NHDES Beach Program** 29 Hozen Dr.; Concord, NH (603) 271-0698 beaches@des.nh.gov







Toxic cyanobacteria blooms



Record number of cyanobacteria blooms so far this summer. And, they started two weeks earlier than last year.



Why are we seeing more cyanobacteria blooms this year?



- Relatively mild winter, with fewer ice-covered days, warmer water
- Heavy rains eroding landscape and washing in phosphorus
- Increased public awareness to report potential blooms?



WHAT YOU NEED TO KNOW ABOUT CYANOBACTERIA Stay safe and healthy in New Hampshire's lakes

Cyanobacteria blooms can make people, pets, and wildlife sick. Stay safe by knowing what to look for and how to respond. If something doesn't look right, then it could be a dangerous toxic bloom. **Stay out and report it!**

Here are just some of the ways a toxic bloom could look:



YOU CAN HELP REPORT CYANOBACTERIA BLOOMS

What to do if think you've seen a bloom:

- · Act fast! Bloom conditions can change quickly.
- · Take several pictures of the suspected bloom.
- Use the NHDES Cyano Reporting Form at https://arcg.is/le8Tfy (or use the QR Code below). Include photos, lake name, and the general location of the bloom.

Follow these steps to minimize immediate risks:

- Don't wade or swim or drink the water.
- · Keep kids, pets, and livestock out of the water.
- If anyone comes in contact with a bloom or scum (including pets), they should rinse off with fresh water as soon as possible.

What happens when a bloom is identified:

- If cyanobacteria densities exceed a certain amount, NHDES will issue a
 public health advisory telling people and pets to stay out of the water.
- When cyanobacteria densities subside, NHDES will remove the advisory.

Stay informed

Sign-up to receive cyanobacteria advisories. NHDES posts public health advisories when cyanobacteria counts are higher than the state standards. Sign up at **bit.ly/CyanobacteriaAlerts** (choose the Beach Advisories email **list**).

NH LAKES works in coordination with The New Hampshire Department of Environmental Services (NHDES), local organizations, and the public to monitor our lakes for cvanobacteria blooms.





Recognize and report! Free PDF download at <u>nhlakes.org/store</u>





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



Summer 2023 has also been the summer of smokey wildfire skies.



Some mysterious sightings in our lakes this summer...





What is that on the water?!



"Help, someone dumped yellow paint into the lake!"





"Help, someone dumped yellow paint into the lake!"

No worries, it's just pine pollen! (usually late-May to early-June)




"The lake looks like someone dumped blue-green paint into it!"





"The lake looks like someone dumped blue-green paint into it!"

- This is likely a cyanobacteria bloom which may be toxic to human and pets.
- Do not go in the water and keep pets and livestock out.
- Report suspected blooms to the NH Dept. of Environmental Services.





"Someone's washing machine is draining into the lake-there's soap bubbles in the water!"







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- Thankfully, this is probably not the case!
- Oils from naturally decaying plants and animals reduce surface tension allowing bubbles to form.



Do this test: Collect some lake foam in a jar. Shake the jar.





- Detergents will produce more bubbles. Natural foam usually dissipates.
- Detergent foam is usually blueish-pinkish in color and smells like perfume.
- Natural foams are whitish-brown and may smell like fish or soil.



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"Is this an oil spill?"





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This is mostly likely natural and not a petroleum product.

Try the Poke Test.

- Break the surface with your finger or stick.
- If the sheen breaks apart and doesn't come back together, it's likely natural.
- If the sheen moves back together again, it's likely petroleum-based.
- Report potential oil spills to the NH Dept. of Environmental Services.





"What's that weird streaky pattern on the lake?"

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Langmuir currents!





- Under the right conditions, the combination of wave action and wind causes horizontal currents to form near the lake surface.
- Adjacent cells rotate counter to one another, creating alternating areas of upwelling and downwelling.
- Air bubbles and debris can N8356get caught in downwelling areas, forming long lines parallel to the wind direction.



"Did I just see a tornado on the lake?"



"Did I just see a tornado on the lake?"

It's a waterspout!



What is that in the water?



"Why is the lake tea colored?"



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The coloration is not harmful and results from decaying organic material (tannins) from nearby wetland areas.



"But, why has the lake gotten more brown over the years?"





"But, why has the lake gotten more brown over the years?"

- "Brownification" of lakes is being studied as a result of climate change.
- Warmer climate = faster breakdown of organic matter
- A wetter climate = more organic matter being washed into lakes.



"More tea, along with more and warmer water will result in a stronger cup of tea."



"What is that gross looking limb-like thing?"





"What is that gross looking limb-like thing?"

Not to worry, it's just the root of a water lily!







"What's that yellow-green cotton candy stuff floating around?"







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- It's filamentous green algae, common during late-summer.
- It's native and not toxic, but indicates elevated nutrients.
- Do the stick test. Strands = not likely cyanobacteria.



"Lobsters in the lake?!"





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It's a freshwater crayfish!



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It's a freshwater crayfish!



But, beware of the invasive rusty crayfish, with it's dark rusty spot.



"Craters on the bottom of the lake?!"







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Fish spawning beds!



"Freshwater escargot?"





"Freshwater escargot?"

- No, these are the invasive Chinese mystery snail!
- Purposely introduced into Asian food markets in San Francisco 1890s. In 1915, reported in Boston.
- Help prevent their spread.
- We recommend not eating them!





"I found an alien brain!"



Good news, it's a bryozoan, and likely indicates good water quality!

- They are single-celled animals living in colonies forming firm, gelatinous masses, attaching to submerged logs, twigs, stones, and docks.
- They are filter feeders, eating microscopic organisms and are eaten by larger aquatic predators.



"A carnivorous plant in the lake?!"



Yes, it's bladderwort!

- Lacks roots and may form massive floating mats.
- May go through "boom and bust" cycles.
- The bladders (traps!) are hollow with a flexible valve that is kept closed.
- A physiological process moves water from the bladder interior to exterior, creating low pressure.
- If a small animals triggers the bristles projecting from the door, the trap suddenly opens. The quick inflow of water sucks prey inside!
- There are many different species.



Check out this amazing video of bladderwort feasting on prey! <u>https://youtu.be/wZcKoTxp5mc</u>



Be on the lookout for swollen bladderwort!

- Very robust looking form of bladderwort.
- The floats holding the flower up out the water are usually fat and bloated.
- Fragments of plant seem to grow new branches quickly, outcompeting other plants.
- Think you've seen it?! Grab a sample, take a photo and email it to NH DES at <u>Amy.Smagula@des.nh.gov</u>







"Do leeches in the water mean the lake is polluted?"





"Do leeches in the water mean the lake is polluted?"

- No! Leeches are natural organisms found in most lakes.
- Leeches are most often found in shallow areas under rocks and sticks and decaying leaves.
- They feed on small insects and snails and remains of animals and plants.
- Help keep their population in check by not dumping grass clippings and leaves.





"Freshwater mussels in our lakes?!"








"Freshwater mussels in our lakes?!"

- Yes, some lakes are home to these fascinating creatures! 10 species, some are endangered.
- Mussel larvae attach themselves to a fish host, they develop into juvenile mussels and drop off.
- They then sink to the bottom of the water and begin to develop into full-grown mussels.
- Very sensitive to pollution.
- Favorite food of raccoons and otters.



Dwarf wedgemussel (endangered, CT & Ashuelot Rivers)



Eastern elliptio (common, widespread)



Eastern Pondmussel (State threatened)



"Jellyfish—in a lake?!"







"Jellyfish—in a lake?!"





Yes, but don't worry, they don't sting!



Find out more!



nhlakes.org