

Email from NH DES to the PLA on 8/3/2023:

"Province Lake was resampled today, 3 August 2023. The cyanobacteria density continues to exceed the state limit of 70,000 cell/mL, so the advisory will remain active. Cell densities from five different sampling locations ranged from 12,600 to **1,268,000** cells/mL. The primary taxa present is *Dolichospermum*. There are now two species of *Dolichospermum* blooming. Previous to this week there was only one. While some areas had lower density, my sampler today said she visually observed cyanobacteria at every location she sampled. At the lower density sites it appears as flecks in the water, at the higher density areas it is a visible bloom / scum. See the picture attached taken today.

This re-occurrence of even higher densities of cyanobacteria after last week's low values collected during a significant rain event, demonstrates why we do not close advisories when samples are not collected under representative conditions. Advisories are lifted when the bloom passes. This is determined by having no significant reports of continued blooms during the week before sampling, and the cell count declines below 40,000 cells/mL. The samples also need to be collected under representative conditions - this does not include rainy or extremely windy days. When it is windy or rainy the cyanobacteria get physically mixed back into the water column and we cannot reliably determine if they are persisting at unsafe levels in the water. These are the protocols we use for all lakes across the state.

I understand that folks are frustrated with this long advisory. I am doing my job to protect public health by providing this information. The consequences of cyanotoxin exposure can vary from dermal, eye, nose and mouth irritations, gastrointestinal symptoms, tingling, numbness and seizures, and in serious cases organ failure and death. That being said, NHDES does not close waterbodies. If you chose to swim or wade in the waterbody during an advisory the risk will not be zero, but it will be higher in areas where you can see flecks, discoloration, clouds of material in the water, or ribbons of surface accumulations. **Cyanobacteria blooms are dynamic.** The cyanobacteria grow lake wide and pile up on different shorelines based on wind, wave, boat action and lake morphology. It is important to do a careful visual inspection of the water prior to recreating, even if there is no active advisory or alert. The variation in cyanobacteria densities from the five locations today demonstrates how dynamic bloom events are. **We cannot perfectly characterize the risk around a waterbody.** We do our best to sample as much as we can, but these are challenging and dynamic events to characterize as they can change hour to hour and day to day. If there is a single sample from a waterbody above the advisory level, there is enough cyanobacteria present in the system to potentially cause acute health risks to people and pets.

As homeowners on the water, you can take some steps to prevent cyanobacteria blooms in the future. Province lake has a [watershed management plan](#) already, and you can check in with the lake association to see how the implementation process is going. Get involved if you can. Please also be aware of the [Shoreland Protection Act](#), and its restrictions on the use of fertilizers along the shoreline. Properly maintain your household septic system, getting it inspected and pumped regularly. Maintain a buffer of natural vegetation on the water edge to filter it before it enters the waterbody. For more information about actions homeowners can take to minimize nutrient runoff into the lake, check out NH LAKES's [LakeSmart Resource Library](#). You can also participate in their free, voluntary, non-regulatory [LakeSmart Program](#), where a qualified professional will come out to your property and walk through ways you could better protect lake health through decisions you make on your property. Check out [Soak Up the Rain program](#) from NHDES for projects to address any storm water run off from your property.

We at NHDES are working on a statewide strategic cyanobacteria plan. A great deal of this plan will focus on the development and implementation of watershed management plans, so Province lake is already a step ahead in having one written already. You can follow the progress of this plan by visiting [this webpage](#). This has been a record breaking year for cyanobacteria across the state - this is related to the fact that this is one of the hottest seasons on record. Cyanobacteria grow better in warmer temperatures, and benefit from increased nutrients from all the storm water runoff we have had this year as well. Unfortunately, climate change will continue to increase the cyanobacteria problem globally.

Please keep signs posted at public access points. NHDES will arrange for sampling again next week. If people ask for updates on the current cyanobacteria advisory status, please direct them to the [Healthy Swimming Mapper](#). If you click on the advisory symbol, you can see our most recent sampling date. When advisories are lifted, the red symbol for the waterbody will no longer be on the map.

Please forward this email to other residents / community members who need this information. If they would like to be added to the email distribution list, please have them [sign up through this form](#) to be directly included on future communications from NHDES. If you prefer to no longer receive these sampling updates, simply respond, and indicate "unsubscribe".

For more information:

[Report a CyanoHAB](#)

[Healthy Swimming Mapper](#)

[Frequently Asked Questions"](#)