Brawley Consulting Group, LLC

Land Conservation and Management Services

Memo

Date: October 18, 2025

To: Bantam Lake Protective Association

From: Brawley Consulting Group

Re: Results of Cyanobacteria Monitoring of October 17, 2025

Summary

Based on visual assessments on October 17, 2025, the risk to the public from cyanobacteria and harmful algal blooms was high along some of the shoreline areas but low in the interior regions of the lake but. The assessment of interior lake regions, where samples were collected, was supported by cell counts, relative phycocyanin concentrations and Secchi disk transparencies.

Methods and Conditions

On Friday, October 17, 2025, the Brawley Consulting Group collected data and samples from the lake and analyzed those the next several days as part of the biweekly Cyanobacteria Monitoring Program. Detailed methods have been described in past summaries. Data and samples were collected at the North Bay, Center Lake, and South Bay sites. Data was also collected at the Point Folly site, but water samples were not.

Arrival at the Lake was at approximately 1pm. Remnants of recent cyanobacteria blooms were observed along portions of the shoreline but not in the open water areas. The skies were bright with passing clouds, and winds were moderate and out of the northwest (Weather Underground 2025).

Cyanobacteria and Algae Community

There were 27 algae genera identified in the plankton net or whole water samples collected on October 17th. Chlorophyta (aka green algae) and Cyanophyta (aka blue-green algae or cyanobacteria) had the greatest richness (numbers of identified genera) with 10 and 7 genera identified, respectively. Five different Bacillariophyta (aka diatoms) genera were identified. Four other taxonomic groups were represented by 1 or 2 genera each.

Total algal cell concentrations were between approximately 3,700 cells/mL at North Bay and 11,300 cells/mL at Center Lake. Like on October 4th, the approximate percentage of total cells that were cyanobacteria ranged from 58% at South Basin to 77% at Center Lake.

Cyanobacteria genera observed included *Aphanizomenon spp., Aphanocapsa spp.*, *Dolichospermum spp., Gomphosphaeria spp., Microcystis spp.*, *Planktothrix spp.*, and *Woronichinia spp.*

Cyanobacteria cell concentrations in the samples were generally low (Table 1). Site concentrations and lake average of approximately 4,681 cells/mL were all within the State's Visual Rank Category 1 designation which indicates low risk to human health from harmful algal blooms (Fig. 2). That range is listed as <20,000 cells per mL (CT DPH & CT DEEP 2023).

Table 1. Site characteristics and cyanobacteria cell concentrations at Bantam Lake on July 22, 2025.

Sites	Cyanobacteria cells (cells/mL)	Total Depth (m)	Secchi Transparency (m)	Temperature Top/Bottom (°C)	Oxygen Top/Bottom (mg/L)
North Bay	2,587	6.13	1.95	14.1 / 13.8	9.4 /9.1
Center Lake	8,722	8.40	1.98	14.5 / 13.6	9.9 / 9.1
South Bay	2,734	6.54	2.07	14.6 / 14.2	9.6 / 9.0
Folly Point	---	4.08	2.13	13.8 / 13.6	10.2 / 9.4

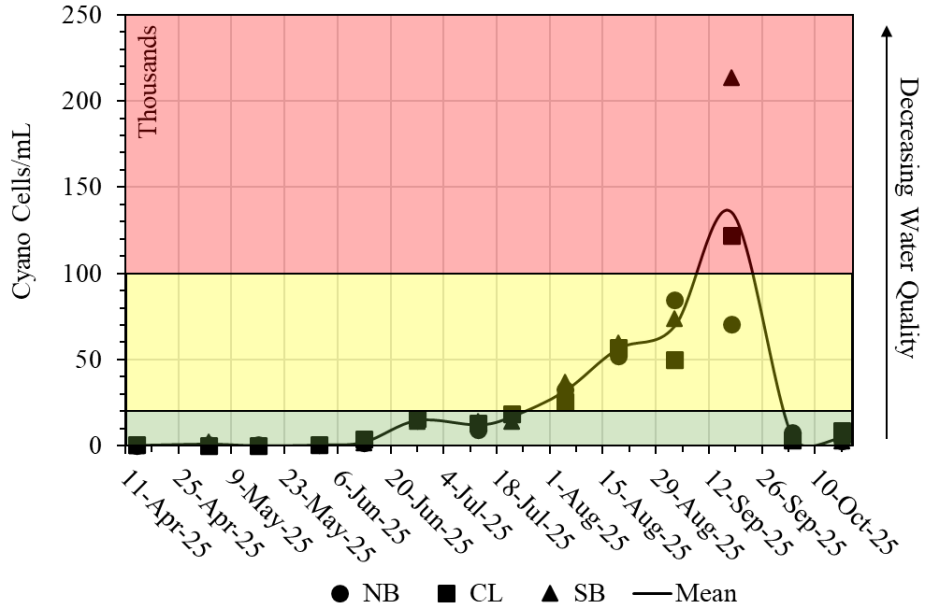

Figure 1. Cyanobacteria cell concentrations at the North Bay (NB), Center Lake (CL), and South Bay (SB) sites in the 2025 season at Bantam Lake. The plot is color coded to represent the CT DEEP's Visual Rank Categories for risk from harmful algal blooms: green = low risk; yellow = moderate risk; red = high risk.

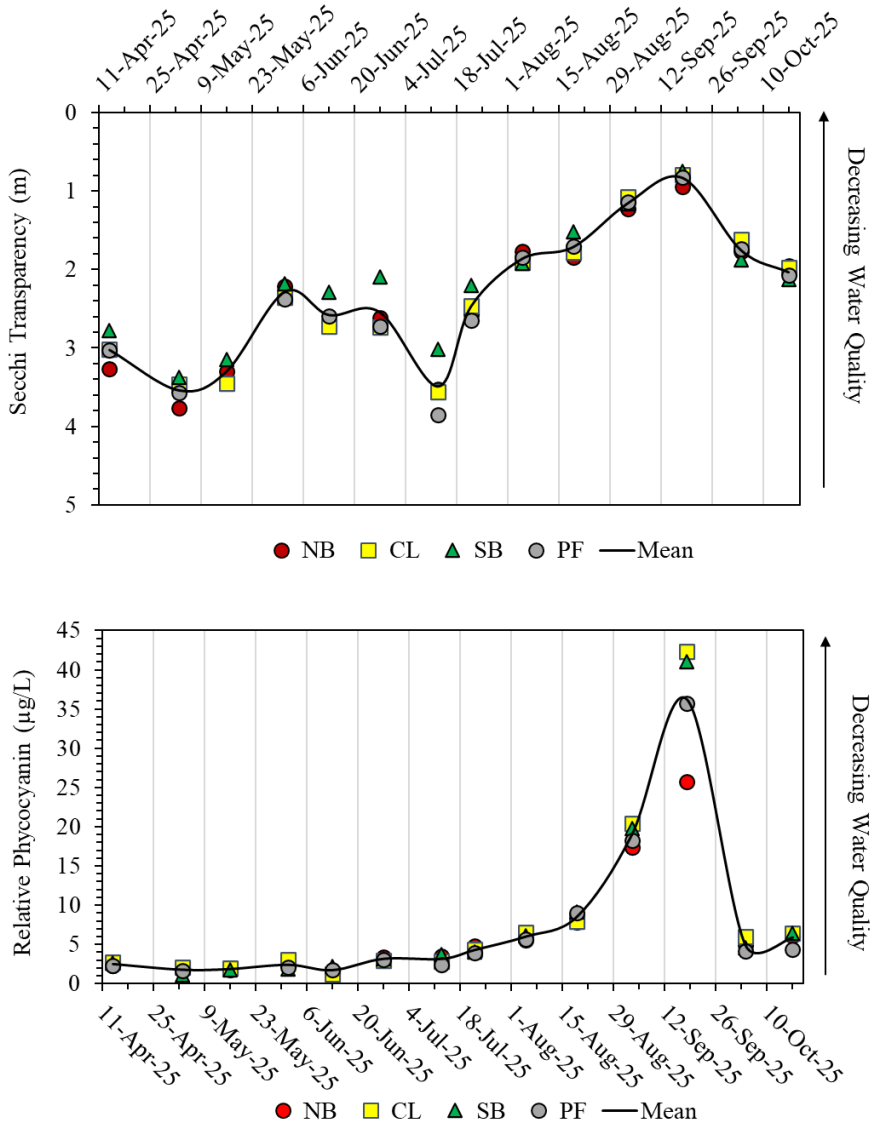

Figure 2. Secchi disk transparencies (top) and relative phycocyanin concentrations (bottom) at the North Bay (NB), Center Lake (CL), South Bay (SB), and Folly Point (PF) sites on Bantam Lake in 2025.

Water Quality

Two other indicators of cyanobacteria productivity and water quality measured as part of this monitoring program are Secchi disk transparency and relative phycocyanin concentration. Secchi transparency is a measurement indicating how far light transmits through the water column. The more algae and other particulate matter suspended in the water column, the less Secchi disk transparency will be and vice versa. Secchi transparencies on October 17th were like those observed on October 4th, between 1.9 and 2.2 meters (Table 1), with a lake average of 2.03 meters, which was the highest average since late July (Fig. 3).

Phycocyanin is a photosynthetic pigment used as an indicator of freshwater cyanobacteria. It was measured throughout the water column with the fluorimeter in the scientific instrumentation used in the monitoring program. Measures are relative in that the instrument was not calibrated with a primary standard. Although relative, they are useful in that they are comparable to measurements collected at different depths and dates. The average measurements taken in the top three meters of the water column were used for a site average, as they have in the past.

Relative phycocyanin levels and the lake average on October 17th were low, indicating low cyanobacteria biovolume in the water at the sampling sites. October 17th site readings and lake average were like those on October 4th with both much lower than those measured in September sampling events (Fig. 3).

Water temperatures near the surface were approximately 14°C to 15°C depending on site (Table 1). Temperatures at the bottom of the water column at each site were slightly lower. The water columns at each site were thermally mixed. Oxygen concentrations throughout the water column were between 9 and 10 mg/L.

Conclusions

For the second consecutive sampling event, cyanobacteria cell counts, relative phycocyanin concentrations, and Secchi disk transparencies at interior areas of the lake marked water quality improvements over conditions observed in September and were indicative of low risk from harmful cyanobacteria blooms. Remnants of blooms were observed along the shoreline on October 17th but did not appear as severe as the shoreline blooms observed over the last month. However, current shoreline conditions presented a higher risk than those in center regions of the lake.

The observable cyanobacteria bloom remnants along portions of the shoreline warrant a designation of Visual Rank Category 3 which is associated with the highest risk from cyanobacteria. The State recommends reporting high risk conditions to the CT DEEP, increasing surveillance, and posting beach closure signs at public beaches.

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Literature Cited

Connecticut Department of Public Health and Connecticut Department of Energy and Environmental Protection. 2023. Guidance to Local Health Departments for Blue–Green Algae Blooms in Recreational Freshwaters. See https://portal.ct.gov/-/media/DPH/EHDW/Blue-Green-Algae-Blooms/Guidance-to-LHD-for-Blue-Green-AlgaeBlooms.pdf