Cyanobacteria Off-Week Monitoring of Orleans Ponds
Sampling for the week of: September 7th 2026

Report prepared for: Town of Orleans, OPC
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Sample collection by: OPC
For more information: Cyanobacteria | Association to Preserve Cape Cod (apcc.org)

Pond	Sample Date	Pond Water Temp (F)	General Turbidity	Dominant Genus	BFC PC ave. (ug/L^{-1}) *	Net growth rate (ud^{-1})			Cyano. Scum	Scum determination	MCY Strip Test screening (ppb)	Recent Activity	Current Risk Category
						<50um	WLW	BFC					
Crystal Lake, Site1	09/09/2026	72.6	Clear	DS	967.27	-0.03	0.11	0.22	No scum was observed	-	-	September 2, 2026: Potential for Concern August 19, 2026: Acceptable August 5, 2026:Acceptable	Potential for Concern
Bakers Pond, Site1	09/09/2026	74.1	Clear	MC	17.66	-0.08	-0.15	-0.2	No scum was observed	-	-	August 31, 2026: Acceptable August 17, 2026: Acceptable August 3, 2026:Acceptable	Acceptable

Notes: On September 9, 2026 Bakers Pond was found to be Acceptable while Crystal Lake was found to be in APCC's Potential for Concern risk tier. Please let us know if the Town plans to keep the current Warnings at either of these ponds.

Photos:

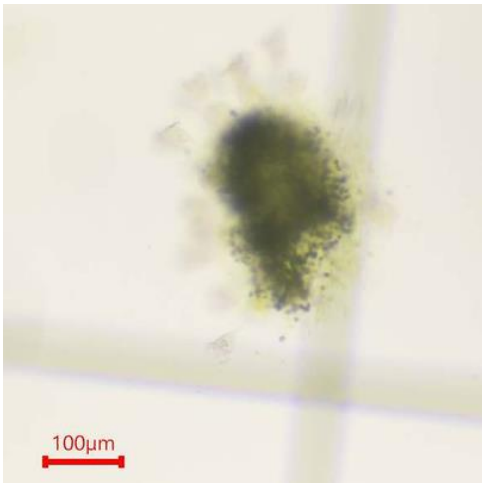

Photo 1. Crystal Lake shoreline September 9, 2026. Photo 2. *Dolichospermum* observed in sample collected at Crystal Lake on September 9, 2026.

Abbreviations:

PC Phycocyanin, pigment produced by cyanobacteria and measure of cyanobacteria biomass.

WLW (Whole Lake Water) Type of phycocyanin sample, collected with a 1-meter integrated tube.

<50um Type of phycocyanin sample, processed by filtering a WLW sample using a 50um mesh (to study picophytoplankton).

BFC (Bloom-Forming-Colony) Type of phycocyanin sample, collected using a plankton net and resulting in a concentrated surface sample of plankton >50um.

DS (*Dolichospermum*) Common genus of cyanobacteria. Produces regulated toxins at low level.

MC (*Microcystis*) Common genus of cyanobacteria. Produces regulated toxins at relatively high levels.

MCY(*Microcystin*) Toxin produced by many genera -measured by County Lab with ABRAXIS or ELISA methods.

Mixed Indicates that no single genus of cyanobacteria was found to be dominant. A genus must be found to have a composition and dominance of at least 70% to be considered the dominant genus in a sample.

WO, AZ (*Woronochinia* and *Aphanizomenon*) Additional genera of cyanobacteria that are believed to produce regulated toxins at a similar rate to *Dolichospermum*

Risk Category Descriptions

Acceptable Definition: No concerning cyanobacteria results at the time and place of sampling. To the best of APCC's knowledge and based on our monitoring results, toxin levels are below State standards for recreational usage of the pond with respect to cyanobacteria and toxins.

Map color is blue.

Formerly the Low Warning Tier.

Recommended Sampling Frequency: Biweekly.

Recommended Action: None.

Potential for Concern

Definition: Monitoring results or the presence of cyanobacteria scum at the time and place of sampling indicate a potential for increased risk for exposure to cyanobacteria toxins. While these conditions may pose lower health risks to adults, risks are higher for children or pets based on lower body mass, particularly if contaminated water is incidentally ingested. Children may inadvertently consume pond water while swimming and pet exposure can result from drinking or ingesting pond water or from grooming after swimming.

Map color is yellow.

Map color yellow with crosshatching indicates a municipal pet advisory has been issued.

Formerly the Moderate Warning Tier

Sampling Frequency: Weekly, unless APCC is notified to hold off on weekly sampling by the client.

Recommended Action: 1. APCC will screen a GRAB sample for microcystin using toxin strip test if microscopy determines the sample is *Microcystis* dominant. If the screening result is equal to or higher than 4ppb APCC will provide a GRAB sample for toxin analysis to the Barnstable County Water Quality Lab for confirmatory testing.

2. A "Pet Advisory" or similar advisory may be posted in accordance with each town's policies and procedures until the pond returns to Acceptable status.

3. Sampling is increased to weekly until all results are once again in the "Acceptable" category, unless APCC is notified to hold off on weekly sampling by the client.

Use Restriction Warranted

Definition: Monitoring results at the time and place of sampling indicate the pond is unsafe for recreation by humans and pets based on the presence of microcystin at or above state standards (8 ppb microcystin) OR based on determination by a municipal health agent(s) resulting in a closure for any other reason related to cyanobacteria. Recreational risk to adults is moderate following exposure. Recreational risks are especially high for children and pets following exposure through accidental ingestion of contaminated water. Children may inadvertently consume pond water while swimming, and pet exposure can result from ingestion or directly drinking pond water or from grooming after swimming. Due to lower body masses, children and pets are more susceptible to cyanobacteria risks than adults.

Map color is red.

Map color red with crosshatching indicates a municipal advisory has been issued.

Formerly the High Warning Tier. Sampling Frequency: Weekly, unless APCC is notified to hold off on weekly sampling by the client.

Recommended Action: 1. APCC will screen a GRAB sample for microcystin using toxin strip test if microscopy determines the sample is Microcystis dominant. If the screening result is equal to or higher than 4ppb APCC will provide a GRAB sample for toxin analysis to the Barnstable County Water Quality Lab for confirmatory testing.

2. The town should post a recreational advisory or similar advisory according to municipal policies and procedures and otherwise notify the public to avoid contact and exposure until the pond meets criteria to be reopened or the advisory is lifted by the local health agent.

3. Sampling will be conducted weekly (unless APCC is notified by client to hold off on weekly sampling) and the pond will remain in the "Use Restriction Warranted" category until there are two consecutive "Acceptable" sampling events according to APCC's 2025 Risk Tier Table.

APCC 2025 Cyanobacteria Risk Tiers

Acceptable

- A cyanobacteria scum was not detected, and the Bloom Forming Colony sample had a phycocyanin measurement <500ug/L.
- A cyanobacteria scum was detected but was determined to be visually insignificant and the Bloom Forming Colony sample had a phycocyanin measurement <100ug/L.

Potential for Concern

- A cyanobacteria scum was not detected but the Bloom Forming Colony sample had a phycocyanin measurement ≥500ug/L.
- A cyanobacteria scum was detected and determined to be visually significant and/or the Bloom Forming Colony sample had a phycocyanin measurement ≥100ug/L.

Stripes are added on the map if the town posts a warning that is not an official Public Health Advisory.*

Use Restriction Warranted

- The town posts a Public Health Advisory.
- Microcystin test measures ≥8 ppb (MassDPH guidance).
- Once a pond is categorized as Use Restriction Warranted it will remain in this category for two consecutive Acceptable sampling events (MassDPH guidance).

Stripes are added on the map if the town posts a Public Health Advisory and are removed once the town removes the Public Health Advisory.**If and when the town informs APCC of their action*

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