

Cyanobacteria Genera Identification

Date	Location	GPS Coordinates	Watershed/Waterbody	Bloom/Optix Species Name	Average Colonies	Total Colonies	Cell Density (cells/mL)	Microcystin Rapid Test	Anatoxin-A Rapid Test	Visual Bloom Y/N
30-Aug-24	Canal Beach- Lake Utopia	45.158874, -66.810665	Magaguadavic River	None Detected	0	0	0	N/A	N/A	No
30-Aug-24	Chamcook Higher	45.153073, -67.087984	Passamaquoddy Bay	None Detected	0	0	0	N/A	N/A	No
30-Aug-24	Chamcook Lower	45.135820, -67.082576	Passamaquoddy Bay	Gloeotrichia	1.3	5	951,000	N/A	N/A	Yes
30-Aug-24	Chamcook Lower	45.135820, -67.082576	Passamaquoddy Bay	Limnographis	1	1	1,970,000	0	0	Yes
17-Jun-24	Darlings Lake Lower	45.474143 -65.629747	Hammond/Darlings Lake	None Detected	0	0	0	0	0	No
18-Jun-24	Darlings Lake Lower	45.474143 -65.629747	Hammond/Darlings Lake	None Detected	0	0	0	0	0	No
19-Jun-24	Darlings Lake Lower	45.474143 -65.629747	Hammond/Darlings Lake	Microcystis	2.5	5	3,220,000	0	0	Slight Green Flecks
20-Jun-24	Darlings Lake Lower	45.474143 -65.629747	Hammond/Darlings Lake	Microcystis	2	2	656,000	N/A	N/A	No
20-Jun-24	Darlings Lake Lower	45.474143 -65.629747	Hammond/Darlings Lake	Woronichinia	1	1	2,340,000	N/A	N/A	No
21-Jun-24	Darlings Lake Lower	45.474143 -65.629747	Hammond/Darlings Lake	Microcystis	1	3	368,000	N/A	N/A	No
25-Jun-24	Darlings Lake Lower	45.474143 -65.629747	Hammond/Darlings Lake	Microcystis	2.4	17	644,000	0	0	No
26-Jun-24	Darlings Lake Lower	45.474143 -65.629747	Hammond/Darlings Lake	Microcystis	1	3	565,000	N/A	N/A	No
26-Jun-24	Darlings Lake Lower	45.474143 -65.629747	Hammond/Darlings Lake	Dolichochosepermum	1	2	307,000	N/A	N/A	No
27-Jun-24	Darlings Lake Lower	45.474143 -65.629747	Hammond/Darlings Lake	Microcystis	2	16	626,000	N/A	N/A	No
27-Jun-24	Darlings Lake Lower	45.474143 -65.629747	Hammond/Darlings Lake	Limnographis	1	1	1,490,000	0	0	Slight Green Flecks
03-Jul-24	Darlings Lake Lower	45.474143 -65.629747	Hammond/Darlings Lake	None Detected	0	0	0	N/A	N/A	No
07-Jul-24	Darlings Lake Lower	45.474143 -65.629747	Hammond/Darlings Lake	None Detected	0	0	0	N/A	N/A	No
10-Jul-24	Darlings Lake Lower	45.474143 -65.629747	Hammond/Darlings Lake	None Detected	0	0	0	N/A	N/A	No
11-Jul-24	Darlings Lake Lower	45.474143 -65.629747	Hammond/Darlings Lake	None Detected	0	0	0	N/A	N/A	No
12-Jul-24	Darlings Lake Lower	45.474143 -65.629747	Hammond/Darlings Lake	Microcystis	2	4	488,000	N/A	N/A	No
15-Jul-24	Darlings Lake Lower	45.474143 -65.629747	Hammond/Darlings Lake	Woronichinia	1	1	1,120,000	0	0	No
17-Jul-24	Darlings Lake Lower	45.474143 -65.629747	Hammond/Darlings Lake	Microcystis	1	4	528,000	N/A	N/A	No
26-Jul-24	Darlings Lake Lower	45.474143 -65.629747	Hammond/Darlings Lake	None Detected	0	0	0	N/A	N/A	No
31-Jul-24	Darlings Lake Lower	45.474143 -65.629747	Hammond/Darlings Lake	None Detected	0	0	0	N/A	N/A	No
06-Aug-24	Darlings Lake Lower	45.474143 -65.629747	Hammond/Darlings Lake	Dolichochosepermum	1	1	154,000	N/A	N/A	No
15-Aug-24	Darlings Lake Lower	45.474143 -65.629747	Hammond/Darlings Lake	Dolichochosepermum	1	1	539,000	N/A	N/A	No
20-Sep-24	Darlings Lake Lower	45.474143 -65.629747	Hammond/Darlings Lake	None Detected	0	0	0	N/A	N/A	No
17-Jun-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	Microcystis	1.5	3	181,000	N/A	N/A	No
17-Jun-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	Dolichochosepermum	1	1	61,800	N/A	N/A	No
18-Jun-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	Microcystis	1.7	5	861,000	0	0	Slight Green Flecks
19-Jun-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	Microcystis	1	2	1,670,000	N/A	N/A	No
20-Jun-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	Microcystis	1	3	240,000	N/A	N/A	No
20-Jun-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	Dolichochosepermum	1	1	353,000	N/A	N/A	No
20-Jun-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	Woronichinia	1	1	794,000	N/A	N/A	No
21-Jun-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	Microcystis	1	2	1,000,000	N/A	N/A	No
25-Jun-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	Microcystis	1.5	3	767,000	0	0	No
25-Jun-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	Woronichinia	1	1	1,500,000	N/A	N/A	No
26-Jun-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	Microcystis	2	6	452,000	N/A	N/A	No
27-Jun-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	Microcystis	2.2	20	771,000	N/A	N/A	No
27-Jun-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	Dolichochosepermum	1	2	72,800	N/A	N/A	No
03-Jul-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	Dolichochosepermum	1	1	40,200	N/A	N/A	No
07-Jul-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	None Detected	0	0	0	N/A	N/A	No
10-Jul-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	None Detected	0	0	0	N/A	N/A	No
11-Jul-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	None Detected	0	0	0	N/A	N/A	No
12-Jul-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	Microcystis	1	2	736,000	N/A	N/A	No
12-Jul-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	Dolichochosepermum	1	1	91,700	N/A	N/A	No
15-Jul-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	None Detected	0	0	0	N/A	N/A	No
17-Jul-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	Microcystis	1	2	1,100,000	0	0	No
26-Jul-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	None Detected	0	0	0	N/A	N/A	No
31-Jul-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	Dolichochosepermum	1	1	74,000	N/A	N/A	No
06-Aug-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	None Detected	0	0	0	N/A	N/A	No
14-Aug-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	None Detected	0	0	0	N/A	N/A	No
20-Sep-24	Darlings Lake Upper	45.474143 -65.629747	Hammond/Darlings Lake	None Detected	0	0	0	N/A	N/A	No
06-Aug-24	Gondola Dog Park	45.452872, -65.978399	Kennebecasis River Main Stem	None Detected	0	0	0	N/A	N/A	No
25-Sep-24	Harvey Lake	45.732950, -67.011107	Oronocto River	Microcystis	3	3	1,230,000	0	0	Yes
25-Sep-24	Harvey Lake	45.732950, -67.011107	Oronocto River	Dolichochosepermum	1	1	375,000	N/A	N/A	Yes
24-Jun-24	Henry Lake	45.405776, -65.614679	Hammond/St. Martins	Microcystis	1	1	620,000	N/A	N/A	No
24-Jun-24	Henry Lake	45.405776, -65.614679	Hammond/St. Martins	Dolichochosepermum	1	1	38,300	N/A	N/A	No
25-Sep-24	Herkert Lake	45.893347, -66.754681	Fredrickton/WSJR	Microcystis	1.3	4	23,000,000	Positive	0	Yes
25-Sep-24	Herkert Lake	45.893347, -66.754681	Fredrickton/WSJR	Woronichinia	1	1	2,020,000	N/A	N/A	Yes
10-Oct-24	HRAA Beach	45.456788, -65.906339	Hammond River Main Stem	Microcystis	1.3	5	423,000	N/A	N/A	No
06-Sep-24	HRAA Pond	45.458289, -65.905975	Hammond River/HRAA Property	Microcystis	1	1	53,400	N/A	N/A	No
20-Sep-24	HRAA Pond	45.458289, -65.905975	Hammond River/HRAA Property	None Detected	0	0	0	N/A	N/A	Yes (might be diatoms)
10-Oct-24	HRAA Pond	45.458289, -65.905975	Hammond River/HRAA Property	None Detected	0	0	0	N/A	N/A	No
10-Oct-24	Irishtown Nature Park	46.143771, -64.768575	Manciton	None Detected	0	0	0	N/A	N/A	No
19-Jun-24	Jordan Miller Beach	45.408365, -66.003385	Kennebecasis River Main Stem	Dolichochosepermum	1	1	228,000	N/A	N/A	No
19-Jun-24	Jordan Miller Beach	45.408365, -66.003385	Kennebecasis River Main Stem	Microcystis	1	6	404,000	N/A	N/A	No
25-Sep-24	Lake George	45.826748, -67.058379	Fredrickton/WSJR	Woronichinia	1	2	2,050,000	N/A	N/A	Yes
25-Sep-24	Mactaquac Provincial Park	45.949121, -66.881714	Fredrickton/WSJR	None Detected	0	0	0	N/A	N/A	No
25-Sep-24	Main Stem WSJR Cow Island	45.851574, -66.230882	Main Stem Wolastog-SJ River	None Detected	0	0	0	N/A	N/A	Benthic
06-Aug-24	McCutcheon's Wharf	45.641430, -65.859717	Belleisle Bay	Dolichochosepermum	2.8	28	28,000,000	0	0	Yes
18-Jun-24	Meenan's Cove	45.458843, -65.936449	Kennebecasis River Main Stem	None Detected	0	0	0	0	0	No
19-Jun-24	Meenan's Cove	45.458843, -65.936449	Kennebecasis River Main Stem	Microcystis	1	3	454,000	0	0	Slight Green Flecks
19-Jun-24	Meenan's Cove	45.458843, -65.936449	Kennebecasis River Main Stem	Dolichochosepermum	1	1	40,500	0	0	Slight Green Flecks
21-Jun-24	Meenan's Cove	45.458843, -65.936449	Kennebecasis River Main Stem	Microcystis	1	1	340,000	N/A	N/A	No
25-Jun-24	Meenan's Cove	45.458843, -65.936449	Kennebecasis River Main Stem	Microcystis	1	2	1,580,000	N/A	N/A	No
25-Jun-24	Meenan's Cove	45.458843, -65.936449	Kennebecasis River Main Stem	Dolichochosepermum	1	2	294,000	N/A	N/A	No
26-Jun-24	Meenan's Cove	45.458843, -65.936449	Kennebecasis River Main Stem	Microcystis	1	2	197,000	N/A	N/A	No
27-Jun-24	Meenan's Cove	45.458843, -65.936449	Kennebecasis River Main Stem	Microcystis	1	3	429,000	N/A	N/A	No
27-Jun-24	Meenan's Cove	45.458843, -65.936449	Kennebecasis River Main Stem	Dolichochosepermum	1	1	454,000	N/A	N/A	No
03-Jul-24	Meenan's Cove	45.458843, -65.936449	Kennebecasis River Main Stem	None Detected	0	0	0	N/A	N/A	No
08-Jul-24	Meenan's Cove	45.458843, -65.936449	Kennebecasis River Main Stem	Dolichochosepermum	1	1	189,000	0	0	No
10-Jul-24	Meenan's Cove	45.458843, -65.936449	Kennebecasis River Main Stem	None Detected	0	0	0	N/A	N/A	No
12-Jul-24	Meenan's Cove	45.458843, -65.936449	Kennebecasis River Main Stem	Microcystis	1	1	246,000	N/A	N/A	No
15-Jul-24	Meenan's Cove	45.458843, -65.936449	Kennebecasis River Main Stem	None Detected	0	0	0	N/A	N/A	No
23-Jul-24	Meenan's Cove	45.458843, -65.936449	Kennebecasis River Main Stem	None Detected	0	0	0	N/A	N/A	No
26-Jul-24	Meenan's Cove	45.458843, -65.936449	Kennebecasis River Main Stem	None Detected	0	0	0	N/A	N/A	No
31-Jul-24	Meenan's Cove	45.458843, -65.936449	Kennebecasis River Main Stem	None Detected	0	0	0	N/A	N/A	No
06-Aug-24	Meenan's Cove	45.458843, -65.936449	Kennebecasis River Main Stem	None Detected	0	0	0	N/A	N/A	No
14-Aug-24	Meenan's Cove	45.458843, -65.936449	Kennebecasis River Main Stem	Dolichochosepermum	1	1	69,400	N/A	N/A	No
20-Sep-24	Meenan's Cove	45.458843, -65.936449	Kennebecasis River Main Stem	Microcystis	1	1	70,100	N/A	N/A	No
03-Jul-24	Ritchie Lake	45.413395, -65.971398	Kennebecasis River Quispamsis	Dolichochosepermum	1	1	122,000	N/A	N/A	No
10-Jul-24	Ritchie Lake	45.413395, -65.971398	Kennebecasis River Quispamsis	Microcystis	1	1	766,000	0	0	No
10-Jul-24	Ritchie Lake	45.413395, -65.971398	Kennebecasis River Quispamsis	Dolichochosepermum	1	1	78,200	N/A	N/A	No
15-Jul-24	Ritchie Lake	45.413395, -65.971398	Kennebecasis River Quispamsis	Microcystis	1	1	1,460,000	0	0	No
06-Aug-24	Ritchie Lake	45.413395, -65.971398	Kennebecasis River Quispamsis	Microcystis	1	2	589,000	N/A	N/A	No
14-Aug-24	Ritchie Lake	45.413395, -65.971398	Kennebecasis River Quispamsis	Microcystis	1	1	796,000	N/A	N/A	No
10-Oct-24	Smithtown Bridge	45.464159, -65.804449	Hammond River Main Stem	Microcystis	2	6	770,000	N/A	N/A	No
25-Sep-24	Washademoak Boat Launch	45.829267, -65.953530	Washademoak	None Detected	0	0	0	N/A	N/A	No

GENERA (historic and/or current)	TOXINS IDENTIFIED (historic and/or current)	Colonies and Cell Density
Cyanobacteria is the proper name for blue-green algae, because these organisms are actually bacteria and not algae at all! Cyanobacteria were the earliest known forms of life on earth. They are a natural part of our environment and water ecosystems, and can be found in many ponds, lakes, rivers, and wetlands in New Brunswick. There are over 400 currently known genera of cyanobacteria worldwide. Some of the most common genera of cyanobacteria in Canadian freshwater systems include <i>Microcystis</i>, <i>Dolichochosepermum</i> (formerly called <i>Anabaena</i>), <i>Aphanizomenon</i>, <i>Woronichinia</i>, <i>Limnographis</i>, <i>Planktothrix</i>, <i>Pseudoanabaena</i>, and <i>Gloeotrichia</i>. <i>Microcystis</i> is the most common bloom-forming genus in North America. Surface blooms and benthic mats may contain one, or several, genera of cyanobacteria.	Not all cyanobacteria are harmful; however, some may produce toxins that can cause skin, eye and throat irritation. More serious health effects such as gastrointestinal illness can occur if toxins are consumed. These toxins can also be harmful to pets, fish, wildlife and livestock. The most commonly measured toxins are microcystins, cylindrospermopsins, anatoxins/guanitoxins, saxitoxins and nodularins. The most common rarely found toxin in North America is microcystin, which can cause skin, eye and throat irritations and more severe illness if consumed. Toxins can sometimes remain in the water for several weeks after surface blooms are no longer visible. Toxins identified within this list may or may not mean that those toxins are currently being produced by a bloom. The presence of a specific genus of cyanobacteria or the presence of the gene (a unit of DNA) responsible for producing toxins may or may not mean that toxins are present. Toxin production is highly variable.	Monitoring cyanobacteria colony counts and cell density (cells/mL) is crucial for assessing the health and potential risks of aquatic ecosystems, particularly in relation to cyanotoxin production. Cyanobacteria, when present in large quantities, can form harmful algal blooms (HABs), which are capable of producing toxic compounds known as cyanotoxins. The cell density, or the number of cyanobacterial cells per milliliter, provides an indication of the overall abundance of these microorganisms. Higher colony counts and cell densities often correlate with an increased likelihood of cyanotoxin production, as many cyanobacteria species produce toxins in response to environmental stressors like nutrient overload, temperature fluctuations, or water stagnation. Regular monitoring of colony counts and cell density helps predict the potential for harmful blooms and cyanotoxin release, enabling timely interventions to protect water quality and human and environmental health.