

Guardians of Nicola Lake and Watershed Society



Member Newsletter

Mid-Summer Issue



250+

MEMBERS

62

NEW MEMBERS SINCE JUNE

4

VOLUNTEER TESTING
TEAMS

**Best Water Clarity
in 3 Years**

MEMBERSHIP BY COMMUNITY (AS OF AUGUST 5) Nicola Bay: 80 · Lakeshore Estates: 67 · Quilchena on the Lake: 37 ·
Harmon Estates: 24 · Beaver Point: 22 · Merritt: 5 · Nkwala Beach Resort: 3 · Jack Ranch: 3 · Other/Not Specified: 11

The lake appears to be following a more favourable path than in recent summers, but August is typically when cyanobacteria become most active. Continued monitoring and informed lake users who know what to look for will remain our best tools for protecting the health of Nicola Lake.

IN THIS ISSUE

- ✓ This summer's water quality update, including a recent satellite snapshot
- ✓ Your shoreline action checklist
- ✓ What Nicola Lake's phytoplankton data is telling us in 2026
- ✓ Understanding external vs. internal nutrient loading
- ✓ Our coordinated, science-led testing program
- ✓ Our working hypotheses on what may be driving Nicola Lake's water quality
- ✓ How to become a member and get involved
- ✓ A guide to boating zones on Nicola Lake

Note: with so many new members this year, some of what follows has been shared before. We want to make sure everyone is up to date.

Water Quality Update: Nicola Lake Continues to Show Encouraging Signs

As Nicola Lake enters its warmest weeks of the year, our monitoring program is tracking the expected seasonal increase in cyanobacteria while continuing to show encouraging signs for overall lake health. If you've spent time on the lake this summer, you've probably noticed it has looked healthier than it has over the past two to four years: water clarity has been excellent, widespread surface blooms have not developed, and many lake users have commented on how clear the water has been. These observations are consistent with our Secchi depth measurements, field observations, and laboratory monitoring.

At the same time, we are beginning to see the expected seasonal increase in cyanobacteria (blue-green algae) as water temperatures warm, a normal part of the lake's annual cycle. The good news is that, despite this seasonal increase, Nicola Lake continues to be in much better condition than in recent summers. Our consulting biologist advises that while cyanobacteria concentrations are beginning to increase overall, we have not yet seen the widespread surface blooms of previous years, though continued hot weather and recent ashfall bear watching (more on that later in this issue).

KEY TAKEAWAYS

- ✓ Nicola Lake continues to look healthier than it has over the past two to four summers, with excellent water clarity and no widespread surface blooms observed
- ✓ We are now seeing the expected seasonal increase in cyanobacteria as the lake warms
- ✓ Overall cyanobacteria concentrations are beginning to increase, although one monitoring location showed a decline between July 14 and July 21
- ✓ Our satellite monitoring program can often detect elevated chlorophyll-a, an indicator of increased algae, before changes become clearly visible from shore
- ✓ No monitoring program can detect every bloom in real time; the best protection is learning to recognize the visual signs of cyanobacteria

How we monitor Nicola Lake

Understanding a lake as large and dynamic as Nicola requires more than one method. We combine satellite monitoring for a lake-wide view of algae conditions, laboratory analysis to identify and count cyanobacteria in water samples, Secchi depth measurements to track water clarity through the season, and regular field observations of what lake users are seeing in real time. Each tool tells us something different, and together they provide the clearest picture of what's happening across Nicola Lake.

What our latest results mean

Laboratory analysis tells us what organisms are actually present in the water, but unlike satellite imagery, results take about a week, since each sample undergoes detailed microscopic examination and quality assurance. Recent results show cyanobacteria concentrations increasing through early and mid-July, though one deep-water monitoring station showed a decline between July 14 and July 21. Samples from the north end of the lake showed lower concentrations than the deep-water station, a reminder that conditions vary significantly across the lake, and can even change over the course of a single day as wind, waves, and currents move algae around.

Satellite Monitoring: The August 4 Snapshot

The newest addition to our monitoring program is satellite monitoring, which lets us assess algae conditions across the entire lake rather than at just a few sampling locations. The most recent image, from August 4, estimated that approximately 9% of the visible lake surface contained elevated chlorophyll-a concentrations, with the highest concentrations occurring in the western end of the lake. Satellites measure chlorophyll-a, a naturally occurring pigment found in all algae, rather than directly identifying cyanobacteria, so this information is always combined with laboratory analysis and on-the-water observations.

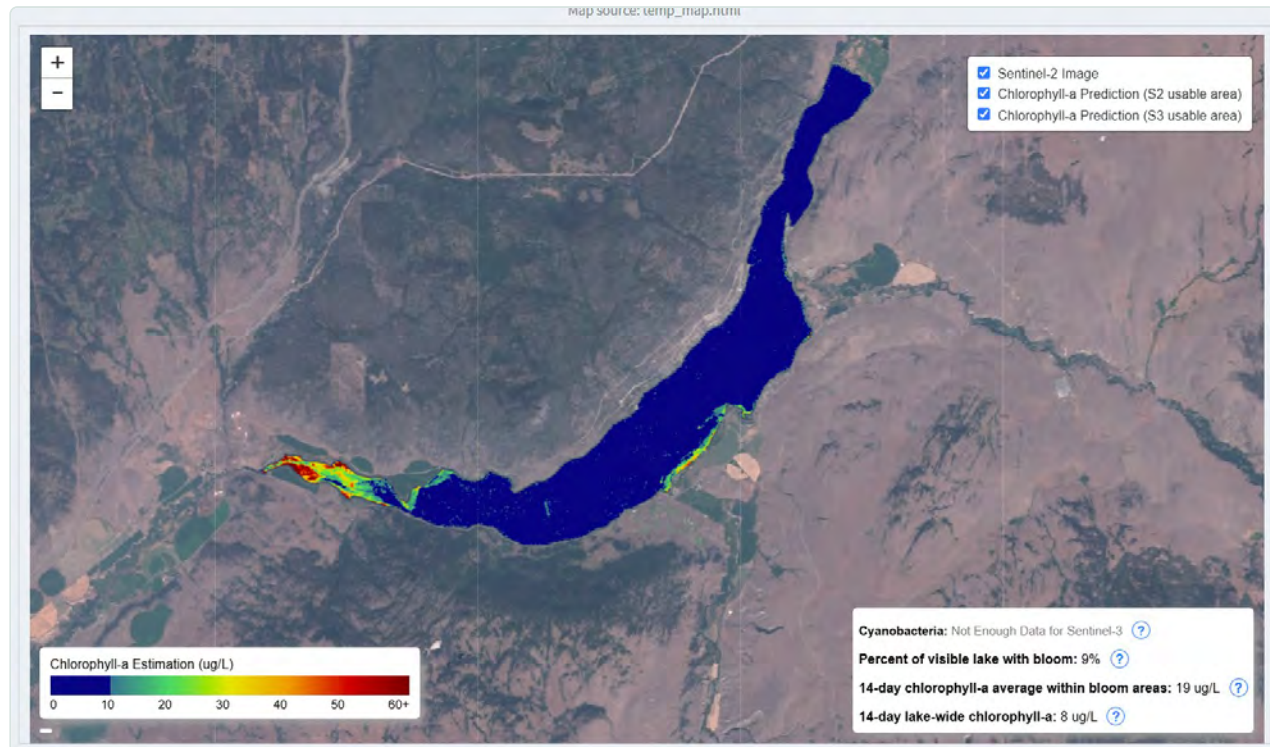


Figure 1. Satellite image from August 4, 2026 showing chlorophyll-a concentrations across Nicola Lake. About 9% of the visible lake surface showed elevated chlorophyll-a, with the highest concentrations in the western end of the lake.

The bottom line. No monitoring program can provide real-time information for every part of the lake, every day, and cyanobacteria can shift with wind and currents over the course of a single day. Think of our monitoring program as the "big picture," while your own observations are the best real-time read on wherever you're swimming, boating, or paddling.

Cyanobacteria can appear in many forms, from tiny green specks to paint-like scums. See "Know What to Look For" on the next page for a photo guide.

Know What to Look For

Cyanobacteria can appear in many different forms. Appearance alone can't confirm whether toxins are present, but recognizing these signs is one of the best ways to protect yourself, your family, and your pets. If you see any of the conditions below, avoid contact with the affected area, keep children and pets out of the water, and choose another spot. When in doubt, stay out.



Small green specks floating on the water, often the earliest visible sign.



Green streaks or swirls on the surface, especially near shore.



Paint-like surface scums or pea soup-like water.

Blooms can also collect as floating mats or shoreline accumulations, and conditions can change quickly: wind, waves, and currents can concentrate algae in one bay while another part of the lake stays completely clear, sometimes within the same day.

What about the recent ash? Several members have asked whether recent ashfall could affect water quality. It's too early to say, but our consulting biologist advises that continued hot weather combined with ash deposition could create more favourable conditions for cyanobacteria growth in the coming weeks. We'll continue monitoring closely and share updates if we observe any measurable effects.

Thank you to everyone who has shared observations, photographs, and questions this summer. Your reports complement our scientific monitoring and help us build the most comprehensive picture of Nicola Lake ever assembled.

How Healthy Is Your Shoreline?

Shoreline health directly affects lake health: buffer vegetation filters runoff before it reaches the water, and every property along Nicola Lake plays a part. Adapted from the BC Lake Stewardship Society's shoreline checklist, here are a few of the simplest, highest-impact actions you can take at home:

YOUR SHORELINE ACTION CHECKLIST

- ✓ Leave a buffer strip of native grasses, shrubs, and trees along the water's edge
- ✓ Check regularly for invasive plants and remove them carefully
- ✓ Let imported beach sand erode naturally; let native plants return
- ✓ Keep livestock away from the shoreline or streamside
- ✓ Redirect driveway runoff into a settling/soaking area, away from the lake
- ✓ Reduce fertilizer and pesticide use; choose phosphate-free soaps and cleaners
- ✓ Pump your septic tank every 1–3 years, and avoid overloading the system
- ✓ Handle fuels, oil, and chemicals with care, and be prepared for spills
- ✓ Practice safe, low-power boating: avoid high-power operation (especially wake boats) in water less than about 20 feet deep, and keep to no-wake speeds within 160 m (500 ft) of shore

Keeping the Community Informed

We have installed educational signs around the lake with QR codes linking to current water quality information, resources, and ways to get involved. We can never say the lake is "safe," because conditions can change quickly. Cyanobacterial blooms can appear, disappear, or move with the wind, affecting one bay or much of the lake. That's why it

matters to recognize what a bloom looks like, avoid affected areas, and stay informed.

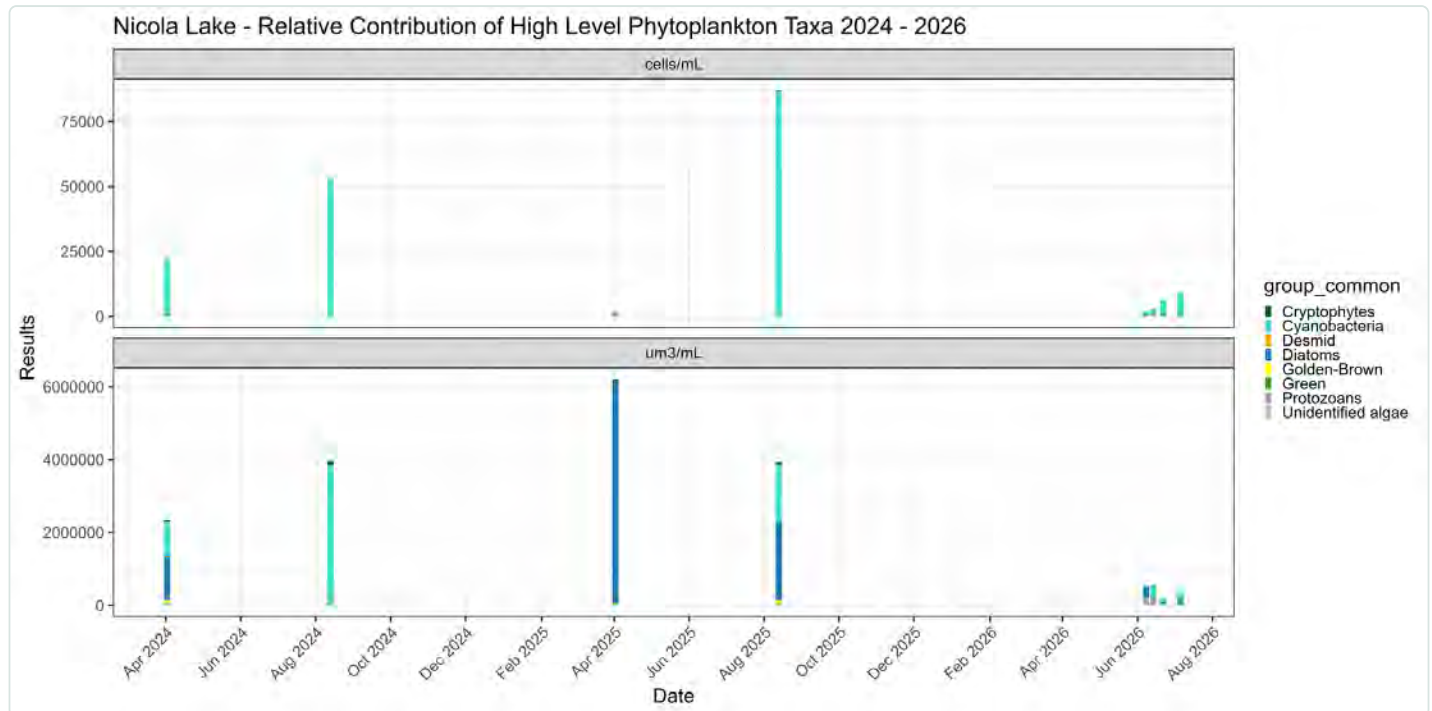
We no longer post water quality updates on Facebook, because older posts can linger and create confusion about when testing was actually completed. Email ensures members always receive the most current information as soon as it's available: one more reason to join.

Learn more online. For more information, visit our website at www.guardiansofnicola.ca. You can also find meeting minutes there from our board of directors, who meet at least once a month, along with more of the research we've been doing.

Welcome to our newest Director. The Guardians welcome Dave Jarvos, of Merritt and Beaver Point Estates, as our newest Board Director. We now have nine Board members steering and supporting the work of the Guardians of Nicola Lake and Watershed Society, representing Lakeshore Estates, Beaver Point, Quilchena on the Lake, Merritt, Nicola Bay, Jack Ranch, and Harmon Estates.



What Is Nicola Lake Telling Us?



Relative contribution of major phytoplankton groups in Nicola Lake, 2024–2026. Upper panel: cell counts (cells/mL). Lower panel: biomass ($\mu\text{m}^3/\text{mL}$). Sampling frequency increased starting in 2025.

One of the best ways to understand the health of Nicola Lake is by studying its phytoplankton, the microscopic algae that form the foundation of the lake's food web. Like plants on land, phytoplankton are a natural and essential part of a healthy lake. The goal is not to eliminate algae, but to maintain a balanced ecosystem where many different types coexist, rather than one dominated by harmful bloom-forming species.

During 2024 and much of 2025, Nicola Lake experienced several significant increases in cyanobacteria, which at times became the dominant group in the lake. So far in 2026, we're seeing something quite different: a more balanced mix of several phytoplankton groups, with overall algae levels much lower than the previous two years. A more diverse phytoplankton community is generally considered a sign of a healthier, more resilient lake.

Not every spike is a harmful bloom

Many people noticed the large spike in spring 2025 and assumed it was the worst algae bloom on record. It wasn't. Those high values were made up primarily of diatoms, a beneficial type of algae that naturally flourishes each spring when cooler water mixes nutrients throughout the lake after winter. Think of them like wildflowers appearing after the snow melts: a normal seasonal event, very different from a harmful cyanobacterial bloom.



Why Scientists Measure More Than Cell Counts

Counting algae cells tells only part of the story. Imagine comparing 100 marbles with 100 basketballs: the number is the same, but the amount of material is completely different. That's why our scientists look at both cell counts *and* total biomass (volume) to get a clear picture of what's actually happening in the lake.

A healthy lake is not an algae-free lake. Algae form the base of the aquatic food web, feeding the tiny aquatic animals that support fish and countless other species. The

goal isn't elimination; it's balance, preventing conditions where one undesirable group, particularly bloom-forming cyanobacteria, overwhelms the rest.

The 2026 monitoring results are consistent with what many people have observed on the lake this year: improved water clarity, lower cyanobacteria concentrations, a more balanced phytoplankton community, and no major cyanobacterial bloom through July. It's always encouraging when the science and the shoreline tell the same story.

"The lake isn't just producing less algae. It appears to be behaving differently. That's the most important message in the data."

Understanding Nutrient Loading

External Loading

Nutrients entering the lake from outside sources: tributaries, runoff, livestock, septic systems, erosion, and other activities across the watershed.

Understanding the balance between these two sources is central to building a **nutrient budget**, the tool that will help us answer where nutrients are coming from, how much comes from each source, how much is already stored in the lake, and which actions will make the biggest difference. Our goal isn't simply to collect data; it's to collect the *right* data, so we can focus our efforts where they matter most.

Internal Loading

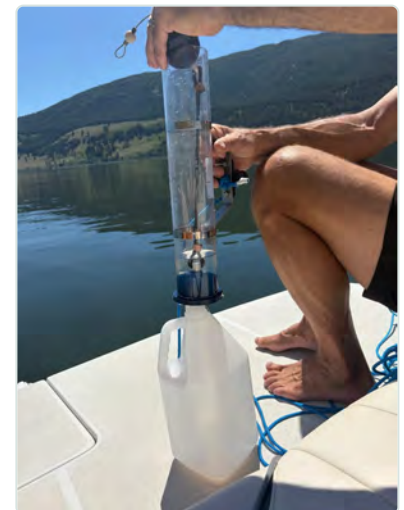
Nutrients already accumulated in the lake's sediments over many years, which can be released back into the water under certain conditions.

The biggest question is still why. The data clearly shows what happened in 2026, but not why. See "Our Working Hypotheses on Nicola Lake's Water Quality" later in this issue for our current thinking, ranked by likely impact and still very much unproven.

Coordinated, Science-Led Testing

We've partnered with Larratt Aquatic Consulting (working with biologists and limnologists) to keep our work scientifically sound and coordinated with other organizations, rather than duplicating effort. Four volunteer water testing teams now collect samples every two weeks at the Province's long-term deep-water monitoring site, building on decades of historical data.

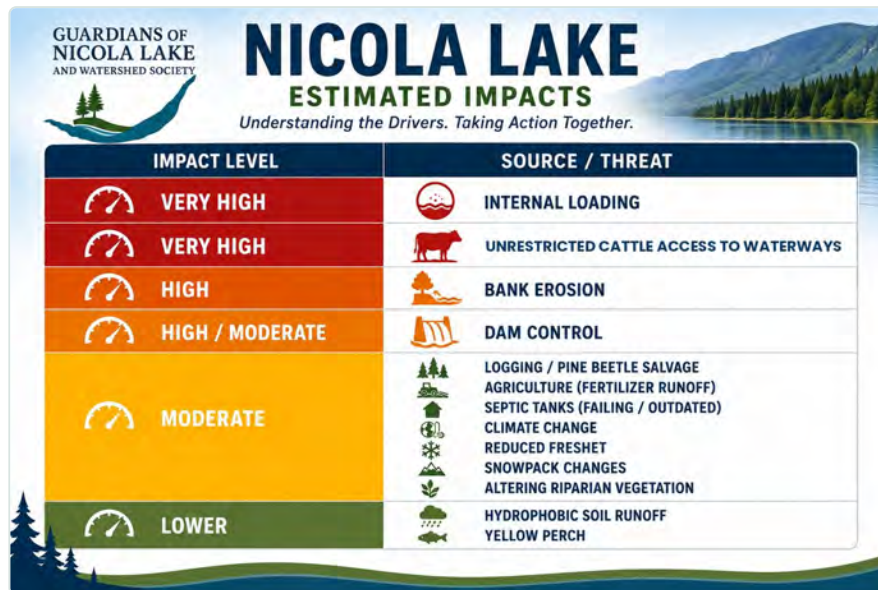
We also run cyanobacteria testing where conditions warrant, while government ministries and partners monitor tributaries and other parts of the watershed. By the end of this season, we'll have one of the most comprehensive datasets ever collected for Nicola Lake. Every sample collected today becomes part of a long-term record that will guide future decisions about this lake.



A Guardians volunteer collecting a water sample for testing.

Our Working Hypotheses on Nicola Lake's Water Quality

One of the questions we hear most often is: *"What is causing the changes we're seeing in Nicola Lake?"* The honest answer is that there is no single cause; water quality issues almost always result from multiple interacting factors rather than one isolated problem. Over the past year, we've worked with biologists, limnologists, government agencies, the Upper Nicola Band, and other watershed partners to develop a set of working hypotheses based on current science, monitoring results, and local observations. These are hypotheses, not conclusions, and the rankings may change as more data comes in.



Very high impact: internal loading and unrestricted livestock access to waterways

Current evidence suggests internal loading, nutrients that have accumulated in the lake's sediments over decades and can be released back into the water under warm, low-oxygen conditions, may be one of the most important contributors. This is still a hypothesis we're testing, not a confirmed cause, but if it holds up, it would mean that even if no new nutrients entered the lake today, a large "legacy" supply may already be stored in the sediment. Separately, where livestock have unrestricted access to streams, wetlands, or shoreline, nutrients and bacteria can enter waterways directly. This doesn't mean agriculture is solely responsible; many ranchers are excellent stewards of the land, and we believe collaboration, not blame, is the path forward.

High to moderate impact: erosion and dam operations

Excessive bank erosion adds sediment, often carrying phosphorus attached to soil particles while reducing water clarity; protecting riparian vegetation is one of the most effective ways to reduce it. Dam operations influence water residence time, freshet timing, and shoreline exposure, all of which may affect nutrient cycling, though they represent just one piece of a larger picture.

Moderate and lower impact factors

Several additional factors likely contribute to the lake's overall nutrient budget, including logging and pine beetle salvage activity, agricultural fertilizer runoff, aging or failing septic systems, climate change, reduced spring freshet, changing snowpack patterns, and loss of riparian vegetation. Individually these may have moderate impacts, but collectively they can become significant. Hydrophobic (water-repellent) soils following wildfire and yellow perch currently appear to be comparatively smaller drivers, though we continue to monitor both.

Science is a process. Good science isn't about proving ourselves right; it's about following the evidence wherever it leads. As more water quality data, sediment analyses, satellite monitoring, and watershed studies become available, some hypotheses will grow stronger and others may prove less significant. Identifying the most important sources of nutrients lets us focus future restoration efforts where they'll have the greatest benefit. Understanding the drivers is the first step; working together on solutions is the next.

Working Together

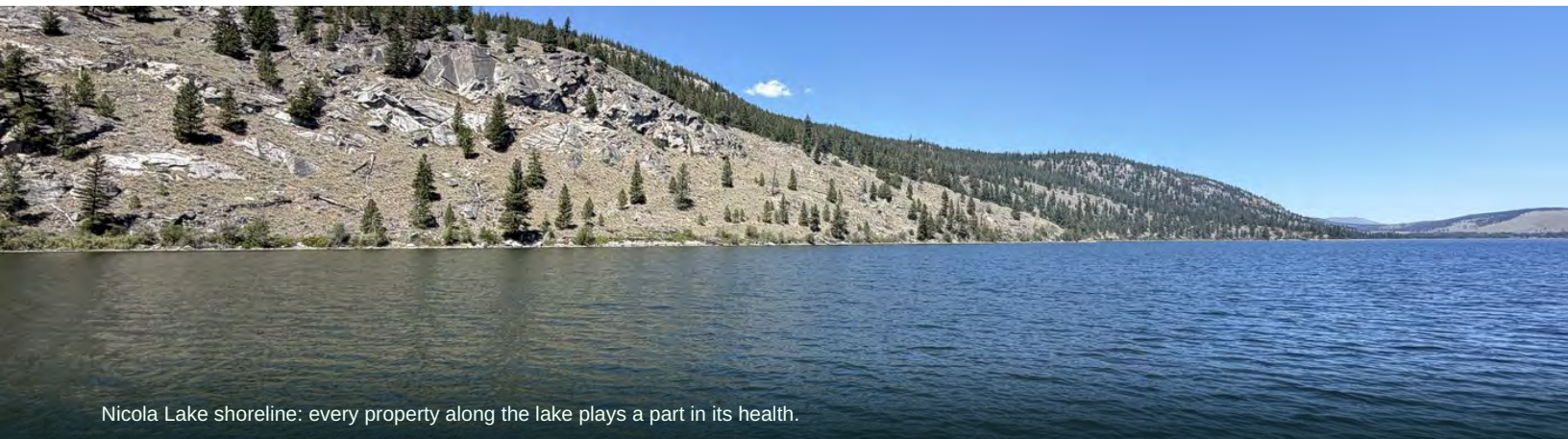
Protecting Nicola Lake requires everyone pulling in the same direction, including our ranchers and farmers, whose presence in the Nicola Valley spans generations. Our goal is to work with the agricultural community, not point fingers, and to identify practical, science-based practices that support both healthy agriculture and a healthy lake. The same goes for residents, boaters, businesses, and visitors: we all have a role to play. We continue to collaborate with:

- Upper Nicola Band
- Government ministries
- Nicola Lake Watershed Partnership
- Interior Health
- BC Centre for Disease Control (BCCDC)
- Thompson-Nicola Regional District (TNRD)
- Independent biologists & limnologists

Community fundraising. Lakeshore Estates held a garage sale and donated all \$2,330 in proceeds to the Guardians. Nicola Bay raised \$1,000 through its long weekend meat draw and 50/50 draw, marking its second \$1,000 contribution. We're grateful for this community-driven support of our testing program.



Young Guardians at Work Raising Funds for Testing



Nicola Lake shoreline: every property along the lake plays a part in its health.

How You Can Help

- ✓ Become a member by scanning the Zeffy QR code
- ✓ Volunteer for water testing or stewardship projects
- ✓ Reduce nutrient runoff where you can
- ✓ Maintain your septic system
- ✓ Protect shoreline vegetation
- ✓ Practice responsible, low-power boating
- ✓ Learn to recognize cyanobacterial blooms and avoid affected areas
- ✓ Share accurate, science-based information with your neighbours

Become a Member

Membership fees directly fund water quality testing, scientific investigation, stewardship projects, and education. Members receive regular email updates on water quality, water levels, and stewardship news. Joining is easy: simply scan the Zeffy QR code to become a member online, or reach out and we'll help you get set up.



Looking Ahead

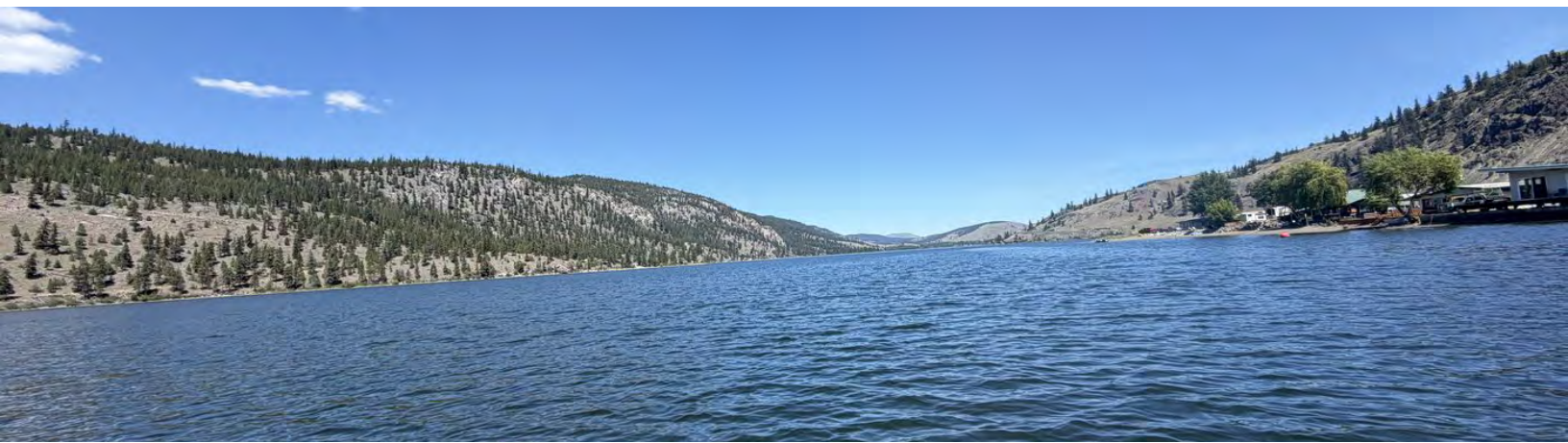
Healthy lakes don't happen overnight, and they don't happen by accident. Our success won't be measured by who we blame. It will be measured by how well we work together. The results from 2026 are encouraging, but one good season doesn't establish a long-term trend. Nicola Lake has historically seen its largest cyanobacterial blooms later in summer, so continued monitoring through August and

September will tell us whether this year marks the start of real improvement.

We're not here to tell people what to think. We're here to help our community better understand Nicola Lake through good science, open communication, and collaboration, so together we can make informed decisions that protect this lake for generations to come.

KEY TAKEAWAYS FROM THIS SEASON

- ✓ The lake isn't just producing less algae; it's behaving differently
- ✓ Cyanobacteria concentrations measured so far in 2026 have generally been lower than the elevated levels observed during parts of 2024 and 2025
- ✓ The phytoplankton community is more balanced and diverse, a sign of a healthier lake
- ✓ Large spring diatom blooms are normal and very different from harmful cyanobacterial blooms
- ✓ Healthy lakes naturally contain algae; the goal is balance, not elimination
- ✓ Continued monitoring through late summer will show whether this is a lasting trend



Know the Zones: Boating on Nicola Lake

Responsible boating protects shorelines, wildlife, and water quality, and it keeps the lake safe and enjoyable for everyone. Use this guide to know which zone you're in and how to boat responsibly.

Recommended Lake-Friendly Boating Zones



These are voluntary stewardship recommendations and do not represent official regulatory zones.

Thank You to Our Corporate Sponsors!

