

# The Lake Partner Program: Empowering passion

Gravin Vance

Lakes are the backbone of the cultural zeitgeist in Ontario. Lounging on docks in Muskoka and beach days along the Great Lakes are core memories for many. But what happens when these lakes are under threat?

## The creation of the Lake Partner Program (LPP) in Ontario

For many in Ontario the realization that lakes were under threat began in the late 1960s, when Lake Erie was famously declared dead due to intense eutrophication. This triggered the rise of public concern around lake health across Ontario. In response, the Ministry of the Environment (now the Ontario Ministry of the Environment, Conservation and Parks; MECP) introduced a “self-help” program in the early 1970s which encouraged individuals to monitor their own lakes for chlorophyll-*a*.

The success of the original “self-help” program, alongside educational work led by partner organizations such as the Federation of Ontario Cottagers’ Associations (FOCA) for, among other topics, acid rain (Figure 1), helped raise public awareness around lake health in Ontario. In the late-1990s, MECP and FOCA partnered to form the Lake Partner Program (LPP), a community science water quality monitoring program that replaced the “self-help” program. In its current form, the LPP engages hundreds of volunteers and community scientists across Ontario to sample lakes for concentrations of total phosphorus, calcium, chloride, sulphate, and water clarity.

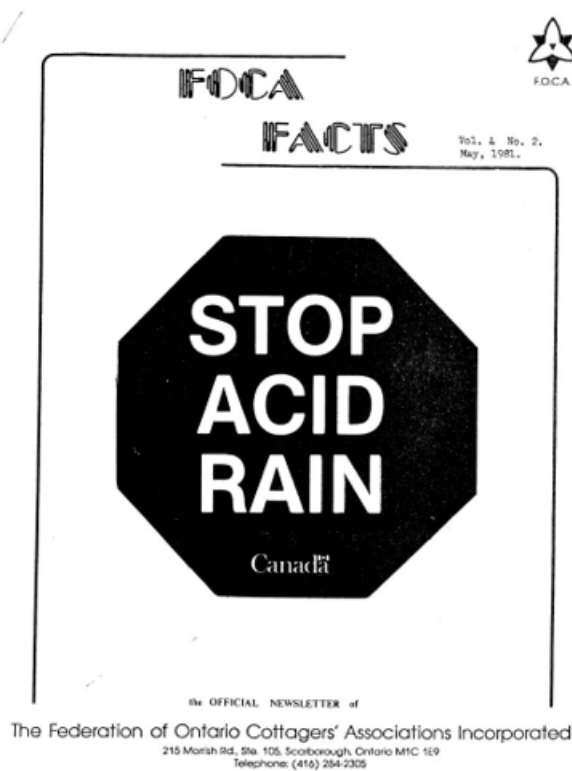


Figure 1 shows a 1981 FOCA publication that discusses acid rain. FOCA was part of the “Who’ll Stop the Rain?” campaign in the US that led to changes to prevent acid rain impacts across North America,

## Long-term datasets

The LPP offers a path for dedicated volunteers to help protect the lakes they love. An important outcome of the LPP is the maintenance of a long-term, publicly accessible database of water quality for Ontario’s inland lakes. As of 2026, over 2000 volunteers (and counting) have participated in the LPP. Collectively, these volunteers have sampled thousands of lakes across Ontario.

To understand if a lake is changing, we must first understand what a lake’s baseline is, and how water quality

varies naturally over time. This requires long-term data. As of 2025, the LPP has established reliable long-term water quality data for over a thousand lakes in Ontario. For example, there are currently more than 1,120 lakes in the LPP program with at least three years of monitoring data, and over 570 lakes with at least 10 years of data. Impressively, there are 236 lakes with more than 20 years of data, making the LPP the most comprehensive public inland lake dataset in the province of Ontario (Figure 2).

When accompanied by other inland lakes’ datasets in Ontario, the LPP can provide important insights into what may be driving trends in water quality, as has been shown in many examples throughout the history of the program. Indeed, the LPP shows the power of volunteer action that, when combined with professional research can be turned into real world solutions for communities across Ontario.

## Data in action

Scientific research requires patience and diligence, and there is often little fanfare when it is complete.

Volunteer samplers may not always see how tracking LPP data directly contributes to improving our understanding of freshwater lakes over time. The more that LPP volunteers become aware of how their data are being used, the more they appreciate and can share the fruits of their labor.

One of the most important steps in the development of the program’s database has been ensuring that the methods used to collect data generate accurate results. Early LPP data helped establish the best methods and protocols for measuring long-term trends in total phosphorus concentrations across Ontario lakes. For

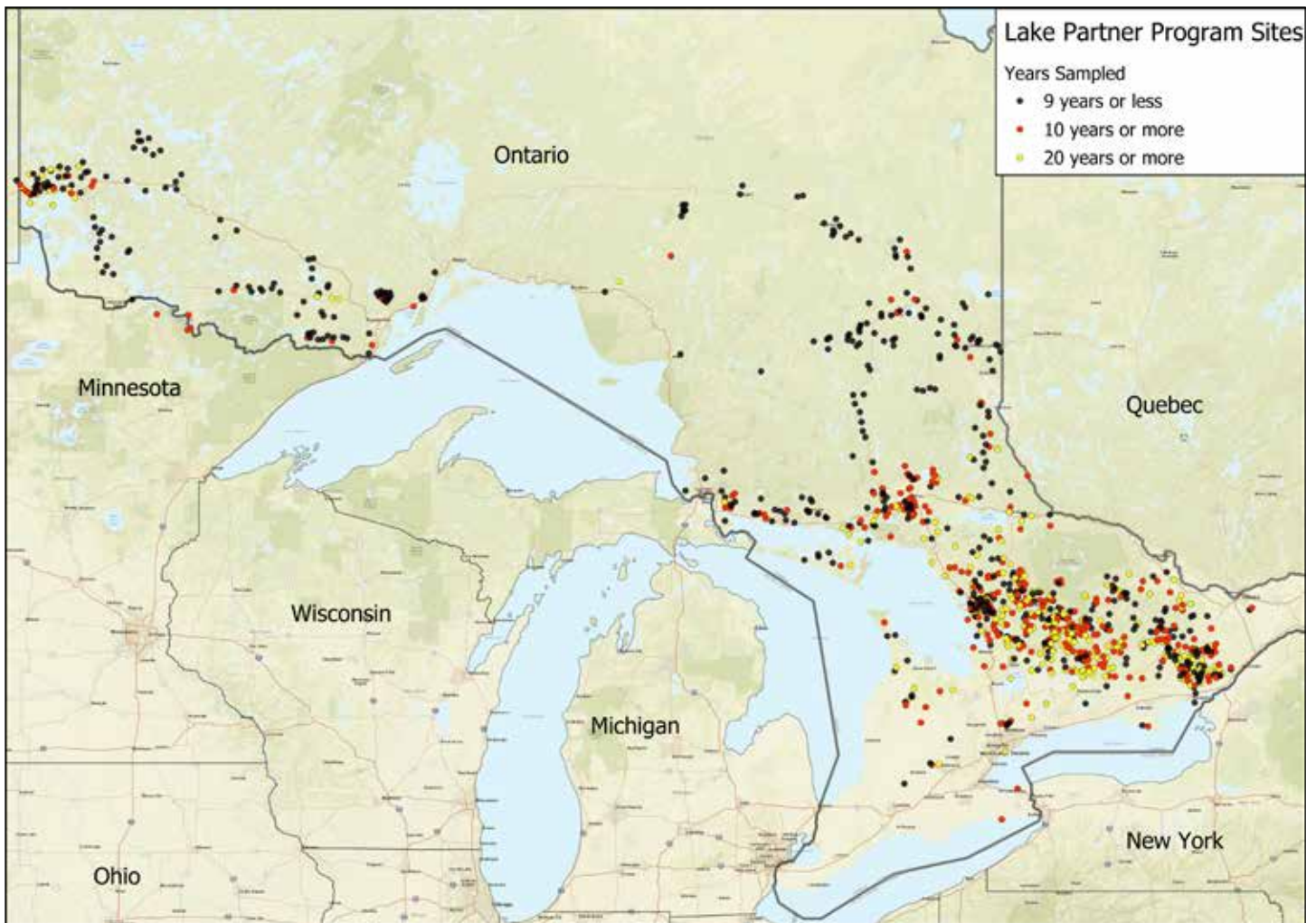


Figure 2 shows distribution of 1129 LPP sites, as of 2025. Sites with 3-9 years of data (554 total) are represented with black dots, sites with 10-19 years of data (337 total) with red dots, and sites with 20 plus years of data (236) in yellow dots. Basemap from Esri. (n.d.). National Geographic World Map [Basemap]. ArcGIS Online. [https://services.arcgis.com/ArcGIS/rest/services/NatGeo\\_World\\_Map/MapServer](https://services.arcgis.com/ArcGIS/rest/services/NatGeo_World_Map/MapServer)

example, Clark et al (2010) reported that sources of variation in total phosphorus measurements could be reduced through precise laboratory analysis, sampling directly into the same borosilicate glass tubes used to digest the samples prior to analysis, and by coarse filtering water samples to remove large zooplankton. This work confirmed that the LPP methods produce reliable long-term phosphorus trends, paving the way for broader use of the data in lake research.

LPP data were subsequently used by Favot et al (2023) to explore possible reasons for an increase in public reports of toxic algae blooms in Ontario lakes over the last two decades. LPP data helped determine the nutrient status of many of the lakes examined in the study and bolstered the finding that recent climate warming may be creating more favorable

conditions for blooms in lakes that previously did not experience them.

Recently, LPP data have been used by community scientists to examine the effects of road salt on *Daphnia* populations and lake health more generally (Arnott et al. 2020; Greco et al. 2021). For example, Sorichetti et al (2022) included LPP data in a recent assessment showing widespread increases in chloride levels in freshwater lakes and streams across Ontario from the 1960s to 2019. Such papers have been cited by LPP volunteers, local lake associations, municipalities and other stakeholders, as they negotiate policy changes to reduce road salt overuse during winter months in Ontario.

### Empowering and sustaining volunteer passion

Community science can be

demanding on volunteers. In the case of the LPP, it involves getting up early in the summer months, getting out on the boat and staring into the lake bottom while others are sipping coffees on the patio or dock. Now don't get it wrong: many of our volunteers find the sampling process fun, but it is also a big commitment and a lot of unpaid work for little fanfare.

The LPP began because of the passion that individuals hold for their lakes. Volunteers first transform this passion into taking lake samples and for some the engagement stops there. But for those whose passion drives them to dive deeper, the program provides resources to educate volunteers on wider related topics of lake health and science. This allows for them to deepen their knowledge of lake health topics based on their own pace and personal levels of interest.

This is where the partnership with FOCA is particularly important for the program. Since 1963, FOCA has thrived as a not-for-profit membership organization that has provided seasonal cottagers and lake residents more broadly with educational information on a wide swath of environmental topics. By hosting LPP publications on FOCA's website and social media pages, they enable volunteers to learn about why they are sampling their lake, and how the parameters they measure affect lake health. These public-facing communications have had the added benefit of helping to recruit new volunteers to the program (Figure 3)

Through a process of self-education, volunteers transform into community scientists by sharing what they have learned about lake water quality at local community events and lake association meetings, providing overviews of last year's sampling results alongside related topics of local interest.

This interaction between LPP volunteers and their communities not only educates others about water quality but also motivates them to get involved in the

stewardship of their lakes. What starts simply as lake sampling can transform into lake wide programs that focus on shoreline naturalization, invasive species identification and removal, septic system education and reinspection programs, fish habitat restoration, and other important lake stewardship activities. As community scientists become more established in the program, they use LPP data to inform the stewardship of their lakes at community, township, and even provincial levels through lake plans, municipal by-law and Official Plan engagement, and environmental advocacy.

### When it all comes together

The LPP is a product of a special blend of the right people coming together at the right time, including passionate individuals, communities, organizations, and a provincial Ministry that recognized a public need and determined a means to serve it, while developing a low-cost community-science implementation model that is well suited to a large province with hundreds of thousands of lakes.

This partnership continues today, as passionate community members use the program and its resources – sampling equipment, lab analysis, lake reports and other educational resources – to bring their communities together to protect and conserve their lakes and surrounding ecosystems. What makes the LPP a success is not just the cost-savings, the broad spatial coverage, the equipment provided, or even the data collected; it is the volunteers who dedicate their time to monitoring our lakes. As long as these devoted lake stewards remain enthused and supported, the data they collect will continue to advance the protection of Ontario's lakes and the communities that rely upon them.

### References

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**Gavin Vance** is the

Assistant Lake Coordinator for the Lake Partner Program and the Lake Stewardship Coordinator for the Federation of Ontario Cottagers' Association. In his role Gavin helps lake associations begin their lake monitoring journeys and produces educational material on lake health and lake stewardship. ✨

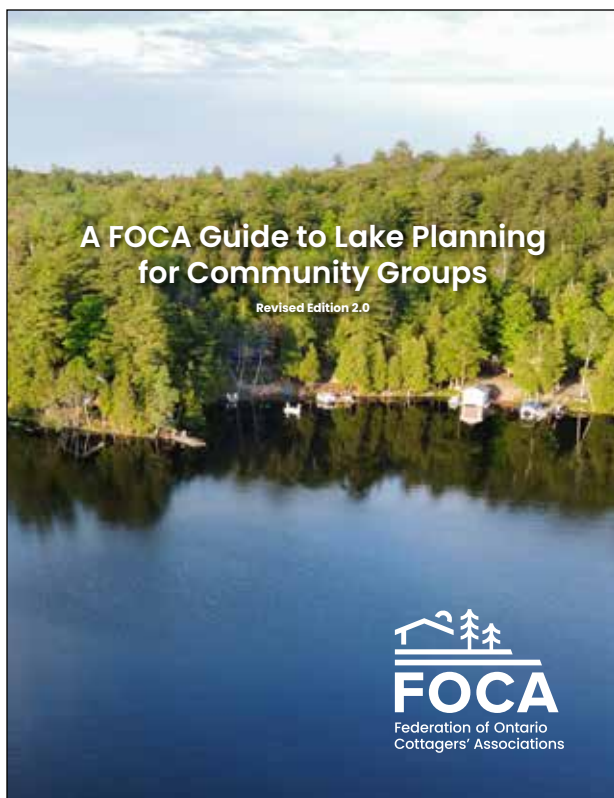


Figure 3 shows FOCA's Lake Planning Guide that was revised in 2026. This publication brings together information and experience from lake associations across Ontario.