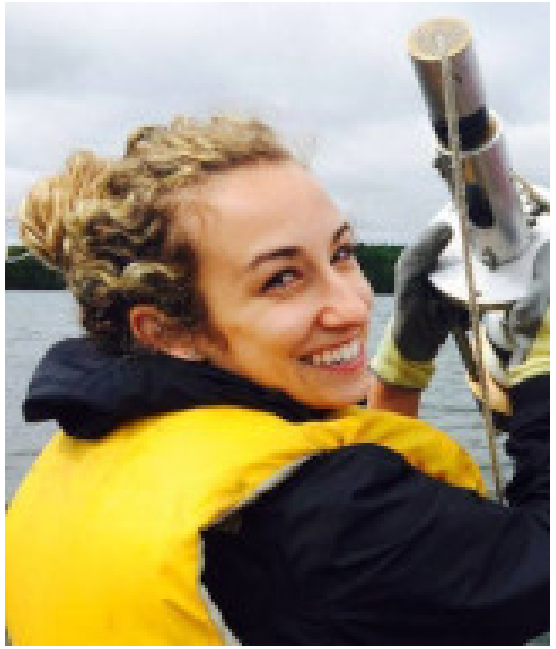
Lake Partner Program

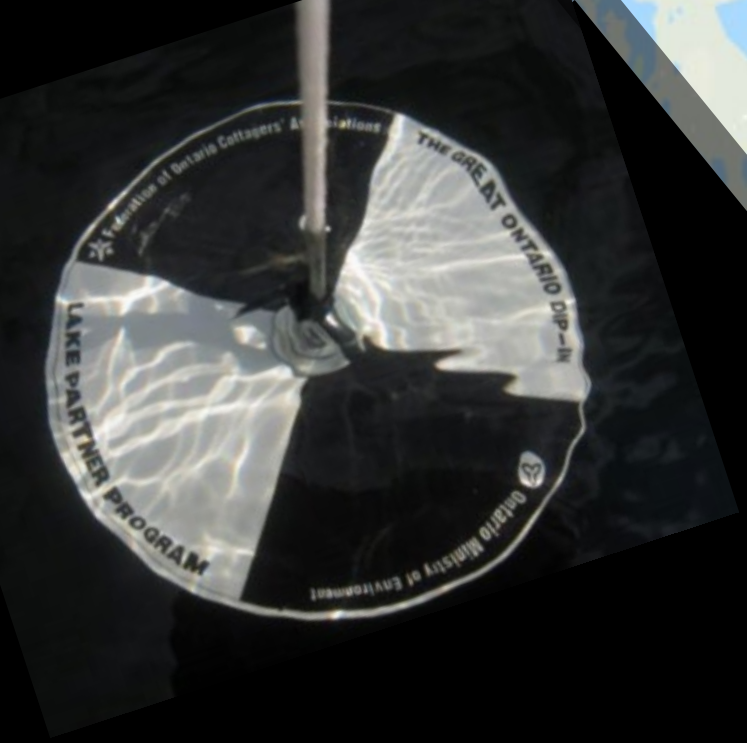


Dr. Liz Favot

FOCA Assistant Lake Stewardship Coordinator
at the Dorset Environmental Science Centre

AGM & Spring Seminar for Lake Associations
FOCA Federation of Ontario Cottagers' Associations
by Webinar Saturday March 6, 2021

Thank you to Yamaha Motor Canada for sponsoring this session!



THE LAKE PARTNER PROGRAM

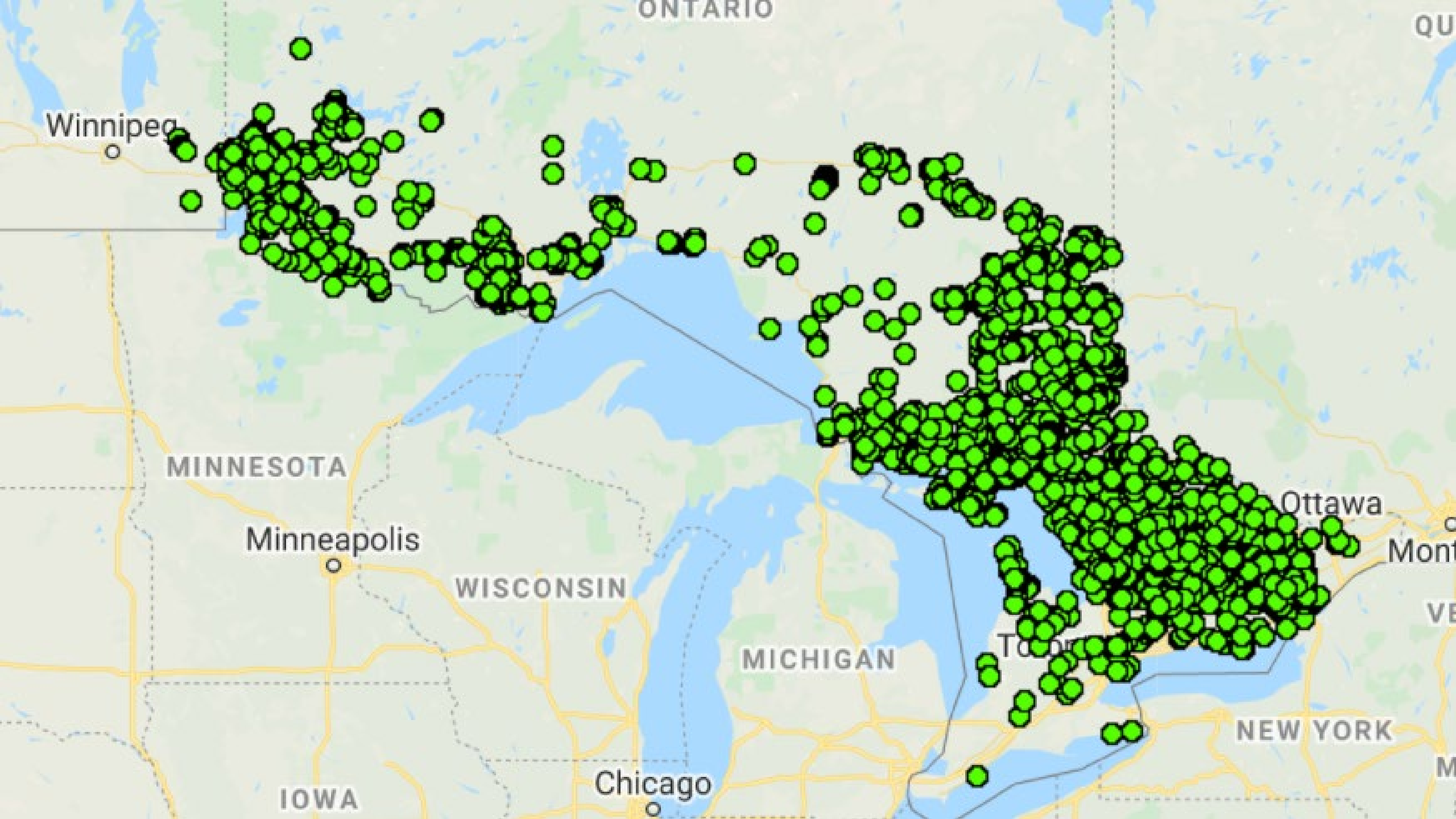
Liz Favot, FOCA Assistant Lake Stewardship Coordinator

LAKE PARTNER PROGRAM: 25 YEARS OF VOLUNTEER MONITORING!

Mission: To foster interest and promote stewardship of water quality across Ontario, and maintain a long-term data set on water quality in inland lakes.

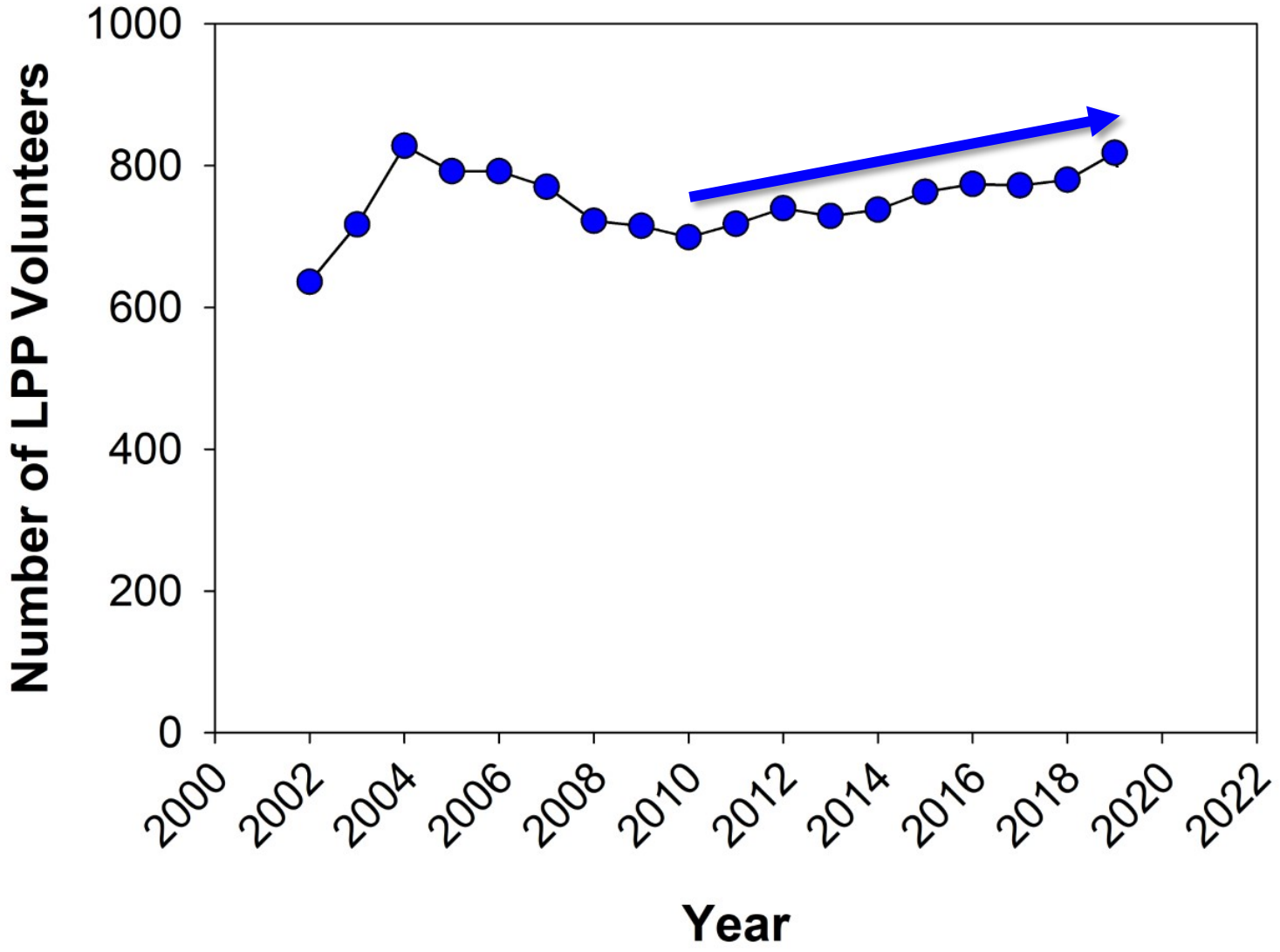
- Each year, over 600 volunteers collect water samples and record water clarity in 550 lakes at over 850 sampling locations
- Volunteers send water samples to Ministry of the Environment, Conservation and Parks (MECP) chemistry lab for analyses
- Data are available online
- Data used to assess and report on water quality across Ontario

Largest volunteer-based water quality monitoring program of its kind in Canada


ONTARIO
Winnipeg
MINNESOTA
Minneapolis
WISCONSIN
MICHIGAN
Ottawa
NEW YORK
Chicago
IOWA

LAKE PARTNER PROGRAM: 25 YEARS OF VOLUNTEER MONITORING!

- Between 2010-2019, the program had a stable and slightly increasing number of volunteers sampling each year



LAKE PARTNER PROGRAM SAMPLING LIFE CYCLE

① Sample kit sent to Lake Partner volunteers

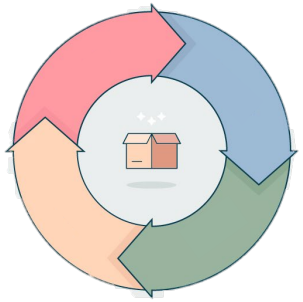
② In **May**, Measure and Record Secchi depth at deep spot

③ Integrated water sample, 1x Secchi depth to surface

④ Filter with 80-µm mesh

⑤ Fill 2 glass tubes on site

⑥ Fill plastic jar



⑦ Affix return postage and mail to MECP

⑧ Laboratory analysis

⑨ Data posted online after QA/QC

WHAT THE LAKE PARTNER PROGRAM MEASURES

Total Phosphorus (TP)	Water clarity	Calcium (since 2008)	Chloride (since 2015)
• Important nutrient controlling the growth of algae in Ontario Lakes	• Estimated using a Secchi Disk	• Essential element that is required by all living organisms	• There have been increases in chloride levels across the province due to road salt
			

Applied Economics, 2014
Vol. 46, No. 10, 1122–1126, http://dx.doi.org/10.1080/00036846.2013.851778

Routledge
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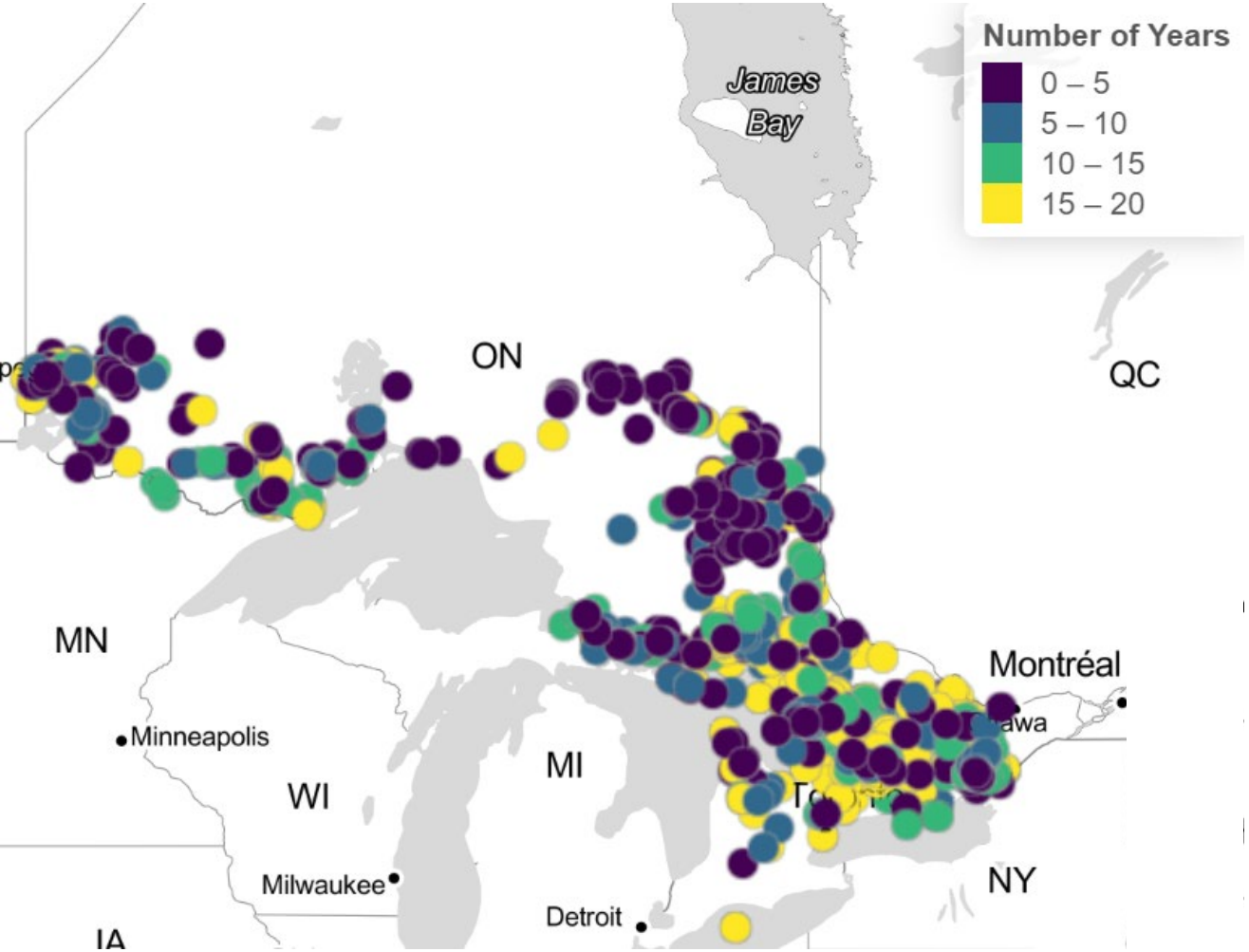
Water quality and cottage prices in Ontario

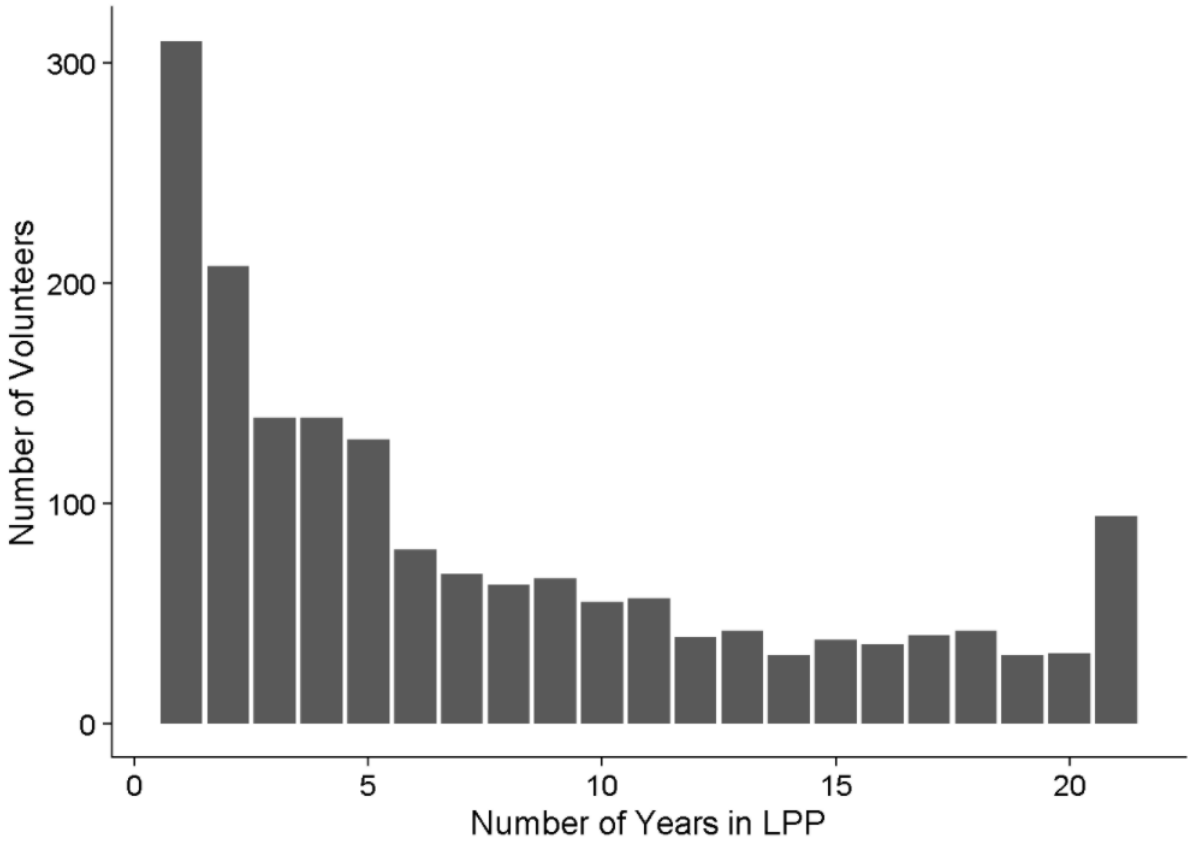
Julia Clapper[a] and Steven B. Caudill[b,c,d,*]

[a]*AutoZone, Memphis, USA*
[b]*Department of Economics, Rhodes College, 38112-1690 Memphis, USA*
[c]*University of Sassari, Sassari, Italy*
[d]*Auburn University, Auburn, AL 36849, USA*

Prices rise by ~6% for every meter increase in water clarity

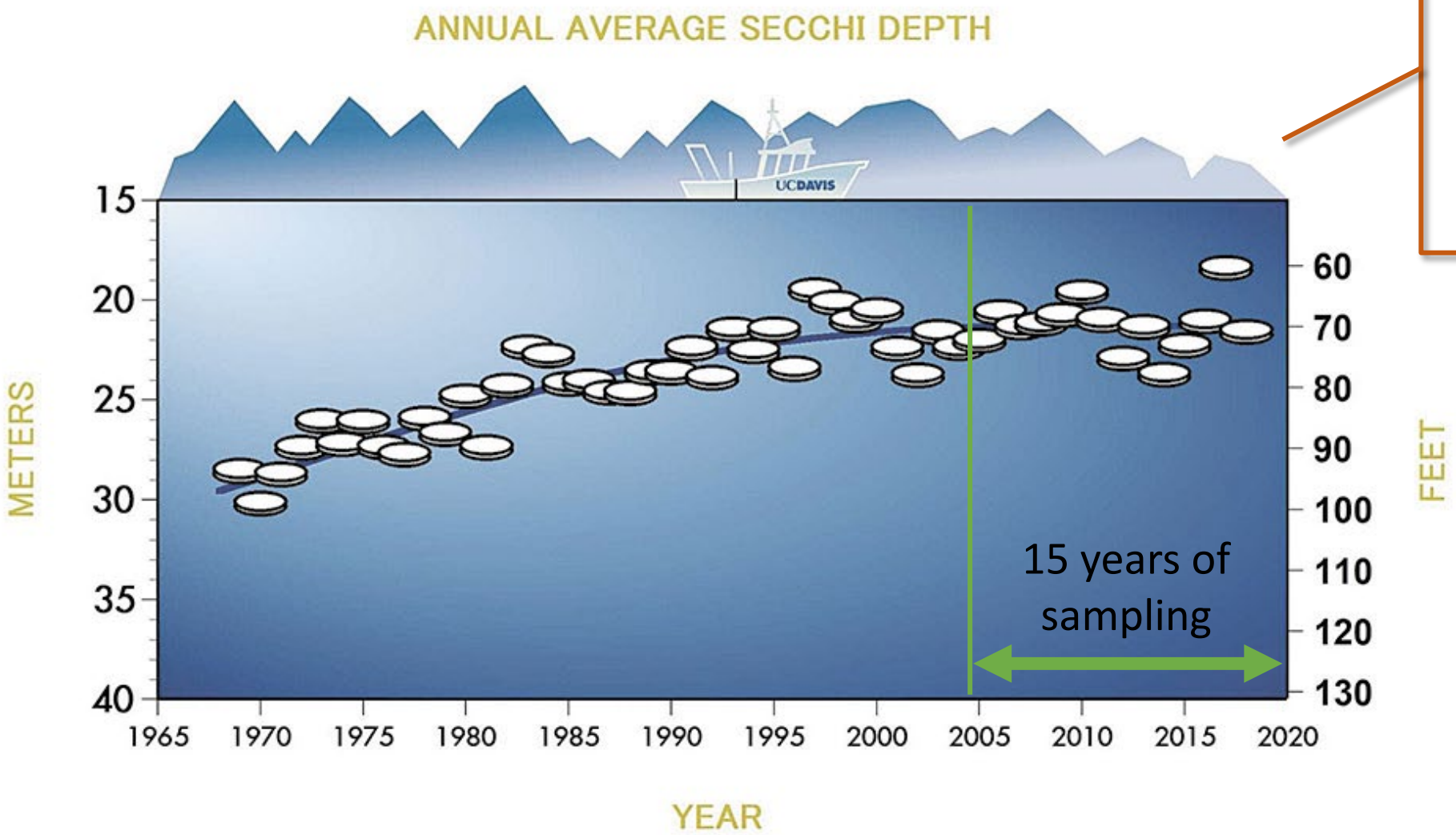
GOAL: MORE YELLOW DOTS (LONG-TERM VOLUNTEERS)





IMPORTANCE OF CONTINUOUS LONG-TERM MONITORING

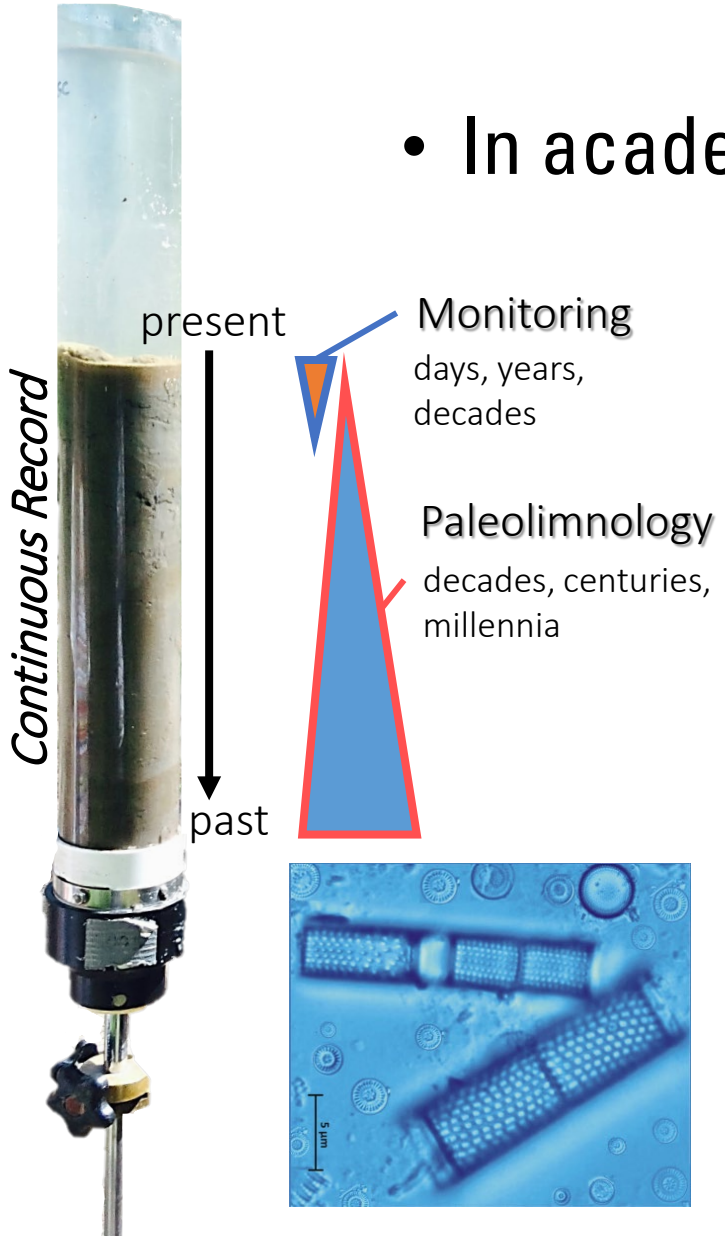
Take Lake Tahoe, U.S.A. for example…



Long-term data collection is essential to get an accurate picture of how water quality is changing.

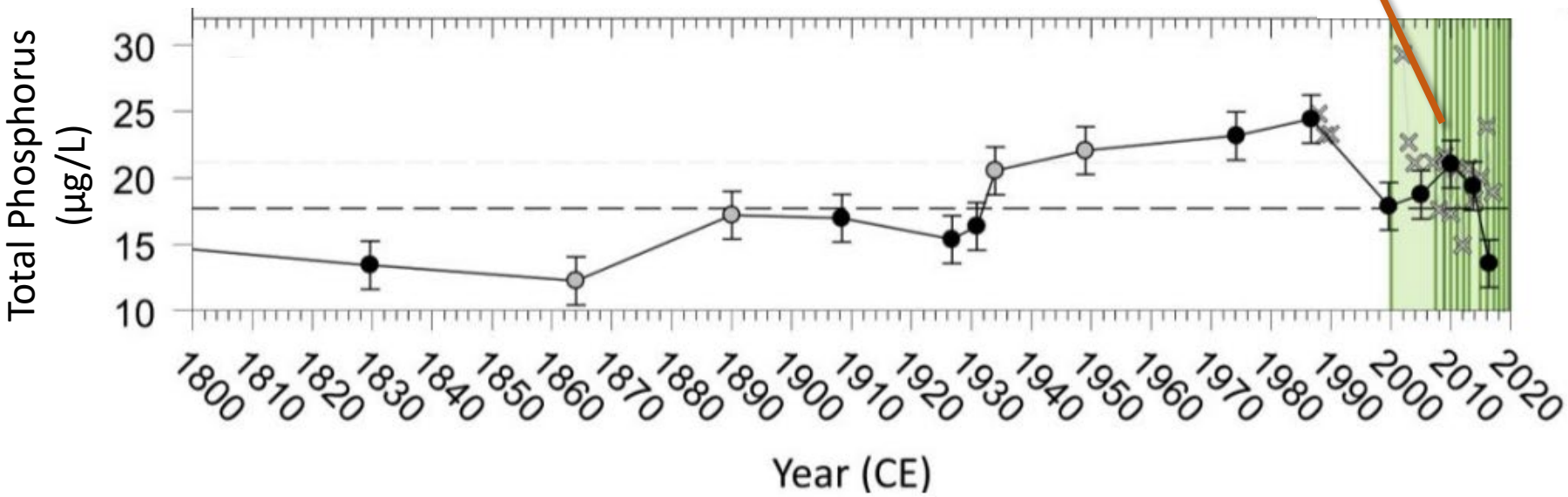
HOW LAKE PARTNER PROGRAM DATA ARE BEING USED

- In academic research:



X symbols include LPP data

(Extra) long-term trends in water quality in Callander Bay, Lake Nipissing



E.J. Favot, PhD thesis

HOW LAKE PARTNER PROGRAM DATA ARE BEING USED

- In academic research:

Lake and Reservoir Management, 26:63–72, 2010

ISSN: 0743-8141 print / 1040-2381 online
DOI: 10.1080/07438141003712139

Assessing variability in total phosphorus measurements in Ontario lakes

Bev J. Clark,[1,*] Andrew M. Paterson,[2] Adam Jeziorski,[3] and Susan Kelsey[2]
[1]HESL, 49 Manitoba Street, Suite 303, Bracebridge ON, P1L 2B2 Canada
[2]Ontario Ministry of the Environment, Dorset Environmental Science Centre, 1026 Bellwood Acres Rd, Dorset, ON, P0A 1E0, Canada
[3]Department of Biology, Queens University, Kingston, ON, K7L 3N6 Canada

Lake and Reservoir Management, 27:107–114, 2011

ISSN: 0743-8141 print / 1040-2381 online
DOI: 10.1080/07438141.2011.557765

Algal blooms in Ontario, Canada: Increas… reports since 1994

Jennifer G. Winter,[1,*] Anna M. DeSellas,[2] Rachael Fletcher,[1] Lucja Heintsc… Lynda Nakamoto,[1] and Kaoru Utsumi[1]
[1]Ontario Ministry of the Environment, Sport Fish and Biomonitoring Unit, Water… and Reporting Section, Environmental Monitoring and Reporting Branch, 125 Res… Toronto ON M9P 3V6, Canada
[2]Ontario Ministry of the Environment, Dorset Environmental Science Centre, P… Dorset ON P0A 1E0, Canada
[3]Ontario Ministry of the Environment, Eastern Region, Program Services S… 1259 Gardiners Road, Kingston ON K7M 8S5, Canada

Abstract

LAKE AND RESERVOIR MANAGEMENT
https://doi.org/10.1080/10402381.2019.1659889

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Check for updates

A multibasin comparison of historical water quality trends in Lake Manitou, Ontario, a provincially significant lake trout lake

C. Nelligan[a], A. Jeziorski[a], K. M. Rühland[a], A. M. Paterson[b], C. Meyer-Jacob[a] and J. P. Smol[a]

[a]Paleoecological Environmental Assessment and Research Laboratory (PEARL), Department of Biology, Queen's University, Kingston, Ontario, K7L 3N6, Canada; [b]Dorset Environmental Science Centre, Ontario Ministry of the Environment, Conservation and Parks, Dorset, Ontario, P0A 1E0, Canada

ABSTRACT
Nelligan C, Jeziorski A, Rü… son of historical water qu… lake. Lake Reserv Manage…

Lake Manitou, on Manito… lake trout population and… below the provincial crite… ited direct monitoring da… concentrations, and to id… ment cores from each ba… weighted hypolimnetic c… mentary chironomid rem… browning, VWHO reconst… and spectrally derived tr… ucts) and sediment-infer… reconstructions suggest t… of Lake Manitou than the… dent with the developme… diatom assemblage shifts… suggest that increased nu… bility) may be contributi… basin, all paleolimnologi… than in the east basin, ar… be needed to protect Lak…

ENVIRONMENTAL Science & Technology
pubs.acs.org/est
Article

Road Salt Impacts Freshwater Zooplankton at Concentrations below Current Water Quality Guidelines

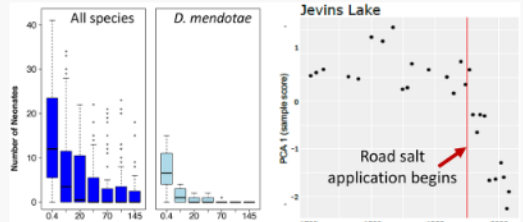
Shelley E. Arnott,* Martha P. Celis-Salgado, Robin E. Valleau, Anna M. DeSellas, Andrew M. Paterson, Norman D. Yan, John P. Smol, and James A. Rusak

Cite This: *Environ. Sci. Technol.* 2020, 54, 9398–9407

Read Online

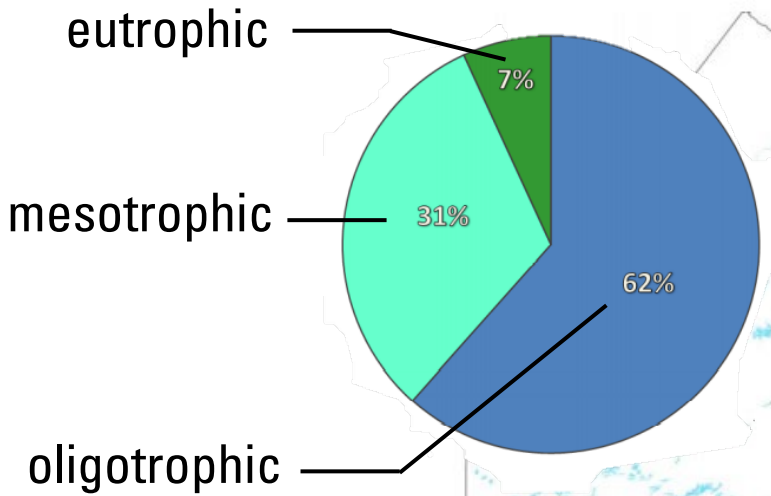
ACCESS | Metrics & More | Article Recommendations | Supporting Information

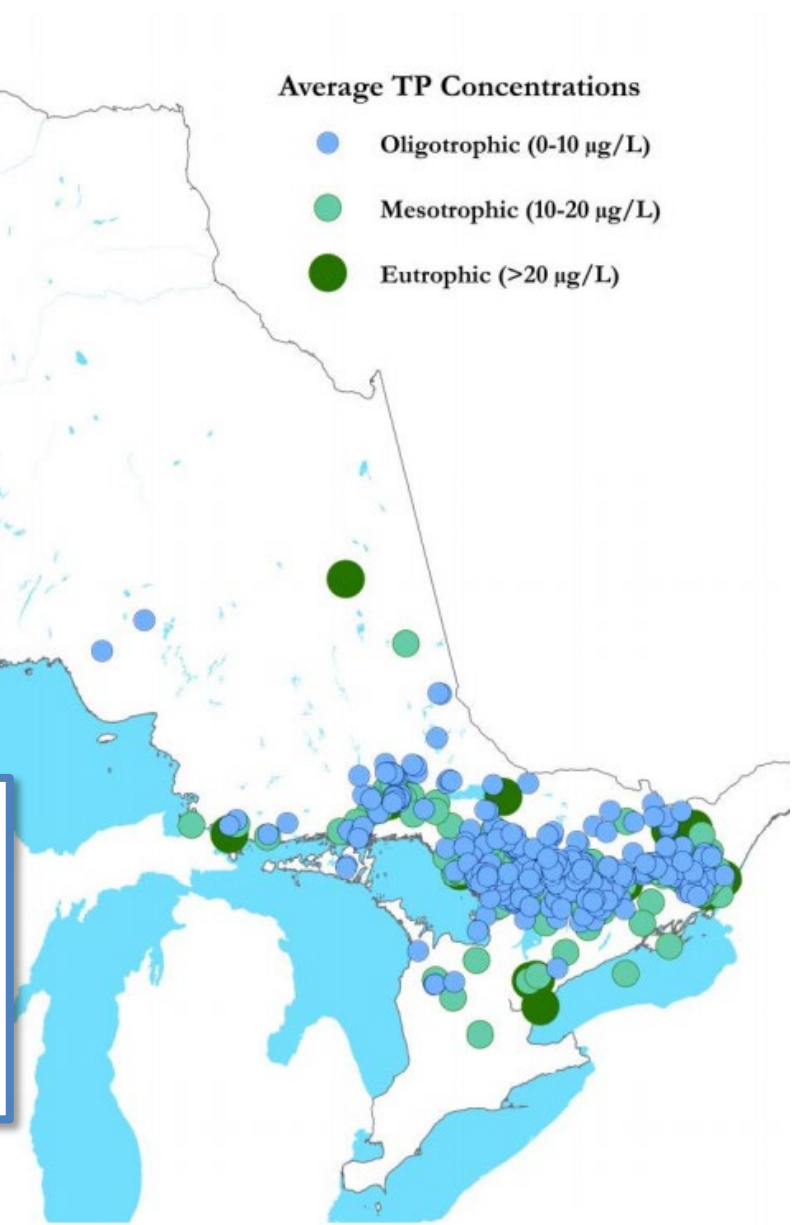
ABSTRACT: Widespread use of NaCl for road deicing has caused increased chloride concentrations in lakes near urban centers and areas of high road density. Chloride can be toxic, and water quality guidelines have been created to regulate it and protect aquatic life. However, these guidelines may not adequately protect organisms in low-nutrient, soft water lakes such as those underlain by the Precambrian Shield. We tested this hypothesis by conducting laboratory experiments on six *Daphnia* species using a soft water culture medium. We also examined temporal changes in



HOW LAKE PARTNER PROGRAM DATA ARE BEING USED

- By the government to assess and report on water quality in lakes across Ontario
- To evaluate development criteria for the Provincial Lakeshore Capacity Model





For 466 Ontario inland lakes in 2010-2014:

93% met the Provincial Water Quality Objective of < 20 µg/L TP

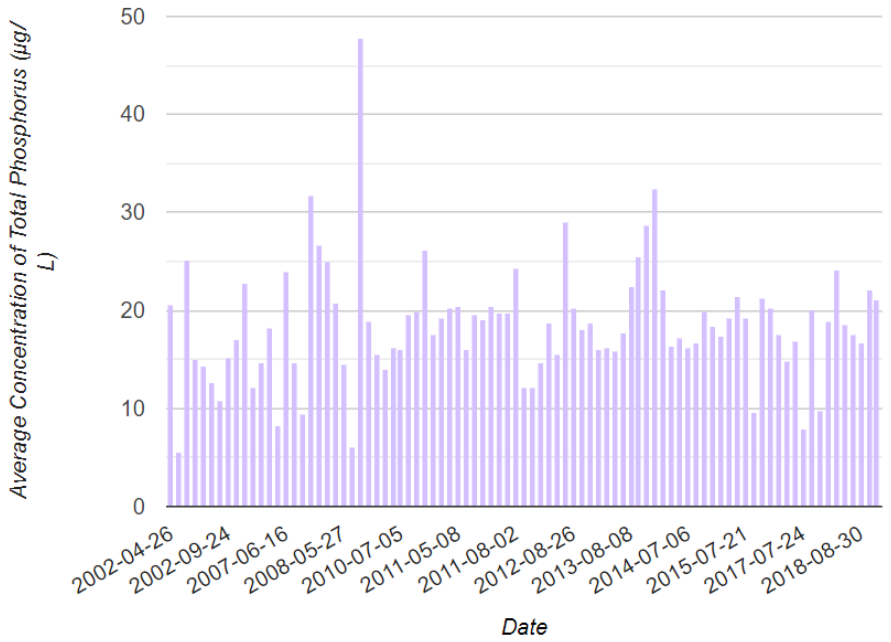
HOW LAKE PARTNER PROGRAM DATA IS BEING USED

- By the lake partners and associations!
  - Individuals interested in the health of their lake and seeking to make informed property decisions
  - Associations monitoring trends and engaging lake communities

Access LPP data here:

[Ontario Lake Partner - Datasets - Ontario Data Catalogue]

[Map: Lake partner | Ontario.ca]



[The Lake Partner Program (foca.on.ca)]

Over 600 volunteer Lake Partners and over 500 lake associations

Sampling over 550 lakes at more than 850 sites

Contributing over 2,600 hours of volunteer time, and more than half-a-million dollars of in-kind field research each year

With 25 years of data collected

And we are gearing up to do it all again Spring 2021!

To all the Lake Partner volunteers:

Thank you for dedicating your time to collect this invaluable data and protect Ontario's precious lakes!

lakepartner@ontario.ca

1-800-470-8322