Ontario's Waterfront Property Owners

Citizen Science to Policy; Fostering Stewardship

FOCA

Federation of Ontario Cottagers' Associations


FOCA
Federation of Ontario Cottagers´ Associations
FOCA's Mission:
To protect thriving and sustainable waterfronts across Ontario

What does FOCA do?

Local citizens groups

Dr. Michael Drescher
Dr. Windekind
Buteau-Duitschaever
University of Waterloo, School of Planning

Participants indicated that having a lake/cottage association was important and beneficial to them and for the health and well being of the lake and larger lake community.

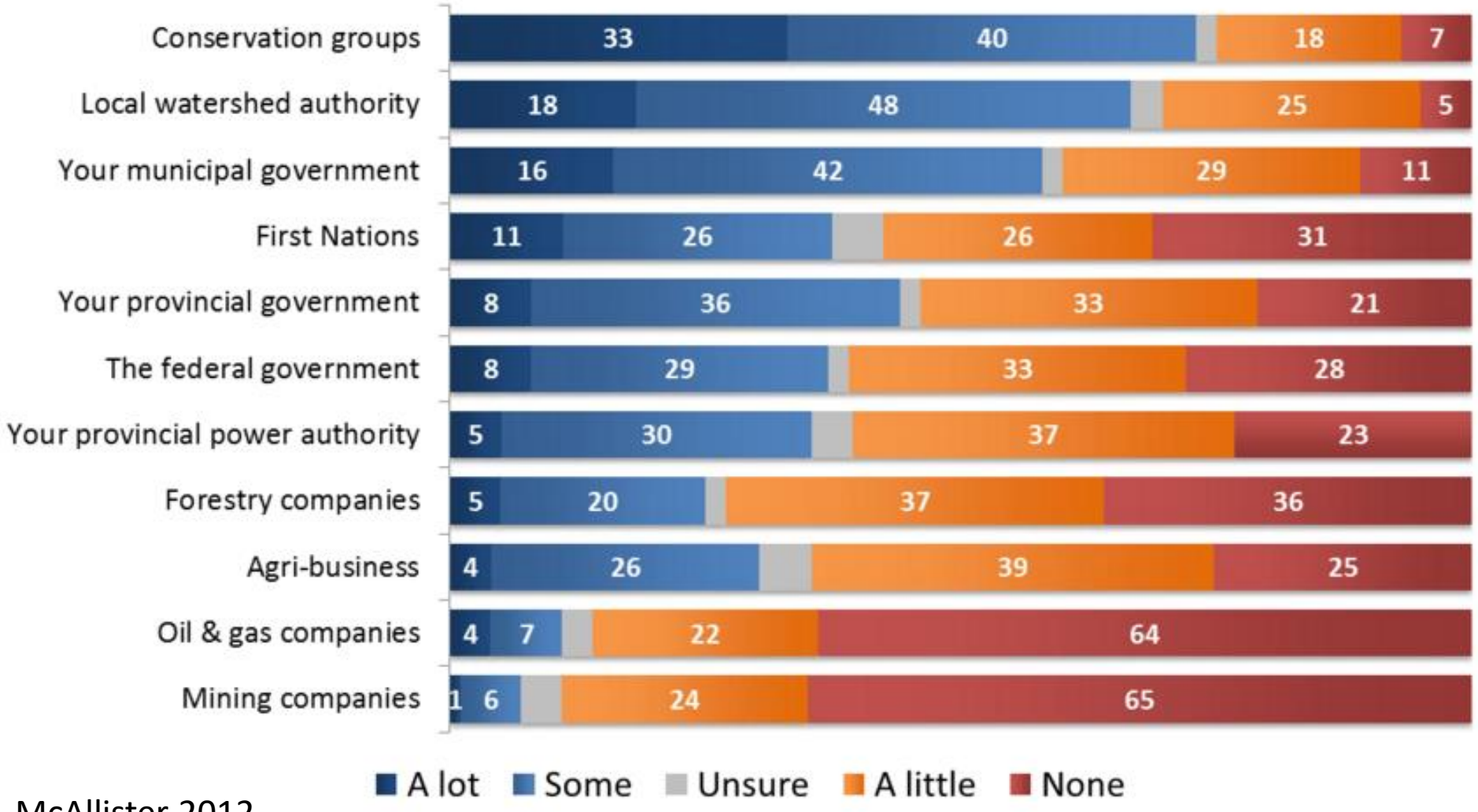
A common theme observed throughout the interviews was that associations provide a (political) voice for lake residents

In essence, lake/cottage associations have political capital, but this political capital is dependent on factors other than sheer existence.

This contrasts to “reactive”/single issue associations. Such associations lack a sense of the big picture/lack of ownership for their lake.

Confidence in the Players

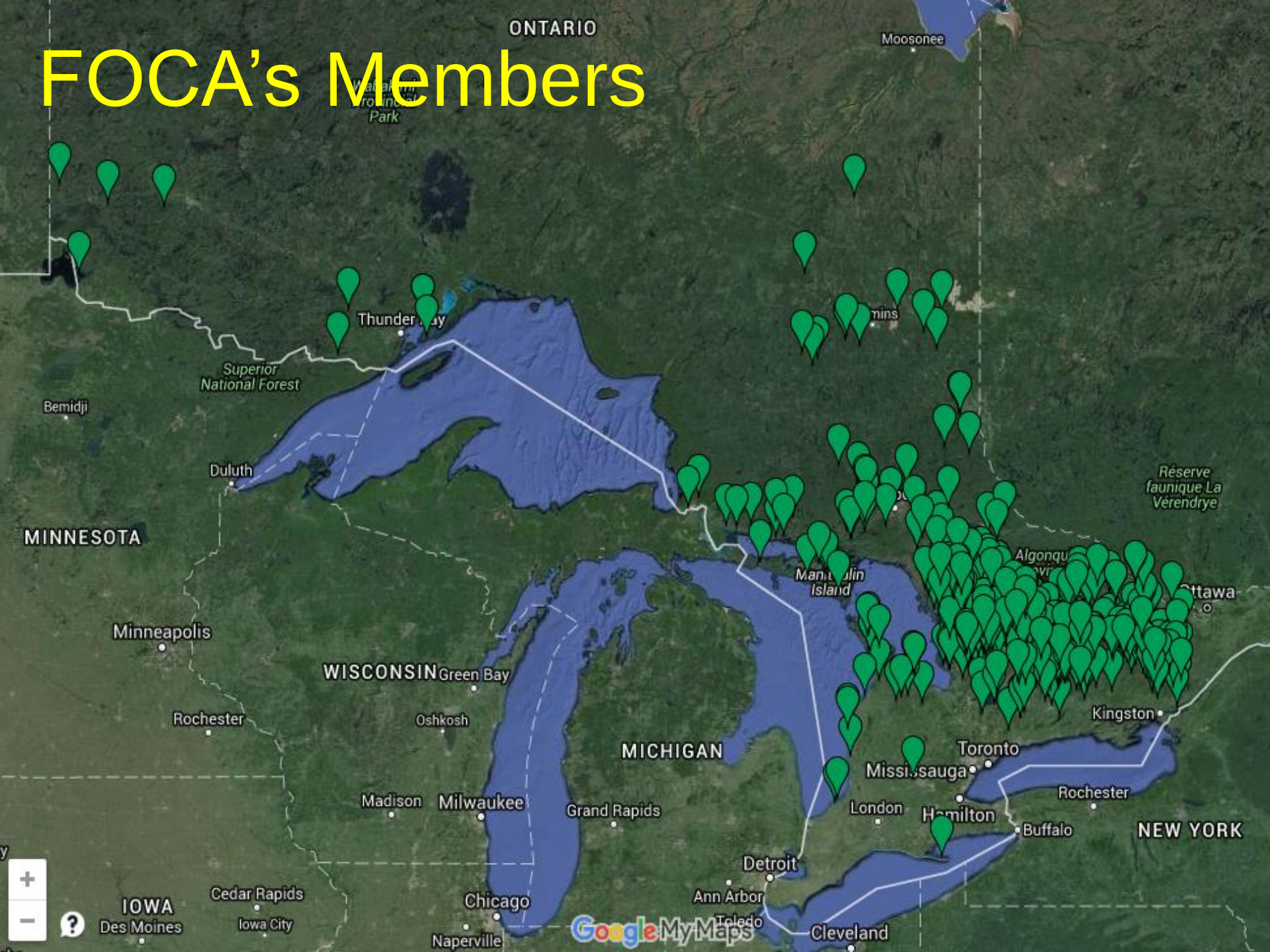
How much CONFIDENCE do you have in each of the following players to act in the PUBLIC INTEREST when it comes to protecting fresh water?

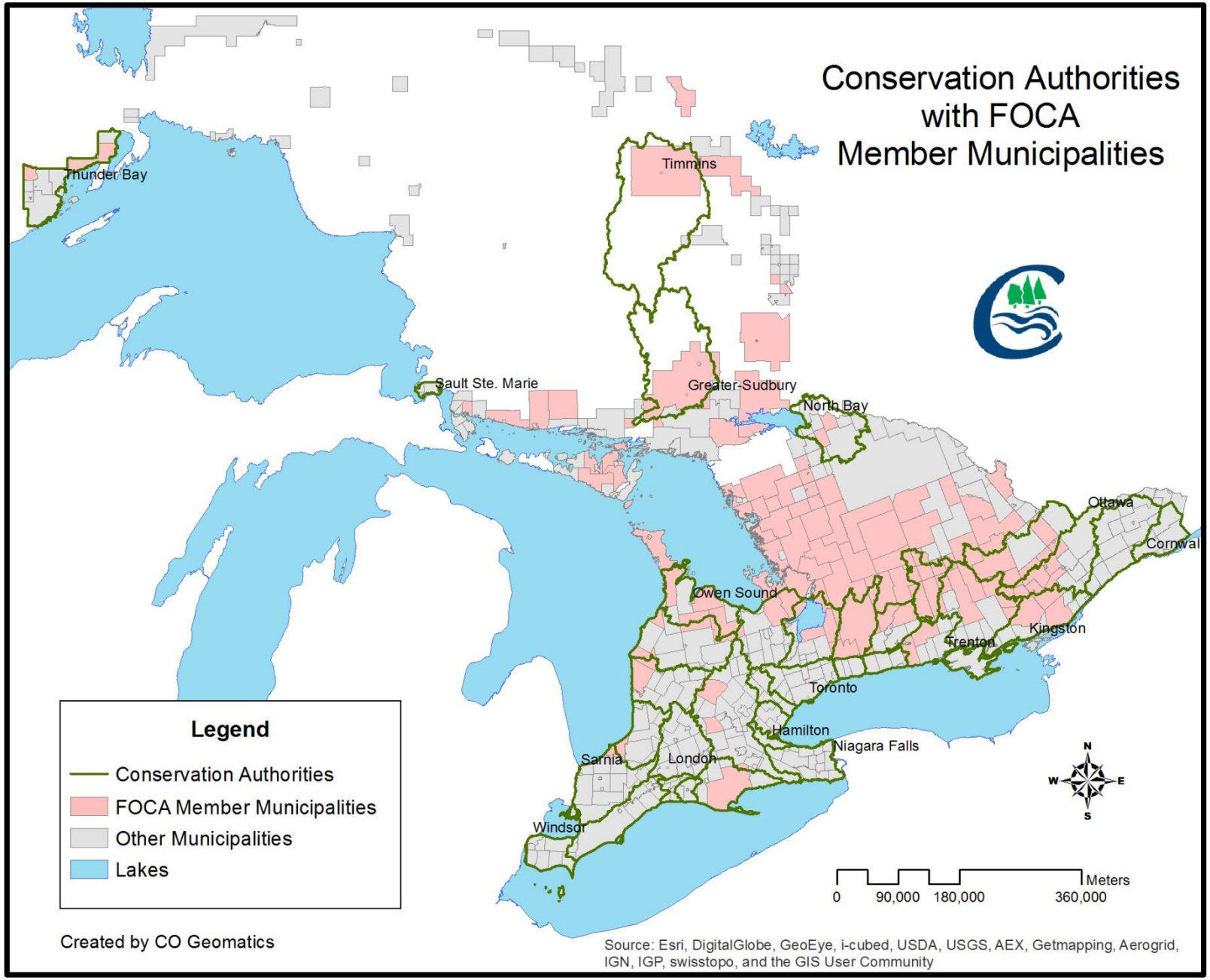


McAllister 2012


MANITOBA
SASKATCHEWAN
ONTARIO
QUÉBEC
NEWFOUNDLA
AND LABRADO
NORTH
DAKOTA
ONTANA
MINNESOTA
SOUTH
DAKOTA
WISCONSIN
MICHIGAN
WYOMING
NEBRASKA
IOWA
ILLINOIS
Chicago
OHIO
PENN
NEW YORK
Toronto
Ottawa
Montreal
VT
NH
MA
MAINE
NB
PE
NOVA SCOTIA
Map data ©2016 Google, INEGI

FOCA's Members




Conservation Authorities with FOCA Member Municipalities
Thunder Bay
Timmins
Sault Ste. Marie
Greater-Sudbury
North Bay
Ottawa
Cornwal
Owen Sound
Kingston
Trenton
Toronto
Hamilton
Niagara Falls
Sarnia
London
Windsor
Legend
Conservation Authorities
FOCA Member Municipalities
Other Municipalities
Lakes
N
W
E
S
0
90,000
180,000
360,000
Meters
Created by CO Geomatics
Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Citizen Science & the Lake Partner Program

Federation of Ontario Cottagers' Associations

Lake Partner Program

Federation of Ontario Cottagers' Associations

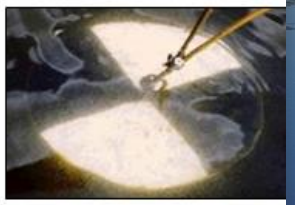
Volunteer environmental monitoring -

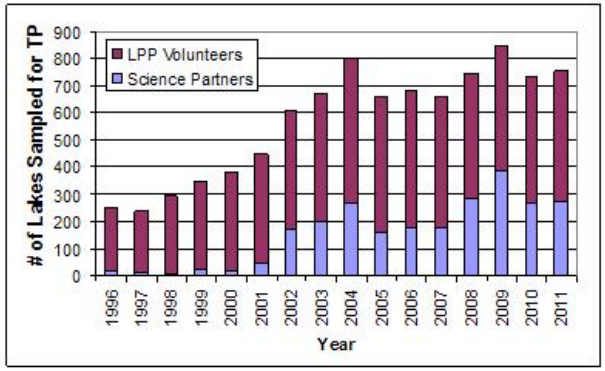
Total Phosphorus Calcium Water Clarity

Long-term science tracking what is changing in the water chemistry of Ontario's inland lakes

Broad factors affecting the sustainability of our lakes include:

- Climate Change
- Eutrophication
- Invasives





Lake Partner Program

Federation of Ontario Cottagers´ Associations

The goal of the Lake Partner Program is to better understand and protect the quality of Ontario's inland lakes by involving citizens in a volunteer-based water quality monitoring program.

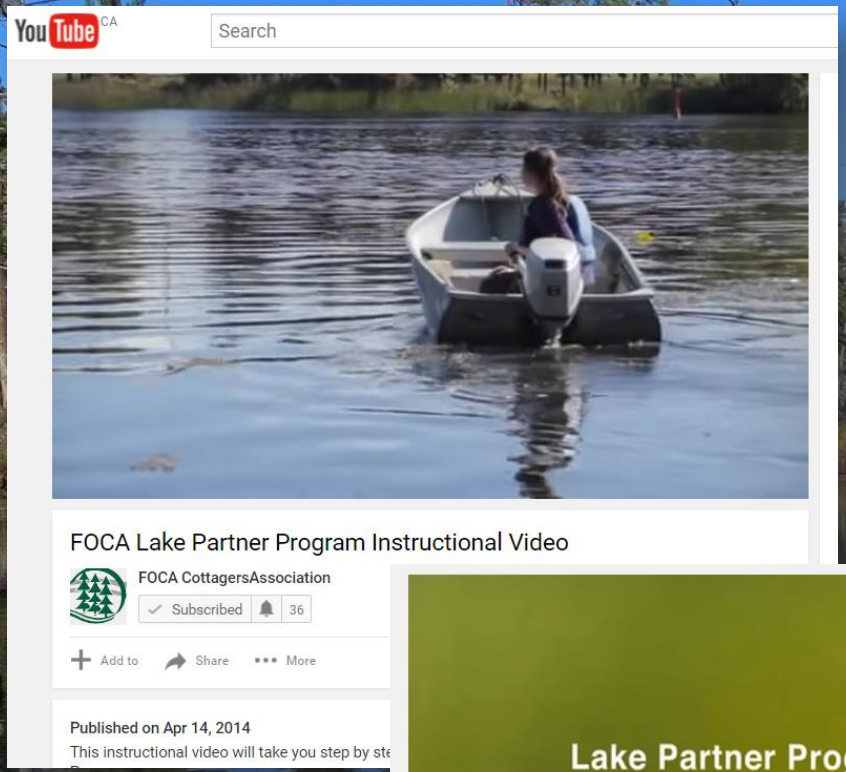
The Lake Partner Program is a province-wide, volunteer-based, water-quality monitoring program. Volunteers collect total phosphorus samples and make monthly water clarity observations on their lakes. This information will allow the early detection of changes in the nutrient status and/or the water clarity of the lake due to the impacts of shoreline development, climate change and other stresses.

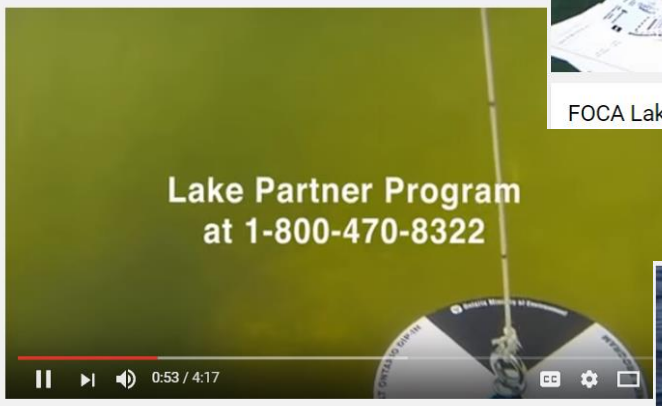
FOCA and DESC/MOECC staff met at DESC in June 2015. Pictured, from left to right:

Jenny Winters (Supervisor, MOECC Environmental Biomonitoring Section, MOECC Toronto), Terry Rees (FOCA), Christie Davies,(FOCA Lake Partner Assistant Coordinator, DESC) Anna Desellas (MOECC Inland Lakes Scientist, DESC), Rachael Fletcher (Manager, Environmental Biomonitoring Section, MOECC Toronto), Keith Somers (MOECC Inland Lakes Scientist, DESC Site Supervisor), Andrew Paterson (MOECC Inland Lakes Scientist, DESC), Deanna Panitz (FOCA Programs Coordinator), Steve Kerr (FOCA Board of Directors).

Sampling Video

Federation of Ontario Cottagers' Associations



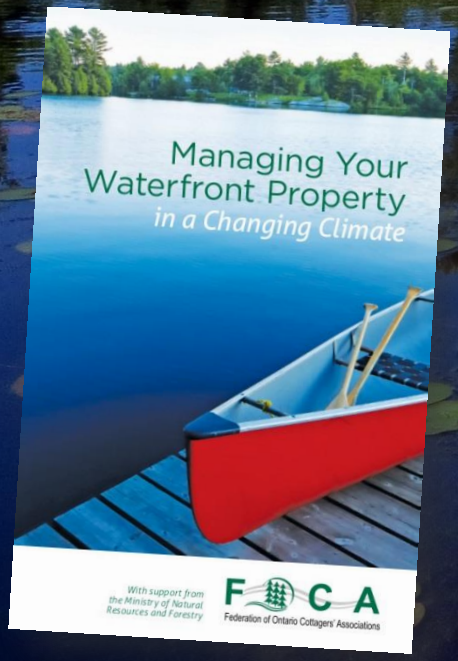


FOCA's tools include:

Federation of Ontario Cottagers' Associations

EVENTS

RESOURCES



NEWS UPDATES

FOCA Elert - October 2016

Political Affairs & Policy Updates

Invasive Species & Cottage Country Utilities - FOCA Asks

This summer, FOCA wrote to Hydro One to enquire about their **boat-moving practices in rural Ontario**, with concern for the potential spread of invasive species between waterbodies. We were pleased to receive a response detailing Hydro One's practices for boat and trailer washing, and their intentions to comply with the draft regulations for Ontario's Invasive Species Act. Read FOCA's letter & Hydro One's response, here

A similar letter to Bell Canada has, as yet, gone unanswered. FOCA will keep you updated with any developments. This follows FOCA enquiries to the Ontario Provincial Police Marine Patrols last year, on the same subject; read the 2015 OPP response here.

Lawsuit Launched over Water Management

A group of Muskoka residents have announced a class-action lawsuit

Lake Partner Program

Federation of Ontario Cottagers´ Associations

Lake Partner Program – OVERVIEW

- **For the most current sampling results (2015), click here…**
- **For LPP contact info, see end of this post**

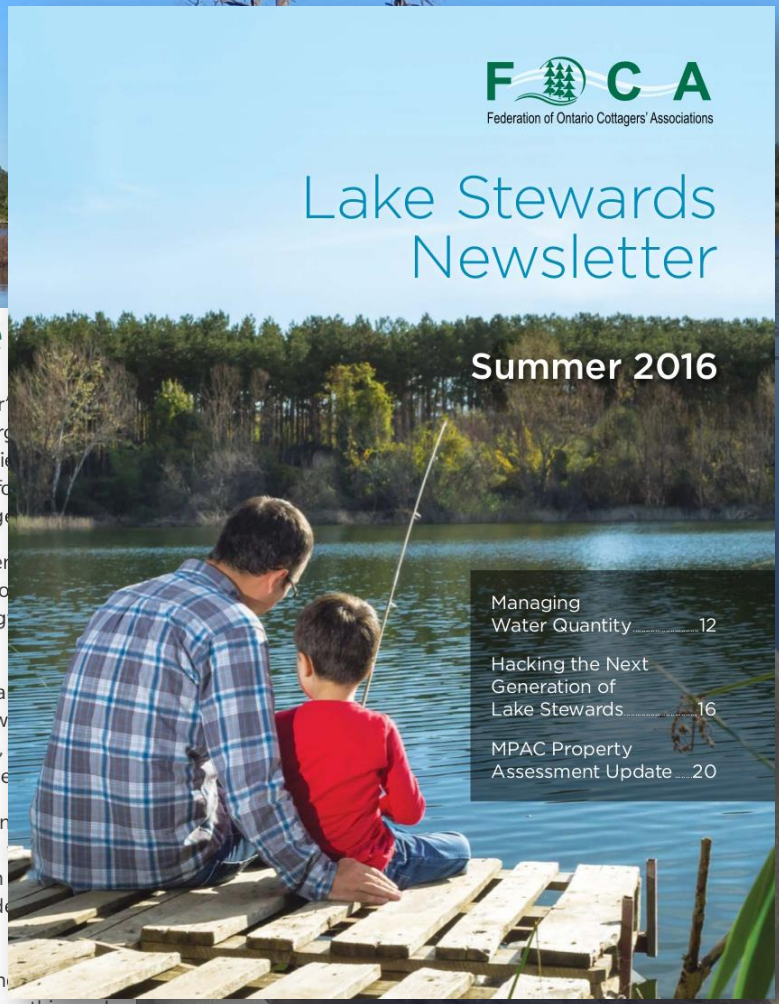
NEW June 2016 – FOCA and the Ontario Ministry of Environment and Climate Change are pleased to release the *Lake Partner Program Report Card*.

This new Report consists of the following three key components:

- Background information on Ontario's Inland Lakes, and the Lake Partner Program
- A description and summary of each of the three water quality indicators measured as part of the Lake Partner Program: Total Phosphorus, Calcium, and Water Clarity. Together, they provide a snapshot of the state of Ontario's lakes.
- Access to useful tools and other web-based information for citizen scientists and lake stewards.

Lake Stewards Newsletter

FOCA
Federation of Ontario Cottagers' Associations



Top 10 Tips: Climate Change Challenge

We all have an important role to play in reducing the impacts of climate change and keeping the environment healthy for future generations. Here are some ideas to keep the lake environment healthy, and reduce your own carbon footprint at the cottage.

1. PADDLE VS. MOTOR: Reach more often for the paddle instead of the boat keys, and enjoy nature at a slower pace!

2. LET THE SHORELINE BE: Do the environment (and yourself) a favour, and choose the hammock over the lawn mower this summer. Plants at the water's edge help filter nutrients, store carbon and prevent erosion, while underwater logs and rock piles provide protection and spawning ground for fish.

3. STARRY, STARRY NIGHTS: Don't be a night polluter. Turn off unnecessary exterior lights and substitute down-facing fixtures where possible. Floodlights and other high-wattage outdoor bulbs are energy-eaters and can even mess up the mating and feeding behaviour of wildlife, while stealing the view from star gazers.

4. SWITCH THE COTTAGE WATTAGE: For indoor light,

7. ELECTRIC IDEAS: Keep an eye out for 'dinosaur' - old fridges can use more than four times the energ efficient model. Appliance retailers, utility companie waste-management services may pick up old units fo they deliver a new one, which even saves you cottage

8. MOTOR MATTERS: Replace old two-stroke en more efficient 'clean marine' options (clean two four-stroke) and off-road vehicle engine technolog engines in top repair to lower emissions.

9. BEWARE THE PHANTOM LOAD: Use power ba electronics that can be turned off when you're aw some devices (including TVs, DVD players, stereos, can continue to steal power even after they're turne

10. HUG A TREE: Retain mature trees as natural in your property. Deciduous trees on the south and buildings provide shade in summer, and let sun winter. Conifers on the north and northwest side block cold winds in winter.

Please keep in touch with FOCA and let us know h these, or other climate-conscious actions, you take on this year! For more tips on how to be a low-impact cottager, see our new

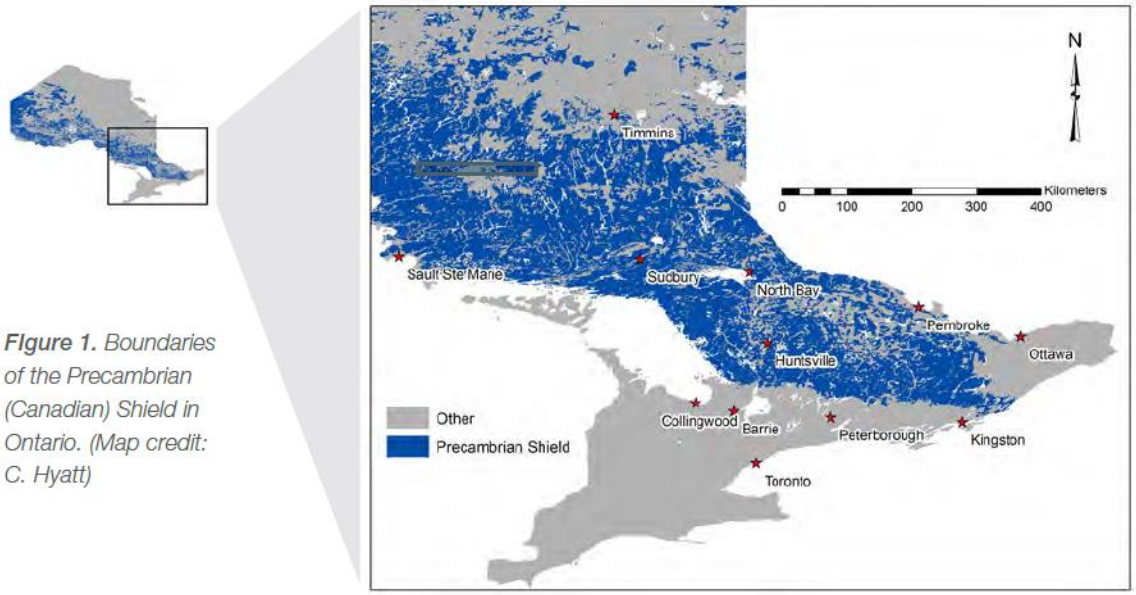


Figure 1. Boundaries of the Precambrian (Canadian) Shield in Ontario. (Map credit: C. Hyatt)

LAKE PARTNER PROGRAM

Report Card 2015

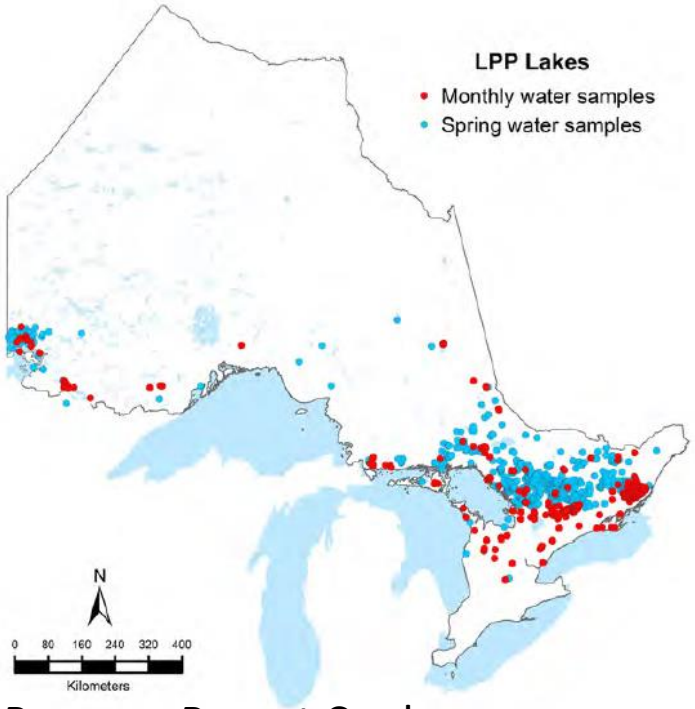
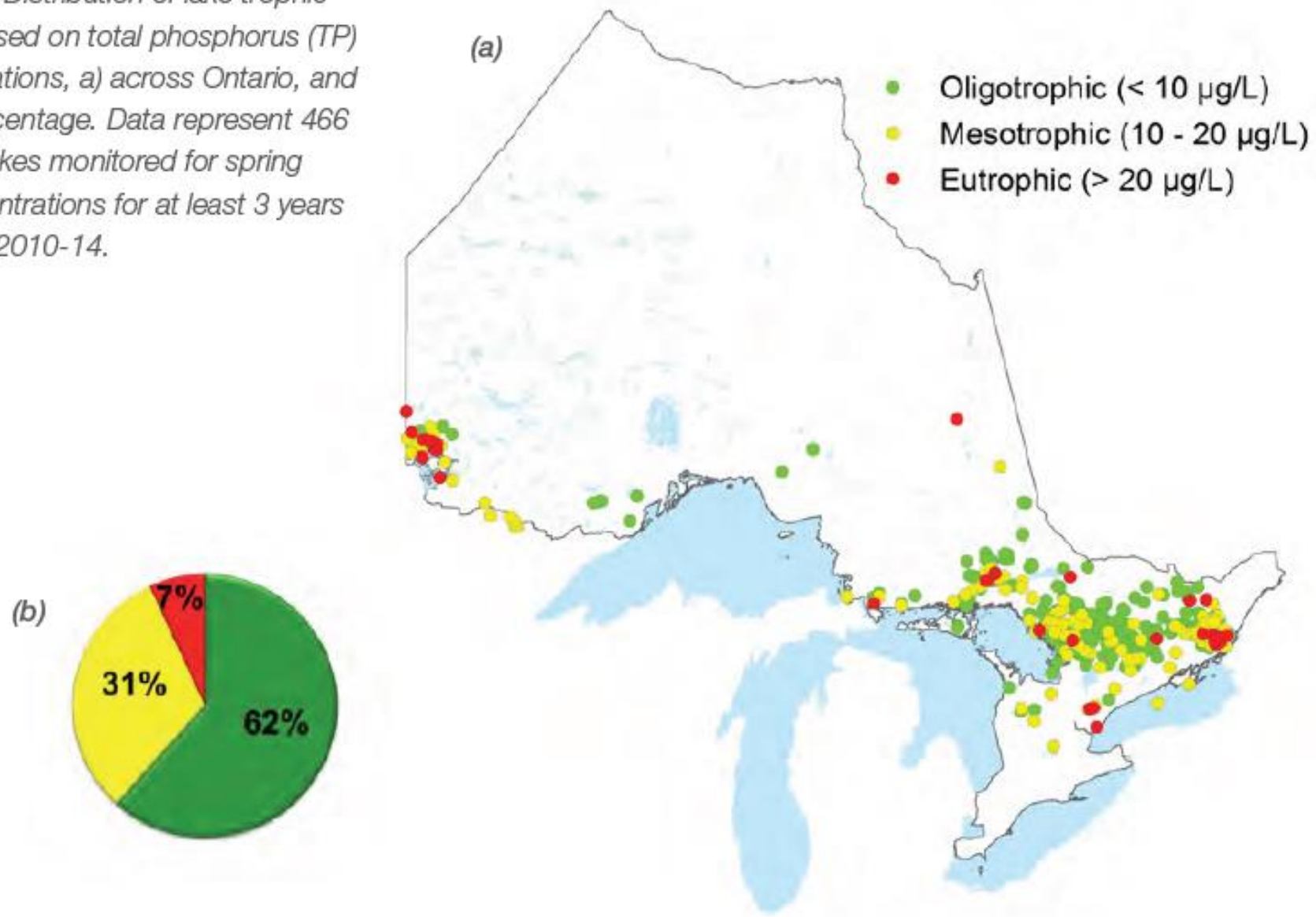


Figure 3. Ontario's Lake Partner Program incorporates inland lakes across Ontario, and some isolated bays of the Great Lakes, such as Georgian Bay. This map shows all of the 233 monthly and 535 spring sites that were actively sampled by volunteers on lakes in Ontario in 2014.

The 2015 Lake Partner Program Report Card examines the health of the lakes, sampled by volunteers, over the most recent five years (2010 to 2014), and is designed to serve as a resource for program participants, lake managers, and the general public across the province.

2015 Lake Partner Program Report Card

Figure 5. *Distribution of lake trophic status based on total phosphorus (TP) concentrations, a) across Ontario, and b) by percentage. Data represent 466 Ontario lakes monitored for spring TP concentrations for at least 3 years between 2010-14.*



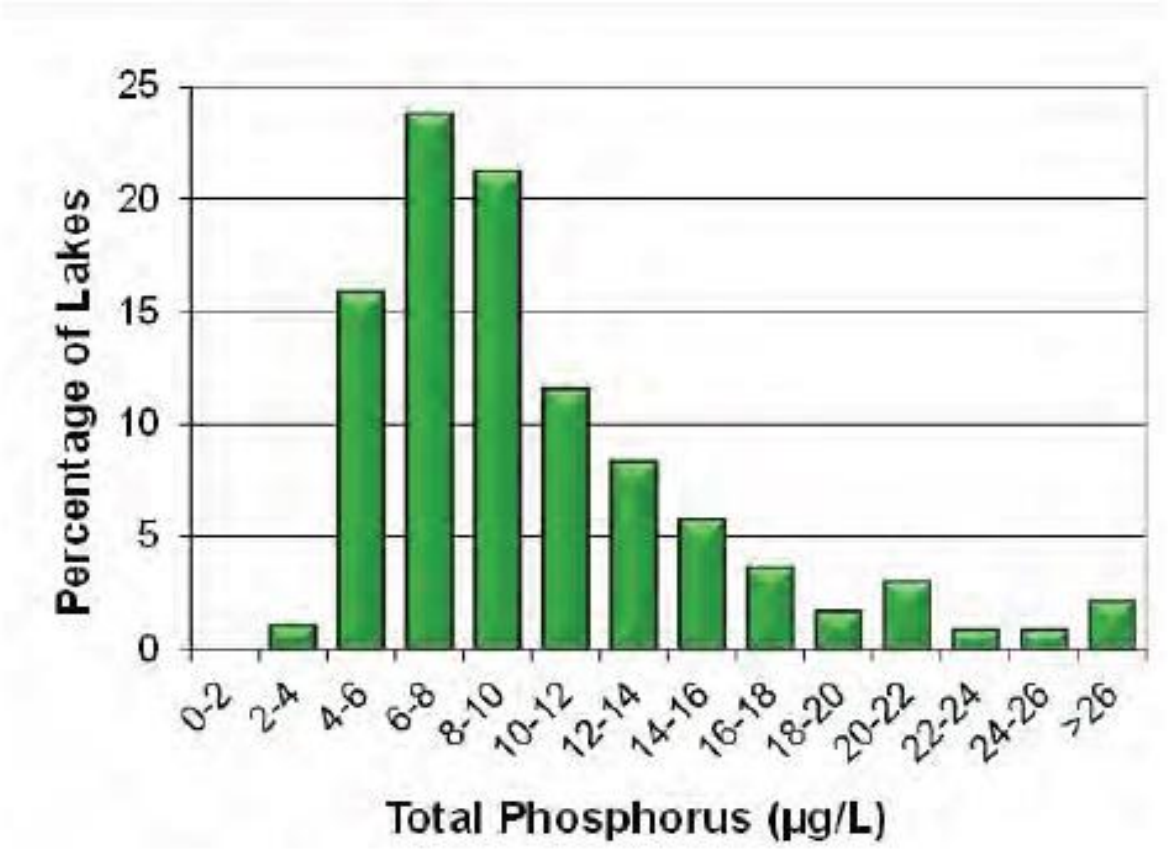


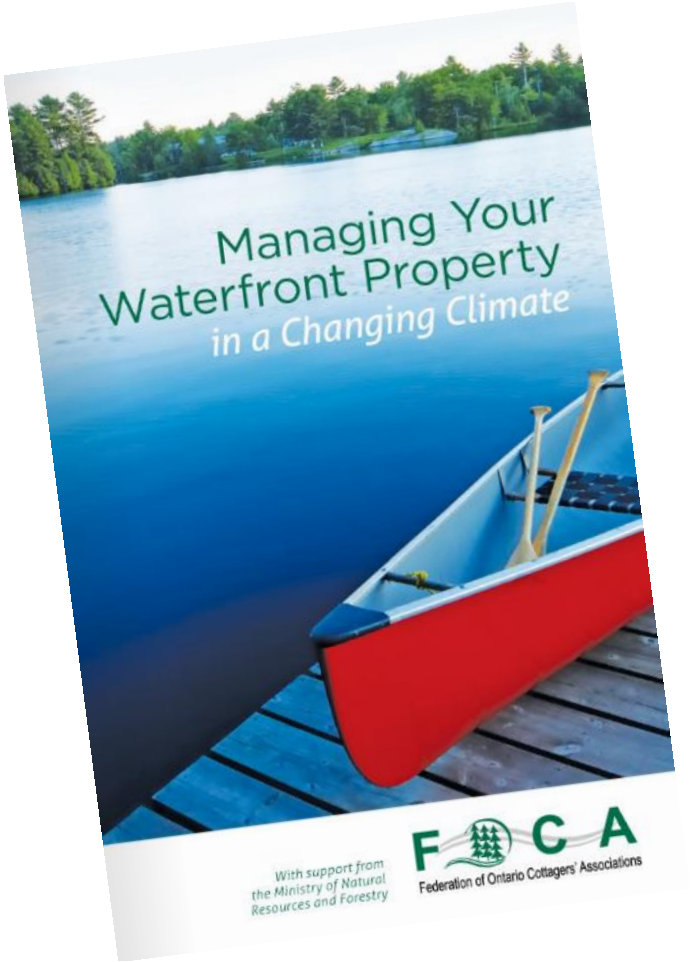
Figure 6. *Current distribution of lake total phosphorus (TP) concentrations across Ontario. Data represent 466 Ontario lakes monitored for spring TP concentrations for at least 3 years between 2010-14.*

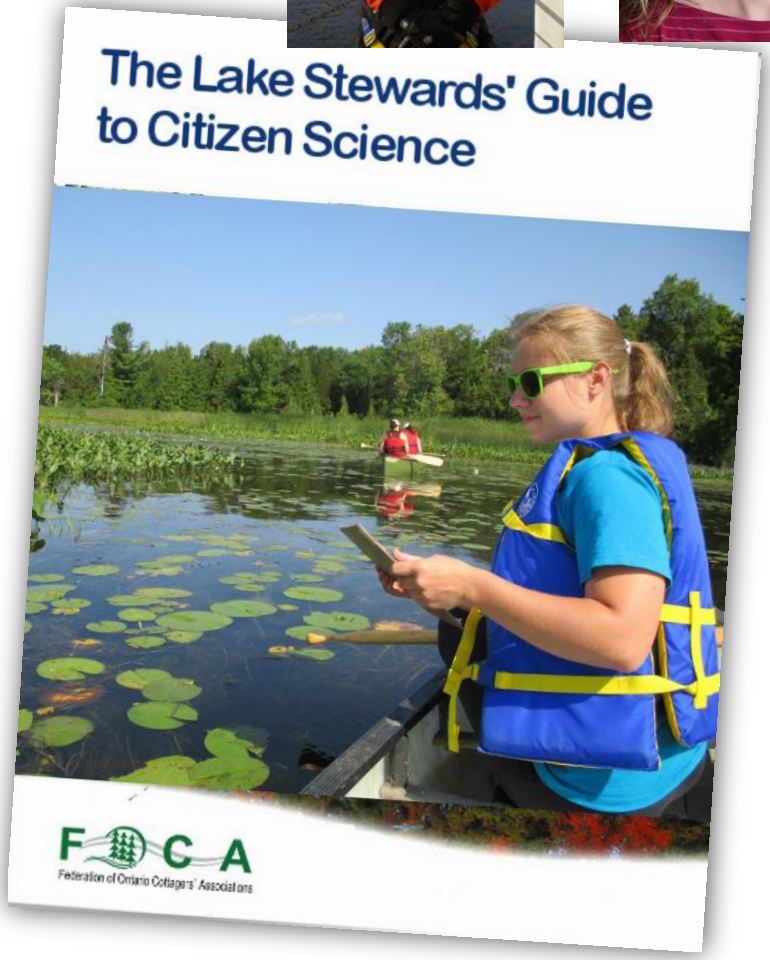
What You Can Do

The complex and dynamic nature of inland lakes requires continued monitoring and research to better inform management actions to protect these lakes for our enjoyment and the many benefits lakes provide.

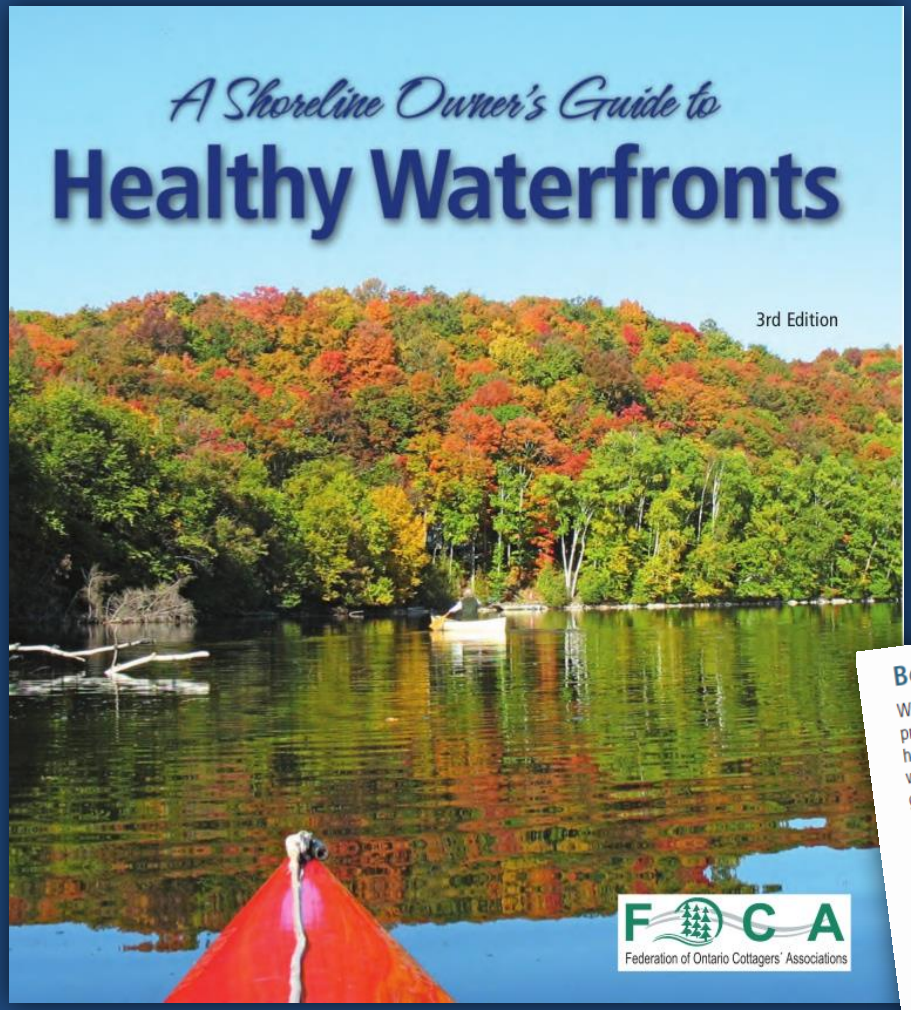
Individuals and communities can work together to help maintain the water quality of Ontario's lakes. To find out more about what you can do to help protect Ontario's lakes, visit FOCA's "Resources" page to access a wealth of information (**www.foca.on.ca/resources/**).

Below: Participants in the Haliburton-Muskoka-Kawartha Children's Water Festival learn about lake water clarity during an interactive demonstration.


Managing Your
Waterfront Property
in a Changing Climate
With support from
the Ministry of Natural
Resources and Forestry
FOCA
Federation of Ontario Cottagers' Associations

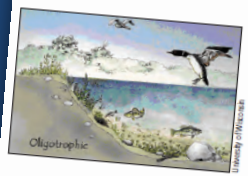

The Lake Stewards' Guide
to Citizen Science
FOCA
Federation of Ontario Cottagers' Associations

New edition:



What Type of Lake Do You Live By?

There are three basic types of lakes found in Ontario. You can learn more about your lake's unique characteristics by contacting your local Conservation Authority, Ontario Ministry of Natural Resources and Forestry (MNRF) or cottage association.

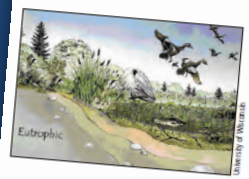


Oligotrophic Lakes

- Generally deep
- Minimal aquatic plant growth
- Low nutrient levels
- Support cold-water fish such as trout and whitefish
- Low levels of phosphorus and chlorophyll
- Most lakes on the Canadian shield are oligotrophic with some exceptions

Mesotrophic Lakes

- Medium depth
- Usually good for fishing; support a wide variety of fish such as walleye and bass
- More nutrients than oligotrophic lakes, but not nearly as much as eutrophic lakes
- Occasional algae bloom at the surface



Eutrophic Lakes

- Generally shallow with abundant vegetation
- Support warm-water fish such as perch, bass and pan fish
- Frequent algae blooms
- Susceptible to oxygen depletion
- High phosphorus or chlorophyll readings

Eutrophication is a lake's aging process. Sediments, erosion and the [illegible] th and decomposition of aquatic plants eventually fill up the [illegible] the lake is converted to a wetland (e.g. [illegible] process normally takes [illegible] ne, accele[illegible] This

Be Smart About Septic Systems

With septic systems what goes in, must come out! Most of Ontario's waterfront property owners rely on on-site wastewater treatment systems to manage household water. Maintaining your septic system is critical to ensuring that your wastewater does not add excess nutrients to your lake or contaminate groundwater. Some tips:

- Have your septic tank inspected and pumped out on a regular basis. The frequency of your pump-outs will vary based on the size of your tank, your family size, and the number of appliances you use. As a general rule, pump your septic tank every 2 to 3 years.
- Avoid constructing patios, decks or parking areas over your septic tile bed. Extra weight can crush pipes and compact the soil, limiting its permeability.
- Do not use snowmobiles over the leaching bed area in winter; this will reduce the snow cover's insulating effect. ATV and snowmobile traffic can also compact filtration material.
- Have an effluent filter installed in your septic tank, to reduce the amount of solids entering the leaching bed to prevent clogging.
- Ensure access to the septic tank for proper maintenance and servicing.
- Avoid planting certain species of trees around the leaching bed area. Willow roots can clog pipes and shade the septic area, slowing evaporation.
- Do not water your lawn around leaching bed area; extra water can reduce the bed's ability to absorb and treat waste water from the house.
- Direct rainwater from roofs, patios and driveways away from the leaching bed

[illegible] system overload. [illegible] drain or toilet. Paints, oil, gasoline, [illegible] waste centre

Citizen Science as a building block

- With vast geographies, long time scales, an army of field staff is a useful resource
- Communicating HOW their data is being used, and why it is relevant, is important
- Examples:

CUMULATIVE EFFECTS ASSESSMENT AND MONITORING

IN THE MUSKOKA WATERSHED

CATHERINE EIMERS, TRENT UNIVERSITY

Research conducted 2012-2015

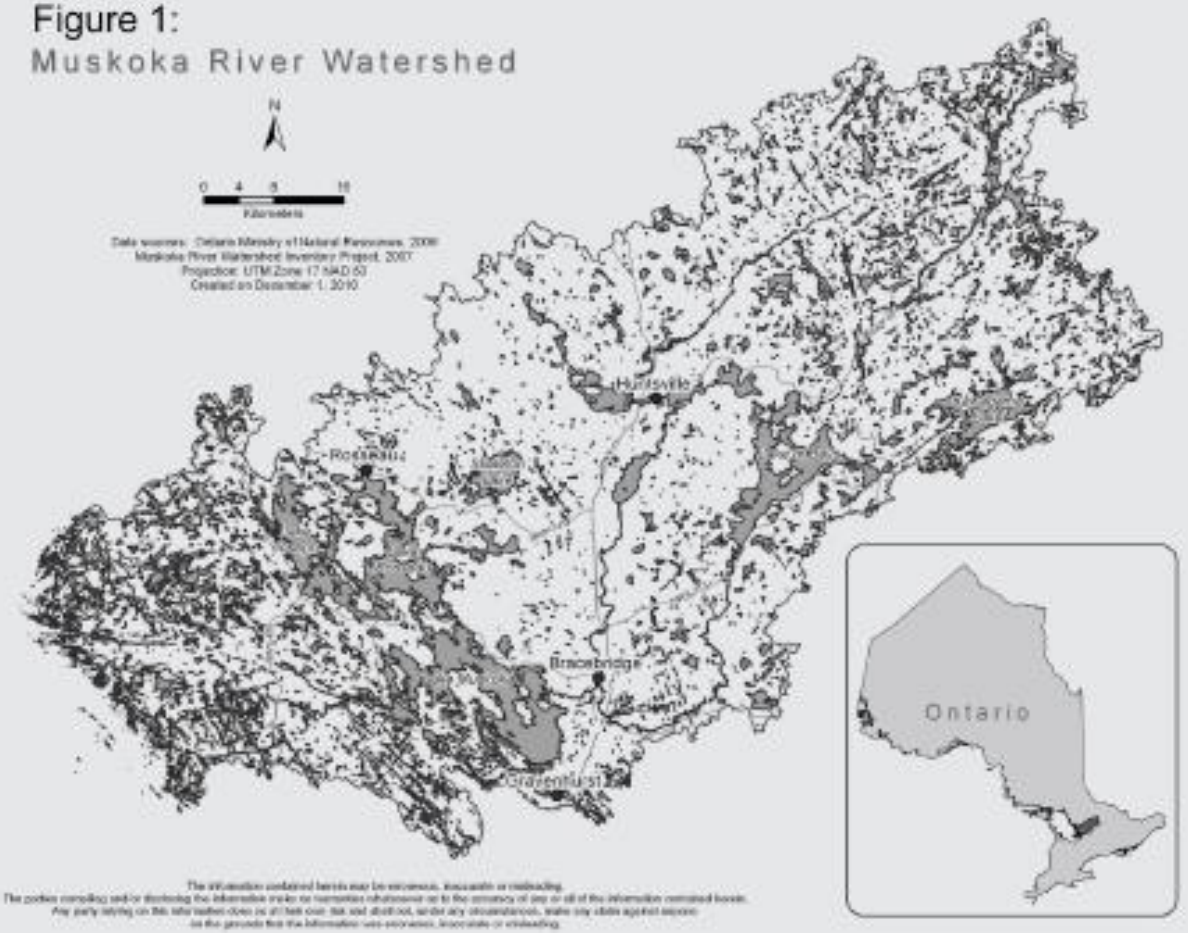


Figure 1: Map of the Muskoka River Watershed.

WHY DID WE DO THIS RESEARCH?

In the heart of Ontario's cottage country, the Muskoka River watershed is home to more than 2000 lakes that are connected by the Muskoka River and its tributaries. Drinking water quality, recreational activities, angling and habitat biodiversity are dependent on the condition of these waterbodies, which are affected by a wide variety of environmental stressors and their interactions. Monitoring is an important component of managing lakes within the Muskoka River Watershed because it provides information about lake conditions over time. This monitoring enables managers to evaluate whether human activities are adversely affecting the physical, chemical and biological quality of a lake.

Historically, the District Municipality of Muskoka's (DMM's) lake monitoring program focused on water clarity and shoreline development. Over three decades of monitoring, shoreline development increased around a number of Muskoka lakes, but phosphorous levels did not increase correspondingly. Other changes were observed over this time period:

- Levels of calcium, an important nutrient for many crustaceans such as zooplankton and crayfish, declined
- Salinity increased as a result of road salt runoff
- Dissolved organic matter increased, which could have implications for nutrient availability, lake thermal properties and biodiversity
- Species composition of phytoplankton changed, causing undesirable changes to drinking water taste and odour

A revision of the original monitoring program in 2005 made lake ecosystem health a monitoring and management priority, but the drivers and implications of many of these changes, as well as the potential for interaction among drivers and cumulative effects were unclear. The monitoring program was in need of further refinement to improve detection and monitoring of cumulative-effects of multiple stressors. Therefore, this project set out to better describe the baseline conditions of waterbodies; establish a common understanding of cumulative effects; make recommendations for updating the current monitoring program; and develop new tools for assessing risk and managing cumulative effects in lakes within the watershed.

BUILDING A GEOSPATIAL DATABASE FOR ASSESSING EFFECTS OF MULTIPLE STRESSORS ON INLAND LAKES

1. OVERVIEW OF PROJECT RESULTS

INTERPOLATIONS

a) TP mapping in three time periods;

b) 'Hotspot' areas and their change with time

CATCHMENT DELINEATION

a) Local lake catchment

b) Upstream catchment

c) Interlake catchment

SUMMARY TABLES OF CATCHMENT ATTRIBUTES

THE ONTARIO COTTAGER

VOL.V, NO. 4 & 5 OCT./DEC. 1975

Devoted Exclusively to Country Cottage Ownership

Cottage Association Annual Meetings Are Vital Aspect of Cottage Country Life

1975

Federation of Ontario Cottagers´ Associations


SILVERADO


"Outreach comes with a hefty price tag that is expressed in terms of the most valuable resource we have, our time. It is not something to be undertaken lightly or with any lack of focus, purpose, or intent."
- Katharine Hayhoe
@vexedmuddler
"Science communication matters because science matters! And science will only be a priority for society and government if citizens are engaged. We need citizens to see that science is a powerful and fascinating process. Good science communication tells stories that convey that fascination."
- Stephen Heard
@vexedmuddler
"Through science journalism, we make sense of the complexities of the natural world and find relevance in new knowledge. Given the importance of science in public policy decisions, sci-comm is necessary to capture the public's interest."
- Katherine Balpataky
"Science communication is vital to our quality of life. It helps everyone understand the problems that we face, and shares the ideas & solutions that can improve life for us all."
-Col. Chris Hadfield
POPULAR MEDIA INDICATE THE PERVASIVE PRE-OCCUPATION WITH POLITICS, ECONOMICS, SPORTS AND CELEBRITY WHILE THE REALITY IS THAT THE MOST POWERFUL FORCE SHAPING OUR LIVES AND SOCIETY TODAY IS SCIENCE WHEN APPLIED BY INDUSTRY, MEDECINE AND THE MILITARY. TO BE SCIENTIFICALLY ILLETERATE MEANS FORFEITING ANY INPUT INTO THE FUTURE TO WHICH WE ARE HEADING.
SCIENCE
DAVID SUZUKI
"As a publicly funded scientist, I have an obligation to share what I learn. More than that, if I want to continue to study the fascinating but largely unseen and underappreciated world of spiders, I need to convince the public that scientists like me are worth having around."
-Catherine Scott
@vexedmuddler
"Science is at its best when it's woven into stories, not when it's recited in lectures."
—David Pearson
@cat_lauscats
Twelve of 100 Voices
"Thanks to all the natural resources scientists who share their information with and through stakeholders and policy makers who need this information for informed decision-making! The Federation of Ontario Cottagers' Associations delivers a citizen-based long-term freshwater monitoring program, in partnership with the Ontario Ministry of Environment and Climate Change."
- Terry Rees
"The biggest hurdle to overcome for sound environmental and science policy is the complete support and advocacy from the general public, and the public will not support what they don't understand."
- Dave Ireland
@vexedmuddler
"I love being among the first to hear about new discoveries from the scientists who made them. And I love the challenge of understanding and sharing those discoveries with our readers."
- Emily Ching
@vexedmuddler
"I applaud those with important science messages to deliver but too often they forget the fundamentals of communication: it's not about what you want to say, its about what others want to hear. In 'scientific' controversies it's rarely even about the data. Ignore these principles and you're talking to yourself - and your colleagues!"
- Jay Ingram
@vexedmuddler
"The products of scientific research affect us all. It is the responsibility of scientists to communicate their research in a meaningful and accurate way to the public-at-large. After all, it is the public who has paid for most scientific research. It is also a two-way street. The more the public will appreciate the value of scientific research, the more likely they will be willing to continue supporting it."
-John Smol
@vexedmuddler