

# Lake Stewards Newsletter

2015



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# Why Monitor Your Lake: the role of Lake Stewards

by Deanna Panitz, FOCA Membership & Programs Coordinator

When it comes down to it, every lake association member cares about water quality. We love our lakes, and we want to ensure that the beautiful setting for our cherished memories will still be there for our kids and grandkids. Water monitoring is an under-recognized public service, with an



important role to play in this generational process.

In Ontario, we are blessed that most of our waterbodies are in good condition on the “swimmable, drinkable, fishable” scale. Even where water quality is currently stable, ongoing monitoring is essential to establish baselines against which to measure future developments. Trends in water quality data are best observed over extended periods of time. Time is also essential to assess the impact of remedial actions taken to improve water quality, such as reduced phosphorus inputs or restored

naturalized shorelines.

Since 1996, FOCA has partnered with the Dorset Environmental Science Centre (DESC) in the province-wide **Lake Partner Program** (LPP) of water quality monitoring (Read more about DESC on page 12). The LPP is a volunteer-based sampling effort that provides nutrient and water clarity data for hundreds of Ontario’s inland lakes. Results for your lake are available through links, here: <http://foca.on.ca/lake-partner-program-sampling-assistance/>.

The Lake Partner Program is a good example of the importance of citizen science to the long-term health of Ontario’s inland lakes. Citizen scientists and lake stewards


are unsung heroes whose ongoing efforts help to measure and maintain the quality of Ontario lakes. It is vital that these dedicated “lake champions” understand the value of their work: collecting samples to chart the chemical properties of their lake, and tracking physical characteristics so that we can better understand the impact of changing stressors on the complex biological communities in these waters. (This effort is separate from water testing done by Health Units on beach water, or other commercial water testing you might undertake for your well water.)

Please do your part to ‘pay it forward’ by committing to water quality monitoring today, in order to serve the needs of future generations on Ontario’s waterfronts.

We encourage you to find the Lake Steward at your lake, and THANK THEM. If no one is in this role at your lake, FOCA urges you to get involved! Speak first with your local association, and find out more about how and why to get involved, here: <http://foca.on.ca/stewardship-foca-history/>.

**FOCA would like to thank the legions of volunteer Lake Stewards for whom this annual publication is named! You are our champions.**

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## Canonto Lake Property Owners' Association (North Frontenac)



An update from the Lake Steward: "The Association has completed a Lake Plan and continues its water quality monitoring as part of the Lake Partner Program, and Ontario's Invading Species Awareness Program. At the annual picnic this July our founding President, Jim

Holton, received recognition for his work and leadership during the first eight years of our Association. The presentation was of a loon photograph, as we are fortunate to have several nesting pairs on the lake and their presence is widely enjoyed."

### Got an association success story to share?

Please help to expand the FOCA "Knowledge Exchange" base for your fellow members! Contact us by email: [info@foca.on.ca](mailto:info@foca.on.ca)

## Faradale Road Association (Hastings County)

A road success story: "We had problems with people speeding because of the possibility of collisions on sharp bends, and causing dust and resulting in the need for more road surface material every year. So, we acquired road signs reducing the posted speed from 50 km/hr to 30 km/hr, warning of children and pets, and warning of short horizons. The result: most people drive more slowly, especially where there are children and/or pets. Also, the road costs less to maintain because more surface material stays in place."

## Want more Association tips?

Plan to join us at the FOCA Fall Seminar! (see back cover)

## Kahshe Lake Ratepayers Association (Muskoka)

For the past three years, KLRA has rewarded those whose efforts have contributed to the well-being of the community, by awarding an annual Outstanding Volunteer Award! Nominees have invested their time and talent, while contributing to the life of the lake and its surroundings, promoting community goodwill or safe practices on and around the lake, and fostering communication. What a great way to thank great volunteers! No wonder KLRA welcomed more than 30 new volunteers this past year.

## The FOCA Achievement Award

Congratulations to Redstone Lake Cottagers Association (RLCA) of Haliburton County, recipients of the FOCA Achievement Award presented at the FOCA AGM in March 2015.

RLCA joined FOCA in the 1980s, and today has about 180 members. They are a great example of an association making a positive impact on their local environment. With the assistance of the Association Lake Stewards and other volunteers and partner organizations including their regional group, the Coalition of Haliburton Property Owners' Associations, the entire shoreline of the five lakes in the Redstone area have been assessed by students trained by Trent University. The results were provided confidentially to each shoreline property, and RLCA is using the comprehensive reports to educate members about healthy shorelines and to encourage them to restore the lake's shoreline to its natural state.



Bring YOUR association's success stories to our attention, and nominate them for the next FOCA Achievement Award! (search the FOCA website: [award](#))

# The cottage you always wanted, the way you want it



Beaver Homes & Cottages provides a peace-of-mind cottage building experience. Ask about it at your Home Hardware Building Centre.

When building your dream home or cottage, it should be exactly the way you dreamed it would be the day you finally walk in the front door," explains Dave Bond, marketing manager for Beaver Homes & Cottages, at Home Hardware Stores Ltd.

Bond, a former builder in cottage country, says that the Beaver Home and Cottage building process is geared to that end result. Along the way, it provides the most flexibility in terms of design and material choice; and the most intense, hands-on guidance via a Beaver Building and Design Consultant. The Beaver approach is so fine-tuned, Home Hardware Building Centre offers a guarantee on design, material, price, quantity and quality.

## Peace of mind

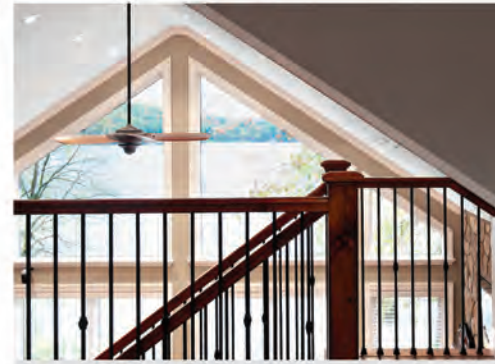
You'll be assigned a well-trained, highly experienced Beaver Home & Cottage consultant who will help with every step of the process including design, choosing materials and even connecting with local builders. "Your Beaver expert will help you work through design drafts, explain product choices to you, supply complete material specifications, pricing, discuss payment options and deliver everything to your site," says Bond. They can even introduce you to local contractors who build Beaver homes packages, he adds.

## Flexibility and unlimited choice

There is a wide array of stunning models available online at BeaverHomesandCottages.ca. Clients can modify these designs, or create their own cottage design from scratch, points out Bond. A Beaver consultant is on-hand to assist in this process (and can even visit your property). The choice of materials available to clients is equally robust. "We have access to an extensive range of products," says Bond. That's important for customers who have very specific wants, such as environmentally-friendly materials.

## Guaranteed design, price, quantity and quality

Because Beaver Homes & Cottages wants your cottage building experience to be worry-free, they guarantee the design work, the quantity and quality of those materials, and, finally, the price. "You're never going to be short of materials," says Bond, "and the price is locked in so you needn't worry about commodity increases down the road." "We understand the emotional attachment people have to cottages. Whether it's a new build or a rebuild, our philosophy is the same: We want you to have what you want, the way you want it. And we believe it can be a lot easier with some solid advice and someone by your side."



"You're never on your own with us," says Bond. "We want you get the cottage you want, the way you want it, we want to help you get it right."

Additional perks of building with Beaver Homes & Cottages: materials are delivered as needed; you get the benefits of phased payment terms; a building consultant from concept to construction to completion.



[beaverhomesandcottages.ca](http://beaverhomesandcottages.ca)



# Invasive Species Update – Prevention is the Intention

by Deanna Panitz, FOCA Membership & Programs Coordinator

Invasive species have the potential to seriously affect biodiversity and the quality of life in Ontario. Unfortunately, we have already seen the impact of some invasive species introductions, such as forest pests like the emerald ash borer and aquatics like the zebra mussel. These invaders have already altered the native environment and negatively impacted our communities. FOCA encourages you to take action now, so that we can all continue to enjoy the native species in our waterfront environments.

In partnership with the Ontario Ministry of Natural Resources and Forestry (MNRF), FOCA encourages you to get involved in the **Aquatic Invasive Species Prevention & Monitoring Program**. This volunteer program helps lake associations and their members to prevent the introduction of, and to monitor for, aquatic invasive species (AIS) on their waterbody. Find out more about how you and your association can join the dozens of FOCA-member groups already involved: <http://foca.on.ca/ais-monitoring-program/>.

MNRF has also launched a public awareness ad campaign (see the ad below) to educate Ontario citizens about the threat of invasive species. The underlying message: Be careful what you bring to the cottage, and be equally careful what you take home!

FOCA continues to watch the status of the Invasive Species Act, Bill 37. This Bill was introduced to the Ontario Legislature in November 2014 and second reading was debated in May 2015; as we go to print, it is not yet scheduled for the required third reading. If passed, this Act will address the threat that invasive species pose to the natural environment of Ontario, and will outline designating criteria, as well as prevention, response and enforcement measures to be taken.

Remember, if you identify any invading species near your cottage this summer call the Invading Species hotline at

1-800-563-7711 or visit Ontario's Invading Species Awareness Program at <http://www.invadingspecies.com/>.

Some important reminders for cottage country:

- Buy your firewood locally, and leave behind any you do not use. Never bring in firewood from another location, because it may be home to an invasive species that could cause irreparable harm.
- Teach kids not to release aquarium plants or pets (e.g., goldfish) at the cottage, or anywhere else. Note: it is illegal to release live fish into an Ontario waterbody unless it is a fish that you've just caught at that location!
- Garden using only non-invasive plants. Find good "Grow me Instead" options here: <http://www.ontarioinvasiveplants.ca/index.php/publications>.
- After fishing, do not release any live bait, or dump the contents of a bait bucket (including the water) into Ontario waters, or within 30 metres of Ontario waters. Learn what species are permitted as live bait: <https://www.ontario.ca/faq/-what-kinds-baitfish-can-i-use-live-bait>.
- Before heading home, clean all your gear including watercraft, trailers, bikes, ATVs and boot bottoms. Remove plant materials and seed-spreading mud.
- Give your pet's coat a good brushing to remove any seeds it might have picked up!



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## Wind, Solar and Cell Towers in Cottage Country

Many associations have ongoing concerns about pending green energy (solar, wind turbine or waterpower) or telecommunications tower proposals on or near their lakes. While each situation is unique, FOCA remains concerned about the level and timing of public involvement in decisions related to these proposals.

In May 2015, FOCA wrote to the Ministry of Energy's Renewable Energy Facilitation Office to request clarification about the procurement and the approvals processes for renewal energy projects. "We have a number of members," FOCA wrote, "who are upset/concerned/confused about how, when or if there are opportunities to weigh in on proposed wind and solar projects." The Ministry replied that the approval process "can vary," by scale and type of project. Read the Ministry's full reply, here:

<http://foca.on.ca/approving-green-energy-projects/>.

Building good communities requires adequate consultation and reasonable public notice, no matter what the project or proposal is about (roads, re-zonings, land use changes, public budgets, etc.) and FOCA encourages better engagement of all property owners, early and throughout the process.

In the case of the Green Energy Act (GEA), exemptions from the Planning Act complicate matters. The challenges associated with siting renewable energy projects, and the conflicts resulting from the exemption of Renewable Energy Projects from the Planning Act were identified by Municipal Affairs and Housing (MMAH) years ago. MMAH confirms that many local planning instruments do not apply to or affect renewable energy projects, including:

- Official Plans
- By-laws or Orders passed under Part V of the Planning Act, including zoning, site plan, holding and interim control by-laws
- Development Permit System By-laws

Recognizing this emerging change and looming conflicts on the landscape, FOCA featured green energy and community concerns at our FOCA member event in Fall 2009, with panelists from the Georgian Bay Association, the Ontario Power Authority, and the Ontario Sustainable Energy Association.

In May 2014, The Association of Municipalities of Ontario (AMO) released a report, *Energy Policy – A Brighter*

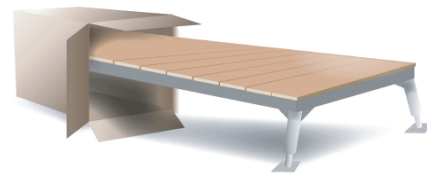
*Future Takes Planning – Municipal concerns about energy*, which included a variety of municipal concerns but specifically mentioned that energy system planning should:

- include a life-cycle cost analysis of energy projects, so Ontarians can clearly understand the costs and benefits of planned investments, and how specific projects fit into our energy system
- support local generation projects in a way that meets local community energy needs and the broader goal of greener, smarter energy delivery
- when it comes to siting large energy projects, AMO asserts this should involve the public early on, providing financial and environmental details. Public feedback must be accounted for in plans and reports
- include social goals as part of the planning and cost benefit analysis, and ensure the public understands the costs and consequences of action and inaction
- include reasonable timelines and the decision-making role of municipal Council in the planning process.

(continued on p. 9)

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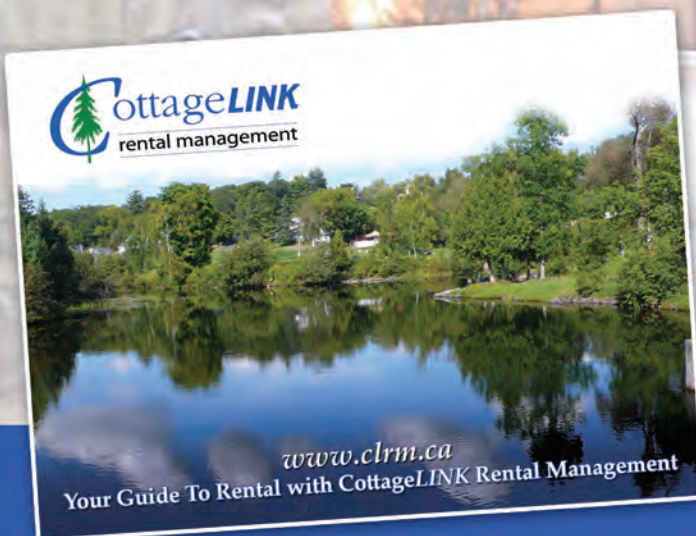
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## Wind, Solar and Cell Towers in Cottage Country

(continued from p. 7)

Finally, AMO recommended the Province look to municipalities—who are responsible for Building Code enforcement, the regulation of local roads, utility corridors and infrastructure—for input into provincial smart grid planning.

One notable indication that the GEA needed to better reflect local interests and concerns came in the form of Premier Wynne's mandate letters to Ministers in September, 2014. The mandate letter on energy specifically directed the Minister of Energy as follows:

“Working with the ministry's agencies and with municipal partners to ensure that municipalities participate meaningfully and effectively in the decision-making process for the placement of renewable energy projects, including wind and natural gas.”

### One Local Council's Reaction

The Township of North Frontenac is one example of a community currently facing a large-scale wind turbine project proposal. Council voted to not support the proposal, and have declared themselves as unwilling hosts. Mayor Ron Higgins, a former FOCA Board member, released an official statement in July 2015, titled “Proposed Wind Turbine Position Paper,” which has been circulated to the Premier, related Ministries, municipal partners and the media. “After reaching our decision to not support this project, and declare ourselves as unwilling hosts,” Higgins wrote, “I felt compelled to conduct more research on how this came about... I am providing this position paper in the hopes of entering into consultation with our Provincial government to have this whole issue addressed.” The issue remains unresolved, as we go to print with this Newsletter.

### What about Cell Towers?

In some respects, the same jurisdictional challenge exists with cell towers (except they are federally regulated), because local citizens and their municipal representatives have little say about how and when and where they get built.

## A MEMBER CASE STUDY:

### Cell Tower Placement in Haliburton

In 2013, the Kawagama Lake Cottagers Association (KLCA) became involved in a cell tower placement debate in their area. As a result of KLCA involvement and comments received during the public consultation process, Bell Mobility modified their original proposed cell tower design. Instead of the 40 metre tri-pole original design, they proposed a 29.9 metre tower disguised as an unlit pine tree. KLCA formally indicated their support for this revised proposal, and Algonquin Highlands Township Council voted shortly thereafter to advise Industry Canada of Council's support for the revised proposal. The Township also took the opportunity to develop a communications tower policy which will guide future proposals and ensure appropriate public consultation as part of the process. (These notes compiled from the KLCA Membership Update of May 2013.)

FOCA thanks John McHardy of Kawagama Lake for sharing his impressions of this experience with FOCA. John has provided some additional written thoughts about the cell tower placement process, and “lessons learned” for others in similar situations. Members can access these resources by request to the FOCA office.

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# UPDATE

## Lyme Disease

by Dr. R. Pellizzari, Peterborough City-County Health Unit

In Ontario, climate change experts warn that we can expect average temperatures to continue to rise during this century. Changes associated with climate change will alter our communities, lives and wellbeing. Climate change is expected to cause, and local naturalists already report, the northern migration of plants and animals. Consider the spread of the Blacklegged tick and the increased risk of Lyme disease as one implication.

The culprit is a bacterium *Borrelia burgdorferi*, spread by the Blacklegged tick (or deer tick). The tick contracts the infection from feeding on wildlife such as mice and deer that carry the disease and then transmits it to humans through a bite. 'Home' for the Blacklegged tick has been the northeastern, mid-Atlantic, and north-central United States, but warming temperatures and changes in land use have resulted in spread throughout parts of Ontario and Quebec beyond the endemic areas surrounding Lake Erie and the St. Lawrence Islands National Park area.



The best defense is to be well-informed and proactive.

Since ticks live in wooded and bushy areas with high grass and leaf litter, it is important to avoid bites by wearing light-coloured clothing that is well-tucked in and well-sprayed with DEET-containing insect repellent when hiking in the woods.



A tick can be hard to see, as they can be as small as a freckle but they fill up as they feed, growing in size and usually become more noticeable. Daily showers and inspections, with or without the help of loved-ones or mirrors can help find them before they can transmit Lyme disease. Don't forget to check the warm and hairy spots where ticks can hide and happily feed. Removing ticks before they have been attached for about 24 hours, and bringing them to your local Health Unit for testing, can help prevent Lyme. Find your local Health Unit here: <http://www.health.gov.on.ca/en/common/system/services/phu/locations.aspx>. Some physicians are treating everyone who has had an engorged tick for 24-36 hours with one dose of an antibiotic to help prevent the disease.

If not successfully prevented, signs and symptoms of Lyme disease usually start to appear as early as three days

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and as late as 32 days after being bitten, however not everyone gets symptoms. The most common symptom is a red, expanding rash known as *Erythema migrans* (EM) or “bull’s-eye” rash that fades in three to four weeks.

The diagnosis is often a clinical one, without the use of tests, as blood tests looking for the antibody against Lyme Disease take weeks to become positive. Once infected, antibodies can circulate for years. Early treatment with antibiotics will not only prevent the long term consequences but may also stop antibodies from forming in some people who will then test negative.

Controversies exist about both testing and treatment, and it is “buyer beware” when it comes to using private labs in the U.S. who profit by marketing their tests. Some of these tests have not been validated and are difficult to interpret. Ontario uses state-of-the-art, two-tiered testing in

its Public Health Lab. By the time that late stage disease develops, virtually everyone will test positive. Negative serological tests in patients with prolonged non-specific symptoms can virtually rule out the disease and physicians should look for other causes.






In response to external claims, in March 2012 Public Health Ontario evaluated the existing science and could not find any sound evidence of a post-Lyme Disease illness that warrants prolonged IV antibiotics. There are certainly compelling anecdotal stories and case reports appearing in local media that can cause concern; hopefully there will be well-designed clinical trials to help sort out the most salient facts, soon.





In the meantime, the ticks are really telling us that the clock is ticking on climate change and we better take this threat seriously.

## So what will a changing climate mean for Ontario Lakes, and cottage country in particular?

by FOCA, with notes from the North American Lake Management Society ([nalms.org](http://nalms.org))

Aquatic ecosystems are very vulnerable to climate change. Even small changes can cause big impacts. Some likely developments for Ontario include:

-  • The average annual amount of precipitation may not change dramatically; however, the distribution will change – likely more in the winter and less in the summer. The overall effect will be to reduce surface and groundwater levels.
-  • The frequency of intense rainfalls will increase, which will increase flooding events.
-  • There will be declines in the duration of winter ice. This may reduce the likelihood for winter fish kills in shallow lakes.
-  • The distribution of many fish and other species will change - cold-water species will likely decline in the south and warm-water species will expand northward.
-  • Fish growth rate should increase, but not at the same rate for each species. The food chain will likely be altered.

-  • Extreme heat will be more common.
-  • Warmer lakes will likely result in reduced fish habitat for existing species. These impacts will be especially severe in shallow lakes.
-  • The duration of summer water stratification will increase, adding to the risk of oxygen depletion. Lower water levels and warmer temperatures may accelerate the accumulation of mercury and other contaminants in the food chain and ultimately fish. These conditions could also lead to an increase in nuisance algae.
-  • Invasions of new non-native species will be more likely.

Specific ecological responses to climate change cannot be exactly predicted because changed conditions, with new combinations of native and non-native species, will interact in unpredictable ways.

How we adapt to changing climatic conditions will greatly influence the future state of Ontario’s lakes and rivers.

## The Dorset Environmental Science Centre

Lake stewards who participate in the Lake Partner Program (LPP) receive their annual sampling kits and return their water samples and observations to the Dorset Environmental Science Centre (DESC).

Located in the heart of Ontario's cottage-country, DESC is perched near the southern boundary of the Precambrian Shield, roughly 200 km north of Toronto. The DESC serves as



the centre of scientific expertise on environmental issues affecting Ontario's inland lakes for the Ministry of Environment and Climate Change (MOECC), and is the home of the Lake Partner Program. Today, DESC monitors water quality in a series of lake basins in south-central Ontario spanning a range of cottage development.

### History of the DESC

In the early 1970s, several Ontario ministries combined resources to develop the science to support policy to minimize the impacts of land-use change on the water quality of Ontario's inland lakes. The resulting atmospheric, terrestrial and aquatic-ecosystem monitoring programs that

focused on the impacts of land-use change also provided data that contributed to the discovery of acid rain in Ontario, and recognition of the importance of long-range atmospheric transport of acid emissions.

During the late 1970s and 1980s, DESC monitoring and research on the ecological impacts of acid rain contributed to the development of environmental regulations for reducing sulphur emissions across North America. Beginning in the mid-1990s, research at DESC evolved to focus on the multiple and interacting environmental stressors affecting inland lakes. This integrated approach enabled DESC scientists to better understand the mechanisms driving lake responses to human activities.

Diverse monitoring approaches have been used to monitor different lakes over time. For example:

- a raft deployed near the centre of Harp Lake records a variety of water-quality parameters at different depths every 10 minutes, all day, and all year
- three of the 8 DESC intensive lakes are sampled every two weeks throughout the ice-free season from April to December; the remaining 5 lakes are sampled once a month during the same ice-free period
- the 26 extensive DESC lakes are sampled once in the spring and once in the fall
- another 20 lakes are sampled once each year for benthos, crayfish and associated water chemistry
- over the years, additional lakes have been sampled by various researchers to compile data sets for lakes spanning spatial gradients for special studies on



LPP sampling kits ready to send to the lake stewards in early 2015.

zooplankton (300+ lakes), benthos (50 lakes), and crayfish (100 lakes).

In 1996, the Ministry's Self-Help Program evolved into the Lake Partner Program (LPP), that expanded in the early 2000s through partnerships with FOCA and the Lake of the Woods District Property Owners Association. In partnership with FOCA, the LPP provides a province-wide, volunteer-based monitoring program that focuses on the water quality of Ontario's recreational lakes. The LPP is one of the largest volunteer sampling efforts of this kind.

### Looking Ahead

Collectively, observations made by DESC and partner-agency staff indicate that climate change is affecting Ontario's lakes, and these effects are evident in the long-term data. Because of the complex interplay of multiple factors that determine individual lake responses, DESC monitoring and reporting efforts focus on the interacting impacts of multiple stressors. This multi-stressor approach is anticipated to identify emerging issues, before damage is irreversible. Ultimately, these data will provide the basis for the development of scientifically sound policies that protect our inland waters.

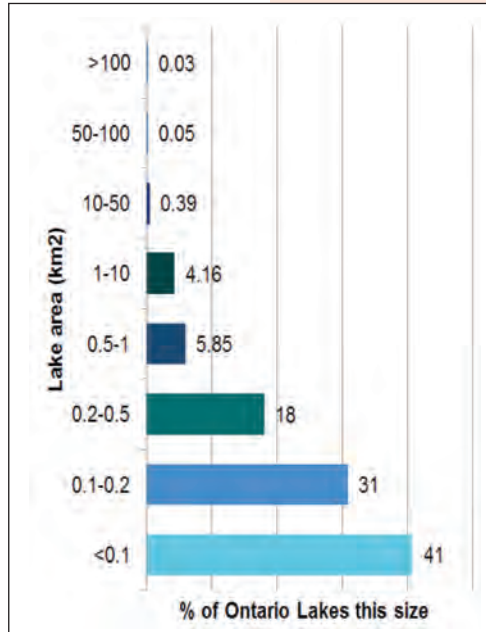
### Lake Partner Program Sampling

Each year, approximately 600 volunteers (i.e., lake stewards) monitor nearly 550 inland lakes at over 800 sampling locations (including lakes with multiple basins). About 85% of the volunteers sample lakes on the Canadian Shield and these volunteers collect one water sample in the spring each year. The remaining volunteers sample once a month during the ice-free season for lakes off the Canadian Shield. Volunteers are also asked to make a minimum of six monthly water clarity observations using a Secchi disk. Water samples are sent to the DESC water chemistry laboratory for analysis using state-of-the-art methods. The chemical and Secchi-disk results are used by members of the public, partner agencies, government and academic researchers to assess and report on water quality in lakes across Ontario.

(continued on p. 15)

## A bit about Ontario's Lakes

Ontario boasts about 250,000 lakes. About half of Ontario's inland lakes are less than 10ha in surface area. Roughly 95% of Ontario's lakes are less than 1km<sup>2</sup>, with Lake Superior being the largest lake in Ontario.



The water quality and ecology of Ontario's inland lakes reflect watershed geology and vegetation, but human settlement, land-use change, climate, colonization by non-native species, and chemical pollutants modify these influences. Ongoing research on these interacting stressors has uncovered a number of surprises. For example, calcium concentrations in Shield lakes are decreasing. Decades of acid loading, coupled

with logging, have depleted watershed stores of calcium, and further decreases are predicted.

Laboratory studies by partners working at DESC have shown that calcium loss is an important stressor for many aquatic species, especially when less calcium is combined with lower food availability and the warmer temperatures that are predicted in future climate change scenarios.

Phosphorus, an important nutrient in lakes, is also decreasing. Less phosphorus means a decrease in algal production, but (surprisingly) in inland lakes a decrease in phosphorus can increase the frequency of short-term population explosions of some species such as harmful algal blooms.

The complex and dynamic nature of inland lakes requires continued monitoring and research to better inform management actions and ultimately, to protect these lakes for the future. Committed volunteer samplers in the Lake Partner Program are an important part of this ongoing effort!

A close-up photograph of a person's hand holding a wooden paddle in a canoe. The paddle is partially submerged in blue water, and the background shows a blurred shoreline with green trees under a clear sky. The overall scene is bright and sunny, suggesting a pleasant day on the water.

# Powering your cottage life

Cottage season is a time to relax and enjoy your friends, family and Mother Nature.

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Partners in Powerful Communities

## The Dorset Environmental Science Centre (continued from page 13)

### Partnership Networks

The popularity of the LPP collaborative program is underscored by the number of government and non-governmental agencies that collect water samples and share water quality data as LPP science partners. For example, collaboration with the Ministry of Natural Resources and Forestry (MNRF) Broad-scale Monitoring Program has provided water chemistry data from approximately 1000 lakes sampled by MNRF staff across Ontario.

Partnerships with academic colleagues have further contributed to the DESC inland-lake data set. The Canadian Aquatic Invasive Species Network (CAISN) involved a multi-university study of the zooplankton and water chemistry of 350 Muskoka-area lakes. Subsequent surveys added data for another roughly 150 lakes. Similarly, a cumulative-effects study funded by the Canadian Water Network targeted another 100 Muskoka-area lakes for sampling by researchers from Laurentian, Waterloo, Nipissing and Trent universities.

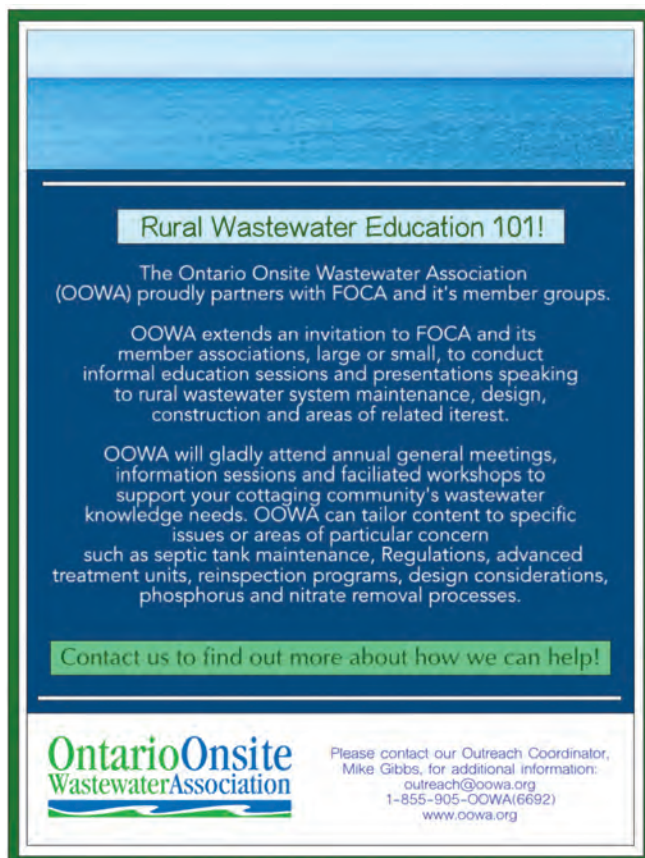
Through collaborations between government, academia, non-government and public volunteers, DESC-based inland-lake studies have amassed data from over



**For sampling tips, lake stewards are encouraged to review the FOCA instructional video by searching "Lake Partner Program" on YouTube.**

2000 Ontario lakes in the last 10 years. This total is roughly 1% of the province's lakes, and these partnership-based monitoring efforts provide an early-warning of emerging water-quality issues for Ontario's inland lakes.

For more information, the cumulative results for the LPP are available online here: <http://foca.on.ca/lake-partner-program-sampling-assistance/>.



**Rural Wastewater Education 101!**


The Ontario Onsite Wastewater Association (OOWA) proudly partners with FOCA and it's member groups.

OOWA extends an invitation to FOCA and its member associations, large or small, to conduct informal education sessions and presentations speaking to rural wastewater system maintenance, design, construction and areas of related interest.

OOWA will gladly attend annual general meetings, information sessions and facilitated workshops to support your cottaging community's wastewater knowledge needs. OOWA can tailor content to specific issues or areas of particular concern such as septic tank maintenance, Regulations, advanced treatment units, reinspection programs, design considerations, phosphorus and nitrate removal processes.

**Contact us to find out more about how we can help!**

**Ontario Onsite Wastewater Association**  
Please contact our Outreach Coordinator, Mike Gibbs, for additional information:  
outreach@oowa.org  
1-855-905-OOWA(6692)  
www.oowa.org



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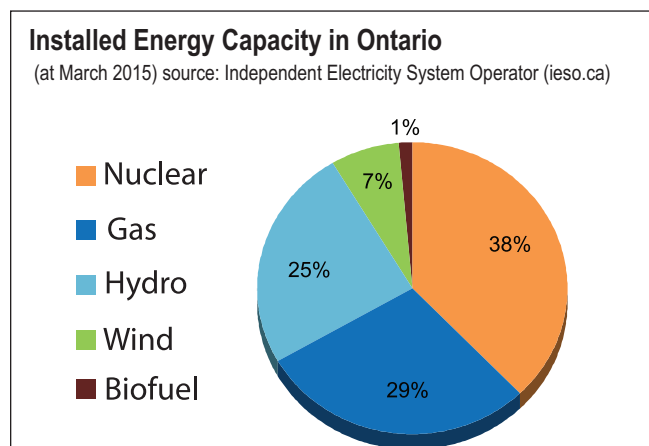
# The Dam Truth: Hydroelectricity in Cottage Country

There are about 2,600 dams in Ontario, which explains why dams are such a familiar sight along our waterways in cottage country. Some of these structures are being used to generate electricity.

Hydroelectric generation uses the power of falling or downward flowing water to make electricity. It is the most widely used form of renewable energy in Canada, and makes a significant contribution to Ontario's energy supply mix.

The use of hydroelectricity in Ontario dates back to the late 19th century. Its advantages include reliability, relatively low production costs, and flexibility to meet ongoing electricity needs as well as peak demands. It also makes good use of a renewable resource: water.

Today, hydroelectric power accounts for approximately a quarter of Ontario's total installed energy capacity.



## How it works

Generating stations use the natural run of a river, or a dam to temporarily raise the water level, to create the drop needed to produce electricity. The water is diverted into a tube (penstock) where it picks up speed and spins a turbine that is connected to a power generator. The generator converts the spinning movement into electricity which can be transferred through a transformer and then into the electricity grid. For an online interactive tool that explains this process, visit:

<http://powerauthority.on.ca/sites/default/files/wa1.swf>

## Public Safety and Dams

Dams are remote pieces of infrastructure, often adjacent to or accessible from recreational waterways. Public activities

around dams are a source of potential safety concern. Due to the dam's very purpose, downstream water levels and flows can change dramatically – often with little warning.

Always follow these safety tips when enjoying recreational activities anywhere close to dams:

- Obey all warning signs, fences, buoys, booms and barriers. They are there to protect you and your family. The areas inside are dangerous, so stay clear of them.
- Stay off dams or station structures, unless there are clearly indicated public walkways or observation points.
- Stay well back from the water's edge, above and below dams and reservoirs.
- Never stand below a dam, or anchor or tie your boat there. Particularly, stay well back of dry riverbeds below dams. They can quickly change into rapidly flowing waterways.
- Even where a dam is out of sight along a river, be aware of water levels at all times. Check upstream frequently when swimming, fishing, boating or paddling, watching for any sign of increasing currents. Changing flows can take you by surprise, pulling you into an undertow, leaving you stranded away from shore or swamping your boat.
- Also be sure to set an example for children, who may not be aware of the dangers, even if they can read. State clearly where they can and cannot go, and make sure you are close to them and can see them at all times.

## Who's in charge of dams

Dams are owned and operated by various agencies and private companies, including the Ministry of Natural Resources and Forestry (MNRF), conservation authorities, Ontario Power Generation, the federal government and municipalities. MNRF is responsible for safety legislation regarding dams under the 'Lakes and Rivers Improvement Act' which regulates new dam construction, repairs, reconstruction or decommissioning.

The former Ontario Power Authority has merged with the Independent Electricity System Operator to provide services, information and analysis to support Ontario's electricity system and connect its stakeholders, which include FOCA's members across cottage country.

Ontario Power Generation (OPG) generates and sells electricity, as an entity wholly owned by the Province of Ontario. Many of the dams along FOCA members'



waterways are managed by OPG. OPG maintains partnerships and programs focused upon watershed management, to balance energy production requirements with environmental, commercial and recreational needs, community connections and snow accumulation concerns. For information about OPG's water safety program, visit <http://www.opg.com>. OPG also manages a biodiversity program that works to maintain or enhance significant natural areas and associated species of concern: since 2000, OPG has planted nearly six million native trees and shrubs on more than 2,700 hectares of ecologically-strategic land in Ontario.

Today, OPG operates 65 hydroelectric stations and 240 dams on 24 river systems. For information on flows and water levels at select locations throughout Ontario, visit <http://www.opg.com/generating-power/hydro/Pages/River-System-Data.aspx>.

In preparation for the spring freshet each year, dam operations transition from winter settings and gradually fill reservoir lakes along the systems. Along the Trent Severn Waterway (TSW) and Rideau Canal, Parks Canada staff collect and analyze information regarding the year's snow pack, the snow depth and its water content. Technical data analysis is conducted to assist the agency with determining the expected inflows into the various water bodies in the watershed, and informs their decision-making related to appropriate water levels in lakes.

Parks Canada staff also engages in such activities as clearing ice and snow from the dams, in order to ensure that all equipment is in good working order and in a state of operational readiness on approach to the spring freshet.

Is your property on the TSW? More information is available from Parks Canada here: <http://www.pc.gc.ca/eng/lhn-nhs/on/trentsevern/plan.aspx>.



Photo: Kirk Doughty

### The forecast for the months ahead

In the winter of 2014-15, severe cold which led to thicker ice, and a lack of mid-winter snow melt throughout Ontario contributed to below-average water levels along Ontario waterway systems. Lake and river flows were reported by (continued on p.19)

[opg.com/watersafety](http://www.opg.com/watersafety)

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## The Dam Truth: Hydroelectricity in Cottage Country

(continued from page 17)

many FOCA members as lower than usual this Spring. Nevertheless, a single rain event can trigger extraordinary results (as it did in 2013), and FOCA reminds all homeowners to review their flood vulnerabilities, and to take proactive measures to protect themselves and their belongings at the waters' edge.

FOCA reminds members that Ontario homes may have limited insurance coverage for damage due to overland water; check your policy! Additionally, seasonal properties are NOT covered by the Ontario Disaster Relief Assistance Program, a provincial financial assistance emergency tool.

While Parks Canada manages water levels year round, the MNRF through the Surface Water Monitoring Centre, municipal partners and Conservation Authorities are responsible for flood preparedness and education, declaring public emergencies, and provision for emergency situations. Residents concerned about water level conditions are encouraged to follow up with these organizations in their area to ensure they are well prepared. Get links and information here: <https://www.ontario.ca/law-and-safety/flood-forecasting-and-warning-program>.



## Water Management Plans: still in limbo

FOCA asks: *Why has the MNRF shut down their own process to use local Water Management Plans to consider all the social, economic and environmental aspects of water power operations?*

Hydroelectric dams affect water levels on many of our rivers and lakes. For their part, the Ministry of Natural Resources and Forestry (MNRF) has been working with dam owners and others since 2006 to identify ways to modernize the regulatory requirements for dams under the Lakes and Rivers Improvement Act (LRIA). The MNRF subsequently proposed to update the requirements for Operating Plans for new dams, as well as changes to the amendment process and implementation of operating plans at existing dams.

In November 2013, technical guidelines for dam operating plans were posted to the Environmental Bill of Rights. While some provisions of this update (those related to new dam locations) have been updated recently, there has been no resolution of a reformed Water Management Plan review process.

As a result, FOCA wrote to senior staff at MNRF in July 2015 to express concerns about this stalemate, noting, “the comment period on proposed changes... ended in January, 2014, almost a year and a half ago.” FOCA has requested some assurance from MNRF that this review/reform process has a reasonable end date, and seeks to secure from MNRF a timeframe when stakeholder input—including input from waterfront property owners and associations—will once again be part of Water Management Planning in Ontario.

Read more about this issue, here: <http://foca.on.ca/water-management-plans-still-in-limbo/>

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For more brief policy updates from FOCA, visit:  
<http://foca.on.ca/foca-brief-policy-updates-may-2015/>

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# A New Era for IISD Experimental Lakes Area

by Matthew McCandless, Executive Director of IISD-ELA

May 14, 2015 marked a major milestone for the newly-formed IISD Experimental Lakes Area (IISD-ELA): the beginning of its second research season under operation by the International Institute of Sustainable Development (IISD).

IISD-ELA is an exceptional natural laboratory in northwestern Ontario comprised of 58 small lakes and their watersheds set aside for scientific research. It is still one of the only places in the world where it is possible to conduct experiments on whole ecosystems. By manipulating these small lakes, scientists are able to examine how all aspects of the ecosystem—from the atmosphere to fish populations—respond. Findings are often much more accurate than those from research conducted at smaller scales, such as in laboratories.

In a time of growing populations and a rapidly changing climate, many countries are

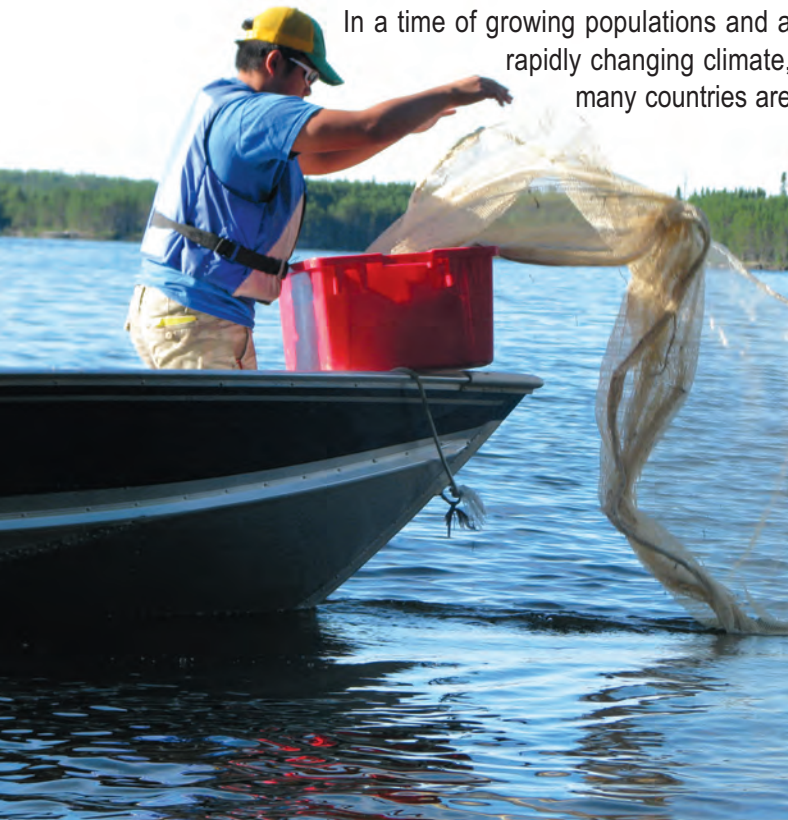


Photo: IISD-ELA

struggling to respond to challenges related to freshwater. These concerns include the impacts of climate change, agricultural runoff, water management practices, contaminants such as mercury and organic pollutants, and a growing list of new chemical substances. The unique

research approach at IISD-ELA has already influenced billion-dollar decisions of governments and industries. It has generated more cost-effective environmental policies, regulations and management which, put simply, result in cleaner water for us all.

This year, we are continuing our tradition of responding to the most pressing environmental issues of our time by conducting long-term experiments at the facility—including some innovative work into the effects of nanosilver on aquatic ecosystems, the effects of mercury contamination on water, and the iconic ongoing research at Lake 227 into eutrophication.

One of the outcomes of last year's research was the discovery that introducing synthetic estrogen into a lake negatively affected the reproductive cycles of fathead minnows and led to the near extinction of the population. The estrogen, found in birth control pills, interfered with the minnow population's ability to reproduce. So startling were the findings that they made headlines across the world.

But it's not all business at IISD-ELA. One of the most exciting new avenues being pursued is that of educational programming at the facility, which launched last summer. This year we have another pilot high school field course planned, as well as two university field courses. This is just one of the many ways in which having a world-class scientific research institute in your backyard is able to benefit Canadians offering unique opportunities, especially to young people, to learn valuable hands-on skills.

None of this would have been possible without the much appreciated public and private financial contributions on which IISD-ELA depends and thanks to which it has been able to expand its scope and thrive in its inaugural year.

The facility recently received a generous donation of \$1 Million to create the IISD-ELA Sustainable Enquiry Fund to provide immediate and ongoing support for post-secondary education opportunities for students at IISD-ELA. Hundreds of donors from Canada and around the world also pledged their support for IISD-ELA through private, individual donations to IISD. We would like to express our gratitude to all our private donors as well as for the ongoing funding from the Governments of Ontario, Manitoba and Canada.

Editor's note: FOCA was one of many voices that fought the Federal government's decision to defund the important work of the ELA scientists. See: <http://foca.on.ca/saving-the-ela/>.



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## Your role: Spread the Word about FOCA!

FOCA enjoys being “on the road,” visiting our member associations across Ontario. While we can’t be everywhere, we appreciate all our supporters who wave the FOCA flag at their own local meetings.

We are counting on **you** to spread the word about the value of FOCA to everyone in waterfront Ontario.

Here’s how you can help:

- 1) Sign up to receive FOCA Elerts (monthly e-news for waterfront folks). Already on the Elert list? Great! Please mention the Elert to your friends and neighbours, too. They can sign up here: <http://foca.on.ca/news/elerts>.
- 2) Share FOCA knowledge: post our fact sheets on your Association website or circulate them as hand-outs. Reproduce FOCA articles in your Association Newsletter. Please credit FOCA as the source, and include our web address, where possible: <http://foca.on.ca>.
- 3) Get words for a short presentation about FOCA’s work from the annual Year in Review publication (<http://foca.on.ca/foca-year-in-review-2014/>), or contact the office for a short digital slide presentation, or alternate file versions of online materials from FOCA.

**Remember:** All FOCA members can access special offers from our partners, including access to the CottageFirst group insurance program. Get the current list of benefits, including any applicable member access codes for offers, here: <http://foca.on.ca/member-services/benefits>.

Here’s a great example of how to share FOCA knowledge, from the Cassels & Adjoining Lakes Association (CALA) Spring 2015 Newsletter:

**WHAT FOCA SEES**

**WHAT YOU SEE**

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- SAFETY
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**Here are a few links to FOCA articles which may be of interest to you.**

- Blue Green Algae** [www.foca.on.ca](http://www.foca.on.ca) (search: blue green algae)
- Boat wake tips** [www.foca.on.ca](http://www.foca.on.ca) (search: wake)
- Invasive Species** [www.invadingspecies.com](http://www.invadingspecies.com)
- FOCA 2014 Year in Review** [www.foca.on.ca/foca-year-in-review-2014/](http://www.foca.on.ca/foca-year-in-review-2014/)

**FOCA** FOCA is your province-wide voice  
Member of Ontario Cottage Associations [www.foca.on.ca](http://www.foca.on.ca)

Thanks for the great coverage, CALA!

## Peninsula Lake & watercross

Member association Peninsula Lake Association (PLA) made a submission to the Town of Huntsville in March 2015, in opposition to a planned 'watercross' event. The event was billed as two-days of snowmobile watercross races planned for the Father's Day weekend of 2015, and described by one opponent as "the Indy 500 on water." After one-on-one meetings with each member of Huntsville Council and the Mayor, Huntsville Town Council denied the request to suspend the noise Bylaw to permit the event.

PLA's written submission to Huntsville Council included the following concerns:

"The proposed snowmobile watercross event will,

- a) Violate the Peninsula Lake community's right to a quiet and peaceful summer weekend
- b) Negatively impact our tourist economy
- c) Willfully pollute Peninsula Lake and its waterfront
- d) Expose participants and spectators to safety risks."

PLA approached the local resorts, and concluded in their submission that none had been given notification of the proposed event, which would take place only a few hundred yards away. Furthermore, PLA took issue with

organizers' claims of huge attendance records at previous events (intended to represent tourism dollars for the local community), by reviewing YouTube footage of past races.

They also challenged the environmental wisdom of the event, noting in their submission that:

*The watercross organizers say they expect that 100 snowmobiles will sink during the 2-day event. The snowmobiles have 2-stroke carburetor engines that mix oil with gasoline. Mercury and Evinrude stopped making these dirty kind of marine engines a long time ago. A 'pit row' will be built along the Hidden Valley Resort beach. Gasoline tanks will be lakeside. There will be special waste containers to dump the contaminated gasoline pumped from sunken snowmobiles.*

*...Watercross is a relatively new event in Ontario. We submit that Huntsville Council should not endorse any watercross event until it can be proven that such events are environmentally sound.*

Congratulations to PLA for this concerted effort and carefully drafted submission to Council!



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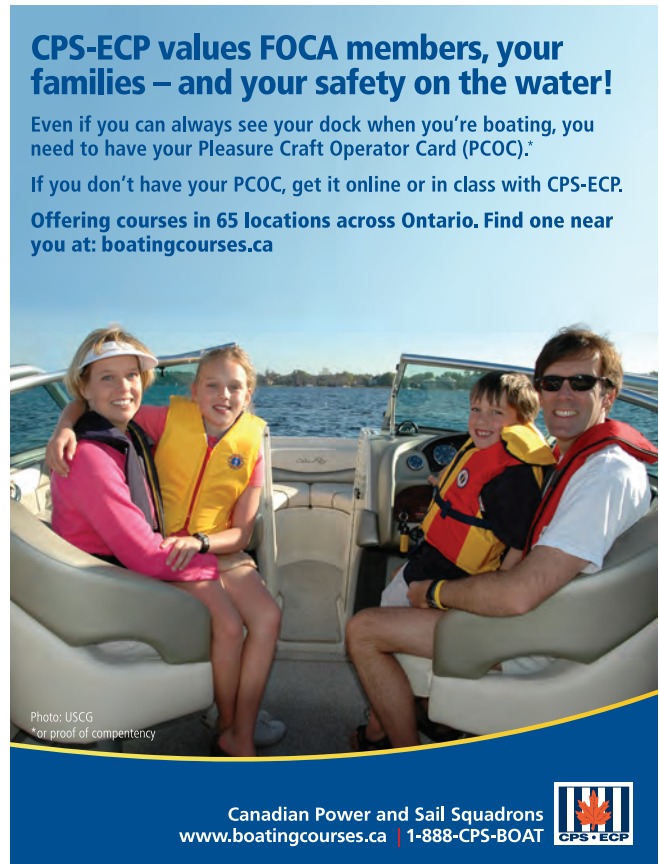
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Registration details will follow soon in the FOCA Elert. Sign up today at: <http://foca.on.ca>