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**Welcome to the January 2022 edition of *Under the Surface*,
the newsletter from Friends of the Muskoka Watershed.**

January is off to a great start for Friends of the Muskoka Watershed. We had a very successful ash drive with more than 60 donors and 1890 kg of ash donated on January 21. Our work has been recognized in the United States. We appreciate, the generous donation received from the Chisholm Thomson Family Foundation. Our first webinar, focussing on road salt, was a success and we have an algal bloom webinar planned for Thursday, February 9. There is much more, but simply said, the future looks bright.

ASHMuskoka project garners attention in US

Friends of the Muskoka Watershed (FOTMW)'s ASHMuskoka work received some high-level attention at a forest ecosystem conference in Vermont.



Dr. Shaun Watmough and his students partner with Friends of the Muskoka Watershed (FOTMW).

Dr. Shaun Watmough, Director of the Environmental and Life Sciences Graduate Program at Trent, presented *A Community Led Wood Ash Recycling Program to Restore Forest Nutrition in Muskoka, Ontario* at the 2022 Forest Ecosystem Monitoring Cooperative Conference in Burlington, Vermont on Dec. 15. It was based on the work of FOTMW and the work of Trent University student researchers.

"I believe this is the first international presentation of our work," says Norman Yan, a founding director of FOTMW. Shaun has been collaborating with FOTMW since 2019.



Friends of the Muskoka Watershed
ASHMUSKOKA



The success of Friends of the Muskoka Watershed is due to the hard work of many volunteers. From a core group that show up every month to stand out in winter weather unloading, weighing and sifting ash donations at ash drives, to high school students who get dusty while helping to spread the ash in the forest - we appreciate all you do. Also, a big thank you to all those who donate the ash from their wood stoves, which makes this all possible. We could not do it without you. This video is for you!



WHY ARE WE GETTING MORE ALGAL BLOOMS?

The classic management approach to algal (cyanobacterial) blooms in fresh water was based on reducing phosphorus loading from human activities (sewage, agriculture etc) to maintain total phosphorus concentrations below levels that increase the probability of blooms.

This approach has been recently challenged by the increasing number of these blooms in lakes with low phosphorus levels and lakes with no human phosphorus sources.

We must still avoid extra phosphorus loading from external sources. However, we also need to be aware that climate change is causing conditions - warmer waters and increasing thermal stability of lakes - that create a good environment for growth of algal blooms.

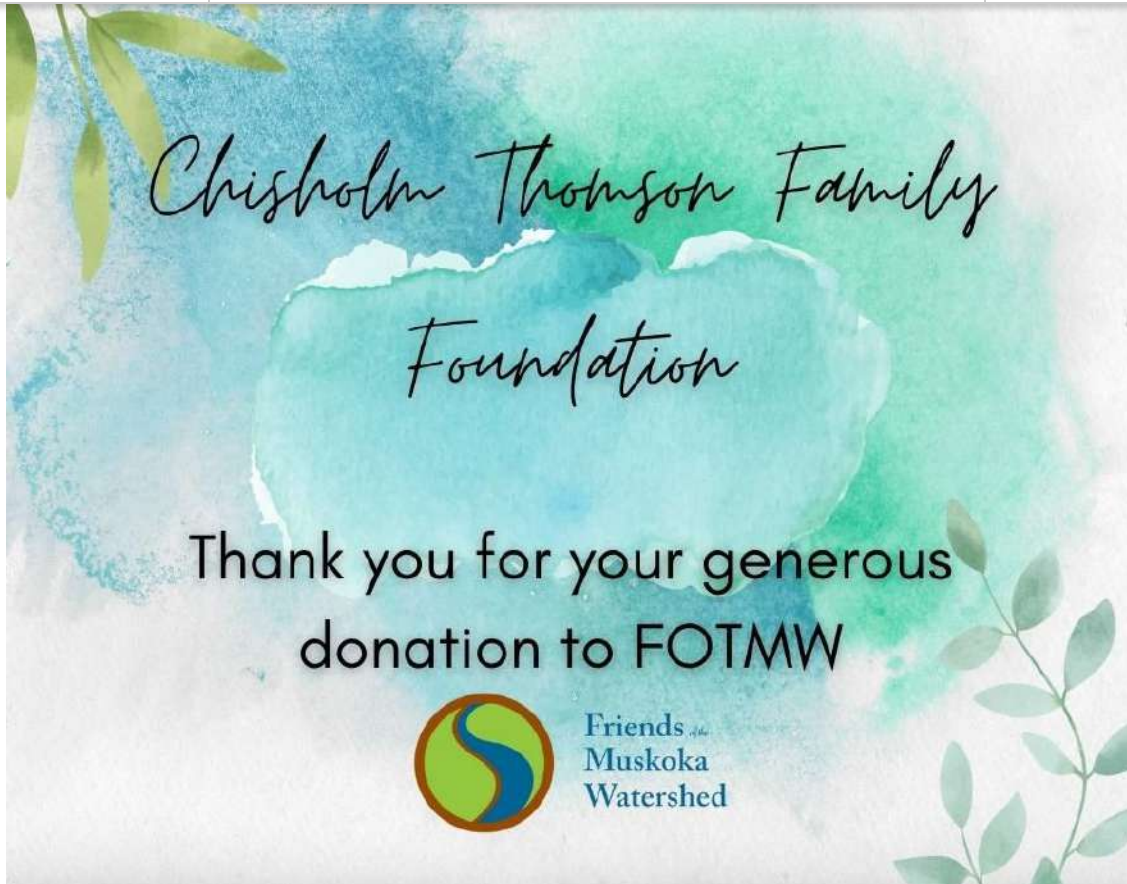
A warmer climate increases the potential for the deep waters in a lake to lose their oxygen content and become sources of internal loading of phosphorus. More severe storms mobilize more phosphorus from the watershed.

Other stressors such as warmer temperature, chloride from road salt, low calcium and invasive predators may interact to reduce the health of zooplankton that graze algae. While we need to investigate these factors, we need not wait for the answers before we do something to reduce our carbon dioxide emissions as our climate is warming.

Email sandy@fotmw.org to register for the workshop (or use the link below). A meeting ID and link will be sent out closer to the event date.

This is for members of FOTMW.org

Sign me up for algal bloom webinar



GENEROUS \$15,000 DONATION RECEIVED

The Chisholm Thomson Family Foundation recently made a donation of \$15,000 to the Friends of the Muskoka Watershed (FOTMW).

“The mission of our foundation is to support organizations that are enabling Canada’s transition to a net zero emissions economy,” says Laurie Thomson of the foundation. “While the work of FOTMW is not directly “on mission”, our board members are all Muskoka residents; we all love Muskoka and want to see it and other lake areas in Ontario and beyond protected for the benefit of all of the many species of flora and fauna that live there and, ultimately, for the health of our planet. We see the research-based work of FOTMW as critical in achieving that goal.”

Friends of the Muskoka Watershed does not have a stable funding source. It depends on membership fees and generous donations, like this from the Chisholm Thomson Family Foundation, to support its work.

“We’d like to thank this foundation for their support so we can continue to protect our watershed forever,” says FOTMW founding director Dr. Norman Yan.

[Make a donation](#)



Friends *of the* Muskoka Watershed
ASHMUSKOKA 

Thank you to everyone who attended our ash drive on January 21.



These volunteers and staff, just a few of the many at the drive, were dressed in their new FOTMW safety jackets ready for action. Over 60 donations were received, totalling over 1890 kg of ash.

Our next drive is on **Saturday, February 18 from 9:30 a.m. to 1 p.m** at the Transfer Station at 1062 Rosewarne Drive in Bracebridge.

Road salt has damaged biota in Jevins Lake

Jevins Lake near Gravenhurst has the highest salt level of any routinely sampled lake in Muskoka, and it has one other distinction. It's the only lake in Muskoka where scientists, in this case led by Robin Valleau, a Queen's University student, have reported that an entire biological community, the animal plankton, appears to have been damaged by road salt. There was only one problem with her demonstration – the community changed as salt levels rose in the lake, and correlations need not indicate cause.

Recently, Robin provided the needed proof. The main change in the Jevins Lake community was the loss of an animal called *Bosmina* – among the most common water fleas in Ontario. Robin and colleagues recently reared *Bosmina* in the lab and showed that they suffer massive damage at about 25 mg/L of chloride, four times lower than the level in Jevins Lake. This moves the Jevins Lake story from correlation to cause. Another piece of evidence that road salt is an environmental threat in many Muskoka lakes.

The environment matters, and with your help, we can protect it.



Friends of the Muskoka Watershed
Citizen Science



MEET OUR CITIZEN SCIENTISTS

We regularly feature those who are helping with this important program

Bill Fee is a supporter and ambassador for FOTMW. He's a member, an ash donor and a citizen scientist too.

He and his study trees live on almost 40 acres about 10 km north of Bracebridge. "I just wanted to help out with Friends of the Muskoka Watershed," he says of participating as a Citizen Scientist. "I'm keen and I wanted to be involved in the research."

Citizen Scientists select two trees on their property. They add a prescribed amount of ash to the soil surrounding one and leave the other as a control without ash. Then at pre-determined times, they collect specific data and submit it to FOTMW.

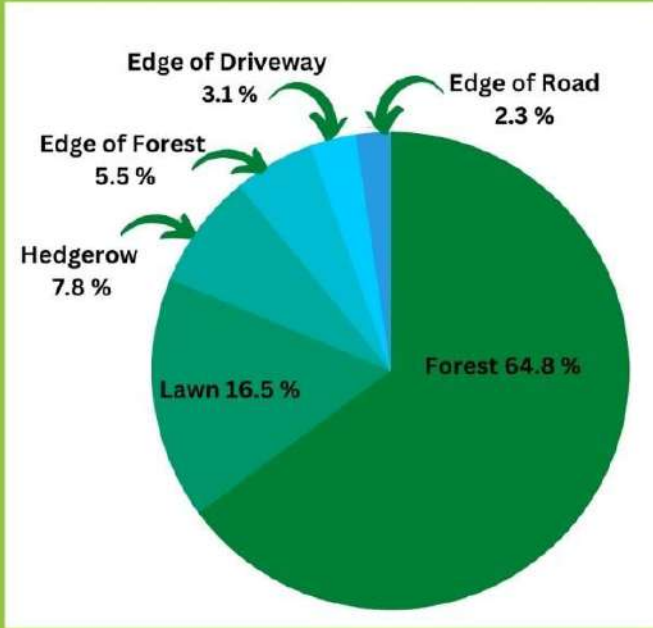
Bill was impressed with the detail in the Citizen Science kit. "It even had gloves and a dust mask," he says. "It was very well done."

Taking care of his forest is something that Bill prioritizes and most of his property is part of a forestry management plan and has been for about 20 years.

"I wanted to be involved in the research"



CITIZEN SCIENCE TEST TREE ENVIRONMENTS

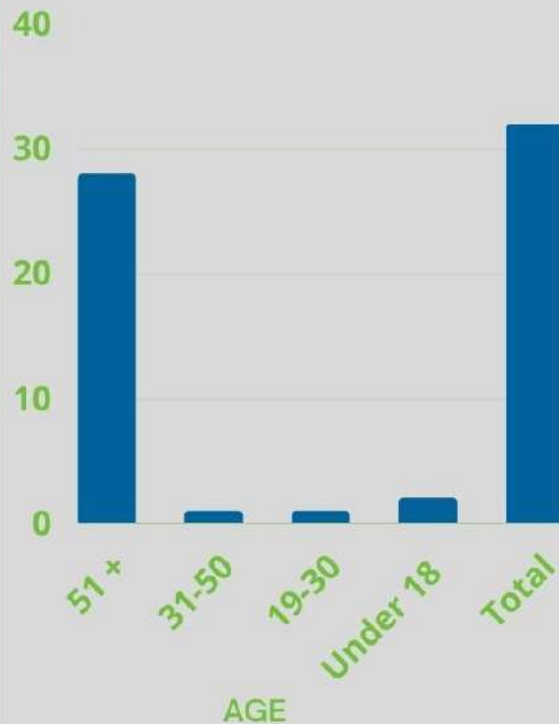


Citizen Scientists chose test tree locations from a variety of environments. Most were in the forest as it made up 64.8 per cent of the tree environments. Next in popularity were lawns at 16.5 per cent. The rest were edge environments such as next to a driveway, road, hedgerow or forest. The least selected environment was the edge of the road at 2.3 per cent.

Age Ranges of Citizen Scientist

A phone survey conducted with Citizen Scientists in the summer of 2022 revealed that most participants were in the 51 and over age category. We know some involved their grandchildren in the monitoring, therefore inspiring a younger generation to take interest in science and learn about the natural environment. In response to the results, we've been reaching out to schools and community organizations to attract younger generations. We encourage everyone to get their friends and family involved, and bring more people into Citizen Science projects. Contact sarah@fotmw.org to learn more.

Citizen Scientists by Age





Friends of the Muskoka Watershed

Friends of the Muskoka Watershed is working to protect our Muskoka Watersheds forever.

Interested in supporting us? We welcome new members, donors, volunteers and supporters. A membership is just \$50 per person, \$90 per family and \$250 for a business. We are a charity and can offer receipts for tax purposes.

Be the change you want to see in the world.

Help us to make a difference.

Contact sandy@fotmw.org if you want to know more.

JOIN as a MEMBER



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***Turning science into community-wide action
to protect your Muskoka watershed.***

***Proactively identifying environmental threats and proposing solutions so your piece
of paradise is preserved for future generations.***

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