

# How Friends of the Muskoka Watershed are reversing the calcium decline issue in Muskoka

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Calcium deficiency in Muskoka lakes has been a long-standing concern since the acid rain era, which lowered calcium levels in about half of the 1600 lakes in Muskoka to a level that damages aquatic life. And it's not just the lakes. Growth and thus carbon capture in many local forests is now also limited by low calcium. Seeing a tree snap in half during high winds may well be a clear sign of low calcium or *ecological osteoporosis* as Dr. Norman Yan, Chair of Friends of the Muskoka Watershed, has coined it.

Friends of the Muskoka Watershed (FMW), incorporated in 2013 as a member-driven, non-profit organization, promotes the protection, wise management, and where necessary, the remediation of Muskoka lakes and watersheds by using research to improve, identify threats to and manage watershed health.

A 2017 study, funded by the Ontario Trillium Foundation, showed that residential wood ash is high in calcium and low in toxic metals, and that many Muskoka residents would be willing to share their wood ashes to help resolve the problem. With these findings, Friends of the Muskoka Watershed went back to the Trillium Foundation and received a grant to develop Canada's first residential wood ash recycling program, ASHMuskoka, to solve the problem of calcium decline in Muskoka's lakes and forests.

Since starting in mid-January 2019, ASHMuskoka has over 500 volunteers collecting dry, clean wood ash from their wood stoves and fireplaces. Dr. Shakira Azan, Project Lead, has worked closely with the District of Muskoka to secure a location for these individuals to drop off their ash during monthly ash drives.

In August, the FMW team met with Dr. Shaun Watmough, Professor and Director of the Trent School of the Environment and a leading expert on calcium decline, plus four of his graduate students. This meeting's purpose was to plan the collection of field data for the applied research component of the three-year ASHMuskoka project.

Twenty, 10 metre x 10 metre plots were laid out in each of three local OMSPA (Ontario Maple Syrup Producers Association) sugar bushes. In each plot, leaf litter, saplings, foliage from the canopy of leaves high up on the trees, and soil samples were collected to quantify the condition of the ecosystem prior to ash additions.

In October, Friends of the Muskoka Watershed, in collaboration with Trent University and volunteers, added the three tonnes of wood ash collected to the plots using a plan that will identify how much ash is needed to replace the calcium lost over the last half century to acid rain. It will take a minimum of two followup years of monitoring to identify the needed dose.

ASHMuskoka is a large undertaking with three universities and, many other scientists working with Friends of the Muskoka Watershed to create a model that other communities throughout Ontario can implement if their areas have also suffered ecological osteoporosis. The District of Muskoka, as well as Norman Miller, MPP Parry Sound - Muskoka, have been invaluable in helping FMW receive the needed regulatory approvals, and assisting in the gathering and storing of wood ash. However, key to our success is the hundreds of Muskoka residents who are keen to participate in what is a new recycling program to help restore Muskoka forests, and indirectly the lakes we love, from what is our most widespread environmental problem – calcium decline. For further information please follow Friends of the Muskoka Watershed on Facebook and Instagram. To become a member please visit their website at [FriendsOfTheMuskokaWatershed.org](http://FriendsOfTheMuskokaWatershed.org)