

Environmental Education and Public Outreach in the Catchacoma Old-growth Forest

Research Report No. 44, Part 2

Ancient Forest Exploration & Research
(ancientforest.org; peterborougholdgrowth.ca)
Powassan, Ontario

by Ania Marcus



photo by Ania Marcus

February 2023

Summary

Ultimately, the most significant lesson we have gleaned from the Catchacoma Forest Project is that effective forest conservation and protection efforts require getting the message out in as many ways as possible. Catchacoma Forest outreach has taken place through public hikes, educational field trips, public talks, educational booths at local events, popular press articles, technical reports, meetings, and a documentary film. The more mediums and approaches used and audiences engaged, the more significant the impact will be.

Purpose of Education and Outreach

Since 2019—when it was discovered that the Catchacoma Forest was the largest known old-growth eastern hemlock stand in Canada—Ancient Forest Exploration & Research (AFER), the Ontario Wilderness Committee (OWC), and the Catchacoma Forest Stewardship Committee (CFSC) have been running education and outreach activities in the Forest.

The purpose of these activities has been to:

- increase awareness of the Forest among local people and communities,
- encourage connections between people and the forested landscape,
- educate people about the Forest’s suite of non-timber values and unique old growth,
- generate awareness about the 2019-2021 logging that took place in the Forest, the upcoming contingency logging scheduled for 2021-2031, and all the work that AFER, OWC, and CFSC have done to halt logging and make the forest a protected area, and
- encourage people to act – to support and advocate for the protection of the Forest.

Catchacoma Forest Stewardship Committee

The CFSC has been an integral force in facilitating education and outreach opportunities to support Catchacoma Forest protection efforts. The Committee is comprised of local citizens such as landowners, cottagers, teachers, students, ecologists, naturalists, seniors, and representatives from the Catchacoma Cottager’s Association, the local rate payer’s association, AFER, and OWC.

Members are intimately familiar with the ecology and history of the local landscape and with the issues of most concern to local residents. Members also have their own unique connections to the local community and beyond, and have used these connections to spread the word about the special values of the Catchacoma Forest and to inform on protection efforts within relevant political spheres. Finally, committee members have facilitated press coverage through outreach and education, and have provided outreach and input to municipal and provincial land use planning processes.

Impact of Covid-19

Covid-19 struck in Ontario shortly after AFER discovered that the Catchacoma Forest was in fact the largest known stand of its kind in Canada—and that the Forest was about to be logged. Though AFER and OWC immediately focused on engaging with the Ministry of Natural Resources and Forestry (MNR), the Ministry of Environment, Conservation and Parks (MECP), and the Bancroft Minden Forest Company (BMFC) to advocate for the protection of the Forest, Covid-19 limited opportunities to engage the public in education and outreach activities to rally support during this time. School closures made bringing classes into the Forest for education more difficult. Meeting in groups was very limited even in the outdoors, which made it difficult to facilitate outreach events.

When meeting in the outdoors was once again allowed, people were still hesitant to meet in groups which continued to make it challenging to unite people to rally protection efforts.

Ultimately, as a result of the pandemic, considerable education associated with the protection of the Catchacoma Forest has been run outside in the Forest since it began over three years ago. Although running activities in the Forest itself is likely the most meaningful for participants, certain barriers can make it challenging to organize and run these activities (i.e. schools not having available funds to bus students to the Forest, liability-related hesitancy of schools to send their students into the Forest, teachers' lack of awareness of the Forest and knowledge of the area, etc.), which were additional challenges during the pandemic and still are today.

Public Hikes

Since 2019, AFER staff and Katie Krelove from the OWC have run ten public hikes in the Catchacoma Forest. From summer biodiversity explorations to winter snowshoeing to observe wolf tracks, spring wetland walks and fall turtle talks, these hikes brought roughly 300 people into a unique Forest experience (Images 1a, 3b). Participants were led through both logged areas and intact old-growth forest as they learned about the history of logging in the Forest and the efforts of AFER, OWC, and CFSC to halt upcoming logging and make the Forest a permanently protected area.

Participants were also taught about the ecology of the landscape – from the species at risk that inhabit the Forest, to its old-growth characteristics, to the ecology of eastern hemlock and why it is so unique to see such a large expanse of this old-growth species in one area. Through the hikes, participants were also taught about the suite of non-timber values that the Forest holds— wildlife habitat, carbon storage, pollination, water and air filtration and purification, human health benefits, recreation, education, and research opportunities, and more. The aim of these hikes was to increase awareness of the Catchacoma Forest among local people, foster a connection between them and the Forest, and ultimately to motivate them to help support efforts to protect this unique and valuable old-growth forest.

Image 1 a, b. Winter solstice public hike in Catchacoma Forest, January 2022



The Peterborough Youth Leadership in Sustainability Program

A major avenue of education and outreach in the Catchacoma Forest over the past three years has been the collaborative partnership between AFER and Youth Leadership in Sustainability (YLS). YLS is an innovative, experiential-learning program founded by Cameron Douglas and based in Peterborough, Ontario that prepares grades 11 and 12 students for leadership roles in sustainability initiatives at local to global levels. In 2019, AFER approached the YLS class with a unique citizen science project opportunity.

This project, funded by the Ontario Trillium Foundation, aimed to find, document and characterize old-growth forests in Peterborough County. Using Ontario government forest mapping data (FRI data), the AFER team had recently discovered the area now known as the Catchacoma Forest – that appeared to hold a significant expanse of old-growth. However, they still needed to conduct considerable field work in the Forest to assess for old-growth features and better understand the ecology, natural history, and conservation values of the area. And so the YLS class joined their call, venturing into the Forest, and learning about citizen science and old-growth forest ecology first hand as they helped AFER to survey the most accessible portions of the Catchacoma Forest.

Before their initial visit to the Forest, students received two full days of training – one in the classroom and one in the field—on establishing plots, assessing habitat features and evidence of logging, trees species identification, measuring tree DBH, and evaluating coarse woody debris. With AFER staff direction, students then established and sampled ten plots in the Catchacoma Forest in order to perform rapid assessments of old-growth characteristics. Students provided approximately 550 person-hours of field effort for this project, and from the data they collected, various reports have been written (i.e., Quinby and YLS 2021; Marcus and Quinby 2023).

With the looming upcoming logging, “our [forest] metrics work quickly turned into advocacy work”—says Cameron Douglas, founder and teacher of the YLS program. The YLS class reached out to BMFC and continued to work with AFER and OWC to advocate for the protection of the Forest. Since their initial venture into the Forest, the YLS class has not stopped contributing to this effort. Each year, a new group of students joins the program and they come to know the Forest in their own way, helping AFER with new research projects and advocacy efforts (Images 2a, 4b).

This past year in October 2022, the YLS class had their first ever over-night field trip into the Catchacoma Forest (Image 3). Carrying their packs and gear 2 km in from Highway 507, they set up a base camp atop a ridge overlooking Pencil Creek with no facilities, running water, outhouses, firepit, picnic tables, or tent pads. A real back-country experience for these 22 students. Over the two days that the class spent camped in the Forest, they helped to establish and sample four plots in the logged areas west of Pencil Creek. While sampling the trees, snags, logs, and stumps of each plot, students learned how to use field sampling equipment such as DBH tapes and calipers, and they learned field techniques such as laying out plots, tree species identification and dead wood decay class assessment (Images 4-5).

This field work was part of an AFER project aimed at determining how much carbon the 2019-2021 logging removed from the Forest and how carbon in logged areas compares to intact areas (Marcus and Quinby 2023). When the field work was finished for the day, students returned to their camp and settled under the stars as they cooked over a fire, told stories, and connected with the land around them in a way that few people have the opportunity to do (Images 6-7). To keep things interesting, temperatures overnight dropped below freezing, but students were prepared and kept their spirits high as they spent the next day exploring the towering old-growth trees east of Pencil Creek.

Image 2 a, b. YLS educational hike, September 2022



Image 3. YLS students setting up overnight camp in the Forest, October 2022



The partnership between AFER and YLS has been a very positive force over the past three years. It has brought over 85 students in critical developmental stages of their lives into a unique landscape, where they have learned about old-growth forest ecology, conservation biology, citizen science, forest management, and environmental advocacy.

Image 4. YLS students sampling a logged plot for carbon project, October 2022



Image 5. YLS students sampling logged plots for carbon project, October 2022



Image 6. YLS class dinner on overnight trip to the Forest, October 2022



Image 7. YLS class on overnight field trip in the Forest, October 2022



Grade 6 Class

In addition to the YLS program, other school classes have ventured into the Catchacoma Forest with AFER and OWC staff as their guides (Image 8). In November of 2022, 30 students from a grade 6 class at Roger Neilson School in Peterborough, Ontario took to the Catchacoma Forest for an educational field-trip guided by AFER (myself) and their teacher, Nansi Harris (Image 9).

Image 8: Fleming College class educational hike and forest bathing trip in the Forest, October 2022



“It was a perfect winter wonderland day and despite the cold and the damp students were thrilled to be out in the woods and awed by the beauty and majesty of the forest”, says Nansi. The class hiked through the stumps of logged areas and then deep into the intact old-growth east of Pencil Creek.

They spent the day among the towering trees – learning the differences between white pine and eastern hemlock, red oak and white oak. They were encouraged to observe and notice things around them – the fungi growing on trees, the various animal tracks, the leaves poking out from the snow that gave hints about what trees were around them. Students got to nibble on wild wintergreen and use DBH tapes to find white pine and hemlock mother trees.

Image 9. Grade six Roger Neilson class educational field trip in Catchacoma Forest, November 2022



A highlight for many students was a silent solo walk beneath the giant hemlocks along Pencil Creek. *“They talked about feeling calm and grounded, and about how they felt peaceful and quiet inside”*, says Nansi. Near the end of the trip, students drank hot chocolate and roasted hot dogs and marshmallows over a fire beside the Pencil Creek wetland—many of them for the first time in their lives (Image 10).

Image 10. Roasting marshmallows with Roger Neilson class, November 2022



This field trip was very special for the many students who had never before experienced a large intact natural area such as the Catchacoma Forest and would not normally have the opportunity to do so because of the costs associated with this kind of trip.

One of the teachers explained to me that, especially for the girls, these experiences in nature were few and far between, if they existed at all. She explained that many girls' families did not view experiences in nature as important, and combined with socio-economic barriers, these kind of nature opportunities were therefore very rare. Due to these barriers, Roger Neilson School covered all costs associated with this field trip so that students could join, even giving them the option to bring their family members if they wished.

Forest Bathing

In the fall of 2022, two classes – an ecotourism class from Fleming College and the YLS class—came to the Forest separately for a unique experience: forest bathing with our guide, Beth Foster. Within the towering old-growth trees east of Pencil Creek, Beth led students through their first ever forest bathing experience—a slow meditative walk where students were frequently invited to connect with the forest using their five senses (Image 11).

Image 11. YLS class forest bathing session with Beth Foster, September 2022



Students were invited to roll sprigs of hemlock between their fingertips and inhale deeply to connect with the smell of the Forest. They were invited to look closely from the forest floor up to the towering canopy for any signs of movement, to connect with the sight of the Forest. Students were invited to drink tea steeped from the hemlock around them, to connect with their sense of taste (Image 12). Again and again, as students walked through the Forest with Beth's invitations in mind, she would ask them: *"what are you noticing?"* Students were encouraged to slow down, observe, notice, and connect.

Image 12. Fleming College class tea ceremony in forest bathing session with Beth Foster, October 2022



Forest bathing, also known as forest therapy or Shinrin-yoku—meaning “*absorbing the forest atmosphere*”—is a term that was coined in 1982 by Yoshifumi Miyazaki, a professor at the Chiba University for environment, health, and field sciences in Japan (Park et al. 2010). Miyazaki was one of the first to conduct scientific research on the health benefits of forest immersion. Now, due to the robust research surrounding the health benefits of forest bathing, it has become an integral part of preventative health care and healing in Japanese medicine and is now spreading across the globe (Park et al. 2010).

Forest bathing has been found to decrease physiological stress, boost immune response and reduce depression and anxiety, namely by lowering cortisol concentrations, pulse rate, blood pressure, inflammatory cytokines, and blood glucose, and by increasing parasympathetic nerve activity (Park et al. 2010; Kuo 2015). Forest bathing impacts physiological, immune system, and mental health responses through various pathways such as phytoncides, which are antimicrobial volatile organic compounds given off by plants, *Mycobacterium vaccae*, a microorganism found in soils, and the sights and sounds in natural landscapes (Kuo 2015).

The accumulating body of research surrounding the health benefits of forest bathing and time spent in nature has led to the development of a novel type of prescription known as “*green prescriptions*”. As the name suggests, these prescriptions allow health care professionals to prescribe time spent in nature to their patients. Across Canada, licensed health-care providers in four provinces – British Columbia, Saskatchewan, Manitoba, and Ontario—are starting to hand out these prescriptions to patients. Some doctors even give their patients yearly passes to Canada’s National Parks, marine conservation areas and historic sites to encourage nature experiences (PaRx 2022). They are doing so through a BC Parks Foundation initiative called *PaRx*—Canada’s first national, evidence-based nature

prescription program driven by health-care professionals who want to improve their patients' health by connecting them to the natural world (PaRx 2022).

Green prescriptions and forest bathing are bringing a new dimension to the environmental movement by intertwining and legitimizing the improvement of human health with time spent connecting with nature. As green prescriptions can be used to cover the cost of forest bathing sessions, they can increase access to this unique type of environmental education that provides people with the opportunity to learn about and benefit from nature in a deeply personal and spiritual way. With this easy access, forest bathing has the potential to make significant positive impacts in environmental education and action across the world, and to counteract the ever-increasing problem of eco-anxiety.

***Saving Catchacoma* Documentary Film**

A major public outreach event run by the CFSC in the effort to protect the Catchacoma Old-growth Forest was the creation and premier of the documentary *Conserving Catchacoma*. This short documentary was produced by Mitch Bowmile, and profiles community efforts to protect the Catchacoma Forest from logging. The documentary was featured in the *2022 ReFrame Peterborough International Film Festival*—a festival showcasing environmental and social justice films in late January 2022.

The film was screened at Patagonia in Toronto for Earth Day in April 2022, and then launched publicly online in June 2022. The documentary has been featured in various articles published in the *Peterborough Examiner* and *Kawartha Now* for awareness-raising and fundraising efforts. It was a semi-finalist for the *Films for the Forest 2022* competition run by Rainforest Partnership (<https://www.filmfortheforest.org/>).

The film can be viewed here:

https://vimeo.com/725771400?embedded=true&source=video_title&owner=1726930.

Press Coverage

The rare old-growth in the Catchacoma Forest and the efforts to protect it have also received considerable press coverage (~20 articles), which has served as outreach to the local community and beyond. Articles written about the Catchacoma Forest have been published in the *Peterborough Examiner*, *National Post*, *Canada Today*, *The Toronto Star*, *Ontario Nature*, and *Kawartha Now* (<https://www.peterborougholdgrowth.ca/press-coverage>). Since 2019, abundant resources and action tools to learn more about the Catchacoma Forest and send advocacy letters to the MNRF, MECP, and BMFC have also been made available on the OWC online platform (<https://www.wildernesscommittee.org/take-action/support-protection-catchacoma-old-growth-forest>).

Meetings

In-person and internet (e.g., Zoom) meetings with government officials, certification bodies, forestry companies, other NGOs, expert advisors, local citizen committees, the general

public, supporters, etc. are good opportunities to educate people about a particular forest conservation issue. These interactions were utilized by the CFSC to get the word out about the non-timber values of the Catchacoma Forest.

Outcomes and Lessons Learned

Students Naturally Engage with Nature

After the Roger Neilson grade six class excursion to the Forest, their teacher Nansi Harris commented that,

“students were their absolute best selves during their trip to the Catchacoma Old-growth Forest. They enjoyed being explorers and adventurers and despite the cold, and the long hike, stayed positive and enthusiastic about how special it was to be in the woods. When we talked about the trip back at school, they were unanimous in their conviction that we need to protect the Forest for future generations of kids and families. And, they want to know when we can go back.”

This positive sentiment was echoed by Cam Douglas, founder and teacher of the YLS program, when discussing his class’ overnight visit to the Forest in November, 2022:

“They loved the overnight that we spent there. To me, a deeper connection happens when you’re able to step back and have that unstructured time in the forest, under the stars, by the campfire, singing songs, waking up in the morning and seeing the mist rising and having slept in the tent. That was a really powerful experience, to have that time in a wild place.”

Cam Douglas also commented on the YLS class’ 2022 forest bathing experience in the Forest, saying,

“I really appreciated the work we did around forest bathing with Beth Foster, to be present in the land and soak in the sounds and smells and feel—it fosters a really deep personal connection. I think that’s a really important starting point for the rest of the world, to feel that deep connection with the forest. And that’s not going to happen with any forest— some forests are heavily tracked out with people, some are close to sound and noise. There is value in the fact that you can walk into this forest and absolutely feel like you are in the wilderness, so that you are able to nurture that deep connection.”

Personal comments like this, from both teachers and students who have visited the Catchacoma Forest, help shed light on the impact and effectiveness of the educational experiences that the CFSC has run in the Forest. In turn, obtaining feedback helps us to modify and improve these educational programs for the future.

Education Value of Catchacoma Forest

We know that education and outreach activities in the Catchacoma Forest are a valuable way of educating people about the forest itself and its protection efforts. However, through these activities we also learned that the Forest has immense educational value for

environmental education and learning in broader contexts. It is a rich outdoor classroom, offering immeasurable opportunities for individuals to learn about the natural world in unique old-growth forest, wetland, and riparian ecosystems.

“We are dialing in more on the relevance and importance of old-growth and the concept of the mother tree, and there’s really not many places around this locale where you can get into an old-growth forest like Catchacoma and see what these mother trees look like... the canyon, the wetland, all these things are pieces you can throw together in conversations about water courses, water buffers, the roles that wetlands play” says Cam Douglas.

The Forest may also be particularly impactful for some individuals’ life-long learning and career directions. For example, in *ReWilding the Classroom*, a documentary about the YLS program, one student commented that “I really enjoyed going up to the Catchacoma Forest and plotting out how much carbon was in the area. That’s something that really interests me and I think that could be something I could actually do as a career when I’m older.”

The forest’s close proximity to Peterborough (~45 min) provides an incredible opportunity for the 6 large high schools, 20 elementary schools, and various post-secondary education institutes such as Trent University and Fleming College in Peterborough to engage in meaningful, local, outdoor environmental education.

Action

It is evident from personal reflections that students took away positive, meaningful experiences from their time in the Forest. At the CFSC we see this as a major success, as one of the main purposes of these education and outreach activities is to cultivate connections between local communities and the Forest. Measurable action is also very important, so a lesson we have learned through these education and outreach activities is to encourage students and participants to engage with the OWC action tools and write letters to decision-makers after and based on their experiences.

A total of 272 people engaged in the December 2019 – June 2021 action tool that sent an email to MNRF and BMFC in support of a moratorium on logging. After the moratorium was granted in 2021, the OWC’s action tool changed and now sends emails to the MECP in support of permanent protection for the Catchacoma Forest. To date, 171 people have engaged with this tool and it is still active.

Through conversations with students from different classes and field trips, we have also learned how much students enjoy stepping outside of the classroom to experience the outdoors in a hands-on way. This is especially true for some students who find in-class learning styles to be challenging but excel in an experiential learning environment. As such, we continue to offer education and outreach events outside in the Catchacoma Forest.

Access to Nature

Through these education and outreach activities we have also learned that there are considerable socio-economic barriers that prevent some people from accessing natural areas. Within the formal education system, field trip costs are usually the responsibility of students' families, some of whom do not have the means to send their children on outdoor education experiences. Without funding opportunities to support outdoor and environmental education in Ontario's school systems, financial support to help children that cannot afford these experiences is difficult to obtain. Therefore, AFER is now looking to start an education fund to cover transportation costs for schools wishing to bring their students into the Forest.

We also learned from the Roger Neilson class excursion that inviting students' families, parents, and/or guardians to participate in outdoor education trips can be an effective way to get students comfortable in nature. It is relatively common for children and/or their families to be uncomfortable or fearful in the outdoors if they have spent little time in it. Hence, cultivating EE that families can experience together may increase student and families' comfort levels in the outdoors and the likelihood that they will choose to seek out natural places in the future.

Indigenous Communities

One facet of EE and public outreach in the Catchacoma Forest that is very much still in progress is the effort to integrate local Indigenous educators, knowledge, and ways of knowing into these events. CFSC has reached out to Curve Lake First Nation and has connected with two local Indigenous ecologists about collaborating in Catchacoma Forest protection efforts. However, we are still working to establish a stronger relationship with these groups at the community level. One of our current funding applications specifically includes funding for the development of this effort.

The Upshot

Ultimately, the most significant lesson we have gleaned from the Catchacoma Forest Project is that effective forest conservation and protection efforts require getting the message out in as many ways as possible. Catchacoma Forest outreach has taken place through public hikes, educational field trips, public talks, educational booths at local events, popular press articles, technical reports, meetings, and a documentary film. The more mediums and approaches used and audiences engaged, the more significant the impact will be.

Additional Resources

To access the AFER reports that draw on research conducted with the YLS class, as well as other Catchacoma Forest-related research and reports, please follow this link:

<https://www.peterboroughldgrowth.ca/research-reports>

Acknowledgements

AFER respectfully and gratefully acknowledges that our field research activities for this project took place on the traditional territory of the Mississauga Anishinaabeg. Financial support for this work was provided by ECO Canada, Ron Waters, Nadurra Wood Corporation, and the Windover Forest. We thank the Catchacoma Forest Stewardship Committee for their continued support and encouragement. Another thank you to the wonderful volunteer, Sammy Tangir, who inspired the introduction reflection, and all other individuals, students, and teachers that have participated in education and outreach surrounding the Catchacoma Forest. Peter Quinby provided editorial input and review.

AFER's Mission and Guiding Principles

AFER is a non-profit scientific organization with a mission to carry out research and education that leads to the identification, description and protection of ancient (pristine) forested landscapes, including old-growth forests. The earth-stewardship principles that guide our work include the following.

- Many forest ecosystem types are now endangered. We consider these ecosystems and other ancient forests to be non-renewable resources, which is not consistent with the practice of mining or logging them.
- We consider biodiversity conservation needs at local, provincial, federal and international scales.
- We support the Government of Canada's commitment to increase protected areas to 30% of the Canadian land base by the year 2030.
- We support the *New York Declaration on Forests* to end natural forest loss by 2030.

References

- Kuo, M. 2015. How might contact with nature promote human health? Promising mechanisms and a possible central pathway. *Frontiers in Psychology* 6:1093.
- Marcus, A. and P. Quinby. 2023. Carbon Storage Reduction and CO₂ Produced by Logging in the Catchacoma Old-Growth Forest. *Research Report* No. 43, Ancient Forest Exploration & Research, Powassan, ON.
- Park, B. J., Y. Tsunetsugu, T. Kasetani, T. Kagawa and Y. Miyazaki. 2010. The physiological effects of *Shinrin-yoku* (taking in the forest atmosphere or forest bathing): evidence from field experiments in 24 forests across Japan. *Environmental Health and Preventative Medicine* 15:18-26.
- PaRx. 2022. Learn More about PaRx. *PaRx: A Prescription for Nature*. <https://www.parkprescriptions.ca/en/about>.
- Quinby et al. 2021. A Rapid Old-growth Forest Survey to Assess for Old Trees, Evidence of Logging and Coarse Woody Debris in the Heart of the Catchacoma Forest: A Citizen Science Project. *Preliminary Results Bulletin* #11, Ancient Forest Exploration & Research, Powassan, Ontario.