

Project Impact, Participant Feedback and Lessons Learned:
An Eight-Month Review

**Developing a Culture of Forest Conservation:
Mapping Old Growth in Peterborough County**



Jackson Park Old-growth Forest, Peterborough, Ontario

Ancient Forest Exploration & Research
November 26, 2019

1. Project Impact

Determining our impact in the community is an important objective for our Seed Grant-funded Peterborough Old-Growth Forest Project. We strive to make positive change in community attitude toward forests to foster a culture of forest conservation. We believe that the most effective way to facilitate this is by connecting people directly with old-growth forest landscapes, which we have done since May of this year by inviting community members to local forests for interpretive hikes and forest surveys.

So far, we have encouraged almost 250 people across Peterborough County to engage with, and learn about, the old-growth forests in their communities and have received feedback from dozens of community members indicating that our efforts are paying off. The first outreach program was to hold bi-weekly interpretive walks in the City of Peterborough's Jackson Park, where AFER identified three old-growth forest stands in 2016. We named these "Wednesday Forest Walks", which ran every other Wednesday from May 8, 2019 to October 30, 2019. In total, 82 people (almost all adults) attended these walks. Some who attended were also long-time Peterborough residents who were visiting the Park for the first time.

Starting in September we requested feedback on these walks using hardcopy and online surveys that were completed optionally and anonymously. We also advertised the online survey in two e-mails sent to our e-mail subscribers and in two social media posts. We received 14 responses in total, 12 of which were completed in-person (via hardcopy) and two of which were completed online.

Most respondents had a positive experience but indicated that the experience could have been enhanced in some way, such as by providing supplementary handouts or adjusting the frequency/timing of walks. Of the 14 respondents, 79% (11) appreciated forests more following a walk, and 85% (12) appreciated forests more or slightly more following a walk. 100% of respondents were interested or very interested in returning to a future walk. A full breakdown of results is provided in Appendix A.

We approached Outward Bound Canada to inquire if they run expeditions in northern Peterborough County. They do not, so we partnered with them to test our *Old-growth Survey Protocol 1* further north in Algonquin Park. In August, we invited community members to join us at Mark S. Burnham Provincial Park to test our old-growth forest survey protocols and to help us collect data that could be compared to other old-growth forests in Peterborough County. We conducted several forest surveys over three days in August with the help of 15 citizen scientists. Feedback was requested recently through an anonymous, online survey which was completed by 4 participants.

Following this, we collaborated with Youth Leadership in Sustainability (YLS) students, a one-semester high school program (KPRD School Board) focused on environmental and world issues. Prior to visiting the old-growth forest to conduct field surveys, we provided training in basic tree identification skills and introduced them to old-growth forest characteristics and values at Jackson Park. Following this, we spent two full days in October conducting forest surveys in Canada's largest known eastern hemlock old-growth forest at the north end of Catchacoma Lake.

2. Participant Feedback

Three out of four Jackson Park Walk respondents (75%) said that they appreciated forests more after the experience (one respondent answered that they felt the same level of appreciation) and all respondents' moods improved while conducting forest surveys. Recommendations to improve this experience included equipment upgrades and improved coordination and planning to make it easier for volunteers to accommodate forest surveys into their schedule. A full breakdown of results is provided in Appendix B.

To collect feedback from the class, we sent a list of questions to the teacher, Cameron Douglas, who surveyed the class on our behalf. The feedback we received (Appendix C) from the class was overwhelmingly positive: 100% of students who submitted responses (22) said that they appreciated forests more and their descriptions of their mood indicate that all 22 students' moods improved in some way (e.g., felt happier, more relaxed and calm, etc.). Of 20 respondents,

15 stated that they learned “a lot” or a “moderate amount” from this experience and the main recommendation we received was that forest surveys should be extended by camping overnight.

“I felt really happy. I got to spend time outside in a forest that was much older than I was, which is a really humbling experience. As well, being outside in the fresh air always makes me feel better, especially with other like-minded people. After we got off of the bus, I could feel any negative emotions drift away.”

YLS student on their experience conducting forest surveys with AFER

Of those who completed feedback surveys, 93% of respondents (37/40) stated that they appreciated forests more or slightly more following forest walks and surveys and all forest survey participants experienced an improved mood while completing surveys.

We also received a very supportive letter from Chris Falcioni, Northern Ontario Program Manager at Outward Bound Canada (OBC), a youth outdoor education and wilderness travel program. Several groups at OBC tested our *Old-growth Forest Survey Protocol 1* on their trips throughout Algonquin Park (Appendix D). While participants were not directly surveyed, Mr. Falcioni states that “students and instructors were very excited to participate” and that this activity was sometimes the “highlight of the wilderness experience”. Lastly, he stated that, “we are very much looking forward to continuing on with this important and successful component of our program. Looking to the future, it would be very useful to us to have additional maps of old-growth forests for all areas of Ontario and Quebec where we send our expeditions.”

The positive feedback provided by YLS students and Outward Bound suggests that our work may have a larger impact on youth than on adults. Moreover, evidence suggests that connecting children with the wilderness has a positive impact on environmentally-conscious behaviours in adulthood (e.g., Wells and Lekies 2006, Chawla, 2007, Rosa et al. 2018). If we continue to engage with this class and others like it in old-growth forest exploration, we will indirectly - and perhaps significantly - support the conservation of old-growth forests by inspiring today’s youth to be tomorrow’s environmental stewards.

At the same time, we will need to continue monitoring and adapting our approach to ensure that our programming continues to be effective and improve to ensure that we are making the most meaningful impact possible. While all survey respondents reacted positively to their experience(s) with AFER, many had recommendations to improve our programming, including diversifying our teaching approach, planning events further in advance, and adjusting the timing or length of events. It is also clear that we should consider offering both basic and advanced activities, since a few respondents indicated that they only gained a marginal amount of knowledge from their experience.

3. Lessons Learned

- **Where are the old-growth forests at risk located, and what are their features?** All old-growth forests in Ontario’s Temperate Forest Region including Peterborough County are at risk (rare, threatened or endangered). A few months into this project, we realized that we could not be effective if we continued to include a focus on private lands. This decision was made based on two main factors: (1) there is no useful mapping that provides forest composition and age for the southern part of the county and (2) the primary mandate of land trusts, such as the Kawartha Land Trust, is to focus on private lands. Typically, land trusts do not concern themselves with public lands. Thus, to fulfill this need, we decided to concentrate on public lands. Please see the uploaded document for our mapping work: *Project Accomplishments: An Eight-Month Review*.
- **Where are insect/disease resistant trees located?** Due to the time required, we will not search for disease-resistant trees, but we will record observations of those we find.
- **What is the most effective way to recruit and retain high quality stewards?**
 - A focus on organized groups doing both formal and informal outdoor education and wilderness recreation was the most effective approach since old-growth surveys can be added to an existing program/curriculum

with minimal logistical and people management demands on AFER. By providing the science component to an outdoor experience, AFER can avoid the organizing and managing required with groups in the field. The two groups that we worked with in 2019 that fall into this category are Outward Bound Canada and the YLS class, both of whom want to continue the old-growth forest surveys next year. We expect that children's summer camps that run canoe trips will also fall into this category (see letter from Dr. Henderson, Appendix E). We had an agreement with Camp Pathfinder in Algonquin Park to apply our *Protocol 1* as part of their canoe trips but the director became ill and could not follow through on the project.

- Focusing on retaining a few high quality stewards has been effective (e.g., Jesse Archer very keen, was able to attend several events on short notice).
 - Getting out into the community to tell people who we are is a good way to connect with potential volunteers.
 - We have developed a list of many interested volunteers but we have fewer volunteer opportunities than people who are willing to help. The main reason for this relates to the significant time commitment required to plan volunteer events, develop volunteer roles, coordinate volunteers and maintain quality results. Sometimes volunteers must work independently, but there is no guarantee that the work product will be acceptable. For example, we spent a lot of time working with one volunteer (university student) to produce a species-at-risk report that was not completed and contained several errors.
 - Building a larger group of volunteers for outreach events would have been helpful to prevent event cancellations and to lessen competition for volunteers with partner groups. For example, a request for volunteers was distributed to our e-mail list of over 100 people and there were no responses to this.
 - Volunteers are generally available evenings and weekends, which does not align well with a typical Monday to Friday work schedule.
 - One issue we have is that we lack simple but rewarding tasks for volunteers to do in the office that would keep them continually engaged and help us to retain them. One such task could be counting tree rings, another could be entering data.
 - One or two-night weekend expeditions advertised in advance may work well but requires that staff work on weekends. We did not test this, but we should.
- **What level of relevant experience, if any, is required?** People with no previous experience in forest ecology and sampling have successfully learned and applied our field protocols. Our most complicated protocol (*Protocol 3*) has been completed by a diverse group of people with a wide age range, from high school students to retirees, all with different levels of tree/forest knowledge. Some familiarity with tree and shrub species identification is helpful and speeds up forest surveys. Mobility issues may limit retirees to areas where terrain is not too challenging.
 - **What training materials and methods are most effective?**
 - *Protocols 2* and *3* essentially require participants to “learn by doing”. Written instructions were often not read beforehand, and although instructions were always included in field packages, these were seldom consulted/followed (especially for the YLS class).
 - It could be beneficial to create instructional videos for participants to watch prior to conducting field work and to supplement written instructions. These could be particularly helpful for classes that could watch videos during class time and ask questions afterwards.
 - There are many protocols for increment boring (to get a tree core for aging) exist, but there are few that describe aging trees via ring counts. Since we have been coring many old trees, it would be good to emphasize taking pictures/videos of the core as it is being extracted just in case pieces are dropped and/or mixed up. Pictures should be taken again in the lab once a core is laid out to dry for the same reason. It can be very difficult to determine which pieces go together if this happens, and may lead to inaccurate aging (e.g., if you count a section of core that was beyond the pith).
 - **Do steward attitudes change because of participation?** Yes. We evaluated our Wednesday Forest Walks and found that 11/14 (78%) appreciated forests more after completing the walk. Cameron Douglas, the YLS teacher,

stated that “I can say that my class was at its VERY best in the forest. The group approach to the survey work got them collaborating on a real, hands-on and relevant project. And collaborate they did!!”

- **Which partner organizations can help collect data, apply it to conservation objectives, and sustain elements of the program beyond the funding term?** Currently, there is no single organization that can meet all three of these objectives. Those organizations that are best for collecting data are not the same as those that have an interest in participating in developing ancient forest conservation strategies, for the most part. However, this is not a problem since there is no need for a direct interaction between data collection and developing conservation strategies. AFER will likely be the only organization that will take on this program beyond the funding term. See uploaded *Accomplishments* document for more information on partners.
- **What are some applications and outcomes of collecting the data?** Citizen scientists will develop a greater connection to and appreciation for forests. Analysis of data collected can help to inform management decisions. For example, available, verified old-growth mapping will help to avoid the logging of significant old-growth forest stands when used in forest management planning. More information on forests also helps to raise public awareness of the significance of local forests by sharing data such as tree ages, and comparing data to those of other well-known old-growth forests helps to determine all levels of natural heritage significance (regional, provincial, national). And lastly, data is the foundation for developing strong and lasting *Ancient Forest Conservation Strategies*.

4. References

Chawla, L. 2007. [Childhood Experiences Associated with Care for the Natural World: A Theoretical Framework for Empirical Results](#). *Children, Youth and Environments* 17:144-170.

Rosa C. D, Profice C. C., Collado S. 2018. [Nature experiences and adults' self-reported pro-environmental behaviors: the role of connectedness to nature and childhood nature experiences](#). *Frontiers in Psychology* 9.

Wells, N. and Lekies, K. 2006. [Nature and the life course: pathways from childhood nature experiences to adult environmentalism](#). *Children, Youth and Environments* 16:1–24.

Appendix A. Wednesday Forest Walk Questions and Response Breakdown (number of people who selected a response is in brackets)

1. How much did you learn from the walk you attended?

- a) A lot (9) b) A little (5) c) Didn't learn anything (0)

2. How has this walk changed your appreciation of forests? "I appreciate them ____":

- a) More (11) b) Slightly more (1) c) No change (2) d) Slightly less (0) e) Less (0)

3. How enjoyable did you find the walk you attended? (Respondents chose number from 1 (did not enjoy at all) to 5 (very enjoyable))

1 (0)	2 (0)	3 (2)	4 (7)	5 (5)
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4. How interested are you in returning to a Wednesday Forest Walk?

1 (0)	2 (0)	3 (0)	4 (5)	5 (9)
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5. Please identify any strategies that would make walks more enjoyable or assist your learning experience. Circle all that apply.

- a. Invite more guest speakers (6)
- b. Provide supplementary handouts (5)
- c. Increase frequency/change time of walks (5)
- d. Other (1)

Additional comments and recommendations:

Response #	Response
1	Maybe pre-collected leaf samples that can be examined up-close and in detail
2	Special field trips!!
3	If they were later in the day during summer I could attend more often. However it's getting dark sooner so that wouldn't be good for walks! Love the walks!
4	Awesome job!
5	I appreciate being able to share this knowledge with my grandchildren they have a sense of awe of nature and I want to help grow this awe
6	Enjoyable informative tour; great hosts
7	Walks that start a bit later in the heat of summer, when there is enough light. 5:30 is a wee bit early to get from work to walk, though I understand it's necessary to not be in the total darkness. Otherwise the walk I attended was so inspiring, I loved being led by a crew of talented young woman who clearly hold a passion and love for trees! Thank you for making learning about trees free and accessible , this walk series is awesome
8	Very enjoyable; pleasant, knowledgeable guides
9	Could potentially use twig samples to help with more I.D. skills (e.g. arrangement: alternate v.s opposite)

10	Very knowledgeable guide.
11	Wonderful! Enjoyed the length of the walk.
12	Talk more about ecology (e.g. microbes, soil, old-growth population)
13	I loved how inviting Carly was to questions, and how she encouraged the participants to contribute. Its wonderful to have regular "tree talks" as part of our community.
14	[In response to question 5] focus on ecology; Provide more "fun facts" commentary, challenge the group to look for something as they walk, explain the importance of old growth.
15	[In response to question 5] make weekly
16	[In response to question 5] medicinal plants
17	[In response to question 5] Mornings
18	[In response to question 5] Weekly

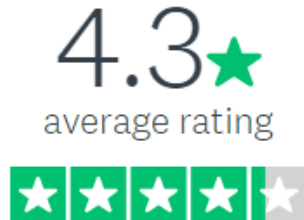
Appendix B. Mark S. Burnham Provincial Park forest survey participant survey questions and responses

Q1

Customize Save as

Please rate how much you learned from your old-growth forest survey experience on a scale of 1 to 5 (1=didn't learn anything, 5=learned a lot).

Answered: 4 Skipped: 0



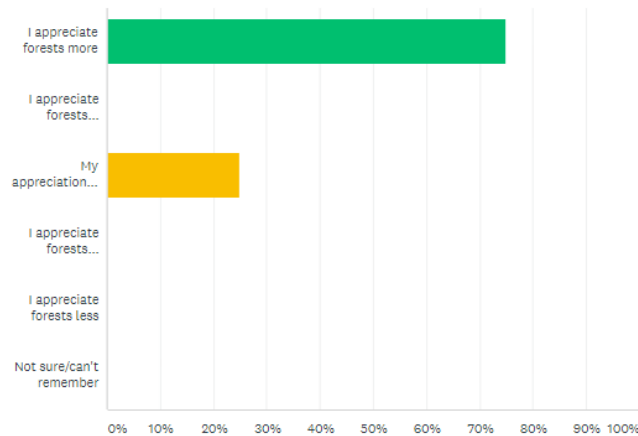
	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	0.00% 0	0.00% 0	25.00% 1	25.00% 1	50.00% 2	4	4.25

Q2

Customize Save as

Describe how your appreciation of forests was affected by your time spent in an old-growth forest.

Answered: 4 Skipped: 0

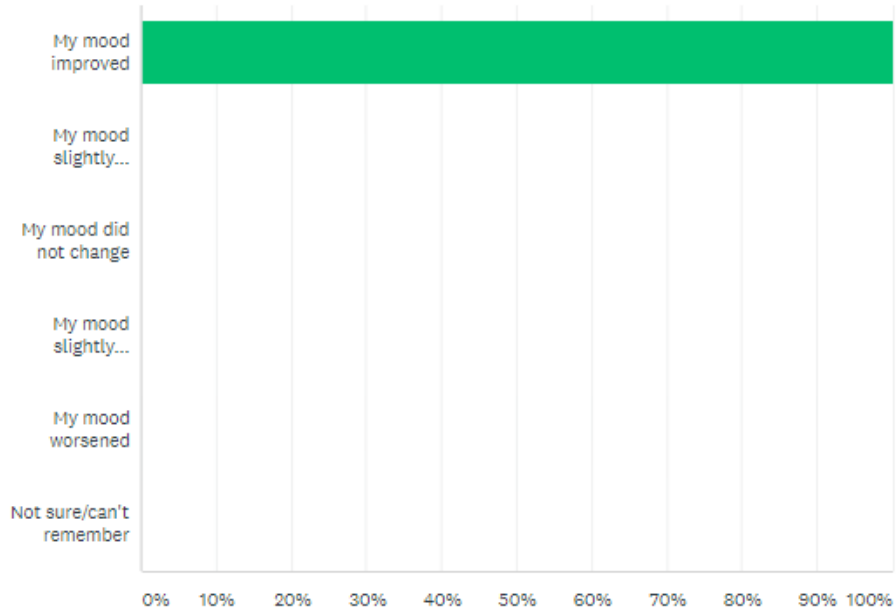


ANSWER CHOICES	RESPONSES
I appreciate forests more	75.00% 3
I appreciate forests slightly more	0.00% 0
My appreciation of forests did not change	25.00% 1
I appreciate forests slightly less	0.00% 0
I appreciate forests less	0.00% 0
Not sure/can't remember	0.00% 0
TOTAL	4



Describe how your mood was affected while completing old-growth forest surveys.

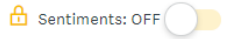
Answered: 4 Skipped: 0





ANSWER CHOICES	RESPONSES
▼ My mood improved	100.00% 4
▼ My mood slightly improved	0.00% 0
▼ My mood did not change	0.00% 0
▼ My mood slightly worsened	0.00% 0
▼ My mood worsened	0.00% 0
▼ Not sure/can't remember	0.00% 0
TOTAL	4

What made old-growth forest surveys enjoyable?

Answered: 4 Skipped: 0

RESPONSES (4) WORD CLOUD TAGS (0) 

Apply to selected ▾ Filter by tag ▾ Search responses  

Showing 4 responses

<input type="checkbox"/>	Being in the forest, learning the process and time spent with good people	11/14/2019 8:22 PM	View respondent's answers	Add tags ▾
<input type="checkbox"/>	Being in nature and learning g about nature.	11/14/2019 7:01 PM	View respondent's answers	Add tags ▾
<input type="checkbox"/>	Working with like-minded and knowledgeable people who could increase my knowledge. Being in the presence of the trees with the time taken to appreciate their grandeur.	11/14/2019 6:47 PM	View respondent's answers	Add tags ▾
<input type="checkbox"/>	Learning how to use a tree core sampler, and simply being in the forest.	11/14/2019 4:15 PM	View respondent's answers	Add tags ▾

What could AFER do to improve facilitating forest surveys?

Answered: 4 Skipped: 0

RESPONSES (4) WORD CLOUD TAGS (0) Sentiments: OFF

Apply to selected ▾ Filter by tag ▾ Search responses  

- Showing 4 responses
- Doing a great job and Carling is a great leader
11/14/2019 8:22 PM [View respondent's answers](#) [Add tags ▾](#)

 - not sure
11/14/2019 7:01 PM [View respondent's answers](#) [Add tags ▾](#)

 - Produce a calendar of potential survey dates so one could plan ahead and become more involved. I felt like I missed some or the request came with too little lead time for planning. I would have been happy to repeatedly get involved to increase my skills and feel like I was actually useful instead of just being trained.
11/14/2019 6:47 PM [View respondent's answers](#) [Add tags ▾](#)

 - I'm not sure. I thought it was great as is. Maybe some equipment upgrades, as some pieces were quite old and slightly deteriorated.
11/14/2019 4:15 PM [View respondent's answers](#) [Add tags ▾](#)

Appendix C. YLS survey questions and responses (number of people who selected a response is in brackets)

1. Please rate how much you learned from your old-growth forest survey experience on a scale of 1 to 5 (1=didn't learn anything, 5=learned a lot).

1 (0)	2 (0)	3 (5)	4 (10)	5 (5)
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2. Do you appreciate forests more/less/the same after completing old-growth forest surveys?

Less (0)	The same (0)	More (22)
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3. Was your mood affected by your time spent in an old-growth forest? How did it make you feel?:

Response #	Response
1	As the instructor, I can say that my class was at its VERY best in the forest. The group approach to the survey work got them collaborating on a real, hands-on and relevant project. And collaborate they did !! They were in such good spirits. They begged to be able to do this as a field camp where we'd stay overnight - they just wanted to be there in the forest and soak in it. For me, personally, I felt so at peace in the forest. It was so quiet, and the sun was filtering through the canopy. I felt very few of the pressures I would in a normal classroom ... in part b/c I was relaxed, and in part b/c I knew my students were so engaged and in good spirits.
2	Made me feel curious and attentive to detail. The change of setting helped me to feel more relaxed.
3	Yes my mood was effected positively. i felt a lot more calm and happy. i wanted to spend longer there.
4	My mood was affected after the time spent in the forest. especially after doing the individual sits we did. a feeling of inner peace was prominent.
5	I felt a lot happier in the forest than spending time in the classroom. I was more inclined to put my best foot forward and try my hardest during the work.
6	Yes. I felt reinvigorated by the fresh energy of the forest, and the exuberance of my peers.
7	I felt a lot happier in the forest learning than in the classroom. it was very nice to be with my classmates outside. i felt a strong feeling of inner peace and calm after being in the forest.
8	I felt really happy, I got to spend time outside in a forest that was much older than I was. Which is a really humbling experience. As well being outside in the fresh air always makes me feel better, especially with other like minded people. After we got off of the bus I could feel any negative emotions drift away.

9	Yes. I was energized and happier than normal
10	It was really fun, and made me really happy being in the forests. It made me really appreciate the work that AFER does. I also love to be outside in nature and with the hands on experience that went along with it just was incredible.
11	I always feel more relaxed and fully happier in the forest. I really enjoyed the solo sit time and free time at lunch surrounded my trees and on two beautiful sunny days. It made me miss my summer camp and the canoe trips that I go on- I don't have enough of a relationship with nature in the city
12	I felt really calm and peaceful in the forest. I enjoyed the work we did and being surrounded by nature
13	Yes, my mood was affected and it made me feel happier and calmer.
14	I felt calm and happy when I was in the forest. I thought that it was a wonderful experience and I think back on it all the time.
15	I loved being in the forest. It made me feel really calm and connected to a larger community and the land. Being with the trees was really grounding and overall a great experience.
16	I loved being out in the forest, I felt more at one with nature and more connected to my peers.
17	My mood was peaceful, I felt very free in the forest. I felt more human and more connected.
18	I was more calm and happy.
19	I felt happier, and more capable while in the forest.
20	It made me feel happier and more content with nature. It made me appreciate more of the little things nature has to offer.
21	I felt happy and cheerful-woodmaster
22	I love being in the forest. It's relaxing and calmful listen to nature.
23	I loved being in the forest as it made me feel relaxed from my outside world and happy if I was having a bad day. Loved being surrounded by old trees and connected with nature.

4. What made old-growth forest surveys enjoyable, and what could AFER do to improve facilitating forest surveys?

Response #	Response
1	Instructor: Spectacular forest. Confidence in our approach (great pre-coaching by AFER staff, on methodology and tree ID). Our group survey "kits" were SO well organized - everyone had exactly what they needed to move quickly forward. Hands-on - groups of 5 worked well b/c everyone had something to do. Next time, if possible and weather cooperating, it would be lovely to do the "context" lecture (about OG forests in general, threats, protection policies etc) in the forest. But this may take away from survey time, so may or may not be beneficial.
2	Mainly the change of scenery and the fact of being in a forest. I think that more emphasis on tree ID would've made it more enjoyable and fun.
3	The learning done in an outdoor environment, about the very subject we were surrounded by, was very immersive and therefore a uniquely valuable educational experience.
4	Learning about how you can collect data without hurting or cutting down the trees and learning about how old trees can get and the important role of them was enjoyable.
5	I loved being out of the classroom and doing work that will impact my community. More free time to explore the forest would have better enhanced the experience.
6	It was just the whole experience and I was able to do it with my friends so that was great. We were able to help the forest and have fun at the same time.
7	I loved spending time outside and being outside of the classroom. I think switching the groups would be enjoyable to bond with more people as well as more organized meeting places and times because I was sometimes stressed about meeting up with people.
8	During our time in the old growth forest I found enjoyment from the freedom to explore and the time spent around the beautiful scenery made it enjoyable. having more time to spend time exploring the would have been more enjoyable however.
9	We had a lot of freedom but at the same time we were still able to experience and learn a lot. Something that could improve it would be more exploration time as well as having the transects further apart to be able to gain a better understanding of different within the forest.
10	I really enjoyed being able to do things at our own pace, while still being able to help out. It was enjoyable being in the field, surrounded by beautiful trees and knowing that we were doing something to help. I think the experience was wonderful, the only improvements being having more time to enjoy the forest and explore.

11	I loved learning about the different trees and parts of the forest and having time to soak in all that was around us. Next time maybe have different activities along with the tree surveys and time to explore.
12	Working outside was really enjoyable and I learned a lot. I loved the excitement of measuring trees and seeing what ones were old growth and the different ages and species of the trees. I think it would have been cool to see some of the next steps and more like lab work that goes along with what we did. I wished that we could of looked and maybe counted the rings in the cores that we did. Overall, it was a really enjoyable experience and I learned a lot.
13	I was able to connect with my classmates and nature and it was a great destressing day. I loved being out in nature for the whole day. I think we could have had more transects because we finished rather quickly
14	I felt the forest surveys went very well and i enjoyed it very well. i don't think that AFER could do anything to improve it.
15	Being out in the real forest and learning really interesting skills that could help me understand the forest as well as others. I also loved that we had to bushwhacked to get there, making the experience more real to me. I also loved that we got the chance to core the trees and figure out how old the trees are. I really enjoyed being able to look at the data after and see how the scientists would look at the data and compare it to others. I cannot really think of anything to make it better.
16	The surveys were really fun, and I loved the hands on experience and learning how to do this. It was really nice to just be able to go off and learn all about the sector that you got. I wouldn't change anything with how the program was facilitated. I liked the pre stuff we did before going into the forest and all the identification.
17	The surveys were great, hands on, and I learned more through the experience. I honestly can't say anything else they could of done.
18	It was enjoyable because of the group setting, and the only improvement would have been if it hadn't been raining.
19	It was really nice being out in nature and getting to learn about trees in a more hands on environment
20	Being with the class and my friends while doing something i never thought i would enjoy.
21	Spending time in nature, what would make it better would if we had more time to explore
22	I loved the science and the hiking to the sites that made it enjoyable. Can't think of anything to do different to make anything better. Loved everything!

Appendix D: Letter from Outward Bound Canada



**OUTWARD BOUND
CANADA**

Outward Bound Canada
2200 Yonge Street # 1601
Toronto, Ontario
M4S 2C6

To Whom it May Concern,

This summer we partnered with Dr. Peter Quinby, Chief Scientist at Ancient Forest Exploration & Research, to conduct old-growth forest surveys on some of our outdoor education courses at Outward Bound Canada (OBC). Our Instructors facilitated some data collection around locating, identifying and documenting old-growth trees throughout Algonquin Park. Armed with measuring tapes, GPS devices, cameras and tree ID information, over 60 students on 7 different courses collected the field data in small groups during their wilderness expeditions.

This activity fits very well with our mission at OBC as we strive to connect people with the natural environment as well as to provide service to the community we live in. One of the four pillars of an Outward Bound course is service. Our instructors were able to use this activity for teachable moments, not only on how to identify trees and make observations about the natural environment in these areas, but also to talk about the value of old-growth forests (e.g., carbon storage, biodiversity protection, etc.) in our local and global ecosystems.

This service project was a key component of the expeditions that were able to incorporate it, and the students and instructors were very excited to participate. For some trips, the old-growth survey work was a highlight of the wilderness experience. We are very much looking forward to continuing on with this important and successful component of our program. Looking to the future, it would be very useful to us to have additional maps of old-growth forests for all areas of Ontario and Quebec where we send our expeditions.

Should you have any questions regarding our involvement in this partnership, feel free to connect with me at chris_falcioni@outwardbound.ca

Thank you,

Chris Falcioni
Northern Ontario Program Manager

Appendix E. Letter from Dr. Robert Henderson



Peter Quinby <peterquinby5@gmail.com>

Contact

Henderson, Robert <bhender@mcmaster.ca>
To: Peter Quinby <peterquinby5@gmail.com>

Wed, Nov 20, 2019 at 9:28 AM

Peter, I more than support AFER's initiative to advance citizen science through summer camp participation in environmental stewardship and education, I want in. I would love to see this in action and report on same to both paddling and outdoor/environmental communities. Why? Because this is exactly the kind of work youth (all really) needed on many fronts. What an inspiration here for participants, for communities and for your important work. Service components in outdoor education have waned over the last few decades. Here you will help advance this rewarding work not just soul searching disheartened (perhaps) youth and not just for the forest (let's not ever forget this central mission) but also for the education field overall.

This is the exact work all 3 mentioned above need. I would be honoured to be part of your team and will, I hope, help in many ways in years ahead.

Bob Henderson, McMaster University (retired). Active in Education. see www.bobhenderson.ca

Sent from my iPhone
[Quoted text hidden]