

August 31, 2024

The Forestry Commission of PEI,
Mr. Jean-Paul Arsenault,
and Members of the Forestry Commission

I heard a quote a week or so ago that struck a chord with me. It was made by Susana Muhamed, Minister for Environment and Sustainable Development in Columbia. Ms. Muhamed was speaking in advance of this year's COP16 United Nations Biodiversity Conference which will take in Columbia this October and which she will chair. She had this to say about climate change: "There is a double movement humanity must make. The first one is to decarbonise and have a just energy transition. The other side of the coin is to restore nature and allow nature to take again its power over planet Earth so that we can really stabilize the climate."

A lofty goal for this very important COP 16 meeting. But not surprising, as this call for "nature-based solutions" is now coming from climate scientists around the world. And their message is clear: we cannot successfully reverse climate change by focusing solely on reducing and removing atmospheric carbon. We must also change how we think about and deal with land and water use. We need to use our understandings of the inter-connections between biological, geological and physical systems at work in soils, on land, in water, and in the air. To truly mitigate climate change, we need to work with nature on all fronts – and not against it.

Which brings me back to PEI. As devastating as Fiona was for Island forests, it has also given us an opportunity to develop and promote our own nature-based solutions for climate change and the health of our forests. And we have an opportunity to re-evaluate forest policies, programs and practices - and truth be told - Fiona or not - it's high time this was done anyway. I would like to thank all the members of the Forestry Commission for your hard work on this task so far. Your combined experience and knowledge and your commitment to research, transparency and public consultation are all noted and very much appreciated.

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My husband and I own some forest land in southeastern PEI. We have had FEP management plans for about 40 years. During that time, we have done some selective harvesting for personal uses, but we have mostly prioritized conservation values. Since Fiona, we have been trying to salvage some of the blown down timber and we are now looking to restore or even improve those areas as they naturally regenerate. We received some FEP incentive support for the "clean up" portion of the work and we appreciated that. We had hoped to plant a few longer living hardwood seedlings for enrichment last fall or this past spring, but we were not able to get any from the provincial tree nursery. Our very knowledgeable forest technician has assured us that we are on the list for seedlings as soon as they are available, and I am hopeful we will get a few this fall. I also purchased and was gifted a few seedlings from other sources. I planted them myself. (I worked seasonally as a tree planter for about 12 years in the 1980's and 90's). However, I remain concerned about the lack of availability of hardwood seedlings from our provincial nursery.

Another experience we had with the Forest Enhancement Program in the past is that the kinds of silviculture work we wanted for our mixed regenerating woods only qualified for minimal support. Pre commercial thinning was limited to only about two acres a year and we had to selectively thin for just one commercial species. I have recently been told that the FEP rules are now a bit more flexible and

that healthy trees from a variety of species can now be selected for release.

However, it seems like the FEP funds available for silviculture work continues to be limited - with most of this year's FEP budget having been spent on Fiona clean ups. The pie graph of FEP funding 2018 - 2022 on page 4 of your report, *Towards a New Forest Policy for Prince Edward Island* shows a large spending discrepancy in favour of softwood treatment and planting versus the same for hardwood. And since Fiona only happened in late in 2022, it might be fair to posit that our Forest Enhancement Program has for many years disproportionately supported the softwood timber industry on PEI over landowners who wish to focus more on healthy mixed forest ecosystems. I think this needs to change. I think it's important to support an industry that creates jobs and provides resources in a sustainable manner - but that support should be equally available to other stakeholders who value their forests differently - because healthy forests benefit everyone.

It has always been my hope that I will leave the forests and fields that I care for in good health for future generations. About four years ago, I became very interested in soils and the microorganisms (aka the invisible workforce) that live and work therein. It now makes perfect sense to me that ecosystem health really starts with a healthy well-functioning soil ecosystem. I was pleased to see a brief mention of forest soil and its potential to capture carbon in *Towards a New Forest Policy for Prince Edward Island* on page 13. On the same page, I was also intrigued by this statement. "While trees mainly store carbon, they do release some when their leaves decompose, or their roots burn sugar to capture nutrients and water." I would like to explore this part a little deeper (pun intended).

It is commonly accepted that 4 - 21% of the various sugar compounds that are produced by photosynthesis in a plant's leaves are released by the plant's roots as exudates. However, recent research has revealed that at certain times and under certain conditions this can amount to more than 40% of a plant's photosynthesized carbon product. I would like to suggest that this release of sugars into the plant's rhizosphere is not so much a "burn" - but more of a "trade". Plants release a wide variety of different sugar molecules which provide food for a wide variety of beneficial soil microorganisms that congregate and live in the soil around their roots (bacteria, fungi, protozoa, nematodes and so on within the soil food web). These beneficial organisms, in turn, help the plant in many ways including nutrient cycling. Using many different bio-chemical processes, they extract, convert and make nutrients available to the plants in forms that they can use. It's an intricate and interconnected relationship that science is really only beginning to study and understand. Also, when the exudates are consumed, the microorganisms take on that carbon. Fungi are particularly good at storing this carbon for long periods. The walls of fungal hypha are constructed of carbon rich chitins and melanins which can remain stable while the fungus is alive and also long after it dies. Another fungal compound called glomalin can stabilize and store carbon for up to 50 years! I am just beginning to learn about healthy living soils, but I am now convinced they are super important for carbon sequestration, nutrient cycling, disease control, temperature regulation, water filtration and retention, and who knows how many other Earth saving biological services! Bottom line, it is my hope that our future forestry policies, programs and practices will focus on supporting healthy forest ecosystems including healthy soils.

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Finally, from the point of view of one woodlot owner who is interested in soil and concerned about climate change and the future of Island forests - I would like to offer the following suggestions.

1. I think we need to shift our thinking and policy perspective away from “management” of forests to “stewardship.” Out of curiosity, I googled the Forest Stewardship Council to see how they defined “stewardship”. But, in a bit of a funny twist, the Forest Stewardship Council describes its mission as “responsible management that aims to prevent degradation of forest quality by striking the right balance between harvesting forest resources for human use and the need for the natural cycles to remain intact.” It further states “FSC does not allow deforestation - which is the conversion of natural forest areas into plantations or non-forest uses - or any other forms of forest ecosystem degradation in FSC-certified forests.” And this too: “FSC has several strict requirements that ensure that certified forest managers maintain their forest cover, and maintain or enhance their forest’s structure, function, biodiversity, and productivity.” This all sounds pretty good to me as a model for “stewardship” and guidelines for a future sustainable ecological forestry industry on PEI. I am not proposing that every forest on PEI needs to become FSC certified. But I do think we should all be moving in this direction - especially as policy is being developed for a future with climate change. I think our forests need “stewardship”.

2. I think we need to stop providing incentives for herbicide treatments. Herbicides are clearly degenerative. They not only kill lots of plants, but also negatively impact soil microorganisms, fungi, pollinators, and we really don’t know the extent to which they might harm other species of animals or even us. Manual competition control is effective and if properly funded could provide good employment for many properly trained workers. I think landowners have the right to choose if they want to use herbicides on their property. But, given their negative environmental impacts, this practice should not be supported with taxpayer money.

3. Provide adequate FEP funding for a variety of silviculture treatments to restore and enhance our degraded and blown down forests, and any other treatments that help improve the health of forests. Currently softwood planting and treatments receive the bulk of FEP funding. Whether some of this funding can be re-directed or if additional funding needs to be added I cannot say. I just know our province should be doing more to support woodlot owners who want to protect, maintain, or improve their forests for values other than softwood timber (such as providing habitat for wildlife, climate change mitigation, future maple syrup or high quality wood production...)

4. Provide incentives and training to expand our silviculture workforce. Think of it as an investment in a greener future - sort of like a “peace corps” - but more of a nature-based climate solution corps. But keeping in mind - silviculture work requires training, skills, care, and is physically demanding. Workers deserve to be paid a good living wage. The work also comes with a lot of other challenges (safety, insects, and weather come to mind), but it also has its rewards. Working outside, in nature, doing meaningful important work... I can’t help but wonder about our province refusing to extend work visas for willing workers who are already here. Possibly some of them could be recruited and trained for jobs in forest silviculture right along with local workers also looking for positive employment experiences and training.

5. Make changes at the provincial tree nursery. We need more long-lived tree seedlings available to support FEP and landowners’ own efforts to improve their forests for climate resilience and biodiversity enrichment. Increase the nursery’s overall production capacity in terms of infrastructure, staff, and expertise specific to hardwood production. If industry needs softwood seedlings for timber plantations, so be it. Grow them. But also figure out how many seedlings of other species are required to support a shift towards more ecological forestry. Grow those trees too. In addition to increasing production at the provincial nursery, supporting independent nurseries such as the one at MacPhails and making those trees available for FEP plantings makes a lot of sense.

6. Don't forget about soils. Many of our Island forests now grow in soils that were previously old fields; it is very likely the biodiversity and bio-services within these soils have been reduced. Other forests' soils have never been used for agriculture. Even though they may have been cut over several times, they would hopefully have retained most of their biodiversity. These forests and their soils deserve special protections for that biodiversity - especially from conversion to agriculture. Other practices that damage soil health and biodiversity and which should be rethought include: clear cutting as this removes food and habitat, compaction caused by heavy machinery, and pesticides. I would like to see future policies that support a shift to more ecological harvesting practices like strip cuts or patch cuts, discourage heavy machinery on soil as much as possible, and follow an integrated pest management strategy when necessary.

7. Support ecological forestry education and programs that get people out and engaged with nature. There actually seem to be several excellent programs happening this summer with FLPP and other projects. Schools need outside green classrooms to provide students with more opportunities to develop their appreciation of and knowledge about living systems and for all the other health and mental health benefits that come with spending time with nature.

8. Support or continue to support knowledge sharing organizations like the MacPhails Ecological Forestry Project, watershed groups, conservation groups and other stakeholder groups like the Woodlot Owners Association and the Sustainable Forest Alliance. All have contributions to make and are deserving of government support.

9. Last, but not least, woodlot owners sometimes find themselves in situations where they feel forced to cut their forests for economic reasons - even if they would prefer not to. I read with interest another submission to the Commission that proposed government provide incentives to landowners for long term commitments not to clearcut their forests. This seems like an idea worthy of further consideration. I think it could have a very significant impact in protecting more of PEI's forested landscape.

Fiona was a climate change wake up call for PEI – especially with respect to our forests. But it has also given us an opportunity to become better stewards of our lands. I am reminded now of another quote, this one from Barak Obama in 2015. “We're the first generation to feel the impact of climate change and the last generation that can do something about it.”

I would like to thank the Forestry Commission again for this very important work you have undertaken.

Respectfully submitted,
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