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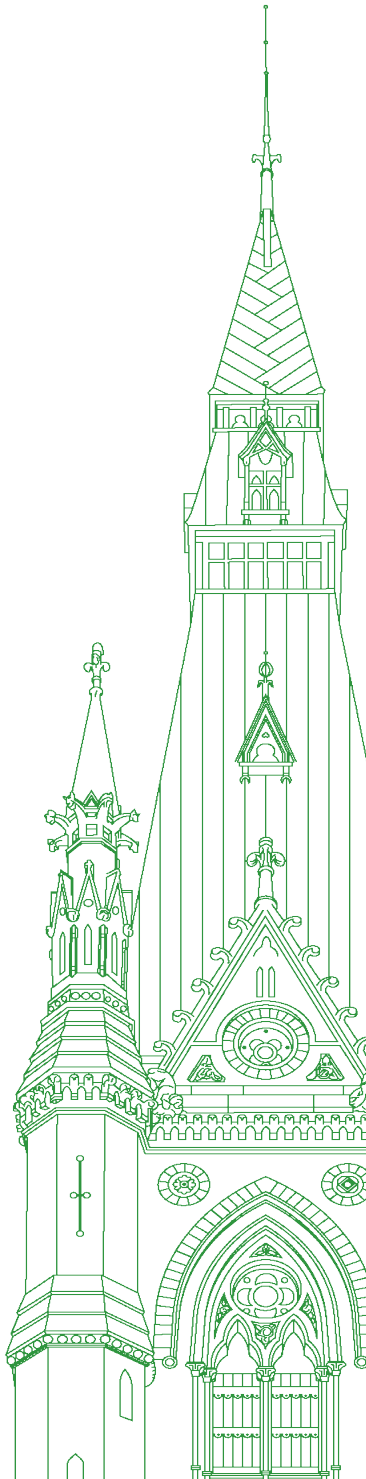

Chair: Mr. James Maloney

Standing Committee on Natural Resources

Friday, December 4, 2020

● (1305)

[*English*]

The Chair (Mr. James Maloney (Etobicoke—Lakeshore, Lib.)): I call the meeting to order. Welcome, everybody.

Thank you for joining us for meeting number seven of the House of Commons Standing Committee on Natural Resources. I appreciate everybody taking the time to be here and logging on early.

To our witnesses, thank you for joining us.

There are a few rules of the road for any of you who may not have done this before. The process will be as follows.

Each witness group will be given up to a maximum of five minutes to make opening remarks. I apologize in advance that if you exceed the five minutes or are exceeding the five minutes, I may have to interrupt you and cut you off. It's my job to do that.

Similarly, when questions are being asked, each person asking questions is given a specific allotted amount of time, so I may have to do the same thing to them or to you.

Interpretation is available. You're free to speak in either official language, and we will be able to hear you.

Because we're online, be cautious. To everybody, please wait until somebody has finished speaking before you start speaking. I know I do it myself, so this is a warning to me as much as to anybody, but it does cause a problem for us, and more so for the interpreters.

On that note, I will welcome our witnesses: the Canadian Parks and Wilderness Society, the Sustainable Forestry Initiative, Tree Canada, Le Consortium de recherche et innovations en bioprocédés industriels au Québec, Carbone boréal, and as an individual, Kathy Lewis.

I will turn it over to the Canadian Parks and Wilderness Society to start us off, for up to five minutes.

Mr. Greg McLean (Calgary Centre, CPC): On a point of order, Mr. Chair, can you give us a quick update on two items? That would be the minister's appearance before the committee, and also the request to have Minister Ng appear before the committee on the softwood issues.

The Chair: Minister O'Regan will be here a week from today. On Monday we will be having a panel consisting of provincial representatives. Some of them are still to be confirmed.

Regarding Minister Ng, the invitation has been extended. It does not look like she will be able to accommodate us, or vice versa, between now and next Friday, which, as you know, is our last meeting.

Mr. Greg McLean: It's our last meeting of the year, but not of the study.

The Chair: Sorry; it's the last meeting before the break, yes.

Canadian Parks and Wilderness Society, please go ahead.

Ms. Florence Daviet (Director, National Forest Program, Canadian Parks and Wilderness Society): Good afternoon. Thank you, Mr. Chair. Thank you to the members of the committee for inviting me today to share my thoughts on forestry recovery.

My name is Florence Daviet. I'm the national forest program director at the Canadian Parks and Wilderness Society, or CPAWS. CPAWS is Canada's only nationwide charity dedicated solely to the protection of our public land, ocean and fresh water. We work collaboratively with governments, indigenous communities, industry and other environmental groups to develop innovative conservation solutions.

My presentation today provides recommendations on how the federal government can target forestry recovery funding towards smarter solutions from a climate mitigation and biodiversity perspective, and move beyond business as usual through research, innovation and collaboration.

In our view, reducing greenhouse gas emissions and biodiversity loss in our forests while supporting local jobs and healthy communities requires adopting the following four strategies.

The first is to avoid impacts. By its very nature, industrial forestry activity has associated greenhouse gas emission and biodiversity impacts. As a consequence, we need to identify and support those who are willing to implement strategies to limit our footprint, especially in areas that currently have very limited or no industrial footprint or that have high biodiversity values. By making room for nature, we can further multiple objectives: meeting our international goals to protect 30% of land and water by 2030, protecting species at risk, reducing emissions from human activities and reducing the risk of forest fires caused by human activities.

Our first recommendation is to support innovators aiming to implement strategies to limit the footprint in the forest.

The second strategy is to reduce impacts. Climate-smart products come from wood baskets that have stable or increasing forest area and carbon stocks, as well as being managed for other sustainability criteria. Some of Canada's wood baskets likely do not meet these criteria as a result of climate-related and/or direct human action.

Management practices that can help include lengthening rotation ages of the trees being cut; reducing the footprint of specific activities, such as roads; quickly restoring forests where needed; and recognizing the non-timber value of forests through markets and other tools.

We're recommending that we need to support improved science and knowledge on how activities in forests are directly and indirectly causing greenhouse gas emissions and biodiversity impacts, and that we need to support as well the development of partnerships and tools to recognize the non-timber value of forests.

The third strategy is to reduce impacts through substitution and demand measures. Wood products provide essential goods and services. The federal government can play a role in ensuring that wood products offset the use of other products that are more detrimental to biodiversity and climate impacts while incentivizing the creation of local jobs.

To do so, they need to continue to advance life cycle assessments that include the ecosystem carbon and biodiversity impacts of the different choices before us, and to support those who are willing to move their businesses in a new direction with more value-added and long-lived harvested wood products that support local jobs.

However, we must not overlook that substitution is only valuable if our overall footprint does not increase. The world currently faces twin biodiversity and climate crises. We know that simply growing our greenhouse gas emissions or biodiversity loss rates more slowly is insufficient to address these crises. Education programs and policy research around reducing consumption and waste needs to continue.

Our fourth recommendation is to fund innovative partnerships that look at these three strategies, including demand considerations, to find solutions, and also to promote and support life-cycle assessments that include ecosystem carbon and biodiversity effects.

Finally, and very importantly, is a strategy for supporting indigenous communities. Across Canada, many indigenous governments and communities are seeking to manage forests with a lighter footprint while ensuring livelihoods for their community. In some cases, this includes looking at implementing indigenous-protected and indigenous-conserved areas and promoting non-timber values; in others, it includes more traditional forestry practices. Traditional knowledge of the land will be a vital part of improving forest management. Supporting indigenous initiatives that consider the strategies mentioned will be a key part of ensuring that this recovery also supports increasing equity and reconciliation efforts.

We recommend supporting partnerships with indigenous communities seeking to manage forest lands with a lighter footprint, including restoring damaged forest areas with important non-timber values such as food security.

● (1310)

As has been noted in recovery recommendations for other sectors, supporting the recovery of the forestry industry should be linked to improving our knowledge of the climate and biodiversity impact of our activities and finding ways to keep doing things better for nature, climate and communities.

Thank you.

The Chair: Thank you. You were right on the five-minute mark, which is greatly appreciated.

We go now to the Sustainable Forestry Initiative, with Ms. Abusow.

Ms. Kathy Abusow (President and Chief Executive Officer, Sustainable Forestry Initiative): Thank you very much.

Good afternoon, Mr. Chair and committee members.

As noted already, my name is Kathy Abusow, and I'm president and CEO of the Sustainable Forestry Initiative. On behalf of SFI, I'm pleased to be here with you today.

For those who don't know, we're a non-profit that advances sustainability through forest-focused collaboration. Collaboration is part of our mission and is essential for this sector's economic recovery. I'll return to this theme later in my remarks.

We're a global leader in setting standards in conservation, collaboration, community engagement and environmental education with the forest sector, the conservation sector, resource professionals, local communities, indigenous peoples and government. We do so to solve national and global sustainability challenges, including climate change and species recovery, while growing opportunities to employ youth, improve indigenous relations and be part of a circular economy with products sourced from renewable and sustainably managed forests across Canada.

I'm going to speak to you a little bit about green jobs, the two billion trees and collaboration as part of the forest sector's economic recovery.

Project Learning Tree Canada is an initiative of SFI, and we've placed over 3,500 youth in green jobs in the forest conservation sector since 2018. In so doing, we've achieved gender balance and provided work experiences for over 500 indigenous youth across 80 indigenous communities. We have also engaged 200 forest sector companies in the SFI forest network and the Canadian Parks Council network.

Up until the fall economic statement was announced, we were very concerned that our program and other job creation programs—which have been growing in relevance and reach in supporting skills development and work experiences to grow a diverse and resilient workforce in the forest sector—would come to an end due to lack of funding for the youth employment and skills strategy. Therefore, I'd like to really congratulate the hard-working public servants from various departments who crafted the fall economic statement. We know that in order for the forest sector to recover, its workforce needs to be resilient and diverse, and this funding really helps. The additional $575 million for the youth employment and skills strategy will go a long way in supporting all youth in finding high-quality innovative jobs in the forest sector and providing it with the diverse and resilient workforce that is needed for the future.

The forest sector is part of the renewable and circular bioeconomy. There is a growing field of opportunities and career opportunities for youth and the next generation in this sector, and we are focused on collaborating to find the career pathways, the educational pathways, the skills development and the work experiences to support that.

In terms of the two billion trees, I want to speak to the role that the two billion trees initiative can play in economic recovery for the forest sector as well. While planting and managing two billion trees will be important to addressing climate change, it also supports job creation and green infrastructure. It's a low-cost solution to many of Canada's significant sustainability challenges.

As the committee will be well aware, healthy forests store carbon, but Canada's forests have been devastated by climate change, including the damaging forest fires and a steep increase in pests and disease, which become a carbon source, not a carbon sink. Therefore, these factors undermine our nation's climate recovery, species recovery and clean water and also damage our ability to have sustainable harvest levels. As a result, they damage our ability to have the sustainable, resilient economy we want.

The two billion trees investment, including the $3.1 billion of funding promised in the fall economic statement, will help restore forests that have been degraded by climate change and keep our forest stock whole. In addition, it creates the opportunity to increase our tree canopy in urban centres and municipalities across Canada. I know that Tree Canada is also on this panel today and will likely speak about the important role that urban trees play. SFI collaborates in sustainably managed forest landscapes and will be playing an even more significant role partnering with organizations, including Tree Canada, in urban forests in the new year.

Finally, I'll speak on the point of collaboration. It's part of our mission. It's critical to the success of economic recovery. I hope that the standing committee recognizes that investments should be made in organizations that are able to collaborate to help sustain our forests and to sustain economic recovery. I hope part of this solution will be looking for track records of success to innovate, to collaborate and to advance all of these important goals that have already been stated: a circular economy, forest products from renewable resources and the ability to address climate change.

● (1315)

Thank you for the opportunity to speak to you today.

The Chair: Thank you very much.

You're quite right. Tree Canada is on the panel, and they are up next.

[*Translation*]

Mr. Léo Duguay (Chair of the Board of Directors, Tree Canada): Thank you, Mr. Chair.

First of all, I'd like to thank you for inviting us to appear before the committee, and I also want to assure you that we'll work together as closely as possible.

[*English*]

In looking forward to this presentation, I took a look back at some old notes, and I'll start off by saying that governments really do matter.

I refer back to a 1982 presentation by Environment Canada, “A Framework for Forest Renewal”; a 1984 presentation by the federal New Democratic Party, “Program for Fair Recovery: Job Security in the Forestry Industry”; and a 1983 study presentation by Frank Oberle, who was a member of Parliament at that time in the riding currently represented by Bob Zimmer.

All of that led, in 1990, to the formation of a ministry of forestry, the first one and only one, which was headed by Frank Oberle. In 1991, through a direct government grant, Tree Canada was formed as a 100%-funded government organization.

You should be thanked and everyone should acknowledge that your starting this in 1991 has led to a Tree Canada that has planted over 82 million trees in 700 communities across Canada, a lot of them represented by you. To note, we have morphed from a fully funded government organization to a fully privately funded organization.

We're extremely proud of this and I can only add that planting trees—and we've planted a lot of them—is a good thing for people, it's a good thing for the economy and it's the best bang for your buck you're ever going to get.

I'll turn to Danielle St-Aubin, our CEO, to continue our presentation.

Mrs. Danielle St-Aubin (Chief Executive Officer, Tree Canada): Thank you, Léo.

Trees play an essential role in creating positive outcomes in urban settings because they have a direct impact on the quality of life of Canadians. This includes from an environmental perspective. They help reduce the heat island effect; they manage stormwater by intercepting rainfall and reducing runoff; they prevent soil erosion; they offer food and shelter for birds and other wildlife; and if the right tree is planted in the right place, they can help slow wildfires.

Urban trees are also very good for the economy. They attract tourists because they offer recreational benefits. They provide employment in the forestry field. They also help individual homeowners, because they can reduce their heating and cooling costs, and properties with trees are generally valued higher in the real estate market.

Trees are also good for our health. They absorb particulates in the air, making it more breathable for people with respiratory illnesses. They motivate us to play outside, no matter what our level of income is. They help patients in hospitals heal because of the psychological impact on people's moods and emotions.

Those are just a few of the benefits, and as Canada continues to urbanize, trees in urban settings will increasingly rise in importance.

Unfortunately, tree canopies in cities are under a lot of pressure, and the burden to mitigate these pressures is placed squarely on the shoulders of municipalities. Many of these pressures are outlined in the Canadian urban forest strategy developed by the Canadian Urban Forest Network, of which Tree Canada is the secretariat. These pressures include climate change, which causes extreme weather events. These events can leave municipalities struggling to clean up and replant millions of dollars' worth of trees.

Lack of genetic diversity and monoculture practices leave our urban forests vulnerable to insect and disease infestations. Examples of this are Dutch elm disease and the invasion of the emerald ash borer.

Development, even smart development, often means that woodlots get converted to either non-treed environments or single-tree environments.

Infrastructure issues, such as a lack of space below ground, mean that trees struggle to survive.

Lastly, of course, is resources. While the federal and provincial governments make contributions related to individual emergencies and perform some research, there has been a lack of a sustained long-term commitment to urban forest stewardship, which is why the announcement of the two billion trees initiative is so welcomed and so critical. With all these competing priorities, urban forests are not often at the top of the list for municipalities.

I'll turn it over now to my colleague, Dr. Adrina Bardekjian, our manager of urban forestry programs and research development.

● (1320)

Dr. Adrina Bardekjian (Manager, Urban Forestry Programs and Research Development, Tree Canada): Thank you, Danielle.

There are things we can do to support this critical asset. Beyond our own research and experience, we've been active in participating in think tanks, engagement sessions and various working groups. We'd like to offer a few high-level recommendations.

First, develop a national strategy for urban forests across the country, which could include tree protection policies, minimum percentage of canopy cover and baseline best practices.

Second, examine taxation and incentive programs to promote good urban forestry practices and stewardship by individuals, community groups, municipalities, developers and builders.

Third, create or appoint a national body to serve as a catalyst for research communications, education and advocacy, and as a central hub for urban forestry information and knowledge exchange.

Fourth, raise the level of awareness of urban forestry issues to diverse audiences and stakeholders, such as the public at large, other allied professionals and policy-makers.

Fifth, examine municipal needs and undertake practical research projects to support their efforts.

Lastly, develop professional industry standards for urban forestry and arboriculture on a national level to ensure safe work practices.

The urban tree canopy is an important part of our green infrastructure. Trees increase in value if they can reach their full potential. In order for that to happen—

The Chair: Unfortunately, I'm going to have to interrupt and stop you there.

Dr. Adrina Bardekjian: Thank you for the opportunity to speak to you today.

The Chair: We'll move on to Consortium de recherche et innovations en bioprocédés industriels au Québec.

[*Translation*]

Mr. Mohammed Benyagoub (President and Chief Executive Officer, Consortium de recherche et innovations en bioprocédés industriels au Québec): Thank you, Mr. Chair.

First of all, I'd like to thank Mario Simard for making our appearance before the Standing Committee on Natural Resources a little easier.

For people who aren't familiar with the Consortium de recherche et innovations en bioprocédés industriels au Québec, or CRIBIQ, I'll say that it's a consortium that brings together industrial partners and public research centres. Our main mandate is to financially support the industrial research that mobilizes these businesses and research centres, and to promote innovation among producers and processors of bio-sourced products from forest biomass.

CRIBIQ currently has a portfolio of 300 businesses and financing of approximately $145 million, and about 40% of our investments are related to forest biomass development.

With regard to today's topic, the bio-economy and its role in economic recovery, we are convinced that industrial sectors linked to the bio-economy can play a major role. It's an important link in the industrial and economic recovery in a post-pandemic context.

We need only think of the revitalization of resource regions or Canada's economic sovereignty. Everyone knows that at the beginning of the pandemic, we were faced with a shortage of a number of products, including very advanced materials used in the manufacture of many products needed in the health sector or hygiene products, among others.

So I think that bioproducts can play a fundamental role, as the bio-economy promotes the ecological footprint. Earlier, we talked about the life cycle issue. In most of the projects we've funded, the life cycle analysis has shown clearly that the development of these bioproducts can play an important role in reducing waste and greenhouse gases, in addition to limiting the relocation of high value-added products, since most of the jobs associated with bioproducts must be close to biosources.

We want to take advantage of this forum to offer some food for thought that can strengthen the role of the bio-economy in Canada's post-pandemic recovery.

I'll turn things over to my colleague and co-founder of CRIBIQ, Laurent Roger Bernier, to talk about our three recommendations.

● (1325)

Mr. Roger Bernier (Microbiologist and Agronomist, Consortium de recherche et innovations en bioprocédés industriels au Québec): Thank you, Mr. Benyagoub.

Good afternoon, Mr. Chair and members of the committee.

Greetings, as well, to the other participants.

Our first recommendation is to introduce tax incentives, such as special tax credits, for the commercialization of bioproducts to make this commercialization much more competitive.

In 2010, several U.S. companies had already approached elected officials in the U.S. House of Representatives to call for the introduction of a tax credit for the production of bioproducts. Following this initial request, Iowa introduced a tax credit of 5¢ per pound in 2016 for products with a minimum of 50% bio-based material content. More recently, Maine, Nebraska and Minnesota have adopted similar tax schemes, introducing a credit ranging from 3¢ to 8¢ per pound for certain products still derived from biomass, with other states, such as Illinois and Kentucky, in the process of adopting similar legislation.

Our second recommendation aims to strengthen consumer confidence in a label attesting to the renewable nature of bioproducts, following the example of the U.S. BioPreferred program, which I had the opportunity to contribute to by labelling certain biosourced molecules produced in Canada.

This program, which is managed by the U.S. Department of Agriculture, or USDA, was designed to increase the purchase and use of bioproducts. Since its inception, the program has contributed approximately $393 billion and more than 4.2 million direct and indirect jobs to the U.S. economy.

In Canada, it would be appropriate to put in place a similar program for forest biomass products made. It would be managed by Natural Resources Canada. In our opinion, the two main components of such a Canadian program could be, first, mandatory purchasing requirements for federal agencies and their contractors, and second, a voluntary labelling initiative for bioproducts.

Finally, still in the area of bioproducts, our third and final recommendation comes from the observation that, unlike other industrial sectors such as agriculture, aeronautics or electronics, Canada has a less developed chemical industry. A national program should be put in place to facilitate the recruitment, in our university research centres or in government laboratories, of scientific researchers from large private chemical or biotechnology companies that specialize in the industrial conversion of bioresources into high value-added products.

This would have a ripple effect on the participation of large companies in projects here in Canada and would develop or strengthen our research and development infrastructure.

This concludes my remarks. Thank you for your attention.

[*English*]

The Chair: Thank you very much.

Next we have Mr. Villeneuve, from Carbone boréal.

[*Translation*]

Mr. Claude Villeneuve (Professor, Université du Québec à Chicoutimi, Carbone boréal): Good afternoon, Mr. Chair and members of the committee.

I'm pleased to meet with you today to talk about Carbone boréal. I prepared a slide show to illustrate some of the phenomena to support my remarks. I don't know if you can project it. If not, I'll fly solo, if I can put it that way.

Basically, it is scientifically well known that the increase in human greenhouse gas emissions, particularly carbon dioxide, contributes to climate change. This accumulation has been monitored daily at the Mauna Loa Solar Observatory since 1958, and there has been an increase of more than 100 parts per million in the amount of CO_2 in the atmosphere during this period.

However, this increase is remarkably accompanied by an increase and decrease each year, which are always of the same magnitude and which in fact correspond to the photosynthetic activity of the northern forests: the boreal forest, the Canadian forests as well as the Russian and Scandinavian forests in particular. These forests capture carbon between the months of May and September. Then, because they are inactive in the winter, the increase in concentration varies from six parts per million in a single season, while the increase each year is about two parts per million.

So northern trees have a huge role to play, and it's a very good idea to plant more trees. There have been proposals to plant two billion trees, but that's not the way to do it, without taking into account the real contribution of these trees to the fight against climate change. First of all, we need to quantify the contribution of these trees; it's not just magical thinking. There are rules and methodologies for doing this. Each species has its own characteristics. There are still many unresolved scientific questions about the real contribution of the forest in increasing carbon stocks.

Certainly, planting trees where there are none increases the carbon sink and carbon stocks. However, for this to be integrated into a quantified climate change proposal, the species must be known and planted in such a way that their carbon capture can be measured and reported in a standardized way. In addition, we need to make choices about which species will survive climate change, because in Canada, in various regions, even if we work very hard, the average temperature will rise by three to five degrees Celsius. That means that species that are surviving well today in today's ecosystems may not survive 50 or 100 years from now.

The choice of species must also allow the trees to continue to provide the ecological services they provide to the forest. So it's important not to plant just anything, just anywhere.

Lastly, existing forest carbon stocks must be maintained. Trees shouldn't be moved or cut down because trees have been planted.

● (1330)

Lastly, as my colleagues at CRIBIQ have said, we need to maximize the use of forest products, not only as long-life softwood lumber, but also as a supply that competes with products made from petroleum chemicals.

To work effectively, we need more science, a long-term vision and the ability to use our resources intelligently. Carbone boréal is a research program launched in 2008, based on the afforestation hypothesis—

● (1335)

[*English*]

The Chair: Mr. Villeneuve, I'm going to have to ask you to wrap up very quickly.

[*Translation*]

Mr. Claude Villeneuve: Okay.

Carbone boréal is a university infrastructure. So, it's a project that provides information on the long-term impact of afforestation on climate change.

[*English*]

The Chair: Thank you very much, sir.

Last but not least, we have Ms. Lewis.

Dr. Kathy Lewis (Acting Vice-President, Research, University of Northern British Columbia, As an Individual): Thank you very much, and good morning or good afternoon, as appropriate.

I am very pleased to be speaking to the committee from the traditional territory of the Lheidli T'enneh.

I'm currently the acting vice-president for research at the University of Northern British Columbia. Prior to that I was chair of the forestry program. I'm also a professional forester with a background in forest health.

The forest bioeconomy provides significant opportunities for growth and transformation of the forestry sector. This transformation, however, requires Canada to become much less dependent on solid wood products and pulp, less susceptible to highly variable commodity markets, more invested in a diversity of wood and forest products and highly committed to the mitigation of climate change.

The first opportunity I will mention is the enhanced utilization of harvested trees. The forest sector has already made great strides in the development of composite wood products, cross-laminated timbers and bioproducts such as chemicals. We've also seen a tremendous increase in biomass-based energy systems such as wood pellets and wood gasification. These have the potential to greatly enhance the revenue generated from every harvested tree and reduce greenhouse gas emissions by using mill waste instead of fossil fuels. Just as an example, at UNBC we've been able to reduce our greenhouse gas emissions by 66% using these systems.

One of the limiting factors in expanding the development and production of these innovative products and energy systems is that much of the wood supply is near rural communities that lack the infrastructure to support significant business development and that have suffered economic downturns due to dependence on a single industry. While capital investments have been made federally to support technology and product development all the way through to commercialization, the connection to economic diversification and development in rural communities is lacking. This requires enhanced community control over forest resources, which is a provincial jurisdiction, to ensure both environmental and community sustainability, but it also means place-based community development research, entrepreneurship support and capital investment to support local small- to medium-scale businesses.

Similarly, investments in wood product development have produced very exciting innovations in engineered wood products made from smaller bits of wood. These products have been shown to have superior seismic performance and are much more carbon-friendly than steel and concrete. One of the limitations in integrating these products into the construction industry is the lack of training programs for architects, engineers and especially the construction workers who are able to work with these engineered wood products.

A second opportunity for the forestry sector is through forest ecosystem diversification driven by forest product diversity. Canadian forests have experienced unprecedented natural disturbances caused by wildfires and pests, due in part to climate change. Severe impacts from these disturbances have been directly linked to the lack of forest diversity. The forest industry, despite the innovations mentioned previously, remains largely dominated by dimension lumber and pulp, which require a narrow suite of conifer species. This industrial model was established at a time when timber supply was seemingly unlimited, and as a whole it has not kept up with changing market conditions, shrinking forested land base and uncertainties due to factors such as climate change and global trade. The reliance on softwood lumber has resulted in a homogenization of species and age-class structures in forests, which makes them much more susceptible to damage by fire and pests.

We can change forest management practices to enhance diversity—for example, by allowing non-commercial species as part of the composition in forests—but without changes to the industrial model, which is fed by these commercial species, this just exacerbates our growing timber supply problems. Therefore, we need more investment in development and marketing of a wide range of forest products that use multiple species to create an economic demand for diverse products and therefore diverse forests.

Finally, the third opportunity for the forest sector is through its role in mitigating climate change. I believe the committee has already heard from Dr. Werner Kurz, who has found that depending on what happens to timber growing stocks, our forests could become carbon sources or carbon sinks. It's becoming increasingly important to look to our forests to enhance carbon sequestration as a means of mitigating climate change. Recent research from B.C. has shown that when the economic price of carbon emissions and sinks is combined with timber prices, traditional clear-cuts flip from being the most economical to the least economical harvest practices. As we work towards meeting our Paris Agreement targets, the benefits of promoting the retention of intact forests, as well as wider adoption of partial harvesting practices, must be more fully considered.

● (1340)

In summary, I believe that the transformation of the forest sector will require a better connection between agencies responsible for economic development and those responsible for natural resources, greater investment in diverse forest products to create a demand for diverse forests, and an enhanced role for the forest sector in climate change mitigation through adaptation of forest management practices that are driven by carbon accounting as well as timber pricing.

Thank you very much for this opportunity to speak to the committee.

The Chair: Thank you very much, Ms. Lewis. We appreciate that.

That's the last of our opening remarks. We're now moving to the first round of questions for six minutes each, starting with Mr. McLean.

Mr. Greg McLean: Thank you, Mr. Chair. Allow me to thank all of the witnesses today. It's a fantastic amount of information we were given here, and its quite enlightening.

I'm going to start my questioning with CPAWS. I really appreciate that we do need to set land aside in Canada for biodiversity, making sure that there is no footprint that is actually just industrial at the end of the day.

Can we talk about fire's role in the natural ecosystem? Part of what we're hearing here is that we've over-managed these forests by neglecting fire. As a result, the fires are much more intense than they used to be. Can you comment on that? If we just set land aside and did not manage the fire outcome there, what would the natural evolution be in that case?

Ms. Florence Daviet: Thank you.

Ecosystems are complex, of course. Certainly in the boreal forest, as we well know, fires are a natural part of that ecosystem, but I think, as the previous speaker noted, there are some things that we have done in our forests that may potentially be making them more flammable in some ways. We need to recognize that, and we also need to reduce the risk from human activities that cause fires. Whenever you have a road, you start having people, and those people bring multiple risks of fire in some cases. It's always about trying to balance between those different risks and recognizing that fires are a natural part of our ecosystem while also making sure that we're managing it so that it doesn't harm communities, which is obviously a huge risk. At the same time, it's an important part of those ecosystems' functioning.

Mr. Greg McLean: Thank you. I appreciate that.

I'm sorry, but I have a few questions that I want to ask a few of the witnesses here.

I'll ask Tree Canada something now.

You had a great presentation as well on our urban forests. When you talk about planting an urban tree, you're talking about planting a tree that isn't a seedling. When we talk about two billion trees, I think most Canadians are talking about planting seedlings and having those absorb carbon over the life cycle, but in your case, Tree Canada, you talk about planting more mature trees for an urban canopy purpose. That 10-year-old tree, for instance, has how much more CO2 absorbency in its more advanced life cycle than a seedling?

Mrs. Danielle St-Aubin: I can start to answer that, and maybe Adrina can help out.

We have various programs. Some of them are seedling programs. Larger trees tend to follow a bit of an S-curve. Between 10 and 20 years of age, the tree will absorb the most carbon. There is no tracking at this point from an urban setting with regard to how much an urban tree absorbs over its lifetime. It obviously depends on the tree, the species, where it's planted and how long it lives.

I don't know if Adrina wants to add to that.

● (1345)

Dr. Adrina Bardekjian: No, that's accurate, Danielle. Thanks.

Mr. Greg McLean: What would be the cost of planting, as an urban tree, a 10-year-old tree versus a seedling?

Mrs. Danielle St-Aubin: Again, that depends on the species, but you could go anywhere from a $40 potted stalk to a $1,000 bigger tree.

Mr. Greg McLean: In the context of a two-billion-dollar reforestation project, what would more or less be the absorbency?

Mrs. Danielle St-Aubin: Do you mean the cost of it? We would be looking at somewhere between $25 to $100 a tree.

Mr. Greg McLean: Okay.

I'll move now to Carbone boréal. It was a very interesting presentation. I really appreciate the science that you brought to the equation here.

For the quantification that you talked about—a gain of two billion trees, and where we would plant those in our ecosystem—can you see there being the land base for those trees to prosper? If those trees prosper on land that isn't forested right now or that isn't being reforested by companies that are already harvesting trees and then required to reforest, what is exactly the ability of those trees to absorb more CO2 than is being absorbed by the current timber stock?

That's for Mr. Villeneuve.

[*Translation*]

Mr. Claude Villeneuve: To be able to quantify the gains in CO_2, afforestation must be practised on land deforested since at least 1990. Such areas are abundant in the boreal forest. In Quebec, about 1.7 million hectares of the commercial boreal forest are open forest spruce-moss stands.

It is believed that Canada's forest can support 2,000 trees per hectare. However, this isn't ideal. There's also land that has become unsuitable for agriculture, which is much more productive although it covers far fewer hectares. Municipalities also have areas that could be advantageously reforested.

However, we must be careful and think long term. If we plant a tree today, the carbon stock will be built up over time, with the growth curve having a maximum capture period. Then, the carbon will have to remain stored for 100 years. So, we have to think about species that live a long time.

It's important to keep in mind that if two billion trees were planted in Canada today, the maximum uptake of CO_2 would occur between 2040 and 2080. Assuming a maximum uptake of two kilograms for the least productive species to 10 kilograms for the most productive species, planting two billion trees would at best remove a maximum of 5 to 10 million tonnes of CO_2 per year from the atmosphere, which would be equivalent to the total emissions from Canada's aluminum smelters.

It's a relatively minor annual contribution—

[*English*]

The Chair: Thanks, Mr. Villeneuve. I'm going to have to stop you, unfortunately.

Mr. Greg McLean: That's very interesting, though.

Thank you very much, Mr. Villeneuve.

The Chair: Thanks, Mr. McLean.

Mr. Sidhu, we'll go over to you for six minutes.

● (1350)

Mr. Maninder Sidhu (Brampton East, Lib.): Thank you, Mr. Chair, and thank you to all of our witnesses for being here today.

It's definitely a very engaging conversation. There's lots to learn here, not only for our generation but for future generations such as my children's. It's very exciting.

My question is for Ms. Abusow. It's great to see your organization engaging so many youth. The extra funding in the fall economic statement for more youth opportunities is something that I'm very excited to see.

I see that your organization offers a number of different certifications and operates a certification database. Can you share more with the committee about why it's important that you offer these services?

Ms. Kathy Abusow: Yes. One aspect of our program is environmental education and career and skills development, which is what we started to speak about. The certification side is another aspect of our non-profit, and that's to ensure sustainable supply chains.

Whether it's a Fortune 100 or Fortune 500 company, they know that sustainably managed forests are part of the solution for many of the things that we've talked about today, such as climate change, species recovery and sustainable communities. They want to ensure when they're sourcing forest products that they've been certified to ensure they've been managed for economic, environmental and social needs.

We provide the standards, and organizations such as KPMG, PricewaterhouseCoopers and others have teams of foresters, ecologists, indigenous relations specialists, etc., who certify those forests. That gets tracked through the supply chain to the end-user to provide the assurance the forest is sustainably managed.

It's critical to their success. Many global brands—the Consumer Goods Forum, worth a trillion in revenue and market value—insists on certification, because forests can also be poorly managed. There can also be illegal logging and degradation of forests. They know that forests can be part of the solution, part of the circular economy and part of the bioeconomy. They also know that poorly managed forests that aren't regenerated are part of the problem, so that's why our certification program and others as well are really critical to providing that assurance.

Mr. Maninder Sidhu: Thank you for that.

I note that you operate one of three different certification systems in Canada.

Ms. Kathy Abusow: Yes.

Mr. Maninder Sidhu: Briefly, why do we have different forest certifications? Can you speak to similarities or differences between them? I was on your website and I see a lot there. That's why I'm asking.

Ms. Kathy Abusow: Yes, absolutely.

In Canada, the Canadian Standards Association has a sustainable forest management standard. There is the Sustainable Forestry Initiative standard, which is ours, and there is the Forest Stewardship Council standard. Just as we have lots of organizations that try to alleviate poverty or world hunger and just as we have many car manufacturers, many organizations and many approaches are needed for this problem to ensure assurance. All three of these standards are globally recognized and endorsed by global organizations, and, just like in anything else, different corporations will lean on one or the other for specific needs.

We have great strength in terms of our supply chain and biodiversity management and recovery. In our standards, we put a lot of research and investment into conservation collaborations to help recover species, which a lot of organizations value. We ensure that sustainably managed forests don't just maintain species but recover species, and we work with ECCC and others for that.

We also do significant activities in indigenous relations and community development. There are about 40 indigenous communities across Canada that utilize our standards, and we're developing more training programs to facilitate that growth. In fact, we've put out a specific indigenous module for indigenous communities to use with our standards.

Those are some of the reasons organizations work with SFI. It's also because we have a broad program with other services, such as skills development, job creation, etc.

Mr. Maninder Sidhu: You've mentioned all these certifications. I'm assuming that there's a competitive advantage and that all these companies would sign on, but I'd like to hear more from you on that.

Ms. Kathy Abusow: Right now, we are the largest single standard globally, and certainly skill makes an incredible difference. Part of being the largest means that you have to collaborate with a wide variety of organizations.

I started this conversation by saying that SFI advances sustainability issues through forest-focused collaborations. I think one of the reasons we've been successful is that we don't try to solve problems alone; we work with environmental groups, government agencies, researchers and academics, and we support a lot of research and investment and try to figure out how you recover species, how you maintain water quality and how you sequester more carbon.

In fact, on a new standard that is under revision, climate-smart forestry practice is now embedded in it. That wasn't in our last standard. We're always working to collaborate and to figure the issues of the day and how we can update our standards to be relevant. In our last standards revision five years ago, we focused on elevating indigenous rights and recognition. We're constantly adapting and improving our standards through collaboration to set high standards that meet market expectations, conservation expectations, customer expectations and, frankly, societal expectations, because in Canada 94% of this is public land. It's important that we get this right and that we work together to manage our forests sustainably.

● (1355)

The Chair: That's great. Thank you very much, Ms. Sidhu. I appreciate that.

We are going to Mr. Simard for six minutes.

[*Translation*]

Mr. Mario Simard (Jonquière, BQ): Thank you very much, Mr. Chair.

I don't want to start off on the wrong note, but chauvinism means that I will have to ask Mr. Villeneuve a question, because I am quite proud of what the chair on eco-advising is all about and, more importantly, of Carbone boréal. These two organizations are both located in my riding and at the university where I used to work.

Mr. Villeneuve, could you explain Carbone boréal to us in two or three minutes?

Mr. Claude Villeneuve: Thank you for the question.

Carbone boréal is an initiative focused on basic scientific research. The organization has five objectives. The first is to establish a network of experimental plantations where scientific work can be done. We're planting about 200,000 trees a year, and already more than 1.3 million trees have been planted. This also allows us to use carbon market mechanisms to subsidize research. So we are going to make offsets. We can offset emissions by holding events and doing other things, and the money raised will fund research. I invite you to visit the website to learn more.

We are creating capital so that in 30 or 50 years from now, students can still receive scholarships to continue studying our forests, thanks to the interest on the capital. We encourage training, highly qualified personnel, master's, doctoral and post-doctoral students, and we are raising public awareness through a variety of activities, including news columns and conferences around the world.

Mr. Mario Simard: Mr. Villeneuve, I'll make a connection between what you're doing and what Quebec is doing because I think there's a fairly interesting link there.

You say that we must maximize the use of our forest resources to replace what is produced from fossil fuels. I think Quebec is moving in the same direction.

Could you and my friends from CRIBIQ explain in a few minutes the advances and possibilities concerning bioproducts?

Mr. Claude Villeneuve: My answer will be very brief.

We have a CRIBIQ grant of more than $500,000 to work on the development of paper mill biosolids. This is a residue that was buried in the past. It produced a lot of greenhouse gases and has fertilizing value. In industrial ecology, we combine anhydrite, a by-product of aluminum, with paper mill biosolids and use it to increase the productivity of the blueberry industry, as well as to increase forest production in our plantations. We conduct fertilization tests in this way.

I'll now turn things over to the people from CRIBIQ.

● (1400)

Mr. Mohammed Benyagoub: The development of everything associated with using forest biomass to make industrial bioproducts began in the early 2000s. I'm talking much more about Quebec, but the same thing goes for Canada. At the beginning of the 2000s, it was more laboratory work, but today, most processes have been industrialized. We're starting to reap the benefits of all the investments made in the sector. So today, from forest biomass we can produce carbon fibres for use in the automotive and aeronautics industries, which is very important to the Quebec economy.

Our organization co-funds projects with some forestry companies and paper mills that have developed innovative materials for use in those industries. Companies have made investments, and paper mills have partnered with biotech companies to use paper mill de-inking sludge to produce bioplastics.

We have projects with Kruger and Domtar to develop products that can be used in food packaging. These projects are well underway. Some have even been launched on the market. We mustn't forget chemicals and forest extractables, which can be used in the health and hygiene sector. In a post-pandemic context, it's very important to mention that.

Mr. Bernier, did you want to add something?

Mr. Roger Bernier: I will add something very quickly.

It's also important to understand that wood is, among other things, cellulose, but cellulose is sugar. These are simple sugars that can be used in fermentation to produce other substances. Instead of using materials derived from petroleum, for example, we can use biomass materials. Biomass can be used to produce a number of high value-added products. They are called bio-based products.

Mr. Mario Simard: I'd like to ask a quick question to my friends from CRIBIQ.

We've already talked about possibly linking the forest industry and the chemical industry, which was your third recommendation. That could be very worthwhile, as I believe the Alberta oil and gas sector will have to go through a transition.

Do you feel that's possible, given that Alberta still has expertise in the petrochemical sector?

Could that expertise be applied to the bio-based products sector?

Mr. Roger Bernier: Mr. Benyagoub, would you like to respond?

Mr. Mohammed Benyagoub: Yes, in that case, it's called—

[*English*]

The Chair: Let's have a very brief answer, please.

[*Translation*]

Mr. Mohammed Benyagoub: In that case, it's called biorefinery. You could draw a parallel with petrochemical refining. Cracking and all the methods that can be used in that field can be carried over to everything involving value-added biomass. These are more or less the same technologies, and the two industries should talk to each other, because they are very complementary.

Bio-based products can even be used in the petrochemical industry, as Domtar does with nanocrystalline cellulose. These products can be used in oil extraction.

So it would be a really good idea for these two industries to talk to each other.

Mr. Mario Simard: Thank you.

[*English*]

The Chair: Thank you very much. Thanks, Mr. Simard.

Mr. Cannings, we'll move over to you for six minutes.

Mr. Richard Cannings (South Okanagan—West Kootenay, NDP): Thank you, Chair.

Thank you all for being here today. As usual, I wish we had all day to talk to you.

Ms. Daviet, you talked about using the forest sector and the forest trade to maximize our climate action abilities and you also talked about the importance of biodiversity. There's a tension there, obviously. One of the reductions of impacts you mentioned was lengthening rotations. We had Dr. Kurz here in our last meeting. He mentioned that in the coastal British Columbia forests, the maximum carbon sequestration happening in those forests goes on until the trees are 150 years old or more, which is twice as long as the average rotation.

I'm wondering if you could talk about that tension. Let's put it this way: You also talked about non-timber values, and one of those might be carbon credits. We were talking about going to net zero by 2050. A lot of sectors were going to have trouble getting to net zero without some sort of carbon credits, I imagine. Maybe you could talk about the idea of using carbon credits to help fund the forest sector, and putting off those rotations to maximize our climate actions.

I hope that's clear enough.

Ms. Florence Daviet: Yes, it is.

I think there are a lot of really innovative ways to look at the non-timber values of our forests, and certainly carbon credits is one of them.

Another I think that's going on in the States is that insurance companies are looking to work with landowners to keep trees and to reforest for fire-smart interventions. I think the discussions we're having right now in Canada around natural infrastructure and how trees can help us with flooding and water quality and other issues that municipalities then end up paying for and that the communities are facing is another place where we're starting to expand our thinking around non-timber values and how those pieces could start to help build strategies that might allow us to manage our forests differently.

I think that all these things take some creative thinking, and also recognizing that we have some very different ecosystems across Canada, as you mentioned. In B.C., we have trees that can get quite old and that are storing huge amounts of carbon, and in other places, that's not so much the case. Trying to figure out how we use the best strategies in those places is very helpful.

I think the other one is linked to indigenous rights and indigenous interests. They are sometimes looking at having more of a tourism approach to having economic value in these places, or maybe other non-timber product approaches that might allow them to have economic value. I know another speaker mentioned a couple of other ideas. It does take some creative thinking and moving ourselves out of our typical boxes, and then helping to build those standards and markets.

You mentioned carbon credits. A lot of that just requires building some of the needed infrastructure so that people feel confident that the emission reductions that are being generated and used are credible.

I hope that helps.

● (1405)

Mr. Richard Cannings: Thank you very much.

I'm going to move to Dr. Lewis.

You mentioned towards the end of your presentation about the different ways that we harvest forests, such as partial cuts versus clear-cuts.

Can you take a couple of minutes to expand on that? If we're talking about harvesting mature forests or even if we're talking about salvaging forests after a pine beetle infestation, for instance, what are the advantages of not using the clear-cut model?

Dr. Kathy Lewis: The main advantage that I think is of interest to this committee is that when we take the economic value or cost of different harvesting approaches—clear-cut harvesting and partial cutting—and combine that with the costs of the different greenhouse gas emissions that will result depending on which way you do things, it becomes apparent that at least in some of the forests that we've been studying, when you combine the carbon part with the economic part of the value of the timber, partial cutting is a better deal.

Traditionally—at least in B.C., and I think in many other provinces—we have been focusing on clear-cut harvesting because it's the most economical, and in some cases it's been safer, although we've been able to address some of those safety issues as well. This research indicates that when you look at the carbon cost of clear-cut harvesting, it becomes very expensive. Partial-cut harvesting provides us with one of the tools that we can use to both get economic value from the forest in our traditional way and also somewhat reduce the carbon emissions that result and promote the ability of the forest to capture carbon.

Mr. Richard Cannings: How much time do I have?

The Chair: Thank you, Mr. Cannings. You're right on time.

Mr. Richard Cannings: Okay, thank you.

The Chair: I appreciate it immensely.

We're now going to the second round for five minutes each, starting with Ms. Harder.

Ms. Rachael Harder (Lethbridge, CPC): Thank you.

My question is for Carbone boréal to start with.

You said that two billion trees cannot be planted overnight, and then you talked about the importance of considering species, considering the place where these trees are planted and considering when and how they're planted.

What you're putting out there is the idea that there needs to be a method, there needs to be a plan, and that this isn't going to just happen magically, which is interesting to me, because we had an official from the department at our committee just a little while ago, and she said there is currently no plan, that there is currently no budget and that no trees have been planted to this day.

I find your comment helpful.

One of the things that I didn't hear you talk about is the impact this has on nurseries. Obviously these trees have to come from somewhere, and most often they come from a nursery that would plant seedlings and then let them grow for a time, and those trees would then be planted in their natural habitat, wherever that might be.

Can you comment on the pressure that this is going to apply to nurseries and the impact it's going to have on the nurseries, but also the impact it is going to have on other companies that need to access trees in order to fulfill their legal obligations to plant after taking a tree down?

● (1410)

[*Translation*]

Mr. Claude Villeneuve: Thank you for your question.

The answer is in three parts. First, we're already producing and planting a lot of trees. If we have a plan based on a 10-year horizon, let's say, and we send out orders to nurseries, there's a way to adapt the orders to meet needs like that across Canada. It's not a huge challenge, because nurseries start with seeds, and we've got seeds. We need only go and gather them. However, we don't have seeds for all species.

What Carbone boréal does is test assumptions. For example, in science, we wonder if planting trees, which changes the colour of the land, won't have a counterproductive effect in some northern areas. If I were to plant trees in the Northwest Territories, the change in colour during the winter period could diminish the positive effects of carbon sequestration. This needs to be tested.

This year, in areas very far to the north, 200,000 larch trees were planted because they lose their needles in winter. With the help of satellites, we can see if a change occurs and that will provide answers about the growth of the trees. At the moment, the science is still in the development stages. That's why—

[*English*]

Ms. Rachael Harder: Thank you.

[*Translation*]

Mr. Claude Villeneuve: That's why the program must include investments in science.

[*English*]

Ms. Rachael Harder: Thank you. I am going to interrupt there in the interest of time. I'm going to switch over to Sustainable Forestry Initiative.

I believe you discussed indigenous young people and the fact that the forest sector offers so much in the way of employment opportunities. You talked about the two billion trees and the fact that there is an opportunity there.

My understanding is that in order to make this a reality, hiring needs to take place fairly quickly. Training needs to be done and these individuals need to be mobilized and nurtured to go in this direction.

With regard to indigenous young people, perhaps you can discuss with us briefly the tremendous benefit the forest sector offers to indigenous folks, in particular those who are young and looking to come into the market.

Ms. Kathy Abusow: Absolutely.

Many indigenous communities—not, all of course—are in rural communities. Not all, but most of the forest sector is in rural communities as well.

First of all, there's just this geographic alignment. The forest sector depends on trees, forests and the land. Indigenous communities have traditional ties to forests as a way of life. There is this sort of natural geographic connection as well as this love of forests, nature and dependence on forests. It puts forward indigenous people's ability to engage in the forest sector and to develop forest resources within their communities as part of the solution.

In COVID times, it's quite interesting. We had to shift our model. Earlier, we would work with camps and youth organizations and bring indigenous youth together for six-week experiences to learn basic skills. These are often at-risk youth. They would learn basic skills and get a driver's licence. They'd learn how a tree nursery works, how to grow seedlings and things like WHMIS and health and safety. We would get them some certifications and then show them the career pathway, like what tech school they could go to, such as Confederation College, Sault College or BCIT.

Then we would show them role models. We did this indigenous guide of career voices. We connected with different indigenous leaders in the forest sector in all sorts of different jobs and showed the pathway they took to get there—their traditional ways of knowing coupled with western education. Essentially, they learned that there is a pathway for them no matter what, because we were demonstrating all these different pathways.

● (1415)

The Chair: Thank you.

Mr. Weiler, we'll go over to you for five minutes.

Mr. Patrick Weiler (West Vancouver—Sunshine Coast—Sea to Sky Country, Lib.): Thank you, Mr. Chair.

I'd also like to thank all the witnesses for joining our committee today and for the incredible amount of information we've heard, as my colleague Mr. McLean noted.

I'd like to ask my first question of Professor Lewis. You mentioned in your testimony that there are challenges of disconnection between agencies supporting the forestry sector and the need to invest in diverse products.

I'm wondering how you see this coordination between agencies best being done. Do you think the recent announcement of a new regional development agency for B.C., as a more contextually specific organization for B.C., could lead such an effort?

Dr. Kathy Lewis: Yes, I do think that is one of the best ways to move this forward. There are lots of opportunities for small and medium-scale businesses to be developed in the communities where the resources are. However, there aren't the local supports for them to do that. We don't have entrepreneurship centres, for example, in these smaller communities, or even in neighbouring larger communities that then can feed into them.

We need to have that regional focus and allow for what I call "place-based research" into what the best ideas are for these smaller communities moving forward. We don't want to do the same thing in every community. We need to have a good understanding of the resources that are available to those communities and how we can convert that to some form of economic diversification and economic sustainability.

Mr. Patrick Weiler: Could you give us an example of place-based research?

Dr. Kathy Lewis: Yes. We have the Community Development Institute here at UNBC, which does a lot of research out in communities. For example, it's working with Kitimat on the developments there in terms of their industrial change over time, how that manifests itself in terms of community sustainability and how they deal with hundreds of workers coming into the community, living there for a while and then leaving.

That's the kind of idea I'm thinking of.

Mr. Patrick Weiler: Thank you so much, Professor Lewis.

My next question is for Ms. Abusow, following up on the comments of my colleague Mr. Sidhu. It's great to hear about the number of youth who have been able to get work experience through your organization.

My question is this. Do you see a role for youth who could be hired through the youth employment and skills strategy, the Canada summer jobs program or perhaps Canada Green Corps to contribute to the reforestation efforts we have committed to?

Second, how can we as a government best support the youth of today to be best positioned to contribute to the forest sector of the future?

Ms. Kathy Abusow: Yes, absolutely, all of those programs, to the extent that they are interested, can certainly play an important role in providing youth with employment as part of the two billion trees strategy.

We've also heard many speakers talk as well about the need for a plan, so obviously there should be a larger plan that the youth get engaged in with regard to which species and where, as well as how to ensure diversity and resiliency and climate adaptation.

There most definitely is a role, and there is also a role for environmental education as part of this. In these training programs, when they are planning about trees, they can also learn about the world of trees and forests as windows onto the world and the sustainability solutions they can provide. They can start to learn some of these things we have heard about: the role of forests, the economic benefits, the conservation benefits, and the community benefits. What are the forests of the day? What are the forests of the future as well?

There are all sorts of learning opportunities, and I would love to do what we started to advance in our programs and in collaboration with others, which is to bust out the career pathway, so that if we need carbon modellers or we need mass timber architects or we need species recovery specialists with certain expertise in ecology and biology, we start demonstrating the skills that are required and the courses that should be taken, and that on-the-job experience is provided so that they get interested. That's the most rewarding thing that we've had so far. We've taken youth who really had no job prospects but who are now in a technical college or are going into a forestry school or into engineering.

The youth corps and the youth employment and skills strategy and all of these programs can support youth, and one of the things they can also do is support things like the two billion trees strategy. They can also support invasion strategies and many of the other topics and themes that we've heard about.

● (1420)

The Chair: Mr. Weiler, I hate to tell you this, but that's all the time you have, although you were right on time. That's commendable.

Mr. Patrick Weiler: Thank you.

The Chair: We go over to Mr. Simard now for two and a half minutes.

Go ahead, sir.

[*Translation*]

Mr. Mario Simard: Thank you very much, Mr. Chair.

I will now address my friends at CRIBIQ, as well as Mr. Villeneuve.

I'd like to focus on one particular dimension. Earlier, CRIBIQ representatives said that tax incentives were needed to encourage bioproducts. I'd like them to tell us more about that.

Mr. Villeneuve, you said that getting the most out of forest products is a good strategy for capturing carbon. Can you explain that to us? To make it clear, I would ask you to do it as if you're explaining it to a four-year-old.

Mr. Claude Villeneuve: I would say that the wood is CO_2 in sticks. A piece of wood is carbon extracted from the atmosphere. When we have sustainable uses for wood, to replace products like steel or concrete, or even plastic products made from oil that emit a lot of greenhouse gases, wood absorbs carbon and keeps it there as long as it's in use.

For example, if you set up a wooden structure or install a beam in an arena, as long as the arena stands, the CO_2 will be trapped. Wood can store CO_2 that was in the atmosphere and was disturbing the climate.

The more we put wood and sustainable forest products in the service of humans, the more we will limit the harmful effects of rising CO_2 levels that come from burning fossil fuels.

Mr. Roger Bernier: If I may, I'd like to draw another parallel.

As mentioned earlier, wood is mostly made of sugars. The petrochemical industry has long derived these raw materials—commonly referred to as "monomers"—from oil. Nowadays, technology has made it possible to manufacture those same monomers from wood sugars. It's therefore possible to substitute in industrial products that we use every day like detergents, adhesives, glues—

[*English*]

The Chair: Thank you, Mr. Bernier. I apologize, but that's all the time we have for this round.

Mr. Roger Bernier: No problem. Thank you.

● (1425)

The Chair: Mr. Cannings, you have two and a half minutes.

[*Translation*]

Mr. Mario Simard: You are strict, Mr. Chair.

[*English*]

Mr. Richard Cannings: Thank you.

I would like to go back to—

The Chair: I don't enjoy it. Trust me.

Mr. Richard Cannings: I'd like to go back to Ms. Daviet again.

As I said, in our last meeting we had Dr. Werner Kurz talking to us about the Canadian Forest Service's methods of modelling, monitoring and reporting carbon emissions, as well as the carbon budget in the forest sector.

I know that you've done a lot of work in that regard. I wonder if you might spend a couple of minutes talking about what you like about the way Canada reports on carbon monitoring and the carbon balance in Canadian forests and how we take credit for that in our fight against climate change.

Ms. Florence Daviet: Sure.

I think there are a couple of different pieces. The carbon budget model is obviously what we use for our national inventory, which tracks the emissions from forests and some activities in wetlands and peatlands and some activities in agriculture. The national inventory is great because it tracks, year by year, what's going out into the atmosphere and what's being sequestered.

One of the gaps—and I know that the scientists are anxious to continue to improve our national inventory—is that we don't capture all of the activities that cause emissions. There's new science, for example, that shows that when we have roads built into peatlands, that does cause significant emissions—even winter roads, for example.

We need to continue to improve the information that we have in our national inventory and to understand how these various activities are, in fact, causing emissions, so that when you put a price on carbon, you start to understand how different kinds of management practices are potentially detrimental, in some cases, in reaching our climate objectives and making good economic sense. I think that's one element that we need to think about.

I think the second piece is the work that's being done using the carbon budget model to look at mitigation pathways. One of the challenges with any modelling is that when they look at different pathways beyond the direct emission reductions that happen when we harvest less, there are all of these externalities or additional things that happen after that. It may be that it leaks and goes somewhere else, or in some cases if you say we'll substitute this product for another product, you have to make a lot of assumptions about how you're going to get that market to shift and make sure that those new goods are being used and that we're not just increasing our use of all products and therefore having more greenhouse gas emissions occurring annually, which we cannot afford at this point. We really have to turn things around.

In all modelling exercises, we have to be very careful about the assumptions that we make over time and place and about the types of assumptions we're making around demand and how well and quickly we can shift markets.

In general, I tend to focus more on where we're actually achieving direct emission reductions and contract those things, and I tend to get a little bit more concerned when we're putting a lot of emphasis on substitution when it's unclear how we're going to get there.

The Chair: All right.

Mr. Richard Cannings: Thank you.

The Chair: Thanks, Mr. Cannings.

Mr. Zimmer, we go over to you for five minutes.

Mr. Bob Zimmer (Prince George—Peace River—Northern Rockies, CPC): I want to particularly ask questions of Dr. Kathy Lewis.

Welcome. I've been up to UNBC many times, and we were part of some major funding announcements there for these initiatives. They're great. We have the experts in Canada.

As you know, UNBC has been recognized as Canada's greenest university for its environmental and energy performance. Can you tell us about the successes of the UNBC energy initiative?

Dr. Kathy Lewis: I can tell you a bit about it.

We have been on a track for energy conservation pretty much ever since we started at UNBC. We made some great inroads with the start of our pellet plants. We have a pellet boiler that takes in wood pellets and is used to heat our greenhouse systems through a hot water system. The bigger project came along with our gasification system. That takes wood waste from one of our local sawmills—entirely wood waste—and converts it to a gas. It's technology that I have no understanding of. That is then used to heat water, which offsets our use of natural gas for heating the campus.

I think that's what you were asking about. That's one of the pathways we've been taking to reduce our energy consumption.

● (1430)

Mr. Bob Zimmer: In terms of leadership, whether it's the wood pellet heating system or the bioenergy plant, what are some of the ways UNBC's success could be replicated by others in the higher education industry? How might others follow UNBC's leadership in this area?

Dr. Kathy Lewis: Some others have. I'm a little familiar with a few institutions that are adopting similar approaches. I believe the City of Prince George is on a similar pathway. We were looking at our systems for a way to support remote communities that are reliant on diesel generators for their energy. We were trying to find a way to use all these technologies to help transform them into more sustainable energy systems. That work is not making great progress, but there are opportunities for developing that even further.

Mr. Bob Zimmer: Yes, we've really tried to bring that into indigenous communities, and it hasn't really taken off like we'd hoped.

Under the energy initiative's phase 3, the sustainable communities demonstration project, the UNBC website says that the SCDP will serve as a model for energy security for Canada's off-grid communities, referring to what you said, many of which are located in British Columbia.

Can you unpack this for us?

Dr. Kathy Lewis: It's an opportunity to use the systems that have been developed through technology and have them in rural and remote communities where they are highly dependent on diesel generators. The technical problem, from what I understand—and I'm not an expert in this area—is getting rid of the tar.

We have to do some more work before that can be taken much further. You can use the gas that's generated to heat water, but you can't use it for electricity. That is a technology glitch on which we need more work.

Mr. Bob Zimmer: That was part of the plan at UNBC to make heat using wood waste. I don't know if the panel knows this, but most of the municipal buildings in Prince George are heated with energy generated at UNBC from this wood waste. It's piped down the hill into the city. Could you expand on that a bit further?

You talked about how it hasn't gone any further due to the tar aspect. I wanted to dig into that, because to me it was a scale issue. In terms of size, we wanted to put this on the back of a truck somewhere, bring it to a community, drop it off and have it function.

Could you highlight what some of those issues are? We want to see this go further, so could you list a few of those problems?

Dr. Kathy Lewis: Again, I'm not the expert here. We tried developing some of these systems in some remote communities such as Kwadacha and Tsay Keh up in the north. The opportunity to heat the water is there, but there are still technical problems in for electricity generation. Where it might save us, however, is finding ways to link that up with battery technology. At this point, I probably shouldn't say anything more, because it's not my area of expertise.

Mr. Bob Zimmer: Thank you for appearing today. UNBC has punched far above its weight, as James Moore has often said. I'm more than impressed that you're continuing with this work, challenging as it is. There are a lot of miles to cover still, as you know, but thanks for appearing before our committee today.

The Chair: Mr. Lefebvre, we'll go over to you for five minutes.

Mr. Paul Lefebvre (Sudbury, Lib.): Thank you, Mr. Chair. I've actually had the honour of meeting many of the people on the panel today, with the exception of Ms. Lewis. It was good to hear from all of you.

[*Translation*]

I know everyone here today, and I'm very pleased to hear your testimony, which I find fascinating because you can see the potential of the forest industry. I'm a little guy from the pulp and paper industry in Kapuskasing, so I've seen firsthand the importance of this industry and its potential.

I'd like to start with Mrs. St-Aubin, who is originally from Sudbury, where I live. I'm speaking to you from there right now.

As your organization Tree Canada knows, our government has set aside $3.1 billion for its campaign to plant 2 billion trees.

Mrs. St-Aubin, your organization looks after urban trees. Can you tell me—in one minute, please—how you're going to contribute to reaching the goal of 2 billion trees?

● (1435)

Mrs. Danielle St-Aubin: Thank you for your question.

We look after trees, not only in urban areas, but also in rural areas. We grow seedlings and plant hundreds of thousands of trees per year in those areas. So we make a contribution in terms of mass, in terms of the number of trees.

Mr. Paul Lefebvre: How many trees do you plant per year?

Mrs. Danielle St-Aubin: We plant over 350,000 trees per year and we plan to increase our production. Urban trees are more mature, but they are not necessarily huge. They are mostly seedlings or potted trees that can capture CO_2 as soon as they're planted and as they continue to grow.

Mr. Paul Lefebvre: Thank you very much, Mrs. St-Aubin.

I will now turn to you, Mr. Villeneuve. About a month ago, as part of our study, we had a representative from the Forest Products Association of Canada appear before us. President and CEO Derek Nighbor told us that the association and its members had the capacity to plant about 1,000 trees per minute and that they planted an average of 500 million trees per year.

Then my colleague Mr. Zimmer did the math, and it seems to me he suggested that it would take 34 years to reach the federal government's goal of planting 2 billion trees. So I would like your expert opinion on how long it would take to plant 2 billion trees. Would it be possible to do it in 10 years?

Mr. Claude Villeneuve: It should be possible to get there in 10 years. I will use the example of vaccination against COVID-19. If it is to succeed, it will require planning, people who can think strategically, funding bodies to prepare plans and, above all, a responsive environment. That last element is fundamental, because wherever humans are present, we might find competing land use agendas.

The trees we're going to plant will be the main resource for carbon capture for 150 years, which is the minimum we should aim for. If we want them to help fight climate change, we must be able to maintain those resources. That means protecting the land where they are planted from any other activity.

Carbone boréal's experimental forests are protected under the Forestry Act. No human activity other than research can take place there, and that form of protection is effective.

So you have to think about the land, production strategies and, above all, a long-term vision with indicators that allow for reliable reporting. If you remember what I said about the aluminum industry and the 2 billion trees, every year, those 2 billion trees must capture the 10 million tonnes of emissions that industry generates.

[*English*]

Mr. Paul Lefebvre: Mr. Chair, how much time do I have?

The Chair: You have 30 seconds.

Mr. Paul Lefebvre: All right.

[*Translation*]

So I will turn to you now, Mr. Bernier

Going back to the three recommendations you presented to us, can you tell us more about the experience that you had in the United States with the labelling of biosourced products?

Mr. Roger Bernier: That biosourced product was made by a Canadian company in Sarnia. We had it certified as BioPreferred. The certification was very simple, relatively easy, and opened up markets in the United States for us.

Mr. Paul Lefebvre: Thank you.

Mr. Roger Bernier: So the same thing could be done in Canada.

[*English*]

The Chair: Thank you, Mr. Bernier, and thank you, Mr. Lefebvre.

Mr. Patzer, we'll go over to you for five minutes.

Mr. Jeremy Patzer (Cypress Hills—Grasslands, CPC): Thank you very much.

I'll start with Ms. Lewis. Then perhaps Ms. Abusow can comment as well.

During this study, we've been hearing about the effects of carbon sequestration related to controlling emissions. The Canadian Forest Service tells us that a third of Canada's forest land, approximately 291 million acres, is unmanaged. It's currently not being estimated for emissions or removal of carbon. Is this something we should be tracking?

● (1440)

Dr. Kathy Lewis: Oh, wow. That's a big question. The more information we have with regard to carbon emissions and forest management, the better. Even though that large area is not being managed, it actually is. If we're doing things like fire suppression, we are affecting how those forest ecosystems are functioning. We need to understand the influence of those activities on their total carbon emissions.

Mr. Jeremy Patzer: Thank you.

Ms. Abusow, do you have anything you want to add to that?

Ms. Kathy Abusow: Yes. Actually, I think it's important to understand that about half of our forest stock isn't used in active forest management to produce forest products. Not everyone understands that. I think it's an important fact, and unique about Canada.

You heard the first speaker talk about protection strategies for 30% of our forests by 2030. What you're doing is taking even more of that area out of potentially sustainable forest management to sustain communities—all communities—and indigenous communities. This is what we're focused on: How do you manage those forests for carbon, for multiple values, but have other effective conservation measures that address protected areas and allow sustainably managed forests to be included in a protected area strategy? It means making them available for harvesting and also acknowledging, when you get conservation outcomes on those forests that are akin to strictly protected areas, that those forests that are sustainably managed should be able to count as well.

This is something we're working on with ECCC. I think this is all important, because it is all related to species recovery, carbon strategies and sustainable communities. We have to ask ourselves why we want 30% by 2030. We say it's for climate, it's for species, it's for conservation outcomes, but you can have that and also have sustainably managed forests, a circular economy, products that are produced from them and those other benefits through proper management, through new strategies and innovation.

Yes, our whole forest base needs to count, but we seem to forget that we're already not counting 50% in a lot of what we're doing. I just want to remind this committee of that larger forest base that we work on. It's an important one to consider overall, with all of these strategies, not just that which is under active forest management.

Mr. Jeremy Patzer: Thank you very much.

Basically, though, there's no data we can rely on to help us with the unmanaged forest side.

Ms. Kathy Abusow: That's right. I agree that you need to have as much data as possible to have the fullest plan in terms of the path forward.

Mr. Jeremy Patzer: Yes, absolutely.

I'll switch over to CPAWS for a minute.

For this study, I think it's possible for us to look for common ground between economic and environmental interests. We've heard from industry that there is some concern out there about foreign competitors and investments, such as from China or the U.S., capturing the market. Some years ago, there were similar concerns raised by environmental groups about the China Investment Corporation getting involved with private forests in B.C.

Do you think we should be concerned about foreign investments or influences working against our national interests, either environmentally or economically?

Ms. Florence Daviet: That's not really my area of expertise. I'm not sure I can answer that with a lot of knowledge, quite honestly.

I'll leave it at that. Thank you.

Mr. Jeremy Patzer: I mean, I'm kind of concerned that in the pursuit of ensuring that our parks and conservation efforts are well funded, we might be accepting money from groups that are committed to ensuring that Canadian industry is stopped in order to prop up foreign interests. Is that not a concern you would have?

The Chair: I think you left her speechless.

Ms. Florence Daviet: No, I'm sorry. I had to switch over to my phone because my Internet died and I don't fully understand how it works.

I think that Canadians are interested in having protected areas, and Canadians support that, including financially, so no, I'm not particularly concerned that that is somehow driving an agenda from foreign investors.

● (1445)

Mr. Jeremy Patzer: Okay. I just took a quick dive through—

The Chair: That's all your time, sir.

Mr. Jeremy Patzer: Okay, thank you.

The Chair: Ms. Jones, we go over to you for five minutes.

Ms. Yvonne Jones (Labrador, Lib.): Thank you very much, Mr. Chair. I thank all of our guests today for their very informative presentations and obviously very interesting discussions.

I have a couple of questions. One is with regard to the BioPreferred labelling system. What does it really mean for a product to have a preferred mark like that? Do you think that is something that Canada should be doing in trying to get a better understanding of where you're going?

Mr. Roger Bernier: Thank you, Madam.

[*Translation*]

BioPreferred certification in the United States is a good example of the way in which we can inform consumers or users of their choices between, for example, a product from classical petrochemistry, that uses nonrenewable material, and an equivalent product made from biobased material, renewable material. This simply lets consumers know that those products are much more sustainable, practical and safe in environmental terms.

Canada could well adopt similar measures in a Canadian context with Canadian goals. We are capable of doing that. We are just as good as other countries. We could have a certification that would be specific to our products. Those products could come from both forest biomass and agricultural biomass. Lignocellulosic compounds, whether they are from agriculture or forestry, are the same or similar in composition.

In our view, a certification like that would convince companies to conduct research and development and to establish production processes. At the end of the day, consumers would benefit, for all the reasons I mentioned.

[*English*]

Ms. Yvonne Jones: Thank you. That certainly provides a lot more clarity.

Would you have pursued this before within the Government of Canada to try to have this kind of labelling, or would this be a relatively new thing for the industry to be asking at this stage?

Mr. Roger Bernier: This is a very good question.

I'm not sure if other companies or other sectors have applied or have lobbied the government for a similar accreditation. Certainly some companies that I'm aware of have filed BioPreferred products in the U.S. for their own products as well, but I'm not sure if it has been done systematically throughout Canada or whether the government has been lobbied.

We favour this idea. We would like to put this forward. We think it's an easy way to get those products accepted by consumers and by the regulatory authorities as well. If it's not being done, we certainly would like to promote it.

Ms. Yvonne Jones: Do you see it as being able to bring value to the product in the export market as well?

Mr. Roger Bernier: Certainly. If you look at the different certifications throughout the world, many industries and many products are certified. You have a certification for cosmetics, for industrial products. Particularly if you're aimed at the European market, that would give you a tremendous lever for those markets, absolutely.

Ms. Yvonne Jones: That's great.

Mr. Chair, if I have a few more minutes, I do have another question.

The Chair: You have 30 seconds.

Ms. Yvonne Jones: Okay. Maybe I'll have to skip it.

Thank you all for your presentations. It's really fascinating to see the work that's ongoing within the forestry sector in Canada. I think the exposure to the product development that you have ongoing is probably not as.... Not as many Canadians are aware of it as maybe we should be. I know that I have been learning a lot in these sessions, so thank you very much.

● (1450)

The Chair: Thank you, Ms. Jones.

Mr. Simard, I'll go to you for two and a half minutes. I'll apologize in advance.

[*Translation*]

Mr. Mario Simard: Thank you, Mr. Chair.

Could you give me some specific examples of what has been done in recent years by CRIBIQ on bioproducts, and by Carbone boréal?

Mr. Mohammed Benyagoub: Speaking for CRIBIQ, the best example of the projects we have funded is a biotechnology company called Bosk Bioproducts. The company is located near Quebec City. It teamed up with a paper mill in the Outaouais that had residue that could be reused, specifically its bacteria.

So a research centre, a biotechnology company and a paper mill teamed up and, today, we are just at the point of reusing industrial residue by fermentation, and on a commercial scale. We are using technological tools to develop very high-quality bio-plastics that can be used in packaging, especially food packaging. These materials are the result of cutting-edge technology.

We have funded a number of other projects especially with paper mills. The result has been the development of high-quality bioproducts for use in aviation or in other industries, like cosmetics.

Mr. Claude Villeneuve: As for Carbone boréal, because of the carbon credits we have generated by planting trees, the carbon offsetting program has allowed us to fund bursaries at masters and postdoctoral levels for about fifteen students who have gone through the entire process. In addition, we have gathered more than $700,000 for future interests. We also have published 20 or so scientific articles and we have four or five more in preparation.

The money collected by Carbone boréal from offsets associated with, as an example, the Bloc Québécois' election campaign—not to mention any names—is put into funds from which we award bursaries to students. For us, that's a great source of pride.

[*English*]

The Chair: Thank you, Mr. Villeneuve.

Mr. Cannings, we'll go over to you for your final two and a half minutes.

Mr. Richard Cannings: Thank you.

I'm going to turn to Dr. Lewis again and pick up on her comments about non-commercial species and biodiversity and try to link that with our efforts to FireSmart communities across Canada that are on that forest interface. I'd like to see if there are some best practices she would put forward for the forest sector on both FireSmart in communities and on allowing non-commercial species to grow. We hear of forest companies using herbicides to remove deciduous shrubs and trees and how that might affect, for instance, forest fire behaviour in those areas.

Could I have some general thoughts on those subjects, please?

Dr. Kathy Lewis: One of the issues that we have with very homogeneous forests, especially ones that are primarily made up of conifers, is they tend to be quite flammable compared to hardwood species like birch and aspen. Especially around communities, there's a great incentive to try to include birch and aspen in the forest as a way to protect the communities because they are...we call them asbestos trees sometimes. They tend to be quite fire resistant.

We have to be careful about making sure that we don't just plant hardwoods everywhere because we want to have resistance to fire, because many of our industries cannot use hardwoods. My discussion is around trying to make sure that we have at least some small industries that can utilize those products as well so that we're not just taking up space where we can grow conifers. We can do two things at once. We can provide FireSmart around communities, but we can also utilize some of those species for developing various kinds of wood products.

● (1455)

Mr. Richard Cannings: Thank you.

Dr. Kathy Lewis: Did that answer your question?

Mr. Richard Cannings: Yes, thank you very much.

Finally, Monsieur Villeneuve, I think it was you who said that in planting two billion trees, the impacts would be 20 years out and would only be five to 10 megatonnes. I just wanted to clarify that.

[*Translation*]

Mr. Claude Villeneuve: Yes, that's exactly what I said. Trees capture little carbon when they are young and then they have a period of growth that can last from ten years to 70 or 90 years, depending on the species. In that period, they work well. After that, they are less effective but they maintain the carbon throughout their life.

However, carbon is still accumulated in the ecosystem. The soil reservoir and the reservoir of decomposing biomass also are quite significant in the fight against climate change.

[*English*]

The Chair: Thank you, Mr. Villeneuve.

Mr. Richard Cannings: Thank you.

The Chair: Thank you, Mr. Cannings.

Mr. McLean, I believe you're next for five minutes.

Mr. Greg McLean: Thank you, Mr. Chair.

I'll go right at Ms. Daviet here. Do you think it's appropriate for an organization calling itself the Canadian Parks and Wilderness Society to accept substantial funding from a notorious U.S. organization that has shown significant political bias to advance its own economic interests?

Ms. Florence Daviet: I'm sorry; I'm not aware of that and cannot answer your question.

Mr. Greg McLean: We're talking about the Tides Foundation funding you. Of course, Tides.... If you look at where the actual funding comes from, you see that it comes from some economic interests. Are you at all aware of the economic interests behind your donors?

Ms. Florence Daviet: Most of our donations come from private Canadians who support our organization and who support the goals of our organization.

Mr. Greg McLean: How much do you get from Tides every year?

Ms. Florence Daviet: I do not know.

Mr. Greg McLean: Can you find that out, please, because I think it's important when you're getting this much money from a U.S. organization that you understand how much that actually is and where the money comes from.

Ms. Florence Daviet: There are a lot of forestry companies and other industries that get money from foreign interests. Certainly that's a question that we can all ask ourselves.

Mr. Greg McLean: It is actually a cross-border industry in North America, and the U.S. does take a lot of the forestry industry's revenue right now in tariffs. A lot of this is driven by economic interests on both sides of the border, and I'm sure you're aware that taking money from somebody who might be benefiting from that might be suspect as far as your input goes, wouldn't you say?

Ms. Florence Daviet: I'm sorry, but I don't agree. I don't agree with what you're trying to say in this situation, but I'm happy to—

Mr. Greg McLean: Well, tied up in the U.S. Treasury right now is $4 billion that actually belongs to Canadian lumber companies that have to trade with the United States market. That's a World Trade Organization dispute going on, which we think we're on the right side of, yet we continue to get a lot of push-back domestically from organizations that don't see that the economic interests of the United States are at heart here. Are you aware that you are part of that?

Ms. Florence Daviet: I don't think that I'm part of that. We do support Canadian forestry companies. We work with them. We have worked with them on trying to advance on multiple issues that they themselves have been wanting to advance on. I think CPAWS works a lot with numerous forestry companies in Canada and supports the actions they're taking when they're moving forward on biodiversity questions.

From my perspective—

Mr. Greg McLean: Okay. Thank you. I need fast answers.

I'll switch now to Tree Canada.

Tree Canada, you talked about what it costs to plant a mature tree versus a seedling, and I think you mentioned up to $1,000 per tree. When you look at a budget of $3.5 billion for a billion trees, what kinds of trees do you think those will be? Will they be diverse or will they be just thrown into one patch of land as quickly as possible?

● (1500)

Mrs. Danielle St-Aubin: I can answer that.

The cost of a tree varies. I would anticipate that the government would want to maximize its dollars and plant trees that are diverse, and in various areas of the country at the most effective cost, I would assume.

From our perspective, we rarely plant thousand-dollar trees. I was just giving you a range of what is possible. We're currently working with, for example, Winnipeg, which is trying to replant a million trees, and they're trying to reduce the cost of each tree as much as possible in order to get as many as possible into the ground.

We also use volunteers, because it's not just the cost of the tree that is important. It's also the cost of getting it into the ground and the cost of maintaining that tree—

Mr. Greg McLean: I'm sorry, Ms. Aubin. Yes, but to plant them, what would you say? If you're looking at three and a half billion dollars divided by a billion trees, it's three and a half bucks a tree. What kind of tree do you plant—diverse, size, etc.— for three and a half bucks a tree?

Mrs. Danielle St-Aubin: Well, the type of tree that's planted will really depend on where it is planted, I would say.

Mr. Greg McLean: Okay. Somewhere in the Canadian forest, if you were increasing the land here, tell me what you think—

The Chair: Thank you, Mr. McLean. That's all your time.

Mr. May, you are last on the docket today.

Mr. Bryan May (Cambridge, Lib.): Thank you, Mr. Chair. How much time do I have? I know we're getting close to the two-hour mark.

The Chair: I'll give you your five minutes if you need it.

Mr. Bryan May: Okay, thank you very much.

First of all, I want to thank all of the witnesses.

One of the great things about going last is I get to do that, to thank everybody, but one of the bad things is that a lot of the questions I would have asked have already been asked and answered. It's a bit of a challenge.

I want to specifically thank CPAWS for being here. I'm not really sure that last line of questioning was appropriate. I nearly jumped in on you there, Greg, to ask the chair for relevance. I think you were right to point out that a lot of organizations, a lot of industries, receive funding from multiple sources, so I do apologize on behalf of the committee for that.

Actually, Greg stepped on one of my questions when he asked with regard to the types of trees and how we do this. It brought me back to my youth a bit. All through university, every spring before I'd start my summer job, I would plant urban trees for the City of London back at a time when this was actually run by a public utilities commission, so I'm aging myself a little bit. I know how difficult it is to plant some of these trees that are older, the 10-, 15-, or 20-year trees, whether you want to call them boulevard trees or decorative trees in urban settings. London had a really good reputation for doing this.

We have had a lot of questions about what types of trees are good. I think that there's been a lot of conversation about this, and I don't want to rehash that discussion, because it depends on where you're putting these trees and on what your goal is for these trees.

I would like to ask Tree Canada this. I'm a member of Parliament in a mostly urban riding. Specifically in an urban setting, what advice would you give us to set standards or try to advise either the provinces or in some cases the municipalities on how to proceed or how to develop an urban canopy program?

Mrs. Danielle St-Aubin: I think this is Adrina's area of expertise.

Dr. Adrina Bardekjian: Sure. Thanks, Danielle.

I would say it depends on how you would like to go about starting and whether there are similar communities that are the same size and have similar considerations. There's an array of resources available. For example, at Tree Canada we have a compendium of best urban forest management practices. It includes a lot of different examples of existing urban forest management plans across the country.

We've also embarked on a study with the University of Toronto that maps Canada's urban forestry footprint. It includes communities that have urban forest management plans and tree protection policies.

Essentially I would say you'd start with really examining what you want for your urban forest, and then do a public consultation to see what the community wants for that space as well.

● (1505)

Mr. Bryan May: Who's doing a really good job at this right now? Who is the gold standard? Who should we look to as a community that has really got this together?

Dr. Adrina Bardekjian: That's a great question. We get asked that a lot.

There are a variety of Canadians who are doing a great job. Certainly you could look at larger communities like the city of Toronto, like Montreal, like Vancouver, but there's also Truro, Nova Scotia, as a smaller community, and Halifax as well. I think also of the town of Oakville here in Ontario. There are a lot of different communities doing great work. Whether something is good or sets a gold standard from an urban forest management perspective really depends on what the initial goal was that the community itself set.

I think that's really important to understand. There isn't a one-size-fits-all for urban forest management planning, because communities are different sizes and have different resources available to them, and they have different compositions of different cross-cultural interests as well, depending on the city.

I think all of those things come into great consideration when you think of developing an urban forest management plan that really works for your community and that's also sustainable moving forward.

Mr. Bryan May: I can anticipate that the chair is about to cut me off.

The Chair: I was going to say that for somebody who didn't want to use all his time, you did a pretty darn good job of using it all.

Mr. Bryan May: I didn't say I wasn't going to use it all; I just asked how long I had.

The Chair: Well, you didn't sound like you wanted to use it all. In any event, I appreciate you being right on time, as I do with everybody.

As I think more than one person said today to our witnesses, we never seem to have enough time to follow up on some of the things we're discussing, but we are very grateful to all our witnesses for taking the time to be here today and providing us with a great deal of information to take home and think about as part of the study.

Thank you. Everybody, please enjoy your weekend, and I will see all the committee members early next week.

The meeting is adjourned.