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Chair

Mr. John Aldag

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● (1545)

[*English*]

The Chair (Mr. John Aldag (Cloverdale—Langley City, Lib.)): Good afternoon, everyone, and welcome to our environment committee hearings today.

The idea for today was to have a couple of panels to talk about the recent report that we saw on the biodiversity loss we're facing worldwide.

Thank you to each of our panellists for joining us today. We are expecting votes some time during this period. We don't know exactly how the afternoon is going to unfold. The way the process works is that we will have opening statements from each of our three panellists. We're hoping for opening comments in the seven-minute range and then we can get into questions and answers.

I use a handy card system. The yellow card means there is one minute left in the time allocated, and the red card means it's time to move on to the next person, but don't stop mid-sentence: just wrap up whatever it is you're saying and finish the thought. We're a fairly amicable group.

On our first panel, we have Dr. Kai Chan, Professor and an author of the report we'll be talking about today. We also have Dr. Jeremy Kerr, Professor of Biology, Faculty of Science, from the University of Ottawa. By video conference, from the Nature Conservancy of Canada, we have Dan Kraus, Senior Conservation Biologist.

Thank you to the three of you for being here.

Dr. Chan, we'll start with you.

Professor Kai Chan (Professor, Institute for Resources, Environment and Sustainability, University of British Columbia, As an Individual): Thank you very much for having me here. It's a great pleasure to have this opportunity to speak.

I've provided a presentation that has a lot more detail for your records. I'm not going to go through most of those slides today, but rather jump straight to the highlights that are not already featured quite clearly, but exhaustively, in the summary for policy-makers.

That presentation and the summary for policy-makers highlight the substantial declines in nature and nature's contributions to people, including cleaning our air, cleaning water, mitigating floods, helping to grow our food, etc., and how that's undermining our collective global ability to meet crucial societal goals for nature and sustainability.

That basically sums up the first half of the assessment, and I'm now going to move on to other aspects.

One key point that isn't well understood about this assessment is that the chapter that I had the pleasure to lead was actually the first of its kind, thanks to the scoping document, which I can't take any credit for. That scoping document laid out an exhaustive pathway and scenario analysis with linked literature reviews. The way that we implemented this was via pathways and scenarios. We examined all available literature about all pathways towards achieving future goals for sustainability and nature according to six different, linked global goals, including feeding humanity, resourcing cities, maintaining fresh water, protecting the oceans, maintaining biodiversity on land, and mitigating climate goals while still providing energy for humanity.

This kind of an analysis had never been done on this scale before. It was absolutely crucial in enabling us to make statements about what was likely needed to achieve the kind of world that was envisioned in the Rio+20 process. Never before have we had that kind of an analysis. In previous assessments, the solutions part of the assessment was really based on opinion that was based on an analysis of the problem rather than an analysis of the solution.

What that meant was that in Paris, when we negotiated the text for the best global assessment, when nations were requesting changes in our proposed solutions, in many cases we had to say, “Actually, that's not what we found. That is not consistent with the evidence about what would achieve this transformation towards sustainability.”

Now, that scenario analysis and the literature reviews of 13 different aspects we called.... There are five levers, including governance interventions. There are eight different leverage points, meaning in global systems where you would intervene, like total consumption and waste. I'm going to sum that up in terms of just five key points, without which, based on our analyses, we will almost certainly not achieve the kind of transformational change the report says we need to achieve our global goals for sustainability.

The first of these is about going carbon neutral, and incentivizing and enabling businesses and individuals to do the same. Leaders in businesses are already doing this. Some governments are committing to it. Most recently the U.K. has committed to doing this by 2050. It's possible to make this normal, and eventually, perhaps not in that distant a future, mandatory. In that way, we can reshape what is seen as good corporate citizenship or individual citizenship by committing to no longer being part of the climate problem. Clearly, that's not going to happen immediately. It is the kind of aspirational goal the U.K. has committed to achieve by 2050.

The second part is to make it easy, enjoyable, inexpensive and then eventually normal to be earth positive. What I mean by "earth positive" is having net positive effects on all biodiversity and ecosystem services—all of nature and what nature does for people. The global assessment is very clear that as far as environmental problems go, climate change is large, yet only the tip of the iceberg. What that means is that if we don't attend to climate change—and this came straight out of our analysis—along with other important environmental problems, like land-use change, over-harvesting, pollution, and invasive species, then we're likely to undermine those other problems and make life more difficult in many different ways and places.

● (1550)

Now, it is not yet possible for individuals and organizations to have net positive impacts on the planet, but this can follow the kinds of developments we've seen in climate change in terms of carbon offsets, learning from some of the mistakes that have happened. I have a lot more to say on that, but I'm going to save that for later.

The third point is to make all subsidies and incentives work for the transformation and not against it. One of the key things that was in the global assessment, including in the summary for policy-makers, which was extremely contentious, was about the need to overcome in this transformation opposition from vested interests, right? We did not beat around the bush in terms of what those vested interests were and what that opposition looks like.

It looks like folks are receiving a lot of funding through subsidies, which are understandably but perversely enhancing production at the expense of the environment. It's unavoidable this should happen unless we specifically tailor those subsidies to encouraging the kind of production that enhances stewardship. Unfortunately, currently in Canada, most subsidies are not structured that way, such that we have a lot of money being spent to enhance production on the one hand, and then a lot of money on the other hand going to counteract the negative effects of that production. We can streamline those two processes by dovetailing them.

In particular, in terms of fossil fuels, this means moving those subsidies away from production for fossil fuels and towards transition—towards clean energy. That should include, of course, retooling programs for workers.

The fourth is about decision-making itself in environmental management and resource management to make it precautionary, adaptive, inclusive and integrative across sectors and jurisdictions.

This means on the one hand, for example, restricting chemicals—this is a precautionary measure—until there is sufficient reason to believe that they are safe for people and the environment. This would follow from the REACH legislation in the European Union. A second point would be to govern through transparent and participatory processes that involve all major stakeholder groups—and also rights holders—without privileging special interests through special or secret access, as is currently quite normal in all jurisdictions in Canada. The third is to zone in an adaptive way, recognizing that the world is a changing place. We can no longer zone based on 100-year flood plains, for example, when we see 100-year floods occurring in many jurisdictions three times a decade. We have to plan as if surprises will come.

The fifth and final one, which is clearly within your mandate, is to strengthen environmental laws and policies and to ensure the consistent enforcement of all laws and policies—not only the environmental ones—at home and abroad. This is crucial for so many reasons.

It has become normal, in that our economy is founded upon a 19th century mentality, to expand our economies broadly. This was appropriate in the 19th century. It is less appropriate now, when we have quite a crowded world, where all of our productive and extractive activities have delayed and diffuse but large and crucial negative impacts on nature, and also on people as mediated by nature.

Now, a key part of this, as I pointed to, is the need to do this both at home and abroad, so it requires action in terms of diplomacy, because what we have currently is a kind of global race to the bottom. It is undermining our ability to protect the environment in place, because producers can rightly say that if they don't produce these products in these ways that have negative impacts on the environment, then that will happen elsewhere and Canadian jobs will be lost. There is a lot that we can do locally, but in the long term it's going to require that international diplomacy.

If we managed to succeed in that task, it would constitute the global sustainable economy, and all five of those changes together would help to realize that world envisioned in the Rio+20 process, which is also entrenched in the global assessment and the achievement of all of the nature-based goals for sustainability—albeit late—and a sustainable world more broadly.

Thank you.

● (1555)

The Chair: Thank you for those opening comments.

I'll move now to you, Mr. Kerr, if you'd like to take your time for seven minutes or so.

Professor Jeremy Kerr (Professor of Biology, Faculty of Science, University of Ottawa, As an Individual): Thank you very much.

I'd like to thank the chair, the vice-chair and all members for being here today, and for your continued work on conservation issues and sustainable development. I am really grateful to every one of you for the fact that you actually care enough to be doing this work. Thank you.

I will begin my comments today by using a guiding quote from Aldo Leopold's *A Sand County Almanac*, and that is very simply, "To keep every cog and wheel is the first precaution of intelligent tinkering."

I think we are at the point now where the data demonstrate very clearly to us that we have not been very intelligent tinkers. We are losing species at a ferocious pace, and more than that, we are losing populations of species at an even greater pace.

In new data that emerged in 2018, we saw that, based on analyses of 4,005 vertebrate populations that have been monitored more or less continuously since 1970, those populations have declined by between 50% and 67%, over that time period. This dreadful conclusion comes from the Living Planet Index, and it tells us that our living planet is considerably less alive than it was when I was a child, when these measurements first began.

Trends of this kind figure prominently in the extraordinary global summary that IPBES has provided. That report rounds up trends from thousands of different primary research studies.

I'd like to comment on a few of those primary research studies, as we have an author of the report here, and I don't think I need to summarize it for you. He has already done that very ably.

The first point I'd like to make is that some have laboured under the mistaken belief that rates of biodiversity decline in other places, such as the tropics, are higher than they are here. This view is incorrect and indefensible, based on quantitative analysis. There are far more species in the tropics than here, but if we measure rates of species decline in Canada relative to numbers of species that actually live here, we find that those rates are pretty similar, and sometimes even higher than global averages of the pace at which things are disappearing in other parts of the world.

For example, 32% of amphibian species globally are at risk of extinction, but 44% of amphibian species in Canada are at risk; 19% of reptile species globally are at risk of extinction, but that number is 65% among Canadian reptile species. Numbers vary from group to group, but the general message is rather simple: We have nothing we can be sanguine about, in terms of the proximity and importance of these threats to the biodiversity we have inherited from our ancestors.

A major reason that such a large proportion of species here is at risk is that they, like most people, are pressed up against our southern border. It is in these southern areas of Canada that land-use changes are most intensive and extensive, largely for agriculture, but also for urban areas and resource extraction.

We have hollowed out habitat in many of Canada's biodiversity hot spots and introduced land-use practices that are incompatible with life for many of those species. The policy whiplash created by governments, immediately upon election, undoing their predecessors' work, is not helping either.

Yet there is cause for hope. Bright spots for habitat in Canada's growing protected areas network, and in traditional territories of indigenous peoples, provide vital habitat for many species, even when there are neighbouring intensive and competing land uses, as in southern Ontario.

I did my Ph.D. in some of those places, such as Pinery Provincial Park on the shores of Lake Huron. It is an area surrounded by extremely intensive agriculture, yet this very small park, which may be only seven or eight square kilometres in size, provides a home for many species at risk. It's a biodiversity hot spot here, at a national scale. It gives us an undeniable example that restoring habitat in even small areas can exert disproportionate benefits in landscapes where habitat loss and pesticide use are pervasive.

To be clear, bigger parks are better, but small parks can be beautiful and vital, too. Yet conservation strategies cannot be based on anecdotes, no matter how charming I find them.

● (1600)

If we examine the economic return from agricultural land uses, for instance, the Statistics Canada census of agriculture data has demonstrated that producers receive little return for their hard work in some areas.

If we then line up those areas with places where there is the most potential for recovering populations of Canadian species at risk, we can work out solutions for prioritizing areas where conservation might proceed relatively effectively and relatively inexpensively. We published a map showing an example of this in 2017 in *Conservation Biology*, an instance of systematic conservation planning that figures very prominently in the target 1 work that so many people are contributing to.

Another major conclusion of that paper is that, in terms of the economic costs of conservation action, it is better to proceed immediately than to refine the plan somewhat but delay it by several years while refining it. Waiting makes the costs much higher than doing it now, even if the immediate plan needs to be refined while it is in motion. Fast action is cheaper, as well as more effective.

In Canada, it's not just biodiversity that's being lost. We're also losing species that do things for us and that provide us with ecosystem services we cannot live without. Pollinators are one such group. We showed that pollinator assemblages, as exemplified by butterflies, are undergoing a process of biotic homogenization. Rare species are disappearing from many areas, and replacing them are common weedy species. The consequence is that, from place to place, groups of species look more and more like each other. The distinctiveness of biological regions is declining.

I have not yet discussed climate change. As you all know, and as the evidence unequivocally demonstrates, human-caused emissions of greenhouse gases from all sources today are the major cause of present-day climate change. We have the power to intervene to reduce those emissions and keep our climate from warming beyond dangerous thresholds—and I mean dangerous for the continued stability of human civilization—as well as the essential and allied problems we face around biodiversity conservation.

I must emphasize that we now have strong evidence that climate change is contributing to extinction risks among groups of species we are not able to do without. In particular, I'll talk about pollinators where we've shown—along with many other researchers around the world—that climate change is contributing to a loss of pollinator biodiversity that is now detectable at continental scales across Europe and North America. Indeed, many of these species are effectively trapped in a climate vise, and their ranges are being crushed by climate change—they're disappearing. That means their capacity to provide these ecosystem with services that determine whether we get to have things like crops—in 75% of cases—is disappearing as well. This is a most unhelpful development and something we should be very concerned about.

We do not have the luxury of time to vacillate about whether we act on climate change. We could have done that a little bit in the 1980s, given that scientific uncertainty could questionably have justified prolonged study rather than immediate action. At this point, however, failing to address climate change and its many impacts, including ecological impacts, is a game of roulette with a loaded pistol.

Achieving connectivity in landscapes to enable species to disperse elsewhere or find refuge from extreme weather is part of what we must address in Canada. This thinking was also clearly front of mind in testimony that you heard in this committee recently on a protected area strategy. Policies for addressing climate change exist and have been tried—they work. They can be refined as we learn new things. They don't impose impractical economic costs; there is no conflict between conservation and the economy.

Finally, I'm going to close on a few simple notes, paraphrasing an indigenous saying: We do not inherit the world from our ancestors; we borrow it from our children. As scientists, we know there are real impacts from failures to take effective conservation action. But, as parents and as citizens, we feel this need more acutely because we see what is coming; we measure it as part of our day jobs.

● (1605)

The basic information I've discussed here today, as published in the IPBES report, isn't new, but has many refinements and improvements. That science was available to all of us 30 years ago.

Ever since, the basic messages that have been conveyed from the scientific community to policy-makers have remained largely consistent—again, with important revisions and refinements. However, the time has now come for us to proceed with effective policy action to conserve biological diversity. The reasons to do so are easily found when we go home to our families at night and remember that we have borrowed the world from our children. We did not inherit it from our parents.

The Chair: Great. Thank you.

Now by video conference, we'll going to Mr. Kraus for his opening statements.

Mr. Dan Kraus (Senior Conservation Biologist, National Office, Nature Conservancy of Canada): Good afternoon.

Mr. Chair, and members of the committee, thank you for having me here to address this important topic.

I'm senior conservation biologist for the Nature Conservancy of Canada. The Nature Conservancy of Canada is our country's leading not-for-profit land conservation organization. We work to protect the most important natural areas and the species they sustain. For over 60 years, we've worked with partners to protect almost three million acres across the country. We're a proud partner of the Government of Canada through the natural heritage conservation program, which I'll touch on later. Many of our conserved areas are within your ridings —over 90% of the Canadian population lives within 100 kilometres of a Nature Conservancy of Canada property.

Dr. Chan, congratulations on your report. Thank you for bringing attention to the loss of biodiversity, both around the world and here in Canada. As Dr. Kerr said, for scientists, this is not new information. We've known that life on earth is slipping away from us, and we've known this for many generations. The impact of our human activities on other species is so widespread and lasting that scientists have referred to our current period as the “sixth extinction”. Extinction rates are now 100 to 1,000 times greater than natural historic levels and future rates are predicted to be 10,000 times greater. This is because of what we're doing.

This is affecting Canada. Despite our massive geography and our large areas of remaining wilderness, Canada has not been immune to extinction and to species loss. The Committee on the Status of Endangered Wildlife in Canada has assessed almost 800 species of wildlife that are at risk of being lost from our country. There are well over 1,500 other species that have not been assessed and that are at risk of being lost.

There are well-known species that have been lost from Canada. Many of you have probably heard of the great auk, last seen in Canada in 1844. The last passenger pigeon was seen in Canada in 1902. The loss of species from Canada is not history; it's happening now, it's happening across Canada and it will continue to happen without action.

As you've heard, there are many threats to our environment and to wildlife, but the biggest threat in Canada today is habitat loss. Until we solve this, we are all destined to continue to witness the loss of Canadian wildlife. Today there is simply no frontier where wildlife lives without our influence. Wildlife has been pushed to the edge as we break their habitats into smaller and smaller fragments. By protecting habitats that still exist, and by restoring those that have been damaged, it is still possible to slow, and yes, even reverse, the decline in biodiversity.

Governments play a central leadership role in this initiative. The committee's report, “Taking Action Today: Establishing Protected Areas for Canada’s Future”, was an important piece of work. It achieved all-party agreement on the importance of our natural areas and laid the groundwork for a major investment in nature in the 2018 budget—the nature fund.

The nature fund is the scale of investment needed to help turn the tide on species loss in Canada, but governments cannot do this alone. This is why the natural heritage conservation program and programs like it are part of the solution. The natural heritage conservation program leverages funds from government, matching them with private individuals, corporations and foundations.

Since it was launched in 2007, the program has conserved more than 450,000 hectares in communities across Canada. These are not just any old 450,000 hectares; these are some of the most important places to conserve biodiversity and the benefits that nature provides to people. We've protected habitat for about a third of all terrestrial and freshwater species at risk in Canada, and it's inspired gifts of land worth over $250 million from Canadians who care about nature. The program has also brought together a broad spectrum of Canadians who are united in conservation and want to make meaningful contributions to nature. The natural heritage conservation program has become a pillar in Canada's conservation solutions playbook.

We need to do more. Many Canadians think about species extinction and the extinction crisis as something that's happening somewhere else. Few Canadians know that there are over 70 species here in Canada that are more threatened than the African elephant or the giant panda. If we want to stop global extinctions, we can start by saving species at home.

There is hope. Canada has a long, proud history of global leadership in species conservation. We are a nation of spectacular, but largely unknown, stories of saving species after they had been pushed to the edge of extinction. Plains bison, swift fox, peregrine falcon, trumpeter swan and many other species were once almost gone, but as a result of the conservation efforts of past generations, they are still parts of Canada today.

● (1610)

We have an opportunity to build on this success. We need to build on this success. The vast majority of Canada's most critically endangered species occur in the southern geography where habitat loss has pushed them to a few locations. We can work in these “hot spots”, as Dr. Kerr called them, to help stop the loss of species, but it needs focused conservation action.

The Nature Conservancy of Canada's mission was urgent when we were founded in 1962, and it's every bit as urgent today. Canada absolutely needs to meet our global commitments and protect our share of 17% of lands and waters, but it's critical that we bring the diversity of our Canadian wildlife along with us.

As the world begins to set the stage for new conservation targets, Canada has an opportunity to show leadership in more ambitious wildlife conservation targets for 2030 and beyond. We need to embrace the opportunity that we have right now to pass on a biologically richer world to our children.

Can we promise; can we commit to leave no species behind, a commitment to zero extinction that we can start in Canada? It's a simple, clear promise and a promise that could change the world.

Thank you.

The Chair: Excellent. Thank you for your opening comments as well.

We're going to get right into our questions and answers. We will use six minutes per side.

Before we do that, I welcome Mr. Shipley and Mr. Berthold back to our table as our guests for today.

First up, we have Mr. Amos for six minutes of questions and answers.

Mr. William Amos (Pontiac, Lib.): Thank you, Chair.

Thank you to our distinguished witnesses. It's very appreciated that you're here. I'm also very appreciative of the fact that you share the same passion that we all do here at the table on conservation matters.

I want to go to each of you for short responses, please. What was your reaction to our government's decision in budget 2018 to invest $1.3 billion over five years in conservation?

Mr. Chan, perhaps we could start with you.

Prof. Kai Chan: I was impressed. It was a really important decision to make. It's unprecedented in terms of a commitment to conservation in this country's history. That's absolutely crucial.

In my remarks, as they got compressed, I didn't focus enough on the importance of what we're already doing and the importance of continuing that and expanding upon that, which is absolutely crucial. The investment we've seen committed to and as unfolding over the coming years is a crucial part of that. It's that foundation for the transformative change that allows us to achieve our goals.

However, it's crucial to note—and it's the reason I focused my remarks on those five extra bits that are the transformative change—that just doing more of what we have already been doing and continuing to do what we've already committed to do is not enough in the coming decades. The escalation of pressures as the human enterprise expands is too much to enable basically any amount of money to solve this problem if we don't also simultaneously address the root causes of species decline. That's the structure of our economy and it's the way that we govern the economy.

● (1615)

Mr. William Amos: Thank you.

Professor Kerr.

Prof. Jeremy Kerr: That's an excellent question.

I have been watching budgets very closely for quite a while now, and budget 2018 was one of those moments when I actually stood up and cheered. I was quite jubilant. The conservation commitments in budget 2018 are extraordinary and historic.

It's all in the follow-through. We have seen instances in the past where governments have committed a lot of money to something that sounded as though it was conservation related, and we have not seen that much conservation, in practice, flow from dedicating that money to task.

In that respect, I have been very impressed with the nature of the follow-up that I have seen so far. The target 1 initiative is a careful, but also dynamic, process that appears to be achieving important targets in rapidly expanding the protected areas networks and doing so in partnership with indigenous peoples and private landowners. I don't think we can possibly recommend a process to proceed that does not do both of those things.

The fact that we see rapid progress, more than the simple budgetary commitments and statements of policy principle, is the part of this equation that most impresses me. We all have to continuously evaluate and re-evaluate what we see governments and many allied groups trying to do. However, at this point, I continue to be very optimistic that this is making a tangible and important difference to rates of extinction, to the prospects of us passing on nature undiminished to the next generation.

Mr. William Amos: Mr. Kraus, over to you.

Mr. Dan Kraus: I still have a book on my shelf about the endangered spaces campaign from 1988. I remember that campaign. The goal was to raise $10 million for conservation. That just reminds me that we have come a far way in terms of our commitment to protecting nature. Do we need to do more? It seems that we do. I think that the nature fund in particular, by providing an opportunity for Canadians as individuals and as corporations to match those dollars and be involved in conservation, will be part of the transformation that Dr. Chan mentioned. We need everybody to understand that nature is important in their lives and that conserving nature is something that we need to all be involved in.

Mr. William Amos: Thank you.

With my last remaining minute, I'll ask Professor Kerr, who is a former colleague at U of O—I look back on those times fondly—a question.

If there were an extra half-billion dollars unlocked in the dream world that I inhabit, where would you suggest that extra and new monies ought to be directed?

Prof. Jeremy Kerr: This is the kind of incredibly unfair question that really vexes scientists, because we always want to know what it is that you really care about. If you care about one thing or the other, then we can much more easily recommend a particular course of action.

There are two main things that I would strongly suggest. The first is that we need to dedicate a great deal of our resources to improving connectivity at semi or continental extents to enable species to respond to changing environments so that they will always be able to move to a new place and find habitat ready and waiting for them. This is one part of the strategy.

Another part is not just to focus on protecting areas that continue to be important for biodiversity because they have not yet been destroyed, but to think about the other side of the coin: restoration in areas where we have disproportionate gains just waiting to be made. We can do an awful lot of good in places like southern Canada where we have seen—degradation is maybe not the word I would choose—land use changes that have altered nature in ways to make nature essentially inhospitable to species that traditionally lived there. Restoration work in these places offers enormous potential to pull back many of Canada's species at risk from the brink.

● (1620)

Mr. William Amos: Thank you.

The Chair: We'll go over now to Mr. Fast for his six minutes of questions.

Hon. Ed Fast (Abbotsford, CPC): I think that my questions will be directed mostly to Mr. Chan.

It's nice to hear that you're from my alma mater. I don't know if you studied there, but you're teaching there, I assume, and researching there.

On the issue of efficient versus inefficient subsidies, you touched on the issue of fossil fuel subsidies and making sure that, if there are going to be subsidies, they actually lead in a direction of improved sustainability. At one of our last meetings, we had the environment commissioner here, and the Department of Finance was questioned about whether we are actually delivering on the commitments we've made internationally at the G20, I believe—commitments to move away from inefficient fossil fuel subsidies.

I'd be interested to hear your take on whether the term “inefficient” has any meaning within that dialogue and whether there's a definition of efficient versus inefficient that you can provide us with.

Prof. Kai Chan: This is really crucial and a great way to follow-up the last question, because the next thing we should say, after we talk about how we can spend extra money, is how can we change the money that we're already spending, right? It doesn't necessarily need to cost a ton more money.

In terms of the language of efficient and inefficient subsidies, that's not terminology that we used in the assessment intentionally. Efficiency is in relation to what the goals of the subsidy are, right? We emphasized the goals in our analysis. Of course, there are designs of efficient and inefficient ways to achieve a given goal, but that was really dealt with in other parts of the assessment.

What we found crucial to identify was the difference between incentivizing production without explicit measures to enhance the stewardship or sustainability of that production to continually enhance—not just to set a low baseline—versus subsidies that either intentionally directly target those kinds of stewardship activities and a transformation towards, for example, a clean energy economy, or ones that require, as part of an enhancement of production, that stewardship be a part of the package.

That's my understanding of what Canada committed to previously, which was to phase out fossil fuel subsidies—not to phase out inefficient ones, but to phase out production-enhancing ones. But perhaps I have that wrong.

Hon. Ed Fast: Mostly you're right. The commissioner pointed out that how you define efficient and inefficient is going to determine the degree to which government defends the subsidies it continues to provide for the fossil fuel industry. She rightly pointed out that if you don't have a proper definition nailed down, you're likely not going to achieve the goals you had committed to at the G20.

Prof. Kai Chan: Yes. If I could add to that, part of my comments earlier was that if we recognize that the Government of Canada collectively has multiple interests and objectives and we recognize that environmental protection is one part of that, then it is inherently inefficient to subsidize production and then separately try to mitigate the negative environmental effects. It's more efficient to deal with those things in a coordinated fashion. I would agree completely with your point about specifying the objectives.

Hon. Ed Fast: Thank you.

I believe it was Mr. Kraus who referred to a continental approach. Was that you or was it Mr. Kerr—

Prof. Jeremy Kerr: I keep using that word.

Hon. Ed Fast: —in one of the responses.

We can have a parochial approach here and assume that Canada is an island unto itself and try to address our species challenges here. We can look at a global approach and maybe escape some accountability for what we're doing at home. However, you had mentioned a continental approach.

It does make sense, because our species are migrating across our borders; they don't recognize borders. Have you found the United States in any way receptive to a continental approach?

● (1625)

Prof. Jeremy Kerr: There are many opportunities for cross-border co-operation. My experience really emphasizes much more the work with research rather than with other governments, so I can't really speak to that direct experience.

I've certainly witnessed an awful lot of transboundary co-operation that our colleague from the Nature Conservancy could certainly speak to in more specific detail regarding management of protected areas that essentially span the international border.

We also see many instances where states and cities that straddle the border remain aware and highly co-operative regarding transboundary issues. One of the ways in which we often see this happening out in eastern North America is through the work of the International Joint Commission that manages the Great Lakes Basin co-operatively and among many jurisdictions.

Hon. Ed Fast: Thank you.

The Chair: Mr. Stetski, for six minutes.

Mr. Wayne Stetski (Kootenay—Columbia, NDP): Thank you very much to all of you for being here today. Great witnesses.

I was a former regional manager with the ministry of environment for southeastern B.C., responsible for ecosystems, fish and wildlife. Then I was manager of the East Kootenay conservation program involved in purchasing private land for conservation; so inherently, I care about every species.

The challenge we have is that many people look at life through economics rather than conservation. I'm wondering if we're starting to do a better job.

I know, Professor Kerr, you started to talk about the economic importance of species winking out, but why should people care about species winking out, from an economic perspective as well as a personal one?

I'll start with Mr. Chan and Mr. Kerr, and then I'd be interested in hearing from all of you on that.

Prof. Kai Chan: There are several answers to this important point. The first is that species are part of ecosystems and that ecosystems provide a wide array of ecosystem services that are valuable in a number of different respects and that can be valued economically. When you do that kind of evaluation, it is often the case that the benefits of conservation or restoration outweigh the costs that are associated with that.

The problem, of course, is in terms of what is internal, what is internalized, to private decision-making. Many of the benefits associated with conservation or restoration are public benefits, ones that are felt and experienced by the nation as a whole and ones that, in many cases, may only be experienced later in time.

The problems are primarily associated with private decision-making that allows the externalization of costs, where economic activities can expose those costs in the form of environmental degradation that requires other people to pay for the damages, and with short-termism, that is, focusing on only what happens over the next few years without sufficient regard to what happens in the more distant future.

Species are crucial components of ecosystems, and ecosystems provide valuable services. The problems are, effectively, undue privatization and insufficient accounting for public benefits and for the long-term benefits.

Mr. Wayne Stetski: Professor Kerr.

Prof. Jeremy Kerr: Thank you.

This is an excellent question and one that I grapple with in many ways, often in the media, but also just with myself. Why do we care about biological diversity?

One of the answers to that question, of course, was touched on extremely ably by Professor Chan: that species do things that matter and that sometimes they do things that matter to us in ways that we fail to measure in economic terms. This is really important, this notion of externalities: that we derive economic benefits from species in a diffuse manner, but that we don't measure those economic benefits all too often. The consequence is that when we inadvertently drive a species extinct without being aware of what we're doing, the cost of that is zero because it's not something that we measure the impact of. That's something that I think we need to be very careful about. There are better ways to do this.

Another element of this, from my point of view, is that if we reduce everything to the question of whether species X, Y, or Z has sufficient economic value in any given instance to prevent development or to alter the way development is conducted, then in many instances—and I suspect even in most instances—what's going to happen is that the decision will be that in the exact location where development is proposed, the specific economic return of biodiversity in that place is relatively small. We can make that decision a million times, and the consequence is that we find ourselves in the midst of a global extinction crisis that we haven't seen in 65 million years. That is literally true.

I have to say that this is a concerning question, but the thing I would say in conclusion—I know that I have to wrap up—is that it's not really about the money. It's about what kind of world we want to live in, and that's a decision that we take away from our children by continuously conceding that in any given instance we are always going to side with a short-term economic perspective.

● (1630)

Mr. Wayne Stetski: I very much appreciate that.

Mr. Kraus.

Mr. Dan Kraus: There are several ways of answering the question why do we value species? The first is utilitarian, and economics is catching up in how we can measure the value of the benefits that nature provides to people.

Two years ago, the Nature Conservancy of Canada partnered with TD Bank to identify the natural capital values of forested areas across Canada. There's a lot of variation, but the average value of a hectare of forest was over $25,000 per year, and if it is maintained, it will provide those services forever. Even the TD economist recognized this is a gross underestimation, that there's only so much they could value as economists, and the true value was much higher.

From a utilitarian perspective I think the main reason we don't want to lose species is that we simply don't know what the impacts will be of losing those species directly, or how those impacts can cascade through the ecosystem and affect people.

I think the other reason is the intrinsic values, as Dr. Kerr alluded to. Do we want live in a world where we're consciously choosing to let species go extinct? I cut the past generations a little slack because they didn't have the science, the knowledge maybe, that it was the last place or the last example of a species. We don't have that slack now; we know which species are declining and are unlikely to be passed on to future generations. It's really our decision what we're going to save. In some cases, we need to make those decisions very quickly.

The Chair: We're out of time.

That takes up the amount of time we had for our first panel. We do have our second panel on standby—the threat of votes is still hanging over our heads.

I'd like to ask the members to stay at the table; we're going to suspend for a minute to swap out the witnesses.

Thank you so much for what you've been able to share today and for being part of this discussion. Unfortunately, because of where we are in the session, we're not going to be able to do a report, but we thought it was important to at least invite you here to have a discussion and allow Canadians to hear from you. Thank you so much for what you've been able to share today.

Prof. Jeremy Kerr: Thank you.

● (1635)

The Chair: We'll get our next panel started.

Alison Woodley is here, and we have Harvey Locke. It's always a pleasure to see both of you.

Alison, if you want to go right into your opening statement, I'll give you about seven minutes. We'll use the same card system when one minute is left and it's time to wrap it up.

Ms. Alison Woodley (Strategic Advisor, National Office, Canadian Parks and Wilderness Society): Thank you very much for inviting me to speak with you today.

I'm Alison Woodley, and I'm here on behalf of CPAWS, the Canadian Parks and Wilderness Society, where I'm currently a strategic adviser.

CPAWS is Canada's only nationwide charity dedicated solely to the protection of our public land, fresh water and ocean. Ninety per cent of our country's land and all of our fresh water and ocean estate are in public hands, so this is a big area and a big responsibility. We have 13 regional chapters across the country, a national office here in Ottawa and about 100 staff working on the ground across the country with Crown governments, indigenous governments and local communities, industry and other partners to support protection of more of our land and seascape.

CPAWS has a bold vision: to protect at least half of Canada's public land, fresh water and ocean. We adopted this vision in 2005 in response to the growing scientific evidence that we need this scale of conservation action if we're going to safeguard the health of the natural world that we and all other species with whom we share the earth rely on for our existence and our well-being.

Since 2005, there's been a huge uptick in support for this scale of thinking. Many scientists, organizations and citizens, internationally and in Canada, are now recognizing the need for this scale of conservation action, and the IPBES report is no exception. It highlights that we have a global emergency for nature and for climate, that these two issues interact and that we need to scale up our action.

The global Nature Needs Half movement is gaining momentum around the world. A petition by Avaaz now has 2.2 million signatures. Scientist E. O. Wilson, one of the world's most renowned biologists, published his book *Half-Earth* a few years ago. National Geographic, which goes into the living rooms of millions of people around the world, is now championing a post-2020 biodiversity goal that includes protecting half the earth. Indigenous leader Herb Norwegian, a former grand chief of the Dehcho First Nations, was an early champion.

The Chair: I'm sorry to jump in here.

The bells have just started ringing, and once they do, we need unanimous consent to continue. Because we are just down the hall, is there agreement that we go longer? Is there a willingness to do that? If we could go 20 minutes into the bells, that would still give us 10 minutes to get down to the chamber.

Some hon. members: Agreed.

The Chair: We'll keep going and at least get the witness testimony, and then we'll see if there's any time for questions and answers at that point.

My apologies.

Ms. Alison Woodley: Canadians are ready for big conservation goals and for Canada to lead. Last year I was involved in a study with the University of Northern British Columbia of a Canada-wide survey that was recently published in the peer-reviewed journal, FACETS.

One of the questions we asked was how much of our country's land and ocean should be protected. The most common answer was 50% for both land and sea. The average response ranged from 43% to 51%. Canadians are on board with big conservation targets.

The IPBES assessment is really a call to action. It reinforces that we have this emergency, that climate change and nature are interconnected, and that the emergency is mutually reinforcing. We need to recognize better that conservation action helps to tackle climate change and that climate action can help to reverse biodiversity loss. Setting large-scale land and ocean protection and restoration targets and implementing them in a planned fashion is an important opportunity to bring these discussions together and advance both.

Canada has a big opportunity to lead, and we're urging Canada to champion a global goal of protecting half the earth and setting a milestone target of at least 30% protection by 2030 in the next Convention on Biological Diversity strategic plan, which is currently being discussed both globally and in Canada. We're also urging Canada to adopt these targets at home. It's necessary, and it's achievable. CPAWS released a report a couple of weeks ago showing how this can be achieved in the ocean. I have a pile of copies here for you today, and the French versions are in production. I'd welcome you to come and get a copy from me afterwards.

Last time I was here at committee, we were discussing protected areas and how to meet the 2020 biodiversity targets of 17% and 10% protection by 2020. Three years later, thanks in part to your important and unanimous all-party report and lots of other efforts by many other people, we've seen the biggest ever increase in ocean protected and conserved areas in Canada, which have expanded eightfold in three years, and put in place for the first time minimum protection standards for MPAs. We're on track to meet these targets in the ocean and likely to exceed them by 2020, and planning is now under way as well in some regions for more comprehensive networks of MPAs beyond 2020. There's more work to be done, for sure, but there's been great progress.

On land, where provincial and territorial governments control most of the land base, progress has been slower but still significant. The federal government has brought together governments and indigenous peoples under the umbrella of the pathway to target 1 initiative that was mentioned by other witnesses.

They've invested more than $1.3 billion in terrestrial nature conservation, and many of us in this room had worked very hard to make that happen. Very importantly, this funding is not just funding for the federal government, but it is flowing to partners on the ground, and this is critical. The new nature fund is generating huge interest in protecting much more land across the country, particularly from indigenous governments and communities. There's so much demand for that funding that there's way more demand than the current funding can support, which really shows the depth of interest that exists across this country in protecting more of our land and ocean, as well as the opportunity we have here in Canada to move forward by supporting on-the-ground efforts.

We need to keep the pedal to the metal to achieve our 2020 targets, but as your report from a few years ago noted, these were interim targets. They were always meant to be interim targets. They're not adequate to achieve the goal of biodiversity conservation. Now it's time for Canada to look beyond 2020 and to set ambitious targets based on the science and indigenous knowledge for what's needed to save nature, which is in the order of half the earth.

The IPBES report reinforces a few more things I want to quickly highlight. First of all is the importance of indigenous-led conservation, and this is a huge opportunity here in Canada. Second, it is important to make sure that quality and quantity are reflected in the next suite of targets to meet our goals of reversing the decline of nature and tackling climate change. Third, it makes the compelling case for scaling up the financial support that exists, including by transforming subsidies into incentives, as my colleagues focused on in the last panel, and the clear benefits of doing so.

To conclude quickly, the IPBES report highlights the challenges we face, but also the opportunity we have to act decisively and to make a big difference. Canada has a huge opportunity to lead, and I encourage you to help us grasp this opportunity.

● (1640)

CPAWS is committed to helping in any way we can.

Thank you.

The Chair: Thank you, Ms. Woodley, for your opening comments.

We're going now to Dr. Justina Ray by video conference.

Thank you, Dr. Ray, for joining us today. I'll turn it over to you, and we'll give you about seven minutes for your opening comments. I'll hold up the yellow card when there's one minute left, and a red card to wrap it up, and then we'll move to our final presenter.

Over to you for your comments, Dr. Ray.

Dr. Justina Ray (President and Senior Scientist, Wildlife Conservation Society Canada, As an Individual): Great, thank you so much.

Thank you, Mr. Chair and members of the standing committee, for asking me to appear here.

The perspective I'm speaking to you from is that of a biodiversity scientist, for one. I'm president and senior scientist of the Wildlife Conservation Society Canada, and I'm an adjunct professor at two universities, Trent and U of T. I come at this with particular field research experience with boreal forest mammals, but also in the tropics, so I have an international perspective to bring. I'm intensively involved in the science-policy interface at both provincial and federal levels. I recently concluded a nine-year stint as co-chair of the terrestrial mammals subcommittee of COSEWIC, the Committee on the Status of Endangered Wildlife in Canada, the body that assesses species at risk under the Species at Risk Act. I'm very familiar with what it would have taken to put together this report, the kind of process, and I understand the conclusions of the "Summary for Policymakers" that was released last week.

In this very short time, I'm going to talk about what's unique about this particular report and why it deserves particular attention, what findings are most relevant to Canada, and what this says about solutions in Canada.

With respect to the uniqueness of the report, just to underscore the sheer number of studies that went into the conclusions of the report, there were something like 15,000 papers assembled by 150 scientists and subject to intensive peer review. The authority of the UN process is very special. We already have this through the International Panel on Climate Change, the IPCC, which is a very similar body. It means that the results and conclusions, and so on, would be written by scientists and endorsed by various governments. It was agreed to by all 130 party governments, so it doesn't represent the opinion of a few, and it has undergone some very rigorous review processes.

Second, the trends that it has shown are extremely relevant globally. They are everywhere. In many wildlife ecosystems in terms of health and functioning, it's very clear that these deteriorating trends have been accelerating and intensifying in the last 50 years in particular. This rate of change is huge relative to the last 10 million years, and it is certainly projected to continue.

The conclusions were not a surprise to most wildlife scientists and ecosystem scientists. We've seen the evidence unfold in studies that are published nearly every day. Many of us have observed first-hand some of these trends playing out in places that we're most familiar with. We've delivered several of the key messages in the report ourselves.

What about this report is most relevant to Canada? Canada is not mentioned anywhere in the summary, nor are any countries, I think. Some regional trends are evident. There is quite a focus on the tropics, but we can't lull ourselves into complacency in this regard because many of the conclusions, if not most of them, are directly relevant to Canada, and I'll name just a few.

The drivers of biodiversity loss and degradation are pretty much the same in Canada as globally. As reported in the summary, land conversion, overfishing, climate change, pollution, invasive alien species, and overharvesting in some places are the top drivers of species and ecosystem degradation here in Canada. Habitat loss is out in front. Certain ecosystems, like wetlands and grasslands, are a shadow of what they once were.

There are some threats that are worse in Canada than in the rest of the world. Two are top of mind. Over-exploitation of fisheries in the northeast Atlantic and northwest Pacific is singled out in the report. Also, there is obviously the threat of climate change, which is playing out in high latitudes.

These are stark threats that are more problematic in Canada than elsewhere in the world. Canada may have fewer species, but the trends for the major species groups are similar, for similar reasons—like large mammals, birds, amphibians, reptiles. We have once-common species groups here that have suddenly become at risk of extinction, like little brown bats, barn swallows, common snapping turtles.

Species loss is already having clear ramifications for food security in some places here in Canada. Caribou up in the north are a very clear example.

● (1645)

Our knowledge emphasizes a certain handful of species and species at risk, but that's really just the front end. There are 80,00 species in Canada, most of which we know very little about. There's a similar message here, as for most of the world.

Another thing the report talks about is the phenomenon of homogenization, which is where, through certain threats of habitat loss, through introduction of alien species, things become more clear for winners rather than losers. There are clear winners and clear losers in this game. A lot of places we know are becoming more and more homogenous in terms of the same types of plants and animals showing up, no matter what the underlying ecosystem was previously. We're seeing that more and more.

What does this say about required actions in the Canadian context? I've referred a bit to public complacency on this issue, in terms of many people being lulled that this is a report that's really only relevant for the tropics—and I've told you why it's not. The connection between nature and human well-being was clearly emphasized in this report. That's one of its extremely well-articulated conclusions. It's just not as directly evident for most people. It does not express itself as dramatically as weather events, which are being increasingly understood. One recent study showed that media talks much more about climate change than about biodiversity loss, about eight times more.

Generally, our governments are not really equipped to deal with biodiversity in a holistic sense. I want to highlight two recent reports that confront this situation in a similar fashion to that of IPBES. The first is a fantastic report that your standing committee wrote in 2016, “Federal Sustainability for Future Generations”. It talked about and emphasized the need for a truly integrated policy-making, whole-of-government approach. There was a similar report by the Canadian Council of Academies, which was commissioned by NRCan, “Greater Than the Sum of Its Parts”. It just came out in January and talks about this need for integrated resource management.

Just as I conclude, I'll say three things. First, although we have much to be worried about, the conservation opportunities are still enormous in this country. As the second-largest country in the world, we have globally significant ecologically intact areas and Arctic systems. Not only are these strongholds for important species that have lost ground elsewhere, but also this is where nature is providing major carbon storehouses. We must understand, from experience, that we can't take these for granted. Indigenous-led conservation is going to be very important for the future.

Second, protected areas, as we just heard, are very, very important, but so are the intervening spaces. The situation facing Wood Buffalo National Park, the largest national park in Canada, is a great case in point for that.

Third, much more financial investment will be required, including this attention to subsidies.

Thank you so much.

● (1650)

The Chair: Great. Thank you so much for those opening comments.

Now, Mr. Locke, we'll move to you. We're at 16 minutes, and so I'll set the timer for six minutes. I'll let you know when that time is up.

Mr. Harvey Locke (Chair, Beyond the Aichi Targets Task Force, International Union for Conservation of Nature World Commission on Protected Areas (IUCN), As an Individual): Thank you.

I asked to have some PowerPoint slides that will help to ground my comments. While they come up, I'll thank everyone on the committee for the time that I was able to spend with you in Banff and for the impact that your report had. I've been around a little while, and I have rarely seen a report like that get the ball rolling in such a great way.

I think great things have happened relative to the stasis Canada was in with relation to nature conservation three years ago. I just hope we can keep it rolling regardless of what happens this fall. The spirit that this committee showed me about moving ahead on this was to me really inspiring when I was with you last time, and I hope we can continue.

I'm going to move quickly into my talk.

This is about land use histories. Here's the big take-away. What humans do to land determines what conservation responses we have and determines the conditions of biodiversity or nature. This first slide shows a map of Canada's land use histories. The bright red or salmon colour in the south shows where we live and produce our food. The green areas are where we've practised forestry and oil and gas and mining. The blue areas are where it's still wild.

Look at that map. That's just what we do as humans. The next map shows the distribution of endangered species in Canada. You will see the one-to-one correlation between what we do and where things are doing well or not well.

A number of speakers have talked about the south. The south is where we've cultivated, where we have our cities, where all of us live and where we get our food. Then you have these in-between areas. You can see that a narrow band is going down the Rockies where the colours are a bit better; that's the Yellowstone-to-Yukon corridor and the Flathead valley that we talked a lot about when we were together in Banff.

Those blue parts shown are the big parks in the Canadian Rockies: Banff and Jasper, and the parks in B.C. like Wells Gray, that are coming down into southern Canada. This is one area where you see that wildness coming down into southern Canada, as well as Quetico park.

We have these three really different conditions in our country, and those three really different conditions need to drive different conservation responses, and they apply all over the world. I'm the lead author on a paper we're about to publish that has been authored by people from all over the world. It's about the three global conditions that exist for biodiversity conservation and sustainable use. The same patterns that occur in Canada occur in China, Colombia and Australia. This is the way we need to go forward with our thinking on how we plan for our relationship with nature.

Basically, the world is divided into cities and farms, shared lands and large wild areas. The strategies we need for each are different. Each speaker before me has talked about various dimensions of exactly this breakdown.

For large wild areas, we need to keep the entire systems intact. Canada is blessed with large wild areas. We store a bunch of carbon in those wild areas. Some of the highest carbon storage in the world occurs in the Mackenzie basin and the Hudson Bay lowlands. This is also where we have indigenous people still engaging with nature in traditional ways, with the management regimes that are worth preserving through time.

In the intermediate areas, this is where the ideas of interconnected corridors with large protected areas, such as the Yellowstone-to-Yukon idea, apply well. We need to protect something like 25% to 75% of each ecoregion. Where we have our cities and farms, we need to do restoration, as was discussed. We need to manage how nitrogen is used. We have to keep our pollinators in the landscape. We need to practise good urban planning. We need to give people access to nature.

These three things together—these strategies together—could lead to a lot of the transformative change that the IPBES report calls for, but we need to be doing the right things in the right places across the country simultaneously. One is not more important than the other. The biodiversity in the south is not more important than the caribou in the north, nor are the grizzly bears in the Rockies more important than the frogs around southwestern Ontario where they grow tomatoes.

● (1655)

We need to save the whole thing, and I believe we need to help the world save the whole thing. Our country is up to that, so that's the quick five-minute version of my talk.

The Chair: Thank you.

We're at just over 10 minutes on the clock right now. It's going to be close to 10 minutes after 5 p.m. Does the committee want to come back? It would give us about 10 minutes for a quick round of questions and answers. We could do four minutes per side and at least get in one set of questions, if our three panellists are willing to stick around and grab a coffee while we're out of the room.

Some hon. members: Agreed.

The Chair: All right, we'll suspend now. We'll come back as soon as the vote is over and we'll pick it up again.

Thank you.

● (1655)

(Pause)

● (1715)

The Chair: We're back in session now.

Doctor Locke, you had wanted to review two slides quickly before we moved into our questions. We have them queued up here, I believe. We'll go to those and then we'll go into some really abbreviated rounds of questions.

Mr. Harvey Locke: Thanks, Mr. Aldag.

I touched on this. This is a map of the world's soil organic carbon. You hear a lot about the carbon above ground in tropical rainforests and how we need to save those forests, but the way carbon works in the world on land is that it's in one of three places. It's above the ground, in trees and other things—we're all carbon, by the way—or in temperate regions, where it's half in the soil and half in the vegetation, or in northern latitudes it's almost entirely in the soil.

Two of the greatest carbon storehouses in the world are in Canada around the James Bay lowlands and the Mackenzie basin downstream from Great Slave Lake.

Why is that important? If we mobilize that carbon by draining it, it goes into the sky and it becomes a huge source of emissions. Interestingly, there's a fantastic overlap between where carbon is in Canada and where caribou are. If we follow the science on maintaining caribou in the country, we need to keep two-thirds of the caribou range intact or we lose them. It's really simple. It's an ironclad thing. It's been agreed, even in federal-provincial-territorial agreements in the NWT, that if we fragment caribou habitat below a third, we lose them, period.

So the opportunity to get a twofer by protecting carbon in these two places and protecting caribou is fantastic. It's a really important climate change mitigation or avoidance strategy. Draining them will be a catastrophe for the earth.

Similarly, in the Amazon, we need to keep the forest there because the forest generates rain, not only because of the species that live there, but the intactness of the large tropical forests in the Amazon—and the Congo basin—actually generates rain. What that relationship has to do with you and me is that the rainfall in the Amazon drives the snow pack in the Sierra Nevada in California, which drives the production of vegetables that all of us eat in the winter from the central valley of California. There are some estimates that if 20% of the Amazon were cleared—and it's at 18% now—it would shut down and the system would lose resilience and flip to what's called a savannah, which would mean there would be the odd tree with a lot of grass and it would look like the Serengeti. In that case, that rain cycle would shut down and the consequences would be inconceivably bad.

The same applies if we mobilize this organic carbon in northern Canada. We need to think about nature not only as the species and the animals running around, but also as these values. These large wilderness areas generate these enormous values of storing carbon, giving us a stable climate, giving us rainfall. That's part of that third category I talked about in my remarks.

This is a map of the distribution of large mammals, carnivores and ungulates in North America in the past and in the present.

What you see is that in this part of the world there were a lot of large mammals. There were buffalo in Buffalo, New York, for example—or bison. What you see is a range contraction north and west. What happens as we fragment, as we farm, is that we lose large mammals. A really simple rule is the more we reduce their habitat, the more we lose them. In these regions especially, we need to keep big systems of interconnected protected areas. To give you an example, look at where those distributions are in the past, on the left, where the colours are hot; on the right, where there are none, in white. Those are the great farmed areas of the central U.S. That's where all the corn and wheat is grown. You can see a complete diminution, or the dropping out and loss of large mammals.

Where the colours remain hot is exactly where the large protected areas are, which is why the comment about large interconnected protected areas in condition two is so important. We simply won't keep large mammals if we don't have large protected areas that are interconnected.

We need to do the three things across the landscape, and that's my extra two minutes. Thank you.

● (1720)

The Chair: Excellent. Thank you so much for that additional information.

We're going to have three very quick rounds of questions. We have 10 minutes left, so we'll go three, three and three. That will take us to the end of the day.

Mr. Bossio, we go to you for your—

Mr. Mike Bossio (Hastings—Lennox and Addington, Lib.): Is Justina still with us?

The Chair: Yes. Doctor Ray should still be online with us. We'll just bring her on.

Mr. Mike Bossio: Okay, great.

Thank you, Chair.

Thank you, all, so much for being here this afternoon. We really appreciate the testimony. There's a lot of valuable information here.

We've heard a lot from the previous witnesses about the value of biodiversity and the value of the investments we've made in protected areas with the $1.3 billion, which many of you around the table here today actually played a significant part in.

Harvey, it was great meeting you out in Banff and having that tour and talking about the importance of biodiversity there and how much of it exists.

There's that and the $1.5 billion for the oceans protection plan. Those are the investments we're making at this level, and those are in juxtaposition to what is happening provincially, and in particular in Ontario where we see Bill 108.

This is specifically for you, Ms. Ray, because of your familiarity with Ontario and what is happening there, with the cancellation of the 50 million tree program and the province no longer having an environment commissioner, along with their oversight capability.

We have 243 species at risk here in Ontario and now there is this whole pay-to-play type of legislation that we see in Bill 108 for developers and protected spaces. Can you give us a sense of what impact that's going to have here provincially now, and how that's going to really hurt what we're trying to do federally?

● (1725)

Dr. Justina Ray: This is going to be a significant step backwards, although it's going to play out in implementation. Ironically, a lot of the changes will actually probably cause more red tape and more difficulty to sort out than the government realizes.

Bill 108 that you were referring to is a giant omnibus bill that had 20 pages of amendments to the hallmark Endangered Species Act. It will serve to decrease the number of species at risk through various means and will also provide lots and lots of leniency and discretion as to how habitat protection would occur through very many different routes.

For developers there will still be a proponent-driven process whereby developers will have options, including being able to pay into a particular conservation fund that, with many steps forward, would perhaps be applied in some fashion to benefit species at risk but will not have anything to do with the activity itself or the impacts.

There are lots of other problems as well, including the way they're organizing themselves with respect to this biodiversity issue. Mostly, they're now going to be splitting this between two ministries. The Ministry of Natural Resources will really focus on the subset of wildlife species that we use—so hunt, trap, fish and so on—and really put a great deal of effort towards that. Then the subset of species at risk that are still left to protect will be on the other side in another ministry, along with a diminished parks program as well.

This will play out as well in terms of investment. There will be lots of budget cuts and lots of shuffling of different staff into different ministries. It will be pretty chaotic and unclear, but really it's about being “open for business”. It's about being open for business, making things more easy to develop, and requiring proponents to jump through fewer requirements to be able to....

And then there will be very few actual—

Mr. Mike Bossio: Let me cut you off there for just one second, though. It's open for business in one sense, but it's actually killing business in the long run because of the impact it's going to have on biodiversity and protected spaces. Would you not agree?

Dr. Justina Ray: Yes, absolutely. I don't think that in the long run this will be a really great recipe for developers and for mining companies and so forth. Even though ostensibly it's like that, it will still cause enormous red tape in other ways and will actually undermine some of the successes that have been undertaken through development—for example, for forestry and so forth—so it causes a great deal of concern.

This is going to involve mostly provincial land, so it's a really core problem.

The Chair: Thank you.

We're going to go over to Monsieur Berthold for his three minutes.

You're welcome to share the time if you care to.

[*Translation*]

Mr. Luc Berthold (Mégantic—L'Érable, CPC): Thank you.

Thank you all for being here today.

I'll try to be brief. The discussion has focused on decisions that are made at very high echelons. We are talking about the planet, the country and the province.

I was mayor of Thetford Mines for seven years, and we had situations where people asked us to take action to protect small species such as frogs. Residents wondered why projects were being halted to protect such species.

In all of this, we must never forget the people who will have to suffer the consequences of the decisions that are made, whether in terms of their region's development or their lifestyle. Unfortunately, that wasn't really mentioned in the documentation I saw. That's a general comment but one that's important. When these decisions are made, the impacts on indigenous and other communities—such as mine, Thetford Mines—need to be taken into account. We had asbestos mining for years, and it left the region devastated. It wasn't fit as a habitat because it was dead. What's going to happen to those people? The decisions that were made had repercussions on people, and that can't be forgotten.

Mr. Chair, I would've really liked to have the French version of the summary for policy-makers. That would've been very helpful given all the information it contains, information I would've liked to read and share with you. It's something we should follow closely.

I don't have enough time to ask questions, but I just want to stress how important it is not to overlook local decision-makers and the people affected by these decisions. Otherwise, the approach won't work, and people will voice their opposition.

Mr. Shields, the floor is yours.

[*English*]

Mr. Martin Shields (Bow River, CPC): Thank you. That's a good comment.

Mr. Locke, I think many of us here are familiar with the Flathead Valley. Are there things you would suggest that we do? That connectivity is a critical piece, as many of us know. Is there anything you would suggest that we could pursue in the future? We're coming back here at some point.

● (1730)

Mr. Harvey Locke: The Flathead Valley is, from a biodiversity species-counting point of view, the most important area in the country we could protect. It fits into this corridor from Yellowstone to Yukon in a critical way.

I think number one is engagement with the Ktunaxa Nation, which has an unresolved land claim or treaty situation in southeast B.C. The Jumbo development or resort is of great importance to them. It is also important for grizzly bears. We need a coherent regional approach that works with the Ktunaxa first nation that will result in proper protection of the values and the connection of those values, from the Flathead, which adjoins Waterton-Glacier, right up through to Banff.

Unfortunately, what's happening on the ground now is that the grizzly bear population is collapsing between the bottom of Banff National Park and the Flathead valley. The mountain goat population is collapsing between those two areas. I hear anecdotally from people who hunt that the elk population is down. Everything is not going well, because we've overwhelmed that landscape. We need to do something to reconnect it and protect the Flathead.

I thank you for your ongoing interest in that very special place.

The Chair: Thank you.

Mr. Martin Shields: If we have time, I'd like you to tell us about the bison we saw. Where's the project at?

The Chair: After Wayne gets his three minutes, if there's a chance for an update on the bison, that would be great.

Mr. Harvey Locke: I would be happy to do that.

The Chair: Mr. Stetski, it's over to you.

Mr. Wayne Stetski: I have to do a speech on climate change in about 10 minutes.

I have a question that I'll open up to the floor. There are a couple of aspects I want to talk about. One is the nature deficit disorder and the potential impact it has on whether youth today care or don't care about species at risk, and what more we should be doing there.

The other is that we did consider looking at the species at risk legislation as a committee. Quite frankly, my concerns in that regard is that some might have wanted to weaken the legislation, while others think there's certainly need for improvement.

If you have a particular opinion on either of those issues, I'd be happy to hear from you.

Mr. Harvey Locke: I might defer to Justina on the Species at Risk Act, because she's lived and breathed it for the last 10 years.

Dr. Justina Ray: In terms of the first question, on the nature deficit disorder—

Mr. Harvey Locke: I'm going to answer that one. You answer the SARA one.

Voices: Oh, oh!

Dr. Justina Ray: I want to address that first, because I was referring to the loss of connection as having a bearing on the urgency of the issue. Climate change is much more immediately felt by the general population and it has been more successful in drawing media attention and people's concern to that issue an immediate one to address, whereas people don't always understand that the erosion of biodiversity and ecosystems really does have a direct bearing on their well-being that probably is going to be playing out more in the future. With people living more and more in cities, this nature deficit disorder is becoming an increasing issue, so it is absolutely very real.

At the same time, you see that when nature becomes more scarce, people flock to it. Particularly in crowded areas, either within or outside cities, people feel an innate need to go to visit these spaces in national parks. This is being shown by the pressure. This should show us that we need more of these green spaces and nature for this connection to keep going.

On the Species at Risk Act, I can totally understand your reticence and concern, because that in and of itself is not the only prong. Again, remember that species at risk are really just the tip of the needle here in terms of when species are in real trouble. That's when they show up on the list and we're in crisis situation.

What we really need to be focusing on in that equation is bolstering some of our processes that happen much earlier than that, so that species don't become at risk. We have to really focus on prevention and on species of special concern with monitoring and understanding at the regional scale, as Harvey just talked about, including how we might be able to fit all of these needs together, because the trade-offs are becoming more stark. We have to be thinking about biodiversity at large and not just species at risk.

I'm going to leave it at that and see whether my colleagues have anything to add.

The Chair: I'll give Harvey a few seconds on the nature deficit.

Mr. Harvey Locke: I live in Banff National Park and the number of people coming now is staggering. I think we are starving the Canadian public and the world public of enough nice places to go in nature. It was a major loss when the Government of Alberta reversed itself on the Bighorn wildland area, which would have added a whole new protected area that could have served that huge global demand.

Canadians love nature. That's a widely held value from coast to coast, in big cities as well as among rural people and indigenous people, and we have an opportunity as a country to embrace that love of nature and chart a course that reflects it.

● (1735)

[*Translation*]

I think it's the same in Quebec as it is in the rest of the country. My wife is from Quebec, she's one of Lac-Saint-Jean's blueberries.

[*English*]

It's something we could really do well. The new Rouge National Urban Park in Toronto is a great thing. We could do a lot more of that.

If we thought of ourselves as a country that puts its love of nature on its sleeve....

We recently hosted an important global event in Montreal at the end of April called the Nature Champions Summit, where we had people attend from all over the world: 12 environment ministers from all over the world, philanthropists, and everything. It was a great event.

People look to Canada as a place that could be a leader on nature. It's in our brand. It's in our perception of ourselves and the world's perception of us, and we aren't leaders on nature now. We're really doing well catching up, but if you take the percentage of Canada that's protected right now, it's not going to quite make 17% of the land. We could push through it if we keep going. On the marine side, we'll get to the 10%. Brazil is already at 30% protected. Tanzania is at 30% protected. It is not impressive for us to be dragging our feet the way we are.

As for what we have done, again I'll flatter this committee in a sincere way. What you did with your report three years ago in kickstarting the process that led to the national advisory panel, that led to the budget allocation, that led to the strong effort on Canada's target 1, has really been fantastically transformative. I can't overstate how much it mattered that you did what you did when you toured the country and wrote that report.

I'm deeply grateful for it, and I hope this might serve as a springboard for the next government to say, “Canada has just begun, and now that we've done the catching up and setting things in motion, we are going to lead.” That would be wonderful.

The Chair: Excellent. That takes us to the end of our time.

Thank you to our three panellists this afternoon, and also to doctors Chan and Kerr for staying with us the duration of the afternoon. I really wish we had time this session of Parliament to continue the discussion, but this is, unfortunately, where we're at.

For committee members, the intention right now is to have our final meeting on Wednesday. We have the Parliamentary Budget Officer booked for one hour, and the departmental officials coming to do an update on CEPA. If it looks as though it's going to be another day somewhat like today and be disrupted by votes and other proceedings of the House, we may end up not having the meeting.

With that in mind, I'd like to take a moment to thank, first of all, the committee members. I think we have many things that we can truly be proud of in the work we've done together in this 42nd Parliament.

I'd also like to thank our amazing staff—our clerk and analysts from the library, our other staff who help us out tremendously every day, the technical people and the translators. Thank you, each and every one of you for the support you've given to us in the committee. We may be able to say our thanks again on Wednesday, but on the off chance that we cannot, I wanted to at least get that in.

With that, folks, we're adjourned.