



CHANGING THE CONVERSATION, WOMEN FOR NATURE, AND NATURE CANADA PRESENT:

Drivers and Barriers

Biodiversity Conversation Series:

How important and the common loon and polar bear to Canadians?



February 22nd, 2018

The third e-dialogue from the [Biodiversity Conversations: How important are the common loon and polar bears to Canadians?](#) series will focus on the drivers and barriers to the national, regional and local resolution of biodiversity conservation. Previous discussions talked about the need to identify critical habitats for endangered species as well as the role of keystone species. What can Canadians do in their day to day lives to help protect and preserve biodiversity, individually and collectively? Panelists will explore how Canadians can work individually and collectively to break down barriers and include New Canadians in critical public policy development solutions for biodiversity conservation. If time allows, they will also dip into the connection between spatial justice and biodiversity conservation. If time allows, they will also dip into the connection between spatial justice and biodiversity conservation.

Dr. Ann Dale, Moderator, Co-Chair, Women for Nature, Principal Investigator, [Meeting the Climate Change Challenge \(MC3\)](#), Royal Roads University

Dr. Meg Beckel, President and CEO, [Canadian Museum of Nature](#)

Dr. Valerie Behan-Pelletier, Honorary Research Associate in the Invertebrate Biodiversity Program at [Agriculture and Agri-Food Canada](#)

Dawn Carr, Executive Director, [Canadian Parks Council](#)

Dr. Holly Clermont, Conservation Biologist and Social Scientist

Christine Leduc, Director of Public Affairs, [EACOM Timber Corporation](#)

Dr. Brenda Kenny, former CEO of [Canadian Energy Pipeline Association](#), serves on the University of Calgary board, chair of the Environment, Safety and Sustainability Committee, and on the Climate Change Emissions Management Corporation Board as Vice Chair

Dr. Leslie King, Program Head, Master and Bachelor of Arts and Master and Bachelor of Science in Environmental Practice programs, [Royal Roads University](#)

Sharolyn Mathieu Vettese, President, [SMV Energy Solutions](#), President and Inventor Wind Simplicity Inc., environmentalist

Dr. Sally Otto, Professor, [Department of Zoology](#) and [the Biodiversity Research Centre](#), University of British Columbia

Ann Dale

Welcome to the third in our series of virtual conversations on biodiversity conservation in Canada. We will be focusing on the barriers and drivers to its regional, national and international implementation. Solutions have never been more urgent, as [extinction continues to accelerate](#). At what scale will we begin to reverse this decline, only one of the questions we will talk about in this e-Dialogue.

Could I ask each of you to please introduce yourselves and your interest in this critical public policy issue?

Brenda Kenny

Thank you, Ann. My name is Brenda Kenny and I am a co-chair of Women for Nature with Ann. I have served on the Board of Alberta WaterSmart and am Vice Chair of Alberta Emissions Reduction. I have been very concerned about biodiversity for a long time and have worked as a national regulator, in industry and innovation. I live in Calgary and have a family cottage in Ontario; being in nature is a powerful force and our responsibility to conserve its vast diversity is one of our highest callings.

Christine Leduc

Thanks Ann. My name is Christine Leduc with EACOM, a Canadian forestry company. We have operations in Ontario and Quebec, with management responsibilities for millions of hectares of Crown forests. Certainly, I am interested in chatting about the role of forest management and biodiversity, in an Ontario/Quebec context, a broader Canadian context and a global context. I'm excited to participate in the conversation today.

Ann Dale

Welcome Brenda and Christine, I am delighted to have you join us. While we are waiting for our other colleagues, I invite our e-audience to browse our [curated biodiversity resource library](#) which is growing, largely due to the wonderful references our e-panelists provide.

Sally Otto

Hi – My name is Sally Otto, and I am a professor at the University of British Columbia. 97% of Canadians believe that protection of Canada's endangered biodiversity is important, yet we continue to see declines in populations and increasing numbers of species at risk. We need to work together – to have these conversations – to increase the amount and effectiveness of protection on the ground (and in the waters) of Canada.

Meg Beckel

Thank you, Ann and hello! I am the CEO of the Canadian Museum of Nature, Canada's national museum of natural sciences. I am also the Chair of Canada's national committee for IUCN, the International Union for the Conservation of Nature. In both roles, I am committed to inspiring understanding and respect for nature for a better and more sustainable natural future. We are all part of a global mission to save the natural world for future generations and conversations like this one are key!

Dawn Carr

Hello everyone, my name is Dawn Carr and I'm the Executive Director of the Canadian Parks Council. I've always been passionate about conservation and the role that parks and protected areas play to maintain biodiversity and my career continues to be guided by this interest. Right now, I advise the National Steering Committee for [the Pathway to Canada Target 1](#) initiative which is working to protect at least 17% of Canada's terrestrial and inland waters by 2020. I look forward to sharing our collective ideas today about how we can all help make a difference.

Leslie King

I am Leslie King, like Ann, I am a Professor in the School of Environment and Sustainability at Royal Roads University. Welcome – I so enjoyed our last biodiversity conversation and all of your contributions. Biodiversity and its loss is the one environmental issue that has stayed with me for all of my career. I am passionate about it in my teaching and in my daily life. Diversity on earth is my greatest joy – and its loss –sometimes my greatest despair (though I fight that). I have learned a great deal from First Nations about how to not only slow the loss but to actively promote and nurture biodiversity. I am so happy that we'll be talking about what we can do in our daily lives to conserve and promote biodiversity.

Holly Clermont

Greetings from the snowy west coast! I am a conservation biologist and recently graduated with a Doctorate of Social Sciences. My research focused on decision-making associated with energy developments affecting biodiversity and the climate. It's wonderful to be a panelist alongside this extraordinary group of women.

Valerie Behan-Pelletier

Hello all, it's a pleasure to be joining you in this conversation. I'm Val Behan-Pelletier. I'm interested in all biodiversity, but my expertise and research is on biodiversity in soil. Most of my research over the last 40 years has been on soil mites, and I have

described and named hundreds of them.

I'm considered a general expert on Soil Biology, and am one of the many authors on the Global Soil Biodiversity Atlas, which you can access in [the Biodiversity Library](#).

Leslie King

Thanks to you Val, I am beginning to love those charismatic soil critters!

It's a gorgeous day here — sunny and snowy — sparkling, bright and white!!

Sharolyn Mathieu Vettese

Hi, I'm Sharolyn and I'm president of SMV Energy Solutions that specializes in energy conservation and cap and trade in Ontario. I'm glad to be here.

Ann Dale

I am absolutely honoured by the expertise and experience we have on this panel—Sally and Meg, thanks for joining, and Holly and Leslie, very dear loyal colleagues throughout the series.

Shall we begin with our first question then. Why does biodiversity conservation require working at multiple scales—in other words, make the business case for action?

Valerie Behan-Pelletier

I'm going to jump in here, as I'm on a slow connection.

I realise that Ann's first question is more nuanced than I thought. There is "scale" in the sense of complexity of biodiversity, with Biodiversity working at the scale of the bacteria and viruses on and in us and all biota, to the scale of ecosystems, for example, the boreal forest, coral reefs, temperate rain forest. We need to encompass all scales when we talk about biodiversity and especially when we decide to "fix" a problem. AND then there is "scale" in the way I think Ann meant, i.e., the complexity of societal scales, from individual to municipal all the way to the Federal and Intergovernmental level, interspersed with various NGOS, such as Nature Canada. I think there is also an emotional "scale" with the charismatic megafauna, e.g., polar bear, having an emotional commitment from us larger than the microfauna, e.g., soil biodiversity.

Ann Dale

I hadn't thought of emotional scale before, thank you, and is that an important factor in determining what science and what species people will accept? Holly, you may wish to jump in here and refer to your doctoral work?

Christine Leduc

Thanks for the comment about learning from First Nations, Leslie, that is certainly our reality in the forest products sector. I also appreciate the comment about talking about what we can do in our daily lives to conserve biodiversity. Joining Women for Nature has prompted me to think about conservation in a professional setting, but also as an individual Canadian citizen.

Leslie King

Thanks Christine!! Wonderful comment Val, as always, I ponder scale, and its implications, a lot.

My answer: Global forces cause local and global biodiversity loss. Causes of biodiversity loss are the same globally and locally: habitat loss, climate change, pollution, inability to change or adapt ranges, and habitat, etc.

Biodiversity loss occurs at local, regional, and global scales and needs to be addressed not just at each of those scales but interactively with linkage, interplay among those scales.

Actions to address local biodiversity loss can have benefits for global biodiversity and vv.

Actions to address biodiversity at any and all levels have profound co-benefits — for addressing climate change, for individual and community well-being, etc.

Ann Dale

Key points, Leslie, linkages and interplay. Does intersectionality have a role, or does it apply only to human relationships?

Meg Beckel

Biodiversity exists at multiple scales and so there is opportunity to work at those same scales.

Local: individuals can engage in their own communities and encourage their municipal government to support local efforts. From visiting parks, to recycling, to reducing

water use, to joining citizen bioblitzes.

Regional: provincial and regional NGO's increasingly work together to create political will and to demonstrate effectiveness of effort. From parks, to private protected areas, to indigenous land stewardship.

National: some biodiversity matters are within the realm of federal jurisdiction and simply must be handled at the national level. It is also a venue for global comparisons that create expectations that must be met. National NGO's increasingly collaborate with other national organizations to create more noise and impact. Nature Conservancy of Canada and Canadian Museum of Nature sharing knowledge through [NatureTalks](#) across Canada.

Christine Leduc

I've always thought that nature, ecosystems, and biodiversity is all larger than the boundaries that humans have created. We established the city of Ottawa, but the birds who come through and travel to other parts of the world are not bound by the human boundaries of cities, provinces, and countries. We always need to be taking steps back to look at the bigger picture. As a Montreal resident, I ponder Quebec's efforts, and what that means in a Canadian context, and what the Canadian contribution looks like on a global scale. Canada has 10% of the world's forests. What does it mean to be responsible for such important biodiversity habitats?

Brenda Kenny

There are so many factors, most of which work at different scales. Alongside the bio-physical and social, time is a key one. An indigenous community may view cultural significance and food security over millennia. A local municipality or county may consider land use plans over decades. And decisions on specific projects including project specific environmental assessment and regulatory processes will look for answers within years or months to be able to attract investment should we decide as Canadians to proceed. Even politicians suffer from the "tyranny of the urgent" and those different time scales impact our viewpoint on establishing strong, predictable and adaptable responses. All nested within distinct but shared interests in biodiversity conservation. And of course, climate change, including changes in water, will have a time scale regardless of how rapidly the world reduces emissions.

Valerie Behan-Pelletier

Brenda has hit on the key issue of TIME; of course, politics sees the environment as a single issue — pipelines, because of the hegemony of political time. Perhaps the different attitude to time of Indigenous communities has helped Canada protect its boreal/arctic diversity?

Dawn Carr

I firmly believe that no one organization can effectively conserve biodiversity and that it requires broad collaboration and a shared vision to ensure that we not only conserve the right things, but protect enough of everything so that the health and wellbeing of all species can thrive. To me, working at all scales means working at all levels of government (federal, provincial, municipal and Indigenous), and with private landholders, and engaged citizens. This kind of collaboration is complex, but essential if we are to be successful.

Holly Clermont

This is a messy question, Ann. I would refer back to some great examples in earlier conversations – monarch butterflies and marine mammals come to mind (Thanks Laren and Michelle).

When working to preserve the last of a species or an ecosystem, cross-scale work was absolutely necessary. To rank ecosystems, we considered range, number of occurrences, area of occupancy, percent area with good viability or ecological integrity, etc. This inevitably encompasses multiple scales. These were layered with threats (severity, scope, impact, and timing), many of which are jurisdictional, such as those arising from property and sector rights (e.g., right to farm legislation). The same was true for protections. Looking more closely, at the origins and derivatives of threats, taking action becomes far more complex. For example, as the federal government finally relinquishes its control over Indigenous people, I discovered some First Nations are struggling with balancing critical housing and economic development needs with protecting remnants of imperiled ecosystems, notably some of the best examples of ecosystems in near-natural condition. When a dozen people are living in a single home, biodiversity may be justifiably expendable.

Valerie Behan-Pelletier

Apologies all — I'm the snail among you today internet-wise.

Ann asks what we can do in our lives— well one thing would be to change the language we use for humans vs. those we use for biodiversity, e.g., using “links” for human infrastructure and “corridors” for biota. For example, listening to the house last weekend and the talk around Environment at the NPD Annual meeting. Environment is politicized in Canada and has become a discussion about the Kinder Morgan pipeline and nothing else. The pipeline is one of the many infrastructure “links” that humans insert on the natural landscape. For some reason, we ignore that biota need similar links. We use the word “corridor” for animal linking infrastructure. A word can make a lot of difference.

Another would be to depoliticize the word “environment” the way it has been done with climate change. Somehow the message is out there that climate change will affect us all. In contrast, negative effects on biodiversity do not have the same impact — and I don’t know why. Though I think the CMN and NatureTalks does a fantastic job, Meg.

Holly Clermont

In my own research, participants tended to roll up biodiversity conservation with climate change. Climate change was seen as causing biodiversity loss, while the notion of biodiversity conservation conferring resilience to ecosystems stressed by a changing climate was completely absent. Perhaps biodiversity loss is viewed as scaling up to global, and climate change scaling down to local. In any case, I feel ‘biodiversity conservation as adaptation’ is a huge leverage point! In an earlier dialogue, Eleanor Fast said there are so many crises in the world that it is hard to get the message across that urgent action is needed. Calls for biodiversity conservation can and therefore should piggyback on those for climate action, and some monies dedicated to climate change monitoring and adaptation used for monitoring and enhancing biodiversity. The organizations working on these problems can join forces. If we continuously portray species and ecosystems as victims, we end up justifying their protection, one by one. If biodiversity is perceived as saviour, then it will become increasingly sacrosanct.

Not long ago, I read an article about how China was creating 30 ‘sponge cities’ — enhancing and building wetlands, planting on rooftops. These are opportunities to enhance biodiversity. Based on a premise advanced by most natural resource professionals — that we cannot entirely reproduce the structure and function of a lost ecosystem, protecting what we have is the first step — not just where they are now, but where we think they might go in a changing climate.

Sally Otto

Both legally and ethically, protecting biodiversity requires that communities and governments work together at all levels. Different voices matter in different locations, from private land to provincial crown land to federal parks. First Nations traditions in different locations provide information and practices from time immemorial about living with the land sustainably. Studies have shown that protecting biodiversity is more effective when local communities are engaged and supportive.

A big part of the problem in protecting species at risk in Canada comes from gaps between scales of governance. [The species-at-risk law \(SARA\)](#) provides protection, but it is only automatic on federal land (~5% of the land area of the provinces). While it can be triggered to extend to provincial land, this "safety net" has not been used. Meanwhile, many provinces, BC included, do not have legislation to protect species at risk and have been protecting too slowly and too little to reverse declines.

Valerie Behan-Pelletier

Sally — I didn't know that about SARA — thanks, and it highlights some of the intergovernmental flaws that beset Canada. Yet, biodiversity would seem to be a topic that society at all levels should be able to get behind. To a certain extent they have in Europe, e.g., the recent upholding of no cutting in ancient forest in Poland by the European court.

Holly Clermont

Yes, gaps are definitely an issue. Not just with broad species at risk legislation, but with the bits and pieces used to fill that gap — a wealth of inadequate tools, I like to call them. Old Growth Management Areas, Wildlife Habitat Areas, and other tools that are underused or have huge limitations built into them that favour industry.

Ann Dale

Holly raised the issue of under-utilized tools? Why are they under-utilized and what can be done about it?

Sharolyn Mathieu Vettese

Sally made a good point about the weak legislation that we have. I would like to add that we don't have any legislation to protect biodiversity, which implies a living and healthy ecosystem. But we are better at implementing some sort of legal protection when a species is nearly extinct. We are not protectors of the Environment as we would like to think.

Brenda Kenny

The intersections are crucial. That is why we have failed. And to Dawn's point about collaboration—we must re-invent institutions and science that can inform and decide/commit in ways that are systems based.

Dawn Carr

Thanks Brenda. The idea of reinventing institutions to reflect a systems-based approach is an exciting idea and I'm hopeful we'll get there in Canada. If institutions could also reflect a process that supports collaboration at multiple scales, that would also be awesome.

Sharolyn Mathieu Vettese

I think nature has a lot to teach us about conserving energy because it wastes nothing, whereas we do the opposite. At this critical juncture in the planet's wellbeing, we need to conserve more if we want to extend the life of our planet. As Sally wrote we need to involve the wisdom of the First Nations.

Christine Leduc

It's interesting because Canada, compared to all other countries, is absolutely blessed with nature. We have a vast country with varying ecosystems and the beauty of Canadian nature is that the majority of it is Crown lands, belonging to the citizens of each province (biodiversity/resources is the dominion of the provincial governments). That said, Canadians have more power if we work together to elevate these issues because it's all of our land and in our interest. Never have Canadians cared so much about their natural environment.

Ann Dale

Christine, a vital point. Any ideas on how we could harness this for great action? I know I am not asking easy questions.

Christine Leduc

I think this work is ongoing and taking place organically. Social media has introduced pervasive changes to the way we communicate. The Women for Nature initiatives furthers this work and encourages all of us to engage our networks. As Canadian citizens, there is power in our votes. If we think of the Canadian biodiversity movement as a parade, there are a lot of floats of different colors and sizes in the parade and I only see it growing and getting bigger with time.

Leslie King

I agree Christine, \that we are blessed but too often we think that biodiversity is out there and has little to do with us!

The main global and Canadian solution to biodiversity loss has been — more and bigger protected areas — great but this solution tends to:

- a. Exclude people from biodiversity
- b. Reinforce notion that biodiversity is elsewhere rather than everywhere
- c. Limit opportunities for biodiversity enhancement at the local level
- d. Can create negative feelings towards biodiversity protection — and promotes the notion that biodiversity is elsewhere — in the wilderness, not in my backyard — rather

than everywhere!

Having said that, we have many wonderful examples of biodiversity conservation initiatives at the local level — the problem again is linkage — as I said last time, the Biodiversity convention is failing because it fails to connect with local networks of biodiversity conservation.

Dawn Carr

I agree Leslie, we need to think about the whole idea of parks and protected areas very differently. We ARE Nature and we need to see ourselves as part of the landscape. The emerging development of [Indigenous Protected and Conserved Areas \(IPCAs\)](#) are a great way of recognizing Indigenous leadership and local community involvement in sustaining our relationship with and dependence on biodiversity.

Sally Otto

I was pretty inspired recently when we crunched the numbers and found out that Canada is home to about 1/3 of the world's remaining wilderness. That's something to be proud of and protect!

Perhaps we need to start thinking 17%/100%. A goal of 17% set aside as fully protected and 100% of our country used to support and enhance biodiversity, aiming for avoiding and minimizing harm where possible and offsetting the harm to wildlife that remains.

Brenda Kenny

Sally is so right about the 100%, especially if we think about the ecosystem services that biodiversity provides. I like the 50% idea because it is catchy, it is possible in Canada and leaps the "corridor"/"link" thinking of some biodiversity conservation efforts. Looking at much of lower Canada from the air — human linking infrastructure wins over that for biota.

Going back to Ann's second question, I think [COSEWIC](#) does a fairly good job on some species at risk as they focus on habitat.

Meg Beckel

We also need to collectively and individually look at the evidence that informs decision making as well as the evidence that inspires the general public to care. Museums and other organizations that engage the public have an opportunity to inform and inspire with the evidence of the value, importance, functionality and beauty of biodiversity. Museums, botanical gardens, zoos, aquaria, local parks, etc., all play a role. When I say evidence, I mean the actual physical specimens that are often simply amazing to see

and to learn about. I also mean the evidence in the form of data and knowledge collected over time that tells the story of biodiversity change. Something that natural history museums around the world are addressing collectively now rather than independently for so long.

Ann Dale

I can hardly keep up with these wonderful ideas, the business case has certainly been made. Brenda—the concept of time and systems based, Leslie—linkages and interplay, Valerie—emotional scale in addition to the others articulated, Meg—actions at all scales are critical, Dawn—multiple levels of government, Holly—place context plays a key role and resources, and Sally—collaboration and gaps between scales of governance.

This leads to our second question. Are there Canadian initiatives/policies/regulations that are actually working to conserve biodiversity? Sally has mentioned SARS and then its weaknesses. Is there any hope, dear colleagues?

Christine Leduc

To answer the question about initiatives, in the forestry sector we use forest certification to show the public and our communities that the forests are managed according to certain standards – Forest Stewardship Council and Sustainable Forestry Initiative. EACOM may be responsible for the management of a few million hectares of forests, but these certification schemes have access to much larger areas (thinking about scale here). FSC certifies 198 million hectares and SFI certifies 115 million hectares.

I invite you to learn more about the Forest Stewardship Council (FSC) here: <https://ic.fsc.org/en/what-is-fsc>

I am especially thinking of the conservation grants program by Sustainable Forestry Initiative (SFI): <http://www.sfiprogram.org/conservation/conservation-grants/>

Since 2010, this initiative has raised \$13.2 million in conservation and community partnership grants.

Dawn Carr

Another positive initiative taking place that may be worth mentioning is the development of a document called [Parks for All: An Action Plan for Canada's Parks Community](#).

Parks for All is a Canadian contribution to the IUCN's #NatureForAll movement that Meg mentioned.

This document was informed by hundreds of thought leaders and decision makers who see themselves and their organizations as having a role to conserve biodiversity and there is a whole section on Conservation that speaks to actions we can undertake to make a difference. This body of work has just been published and work is underway to determine how best to measure and report on progress.

Holly Clermont

Ann, I was reading over the transcripts of earlier conversations, and noticed a discussion advocating for an IPCC-like panel for biodiversity assessment. This already exists: It's called the [Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services \(IPBES\)](#), established in 2012. It is "the intergovernmental body which assesses the state of biodiversity and of the ecosystem services it provides to society, in response to requests from decision-makers." I believe there are regional assessments underway right now.

Valerie Behan-Pelletier

Holly, thank you for bringing up the IPBES.

It's somewhat modeled on the IPCC, but only produces policy documents. I think the power of the IPCC is that documents are produced for various audiences (business, industry, financial, as well as policy). Of course, the IPCC has been in operation for 30+ years also, and has buy-in from almost all climate scientists. That is not the case with IPBES.

Ann and myself looked at their site and noted that there were no Canadians on the Expert Panel.

Holly Clermont

I think the limitations you are speaking of may dissolve as the organization matures, Valerie. I'm not entirely sure where I was on the site, but I noticed Kai Chan (UBC) and Brenda Parlee (U Alberta) are involved in assessments.

Valerie Behan-Pelletier

Holly — you are right, the IPBES should have more influence as it matures, and hopefully it expands its scope, and gets involvement from more biodiversity interests.

And breaking down the stovepipes between government agencies at every level, and various biodiversity 'disciplines' will help. I may have brought this up at previous e-

dialogue:

Enhance collaborative governance between federal and provincial and territorial governments re. Biodiversity. Also, collaboration between government departments. A lack of collaboration was highlighted in the Naylor Report on Research in Canada which came out last year: http://www.sciencereview.ca/eic/site/059.nsf/vwapj/ScienceReview_April2017.pdf

“Strong FPT collaboration is essential if Canada is to compete internationally. The Panel learned that interactions among the relevant officials and ministers are sporadic. Among the issues that seem likely to benefit from enhanced dialogue are matching requirements, human resource planning for research and innovation, and the institutional costs of research.”

Dawn Carr

The points above are really important and the collaborative examples everyone is providing are great. As someone who works intensely within the FPT world, change is happening especially when it comes to collaboration, but we have a long way to go with figuring out how best to operationalize the change. This brings us back to the point of institutions and it would be exciting to see proposed solutions that effect the way we all 'do business' together, with biodiversity conservation front of mind.

Brenda Kenny

We need to address hope and trust. When you have time after this chat, take a look at the [Edelman Trust Barometer](#).

Institutions are not trusted, and the issue (I think Christine raised) about something more than a species-by-species response is important; we must push forward on species-by-species conservation but that is a "necessary but insufficient" response.

People need a reason to hope and trust. I think the building of broader conserved areas is key. A crucial initiative is the commitment to protect more land and water. Nature Canada is active, as are many others, to see this become a reality. See <https://act.protectedplaces.ca/page/19920/action/1>. “Our national and provincial governments have committed internationally to protect 17 percent of Canada’s land and inland waters, and 10 percent of Canada’s ocean by 2020. So far, only ten percent of Canada’s land and inland water and less than one percent of our ocean is legally protected.”

Sally Otto

We're seeing progress protecting species at risk when there are single factor problems (a pollutant, an invasive species). For example, many species of raptors have rebounded following prohibitions on DDT. Where we aren't seeing much progress is for species whose major threat is the loss and degradation of habitat. And, sadly, that is the biggest threat to the majority of species at risk in Canada. (See recent study by the Smart Prosperity Institute on "[Species in the Balance](#)".

Dawn Carr

There is absolutely hope, Ann! I encourage everyone to read up on what is taking place to support Canada in achieving its target to protect at least 17% of terrestrial land and inland waters. The process called Pathway to Canada Target 1 is involving governments, Indigenous peoples, ENGOs, private land holders, and many, many others to figure out how we all need to work together to better conserve biodiversity. This process is a promising practice that will see and support innovation in this field. I also sit on the Canadian Committee for the IUCN (under Meg's stellar leadership) and this group is working hard to support the Pathway to Canada Target 1 as well. :)

Ann Dale

Dawn, do you have a hyperlink to more information about this? And thank you for bringing this forward.

Dawn Carr

Here's a link to the Pathway to Canada Target 1 website: <http://www.conservation2020canada.ca/the-pathway/>

Valerie Behan-Pelletier

Canada and other COP signatories has a commitment to "Target 1". By 2020, at least 17 percent of terrestrial areas and inland water, and 10 percent of coastal and marine areas, are conserved through networks of protected areas and other effective area-based conservation measures."

Will we meet this goal???

I think Canada should be asking the population to sign up for the 50% goal: i.e., give up half of the Earth to wildlife?

Learn more here: https://www.theguardian.com/environment/2018/feb/18/should-we-give-half-planet-earth-wildlife-nature-reserve?CMP=Share_iOSApp_Other

I actually think Canadians would sign on to this; it could be a driving initiative for Indigenous and other levels of government.

Holly Clermont

The 50% idea sounds great at first, but there are some real issues that need to be addressed. I point to First Nations' approaches (already mentioned by Leslie and Christine), where lands and waters are not considered resources but relationships (see Taiaiake Alfred's work (UVic)). These approaches don't separate us from nature but tie us to it. I am unclear how to up-scale this approach, but believe it merits attention. I point to the difficulty in maintaining ecological integrity of parks and conservation areas as just one of the challenges in 'protecting half'.

Meg Beckel

Beyond natural history museums working collaboratively now to share the evidence of biodiversity, [IUCN](#) is also doing great work to inspire understanding and value of nature, to promote nature-based solutions to societal challenges and to provide guidance on nature's uses in a sustainable and equitable manner. The International Union for the Conservation of Nature is currently campaigning to inspire a love of nature since we all know "you protect what you love". [#NatureForAll](#) is the global campaign and it is gaining ground around the world. I should have clarified that this program was led by Parks Canada and has a Canadian campaign that is inspiring the growth of the global campaign.

Brenda Kenny

I agree with the many posts related to more conservation areas. I think that Canadians would get behind that, and we know from experience in other major parks how precious these grow to be (albeit needing continuous protection!).

I think the newly introduced reforms federally on impact assessment might help. If we can achieve shared regional assessments and be more proactive in ongoing shared science that will greatly help. The thousands of smaller, more local decisions and the project or sector decisions like forestry plans, mining, etc... need a common base upon which to plan, decide, condition, mitigate and monitor. As well, the shared science and TEK need to be better understood across and between activities affecting habitat and biodiversity. We have a way forward.

We must have broad based plans, transparent science, and shared EIA results. Now they are generally siloed and project specific. We have much better advanced information technologies and related monitoring (even satellite monitoring) than even five years ago. Lots of positives to build on.

Holly Clermont

Hi Brenda! Shared science is key for sure. Indigenous knowledge appears to be gaining traction in academia, as scholars recognize its value. Consider this article a few days ago, with the headline, "[How western science is finally catching up to Indigenous knowledge](#)" (George Nicholas (SFU) in Maclean's).

Leslie King

As I said last e-dialogue, I think the critically important but still unrecognized opportunity is the preservation and promotion of URBAN biodiversity. So, preserving social ecological systems in urban regions. And a challenge is to use some of the tools we have come to use in parks — eg. connectivity.

Research demonstrates that Biodiversity loss is most intense in urban and peri-urban environment (Nilsson et al, 2013)

Expanding cities

Intensive agriculture

Watercourse pollution, etc.

I also think that we need to move away from just protecting existing biodiversity (though that would be great in itself) to creating new pockets and interconnected systems of biodiversity in urban areas. I have trouble with restoration (since it implies that we can destroy natural systems and then simply rebuild them), but there are good examples:

- Green infrastructure
- Ecologically informed brownfield restoration
- Green roofs/buildings
- Green networks - linear parks, water courses, disused transport networks, greenways
- Community gardens
- Private gardens, rain gardens
- Ecological features incorporated into buildings

Of course it would be very sad if this were all we had but I think we need to take responsibility for nurturing biodiversity in our own backyards — not just out there in our spectacular wilderness.

Meg Beckel

I totally agree that we need to pay more attention to conservation in urban centres. The IUCN has established an Urban Alliance to bring together the many players and layers around the world. It is just getting started.

Sharolyn Mathieu Vettese

Ann, regarding your second question, I am exceptionally hopeful that the cap and trade program will make a difference. I have studied the Ontario program and it has key features of carrots and sticks to be effective. The government is supportive because it brings in revenue without taxation.

Meg Beckel

I think we also need to celebrate individual, organizational and industry efforts so that more will be inspired and step up themselves. Five years ago, we launched the Nature Inspiration Awards to recognize innovation and creativity in connecting people with nature and inspiring nature conservation. We recognize and celebrate youth, adults, NGOs and industry. Canadian Wildlife Federation and Canadian Geographic also have awards that recognize and celebrate contributions to the cause. Although there is always so much more to do, we always need to celebrate progress and solid effort!

Brenda Kenny

What is being done on school curriculum? We need to ensure that youth today understand the environment as a system of biodiversity and that it is a crucial to well-being on all levels. If this is to be sustained, we need to know that current and future voters will stand behind their politicians when the tough decisions about budgets, constrained use, etc., are implemented. Again, back to time, but I think there is a huge social component to achieve long term biodiversity.

Dawn Carr

Here, here! This is so true Brenda! Perhaps if there were less restrictions around access to outdoor play and increased environmental education we'd be more successful in raising the next generation of conservation supporters.

Leslie King

Thanks Brenda and Dawn — and so we come back to education — specifically, outdoor education, as we discussed before. I think we have a huge task of raising awareness of the critical importance of biodiversity to each one of us, our communities, our economy and to the fate of the earth and our global society.

Meg Beckel

This is where the #NatureForAll and Parks for All campaigns come into play. We need to inspire more people to get out into nature to inspire a love of nature. It is difficult to

inspire people to vote for the investments in biodiversity if they don't have any connection with it. Local, provincial, territorial and national parks access is so key to this. This must be complemented by classroom education and experience as well, to Brenda's point.

Leslie King

A few years ago, I presented a paper comparing the IPCC and IPBES and the reasons for the lack of success of the IPBES. One of the major reasons is the intractability of the concept of global biodiversity and the failure to capture people's commitment and understanding of the issue and the consequences of biodiversity loss — we return to education. And I think there are many wonderful local examples of biodiversity education which I am sure most of you know more about than I do and I'd love to hear about them.

Valerie Behan-Pelletier

Ah Leslie – I would love to see a copy of that paper! – please.

The Global Soil Biodiversity Atlas and the website was one way the soil biodiversity community was trying to get over the intractability you noted.

Leslie King

Val, I just tried to find the paper — never published (the story of my life) but I do remember some of the bottom line:

- Biodiversity is an accumulation of activities at micro scale; cumulative effect is global. Climate Change by definition is a global issue;
- Sovereignty is a factor in CC, but does not block policy debate;
- Biodiversity research much more diffuse than CC;
- More players, so capacity building bigger challenge for biodiversity;
- Multiple fora, compared to single forum for CC;
- Science of CC (relatively) better understood in policy circles and in the media;
- Consequences of CC appear more dramatic than biodiversity;
- Public has not grasped the concept.

But I agree that this could be an issue of time and stage of development. Climate change suffered from some of the same problems and I hope that Biodiversity is becoming more recognized and the IPBES will grow and develop.

Valerie Behan-Pelletier

Leslie – thank you so much for this.
I'm going to highlight two of your points:

- Science of CC (relatively) better understood in policy circles and in the media;
- Consequences of CC appear more dramatic than biodiversity.

I think the Chinese best understand that the consequences of biodiversity loss are even more dramatic than CC. Especially with their soils. They are pouring \$\$ into research on the soil microbiome at present.

Ann Dale

I stumbled across this in thinking about our upcoming conversation, and for me, it highlights the necessity for global leadership and action. A new global registry for invasive species has been created: <https://www.theguardian.com/environment/2018/jan/23/new-global-registry-of-invasive-species-is-milestone-in-protecting-biodiversity>.

All of you have raised critical issues: Leslie—urban biodiversity, Christine—a very impressive forestry initiative, Meg—need to inform and inspire, Sally—loss and degradation of habitat, Brenda—the need to complete protected areas commitments, Dawn—Pathway to Canada Target 1, Meg—IUCN, Val—#NatureNeedsHalf, and Holly—IPBES. All of which points to the criticality of collaboration, strategic alliances, bridging gaps of all kinds, networks, human positionality, and in the meantime, we are losing species every day, and time is of the essence, there is no second chance for extinction.

And IUCN has done incredible work, with many working long and hard. Are there other international collaborative models we could build on? As Val discussed, we have been throwing about the idea of a IPCC type initiative for biodiversity conservation. What do you think? Holly, no one knows about IPBES and it is not globally representative—do we need worldwide attention now?

Dawn Carr

Just thinking more about international collaborative models and the IUCN. Many of us are part of the IUCN's commission network which is built with volunteers of experts. Spreading the news and work associated with these commissions would be beneficial. I wish there were more hours in the day to read!

Holly Clermont

I'm a firm believer in building on initiatives, rather than re-inventing them, whenever possible. Despite the challenges we had with Mount Arrowsmith here on mid-Vancouver Island, I think the concepts embedded in the UNESCO biosphere region model have tremendous potential. There are now 18 biosphere regions/reserves in Canada, and 669 worldwide. They subscribe to the notion that people are part of nature. They are designed to be 'living labs' where community organizations, academic institutions, governments, Indigenous communities, and residents can come together, a venue through which they can contribute in their day-to-day lives. They create and share information, work in partnership on sustainability projects, and model solutions. They are mostly stable entities — their leadership has changed very little since I was last engaged in 2012. A quick look at some of the Canadian biosphere reserve websites shows some are doing grand things. Georgian Bay in Ontario conducted 55(!) species at risk surveys last year. Manicouagan-Uapishka in Quebec is partnering with a Sami (Indigenous) community in northern Sweden to help manage the challenges they share. The Canadian Biosphere Reserve Association connects the regions across the country, and UNESCO binds them globally. Perhaps they can be harnessed to raise the profile of IPBES.

Sharolyn Mathieu Vettese

Meg's comment about getting companies involved is key. For too long, business leaders have thought that being green was a cost and might have a small feel good value. But their operating costs go down and that makes sense businesswise, plus it's feel good. For example, if a company recycles more or chooses products and practices that reduce their landfill garbage costs, this will reduce their operating costs. This is good for business. Not all garbage is equal.

Brenda Kenny

I think that many companies are advancing here and it is a good time to engage them as partners rather than harm-doers. For example, and I hate to bring up pipelines because it is SOOOOO polarized, but the Canadian industry now has a condition of membership around performance, third party verification and transparency. Biodiversity could be more explicit there, but the framework and results are positive. And I know of at least one major project that specifically engaged Parks and ENGOs to address project-specific issues in creative ways, together, using set aside funds that the company provided. Just like in Calgary any new public work or building must put 1% of the budget into public art. Engaging positively and building trust through real outcomes is extremely productive.

Meg Beckel

Ann, I think the Arctic council is a global collaborative model that is doing some really good work and is gaining more and more attention because of the dramatic changes taking place in the Arctic. One of the research groups, CAFF, Conservation of Arctic Flora and Fauna, has been around longer than the Arctic Council and is an example of international collaboration that works, produces useful information that informs decision making. It is an example of something to build on and invest in, rather than creating new forums that duplicate effort in a different forum.

Valerie Behan-Pelletier

Meg, I so agree with you on CAFF — somehow it has mobilized the scientific community (I've been involved on the Invertebrate side), and we all agree to contribute without grandstanding. There is institutional structure that is inclusive, non-threatening, — what is the secret — CMN scientists?

Meg Beckel

I think it is all about hosting meetings in interesting and unexpected arctic council cities that makes this work. Interesting locations, people and food! As well as the realization that we need each other to make arctic research possible and affordable.

Holly Clermont

In Canada, I believe recovery teams for species and ecosystems did great work and deserve support. When I worked for Garry Oak Ecosystems Recovery Team, we had 5 permanent and at least 2 temporary staff, and hundreds of people working on 7 Recovery Implementation Groups. The Team, which directed our work, was comprised of representatives from all levels of government, academia, other NGOs, and the private sector. Throughout this organization were people with passion and extraordinary skill. In my view, it was the perfect, professional, partnership organization. We encompassed all aspects of recovery planning, ecosystem and species protection and management, communication, education, research. It was well-respected by regulatory agencies and the public. Recently, I discovered this amazing society was contemplating dissolution, apparently due to sustained federal funding cuts and a loss of cohesion.

Sally Otto

I didn't know that these were being dissolved. Recovery teams were a great way to bring everybody together to focus on solutions that work.

Holly Clermont

Sally, I should clarify. I suspect most are still in operation, just functioning at lesser levels than they once did. I've been out of that loop for a while.

Meg Beckel

I am noticing more and more funders are expecting organizations to collaborate in order to qualify for funding. It is a shift in the nature conservation world and is a carrot that inspires a search for partners, often in unexpected places. Environment Canada just this week announced a new funding program to engage youth in conservation and it expects collaboration and multiple partners.

Dawn Carr

Here's the link to the program: <https://www.canada.ca/en/environment-climate-change/services/environmental-funding/programs/engaging-canadian-kids-wildlife-conservation.html>

Christine Leduc

I attended an event recently and a federal ministry ADM said 'if you're not collaborating today, you're not in the game'. Industry-ENGO partnerships have failed because they did not include First Nations or municipalities. We need to be collaborating, especially in our 2018 world of endless access to each other. These types of dialogues help us address the issue at hand but also build trust to ensure the broader community is engaged to tackle any future issue.

Sharolyn Mathieu Vettese

Another reason why I'm hopeful about cap and trade is because it does cross international boundaries. In January 2018, Ontario's program became linked with Quebec and California forming the second largest carbon market in the world expansion of this carbon can include other provinces and states and countries. It incorporates actions by governments businesses and individuals to reduce GHG emissions.

Brenda Kenny

Anything that puts a price on what we want to reduce (carbon in that case) to get to goals, and to re-invest in solutions is great. Alberta has chosen a carbon tax route instead of cap and trade, but the investments in clean tech have leveraged to over \$2 Billion so far. Regardless of the tool, I think the key is to be clear about the goals and

the ability to collaborate broadly across jurisdictions, like the biodiversity approaches and the habitat set asides.

Mentioned earlier was the challenge in globally addressing biodiversity goals. We need to consider the underlying barriers and respond to those. Carbon has been hard, and we have to move forward aggressively while keeping energy available and affordable. It is "simply" an energy transition and conservation problem (tough in cheek but very serious). Think of what we face in biodiversity globally; fishing for scarce food and income, bush meat for survival, land use for human populations that have in some cases tripled in a few decades. Global strategies will fail if we don't name, talk about and address very real underlying issues.

Ann Dale

Collaboration has emerged as key. Going back to our earlier discussion of scale, do we need a global scale initiative that could bring to the same table all the groups and organizations now working in this critical area for several reasons. First, to scale up and out, to achieve global attention and ideally scientific consensus on the action priorities, to obtain necessary resources but more importantly, to achieve international scientific consensus. Think about previous successful campaigns, they had scientific consensus, multiple level government involvement, and international regime formation to name only three.

Sally Otto

I don't know about this. I think there is scientific consensus that the massive scale of habitat loss and degradation is the main cause of declines in wildlife and the main risk factor for species at risk. Global initiatives have been fairly successful. It really is that Canada lags behind. The proportion of fully protected areas in Canada falls behind. Effective protection for species at risk falls behind. Yet, Canadians value biodiversity, nature, and our wild spaces. Why the disconnect? We spend less per person on species protection than the United States, about half as much (as noted by The Smart Prosperity report).

Canada spent \$2.50 per capita on SARA implementation in 2013/2014. "As such, Canada's federal government spends approximately half as much per capita on imperiled species conservation compared to the US federal government." (<http://institute.smartprosperity.ca/sites/default/files/sr-02-01-18-final.pdf>)

\$2.50 per person per year...I think that falls far short of the value of protecting endangered species to the average Canadian.

Holly Clermont

Perhaps the solution lies in bringing together the organizations and initiatives that already exist? From a research perspective, a network analysis seems like a good first step.

Part of the disconnect is people see 'nature' or 'wilderness', not biodiversity. Empty streams and subtidal areas are largely hidden. Many hunters and fishermen know populations aren't doing well, but they are part of a feedback loop – becoming fewer as their luck runs dry.

Meg Beckel

I would suggest this is precisely what IUCN is doing. At CMN we are focussed on supporting the work of IUCN, the national and regional committees of IUCN and the expert knowledge commissions of IUCN. It is a powerful forum to bolt on to. IUCN also realizes that IT TOO must support other global efforts such as UNEP, CBD, Arctic council CAFF etc. Acronym soup!

Dawn Carr

I would like to retweet this. Or offer a thumbs up.

Leslie King

I agree that collaboration is key — and essential — especially collaboration across levels of societal organization. Climate change networks did this — and biodiversity networks are much less developed. We need to change that.

Brenda Kenny

Absolutely!

Sharolyn Mathieu Vettese

Holly did you see the article in the globe how a sports fish catcher caught large walleye in Hamilton harbour? The demise of Hamilton's steel industry offered an opportunity to stock sprays or young fish to reestablish themselves in their habitat and this effort was successful. Their presence will likely have positive impacts elsewhere in their environment.

Valerie Behan-Pelletier

This is an off-the wall:

Needed: a breakdown of the commonalities of organisations that 'get it right', that bring about positive change, e.g., IPCC, IUCN, Arctic Council, CAFF, Science Councils, SARA, Cosewic...

Unless the book/article has already been written? Though, a bit like "Doing a Ph.D. 101" I don't think so?

Sharolyn Mathieu Vettese

Ann, I think cap and trade is one of the forums to achieve this end as it involves a commitment and actions from governments, businesses, and individuals. With the available funds, it can support research to implement the needed protection.

Brenda Kenny

Sharolyn, I would love to hear more about this as it might relate to biodiversity. Could "offsets" be considered (in terms of habitat like the DFO no-net-loss?) I think you are right that companies would gladly engage in pathways to solve problems.

Ann Dale

I cannot thank each of you enough for taking the time out of very busy schedules to participate in our conversation series. Following the fourth, we will be preparing an action agenda for Canadian decision-makers. And with your permission, we will include all of the e-panelists as authors. As part of this, we will produce a compendium of all the initiatives and programs that are now on the ground, including many the e-audience has introduced. As well, an interesting question we didn't get to, but will include in our document is how to integrate biodiversity conservation into planning practices.

Any concluding remarks, dear colleagues. Just a thought, what about promoting museum collections on the outside of buildings in large urban centres? And what about on ferries, having underwater cameras that show on screens in the lounges the wonderful biodiversity being passed over? Une mille fois merci, mes amis.

Leslie King

Thank you all for this wonderful, stimulating, hope-inspiring conversation! And thanks to you Ann for masterful convening and moderation! Cheers and continue all the good work!

Brenda Kenny

Ann, thank you for hosting this!

Meg Beckel

Join the love of nature campaign #NatureForAll...for the love of nature! A pleasure Ann. Thanks for hosting!

Sally Otto

Thank you, Ann! These conversations help build community and share knowledge. Greatly appreciated!

Valerie Behan-Pelletier

Thanks, all. This was a wonderful conversation – I learned so much.
Val

Dawn Carr

Thank you for the enlightening conversation ladies. What a lovely way to spend part of the afternoon and thank you Ann for preparing an action agenda. Way to go Women for Nature!!!

Holly Clermont

Agreed. Thanks, everyone!