

Key takeaways and priority actions

January 2022





2021 Ontario Biodiversity Summit

Key takeaways and priority actions

The 2021 Ontario Biodiversity Summit was held from May to October 2021 and included 16 informative and engaging virtual sessions. The Summit was organized by the Ontario Biodiversity Council.

Purpose

To reach out and connect people from across Ontario and Canada to talk about, celebrate and most importantly, take action to protect biodiversity, address climate change and advance nature-based solutions for a more sustainable future for all.

Vision

Transformative change that will move us towards a more inspired future, a "nature-positive world", living in harmony within nature, thereby advancing progress on the global sustainable development goals.

How?

By advancing nature-based solutions that explicitly address both biodiversity loss and climate change while delivering clear benefits to people, their health and well-being in a sustainable bio-economy.

Nature-based solutions (NbS) are defined by the IUCN as: "actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits".

Nature based solutions also include much needed climate benefits and:

- are not a substitute for the rapid phase-out of fossil fuels;
- must increase the protection of carbon sinks, while reducing carbon sources;
- involve a wide range of marine, freshwater and terrestrial ecosystems, including forests, wetlands, grasslands and more. It is more than just planting trees, although that, too, is needed;
- should be implemented with the full engagement, support and consent of Indigenous peoples and local communities; and,
- must provide measurable benefits for biodiversity.

Overall Summit Summary & Opening session: Nature-based solutions for the 21st century

The opening session of the 2021 Ontario Biodiversity Summit focused on "Bending the Curve of Biodiversity Loss – a roadmap for a sustainable future." The session reviewed recent assessments on the state of biodiversity at the global, national and sub-national level and detailed progress against corresponding biodiversity goals and targets.

A panel session of experts discussed opportunities for nature-based solutions to achieve multiple wins for biodiversity, climate change and for people.

"Healthy ecosystems sustain healthy people and a healthy economy". Efforts to protect, restore and sustainably manage biodiversity must be scaled-up to achieve the multiple benefits we seek for biodiversity, climate and people. **Key takeaways** Transformative change is needed: we must break down issue-based silos to develop integrated responses using NbS to achieve the multiple benefits we seek. **PROTECT:** biodiversity rich and carbon dense areas that are under threat from human activity. Target 30% by 2030 deemed a minimum. **RESTORE:** strategic restoration required: the "right native species in the right places for the right reasons" and at a scale that will yield measurable biodiversity, climate and people benefits, including job growth. **Priority actions** SUSTAINABLE USE: a biodiversity and climate lens must be integrated into all business and industry practices. FUND: biodiversity needs to be integrated into financial statements and formally valued and financed for its "natural infrastructure" assets and benefits. Terminate perverse subsidies that are damaging nature and re-direct to nature-based solutions that deliver positive biodiversity, climate and community benefits. **SUPPORT AND CONSENT OF INDIGENOUS PEOPLES** – integrate the use of Traditional Knowledge, two-eyed seeing and ethical space. **ENGAGE PEOPLE** – success is dependent upon widespread support of consumers, as a business driver and the electorate to achieve government leadership. **Cross-Cutting REDUCE THREATS** – sustained effort required, including reducing our Ecological **Themes** Footprint. MAINSTREAM BIODIVERSITY – biodiversity and climate positive actions must be integrated into ALL SECTORS. IMPROVE KNOWLEDGE – monitor, report and adapt. Develop the equivalent of a Living Planet Index for Ontario.

Youth round table: A call for the future

Youth from across Ontario identified and discussed priorities for the post-2020 Ontario Biodiversity Strategy. The session focused on the state of biodiversity at both the provincial and international levels, and the associated strategies that have been developed to address biodiversity loss. Participants shared ideas to contribute to a Youth Call to Action that will be presented to the Ontario Biodiversity Council.

We are poised for transformational change – business as usual won't cut it anymore. Key messages for future conservation work and the renewal of the OBS include:

Indigenous Knowledge and Two-Eyed Seeing: Each target and priority of the new strategy, from creation to implementation, must be equally informed by Indigenous Knowledge and "mainstream" knowledge, following the ideals of Two-Eyed Seeing:

Equity through generations:

The new strategy also needs to consider time at a generational scale. Any changes to the land - both good and bad - not only affect those alive today, but those in generations to come.

Key takeaways

Following a nature-positive, bottom-up approach: The strategy also needs to follow a nature-positive, bottom-up approach, with quantifiable, measurable, and actionable targets. Nature and biodiversity are in crisis, and the new strategy needs to not only halt this decline but reverse it. Part of this depends on public engagement, and therefore, depends on a bottom-up approach.

A sense of urgency and hope: The new strategy must convey not only a sense of urgency but of hope. The scale of the biodiversity crisis, coupled with the climate crisis, is something we have never seen before. This can seem daunting and push people towards inaction.

PROTECT: We need to increase our protected land and water targets to at least 25% by 2025 and 30% by 2030 (similar to the targets being discussed internationally and nationally) but ensure that there is intention in the lands being protected.

RESTORE: Youth want to see a higher emphasis on active restoration. Land needs to be purchased before it can be bought for development and restored back to a more natural state. Specific restoration targets must be set, similar to the more general land and water protection targets, for different ecosystems, such as forests, wetlands, meadows, prairies, rivers, and many more. We must save the best and restore the rest.

Priority actions

FUND: There needs to be change on how money flows. The easiest first step would be to reverse the current government's decision and call for a strong Cap and Trade Program that recognizes the value of sequestering carbon with land and through afforestation, thus, incentivising environmental protection. We have the plan and the framework ready; we just need the public pressure. Staying at the public level, providing landowners with incentives - either through tax breaks or through some form of "green loans" - to set aside land to be naturalized or for wildlife habitat, would also help to incentivise environmental protection. At a larger scale, we need to shift the economy in a "greener" direction.

A decade of biodiversity: Successes and challenges in biodiversity education and awareness

Biodiversity education and awareness continues to be of crucial importance on a local, provincial, national and international scale. For this reason, an education and awareness task team was created: the Biodiversity Education and Awareness Network (BEAN). BEAN's priorities are based off targets and goals in Ontario's Biodiversity Strategy 2011. This session explored the successes and challenges of communicating biodiversity with a discussion of how these efforts can be improved in the future.

Key takeaways Key takeaways Some of the key take-aways include the importance of awareness and communication about biodiversity – we are making good progress, awareness is growing, we successfully reached the OBS target and there are many contributing factors for this, including the work of BEAN and the work of all our organizations to talk about biodiversity. ENGAGE PEOPLE: Key next steps include pushing that awareness into action, and continuing to talk about biodiversity in a relatable manner and encouraging all of us to take the next steps in not only being aware but that some of the steps needed to conserve biodiversity are very attainable and really have limitless opportunities to do this.

Restoring biodiversity and ecological connections

This session featured four panel discussions profiling large-scale habitat restoration needs and opportunities. Restoration offers us a chance to curb biodiversity loss by creating habitat and enhancing connectivity on the landscape while providing increased ecosystem services such as carbon sequestration and flood mitigation. Ecosystem restoration contributes to the green economy by creating jobs and generating demand for locally and sustainably grown native plants and seeds. Topics of discussion included restoration policy, and the importance of seed conservation strategies in meeting biodiversity targets within restoration timelines, using "the right native species in the right places for the right reasons."

- Healthy, diverse ecosystems of native species are essential for the flourishing of human societies, and therefore may be valued as infrastructure and capitol, based on the ecological goods and services they provide us, and their ability to help us solve engineering challenges.
- In the rush to revegetate the landscape and meet restoration targets, plant diversity objectives (including genetic diversity) often go unmet; strategic action is needed to conserve and restore a greater diversity of local, native plants, as the foundation of all terrestrial ecosystems.

- Habitat loss, and ecosystem degradation are the direct result of colonization, western
 agricultural practices, and resource extraction; therefore, the first step toward
 restoring healthy ecosystems is to reconcile our individual relationships with the land,
 and the systems that sustain us.
- The restoration sector in Ontario must work to uphold indigenous seed sovereignty and strive to incorporate concepts of reciprocity and rematriation in our restoration efforts, while seeking opportunities to increase social equity in the restoration economy.
- The use of local, wild-origin seed is undervalued in Ontario's restoration economy;

- seed collection and production are limited by both practical and political barriers. Without guiding policies in place, an increased demand in naïve plant products may put pressure on an already fragile natural resource.
- Advances to Ontario's restoration Industry include the recent incorporation of the Ontario Native Plant Growers Association, the formalization of a Southern Ontario Seed Strategy, and the creation of a Greenbelt Native Plant Economy Report.
- The National Tree Seed Centre is helping address major gaps in the supply of native trees, including a lack of knowledge and skills related to native seed collection and processing, a lack of information about handling rare species and long-term banking, a lack of population-level data to inform climate-driven assisted migration, and a lack of species and genetic diversity represented in research collections.
- Most land in any municipality is in private hands so if we want to restore nature there
 needs to be a big push to educate/incentivize private landowners to restore the
 landscape; municipalities should begin public education campaigns that highlight the
 benefits of landscaping/gardening with native plants
- Community trust, uptake and involvement is necessary for the work of restoration to continue at a large scale, and so we must increase the opportunities for individuals to lead and participate in restoration efforts at a grass-roots level without being governed or exploited by the funding organization.
- Ontario's Conservation Authorities play a crucial role in maintaining healthy landscapes through Stormwater Management Plans, Habitat Improvement Plants, Community Action and other policies, integrated within and across watersheds.
- Groups, such as the Forest Gene Conservation Association are working to conserve Species at Risk trees, collect and integrate data about wild seed sources, as well as provide guidance for climate-driven assisted migration and the role of genetic diversity in sustainable forestry.
- Restoration on the Rice Lake Plain involves seed collection, invasive removal, and community outreach delivered by several organizations, all citing a lack of locally appropriate native plants and seeds, and the role of fire in controlling invasive species and maintaining healthy, diverse grassland ecosystems.
- Meadow habitat restoration is compatible with vegetation management practices of rights-of-way managers, but it takes communication and time to change public expectation and aesthetics.
- Working with local communities and private landowners is essential for widespread ecological stewardship, including restoration and tree planting, invasive removal and creating access to nature.
- Large-scale restoration requires iterative planning and adaptive management to balance priorities, and to ensure ecological outcomes as well as project objectives.

Priority actions

RESTORE: Restore landscapes strategically to ensure objectives are met **FUND/VALUE**: Ecosystems should be valued as infrastructure and capitol. **INDIGENOUS CONSENT**: Ensure projects incorporate reciprocity, social equity **FUND**: Engage, educate/incentivize private landowners to restore the landscape. **ENGAGE PEOPLE**: Increase the opportunities for individuals to lead and participate in restoration efforts.

IMPROVE KNOWLEDGE: Large-scale restoration requires iterative planning and adaptive management to balance priorities, and to ensure ecological outcomes as well as project objectives.

Restoring aquatic biodiversity

The natural aquatic biodiversity in Ontario, with 250,000 lakes alone, is a remarkable endowment. This full-day session consisted of four panels that evaluated the experience of sustaining natural aquatic infrastructure and restoring damaged ecological functions. One panel summarized advances in the measurement of the state of aquatic biodiversity (species, genetic, community). Another debated the appropriate balance of the tools of protection, restoration and offsetting. A third considered connections between Ontario aquatic policy and international agreements related to aquatic biodiversity. The final panel explored equitable and diverse public engagement in aquatic biodiversity issues.

Balancing Protection, Restoration and Offsetting

- Priorities for restoring aquatic biodiversity require strategic integration at landscape scale.
- Provincial and federal planning processes are often not as efficient and effective as local collaboration among NGO's and private actors, with government agencies as partners.
- Species-focused restoration can be problematic with limited biodiversity management resources, compared with actions that target ecological functions and systems.
- Restoration or offsetting ratios can oversimplify the need to focus on variables that drive biodiversity, such as critical habitat and limits to functions such as reproduction.

Tracking Meaningful Units of Aquatic Diversity: Genetic, Species and Community

- Basic needs for measuring biodiversity are a system for classifying biota, distribution patterns of those biota, and evaluation of their significance.
- Given the huge number of rivers, lakes and wetlands in Ontario, a landscape approach to understanding how biodiversity changes through time is required. Rivers and streams are the least understood.
- Broad-scale monitoring of sentinel species enables prediction of biodiversity of common species, whereas eDNA is being developed as a tool for detecting the presence of endangered species and maybe eventually the abundance.
- More important for restoration targets than species would be indicators of resilience developed for site-specific application.

Translating Global into Local: International Agreements Relating to Freshwater

- Major international treaties tend to enable local restoration action, rather than
 restrict it, if recognized by the responsible agencies. For example, Indigenous
 knowledge generation and leadership could be enabled by any existing
 environmental treaty.
- International agreements can be used in local-level restoration to sustain funding and momentum.
- On the other hand, local-level restoration orchestrated by communities can snowball into multi-community action with the resources of international agreements.
- For effective multi-actor restoration, collaboration needs to be broad and inclusive. For example, fishery objectives and aquacultural priorities need to be co-developed by all interested parties.

Bottom-up Engagement on Aquatic Biodiversity

- Education can be more effective than regulation for stimulating collaborative restoration action. Particularly important is a collective awareness of failure and commitment to remedy it.
- Another key form of education is public expression of the importance of water and aquatic resources.
- Indigenous knowledge and citizen science are significant bases of bottom-up engagement.
- Grassroots engagement in restoration requires appeal to the values of individuals and to the collective values of their communities. Facilitators need to know how individual and collective values interrelate.
- Nature is a great equalizer. Its services inspire actors to rally for restorative action and its obstacles force restorative changes in behavior.

Priority actions

ENGAGE PEOPLE: Advance the development of strategies for restoring aquatic biodiversity that invite and capitalize on the local-level knowledge of all potential collaborators, particularly non-governmental.

RESTORE: Develop long-term restoration strategies that integrate across landscapes, based on units of ecological resilience and function.

This session examines the current threats to Ontario's biodiversity, both on a large and small scale. Experts in the field give overviews on how issues such as climate change, invasive species, habitat loss & resource use impact biodiversity and what steps can be taken to reduce these threats.

- Biocapacity and ecological footprint must be considered together
- In 2015, Ontario's footprint was ~equal to Ontario's biocapacity
 - From 2005 2015: our footprint decreased but so did our biocapacity
- In order to improve biodiversity, biocapacity needs to increase and ecological footprint needs to decrease
- There are a lot of opportunities to build policies that take these ideas into consideration
- Climate change is one of the greatest threats to biodiversity globally
- In Ontario, warming is not happening geographically or temporally uniform
 - The north is warming faster
 - Winters are warming more so than summers are
- There is a positive feedback loop where climate change is resulting in loss of wetlands, loss of permafrost, and loss of albedo effect which in turn exacerbates climate change
- Nature based solutions can help improve biodiversity while building climate change resiliency
- It cost less money and leads to less biodiversity loss to prevent invasive species establishment than to manage species already present
- We need to invest more money into rehabilitating critical habitat after invasive

Reducing threats to Ontario's biodiversity

species invasions. E.g. removing phragmites from significant wetlands We need more tools in the tool box (herbicide applications, funding, better coordinated efforts) With a changing climate, we will need to consider more potential species • Wild pigs are a huge threat to biodiversity in Ontario, but this is a success story in how invasive species can be dealt with Need to dramatically improve the amount of areas that are protected from development Need legislative changes to protect Ontario's natural areas and need to reverse the widespread use of MZOs Habitat conservation should be done in strategic ways (sensitive habitat, habitat corridors, areas with rapidly increasing loss) All of Ontario's wetlands need to be evaluated prior to development approvals Create a policy to allow for the inclusion of Indigenous Protected and Conserved Areas (IPCAs) as "protected areas" Climate change exacerbates all other threats to biodiversity **REDUCE THREATS:** Ontario needs to decrease our ecological footprint and increase our biocapacity Ontario needs improved legislation to manage habitat and species loss **Priority actions** Ontario requires a coordinated landscape approach to managing threats to biodiversity – one-off projects need to fit into a larger organized plan Ontario needs to invest more funding towards preventing and controlling

Mainstreaming biodiversity within agriculture

invasive species

This session examines the need to balance food production and food security with the conservation of biodiversity and the critical ecosystem services it provides, including climate resilience. Current best management practices, challenges, and future opportunities to advance both biodiversity and climate-friendly agricultural practices are profiled and recommended for the multiple benefits they can achieve.

Key takeaways	 Create seed saver exchanges for heritage seeds, noting that biodiversity is not limited to natural landscapes but includes managed lands. When farmers undertake biodiversity conservation and stewardship activities, they spend money and forgo revenue. This type of commitment should be recognized and compensated as benefits will be to biodiversity as well as climate and carbon storage. Payment for ecosystem services, such as the ALUS model, is one approach that should be examined further given the benefits that accrue to society and wild species.
Priority actions	FUND: Improved incentives for agricultural practices that benefit biodiversity, climate and carbon storage.

Mainstreaming biodiversity within forestry

This session speaks to how biodiversity is mainstreamed within forestry planning and operations within Ontario, and more broadly within Canada. Current best management practices, challenges, and future opportunities to advance forestry practices for both biodiversity and climate benefits are profiled and recommended for the multiple benefits they can achieve.

Key takeaways

Biodiversity can be sustained or enhanced through forest management activities across Canada. Sustainable Forest Management can also have very significant contributions to addressing climate change. It's also recognized that some areas will need to be protected.

Priority actions

ENGAGE PEOPLE: Do more communications to ensure people understand that sustainable forest management is working towards biodiversity. There is a lot of misinformation perpetuated because of the lack of information shared on forest management. In particular, having a shared and factual understanding of forest terminology to disperse false and misinterpreted information. This communication needs to be shared not only with the public but with government, ministries, corporations and 'green' organizations to understand the facts about forest management.

Mainstreaming biodiversity within business

The session speaks to the need to change business from being a driver of biodiversity loss to a driver of protection and restorative action, as well as the competitive advantages for doing so. Efforts to mainstream biodiversity within business and industry sectors are profiled through both guidance and certification programs and case studies, followed by emerging business drivers for investment and recommended actions.

1) Biodiversity trends are starting to drive future regulations and reporting frameworks for business and biodiversity, and portions of those are encapsulated in the UN's post-2020 agenda for biodiversity which includes real expectations for the private sector across the value chain. An action step for businesses is to review these expectations and consider how your business could meet some of those expectations, both within your own operations and your value chain.

- 2) There are action-oriented frameworks currently available for companies to utilize, whether you're a single-site or multi-site company, and many online resources to help companies with best management practices of landscaping, wildlife management, etc. Again, the action is to review these frameworks and see where you can make improvement.
- 3) Biodiversity monitoring data can be leveraged to better tell the conservation story and report publicly (and internally) on biodiversity initiatives. Action: begin monitoring your conservation work, and when you're ready to report, consider the needs and interests of your regional, and the audience you're speaking to.
- 4) Sometimes more brains and pocketbooks are better than 1! Action: Consider Partnerships with other organizations, First Nation communities, etc. these partnerships can create new ideas, provide new faces, and allow space for a more holistic approach to tackling the biodiversity crisis.

MAINSTREAM BIODIVERSITY: Monitor development of ISO/TC331 – Biodiversity standard to develop requirements, principles, framework, guidance and supporting tools to enhance contribution to Sustainable Development.

Priority actions

IMPROVE KNOWLEDGE: Businesses can monitor their conservation work and report on them.

INDIGENOUS CONSENT / ENGAGE PEOPLE: Consider more partnerships to better tackle biodiversity crisis.

Funding biodiversity and nature-based climate actions

This session will highlight the importance of biodiversity and nature-based solutions in contributing to fighting climate change and why financial institutions have taken notice and must take action.

- 1) Tools and channels available/being made available to advance progress:
 - Tax exempt green/environmental impact bonds and loans
 - Investment and production tax credits
 - Reducing property taxes
 - Super-deduction RRSPs and enhanced TFSAs
 - Charitable donations
- 2) Public Sector Accounting of Natural Assets
 - Funding bias exists for natural assets (I.e., accounting standards don't allow most natural asset costs to be capitalized, so assets end up as an operating expense)
 - Funding disincentive to account for natural assets in the public sector
 - Impacts climate related financial disclosures

FUND: Assessing Value of Natural Capital Assets Holistically

- Nature-based solutions require use of natural capital assets wetlands, forests, grasslands, etc., therefore, Ontario/Canada must understand what assets it has, and investigate the associated value (environmental, social, etc.) in addition to the financial value of the land itself i.e., value from carbon sequestration, biodiversity conservation, water flow stabilization, water and air quality enhancement, pollution abatement, heat stress attenuation, aesthetics and recreational opportunities, human health benefits, etc.
- Most natural capital assets are owned by public sector entities, so the public sector needs to "account" for these assets
- Natural assets need to be included in public sector accounting, as current rules prohibit inclusion of natural capital assets in public sector entity financial statements – leading to:
 - a. Overlooking and underpricing natural capital assets as potential nature-based solutions (i.e., issuing building permits for wetlands; etc.)
 - b. Exposure to legal liability (\$1 billion Oakville floodplain lawsuit)
 - c. Public Sector Accounting Boarding (PSAB) should remove this outdated prohibition

FUND: Funding Nature-Based Solutions

- Identify all project-specific environmental, economic, social and financial aspects

Priority actions

- costs and benefits
- Develop a project-specific funding model private and public capital;
 public/private partnerships; carbon credits; green bonds and loans; blended finance; charitable donations; grants and subsidies, tax incentives, etc.

ENGAGE PEOPLE: Identify all project stakeholders – governments, businesses, NGOs, indigenous communities, suppliers, service providers, investors, insurers, banks, charitable foundations, etc.

Investing in natural infrastructure for biodiversity and climate resilient communities

This session will speak to the need for public sector accounting to be able to reflect the monetary value of natural assets in Canada and the need to invest in natural infrastructure (wetlands, forests, grasslands) to attenuate the effects of extreme weather events on people, the insurance industry, and on biodiversity. Potential benefits will be discussed and profiled through both existing programs and its application for the design of new urban developments. Emerging business drivers for investment, policy requirements and recommended actions will be discussed.

Value of nature "goods and services" is significant to our global economy, health and lifestyles:

- "Nature is an exposed asset" which deserves to be protected and invested in the same way as personal property and human health
- Nature presents a growth market for investments and risk transfer solutions
- As nature continues to lose its ability to protect people and property this will lead to more severe events and increased costs associated with extreme weather, therefore, re-insurers (Swiss Re/Munich Re) should fund and implement programs that protect and offer resilience to natural assets

Emerging business drivers for investment, policy requirements and recommended actions:

- Green stimulus spending and nature budgeting
- Marking natural capital count in sovereign debt markets
- Strategic litigation connecting financial to environmental crime
- Due-diligence standards for financial disclosure

IMPROVE KNOWLEDGE: National Infrastructure Assessment

The Government of Canada should create an independent advisory body, for
example, a commission, to carry out the Assessment and provide the
Government with impartial, expert and evidence-based advice on challenges and
opportunities for major infrastructure in Canada covering all sectors of
economic, social, sustainable and natural infrastructure

Priority actions

Key takeaways

MAINSTREAM: Financial Institutions

 Standardize accounting and disclosure principles, which is a critical part of valuing nature and biodiversity – accessible data is needed for the financial

community

FUND (VALUE): Government and Public Agencies

 Policies must incorporate the value of nature - the future of debt markets must account for nature and biodiversity, and policies must align to ensure negative activities do not cancel the positive

MAINSTREAM: Legal institutions

As financial institutions and government agencies increase the quantity/quality of data and disclosure, regulatory frameworks need to support transparency and reporting on making nature dependencies tangible

Acknowledgements

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Thank you to our sponsors:







