



Niagara Escarpment Biosphere Network

Additional Resources Annex

Niagara Escarpment Biosphere

2024 Self Study



Photo ©2023 MarkZelinski.com from the book “NIAGARA ESCARPMENT: Land Between Waters”

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Sample Municipal Resolution in Support of NEBN

Whereas the Niagara Escarpment, from Queenston in the south to Tobermory in the north, has been recognized by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as a World Biosphere since 1990;

And whereas the Niagara Escarpment Biosphere (NEB) provides a range of very positive returns to Ontarians, including but not limited to promoting biodiversity of both flora and fauna, open landscape, productive agriculture and agri-tourism, traditional Indigenous knowledge and cultural history, eco-system services, a living laboratory for learning, carbon sequestration, climate change mitigation and adaptation;

And whereas the NEB is integral to the protection and enhancement agenda for the Great Lakes, especially since several of Ontario's major riverine systems have their headwaters within the NEB that in turn feed into each of Lake Huron, Lake Erie, Lake Ontario and Georgian Bay;

And whereas oversight of the NEB has successfully transitioned from the Ontario governmental agency, the Niagara Escarpment Commission to a citizen-centred, not-for-profit organization, namely the Niagara Escarpment Biosphere Network (NEBN);

And whereas the NEBN has been established as a Co-Leadership model between Indigenous and Non-indigenous leaders, with a key objective of establishing the future direction of the NEBN as a model of delivering on the worthy goals of Canada's Truth and Reconciliation Commission as well as a demonstrated commitment to the United Nation's Declaration on the Rights of Indigenous Peoples;

And whereas the NEBN has made and continues to demonstrate its commitment to partner engagement and collaboration across many sectors and interests, including municipal, environmental, tourism, educational, youth, economic, research, and more;

And whereas *municipality's/agency's name here* has demonstrated its commitment to the integrity of the NEB through policy and action over many decades;

And whereas the NEBN is seeking continuation of the official UNESCO Biosphere designation for the NEB, with the support of those who call the NEB home for work, play and study;

Now therefore be it resolved that the *insert municipality's/agency's name here* strongly supports the continuation of the UNESCO Biosphere designation for the Niagara Escarpment and for the oversight model that has been established with the NEBN.

Ne
BN

**Niagara
Escarpment
Biosphere
Network**

photos by MarkZelinski.com

Created in 1945



United Nations
Educational, Scientific and
Cultural Organization

Organisation
des Nations Unies
pour l'éducation,
la science et la culture



Created in 1957

• Canadian
• Commission
• for UNESCO

• Commission
• canadienne
• pour l'UNESCO

***“ Building Peace in the minds
of men and women ”***

National Commissions for UNESCO

- Liaison
- Information
- Coordination
- Mobilization
- Consultation
- Promotion



What CCUNESCO does

- Bring the voice of Canadians to the international scene
- Facilitate the implementation of UNESCO's activities in Canada
- Provide recommendations based on civil society input
- Serve as a forum for reflection and a catalyst for collective action



A network of networks



Biosphere Reserves



Youth Advisory Group



Tsa Tse, NWT



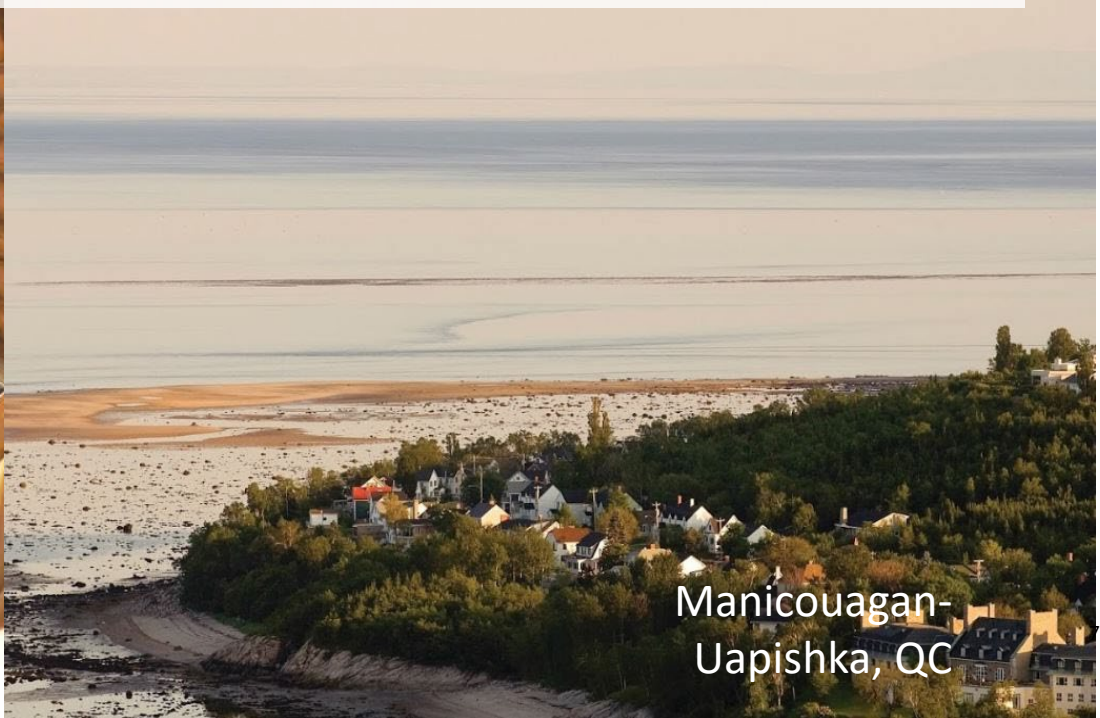
Clayoquot Sound, BC

UNESCO BIOSPHERE RESERVES

07.06.2014



Fundy, NB



Manicouagan-
Uapishka, QC



UNESCO ASSOCIATED SCHOOLS





UNESCO CHAIRS IN CANADA





CANADIAN COALITION OF MUNICIPALITIES AGAINST RACISM & DISCRIMINATION





Tumbler Ridge, BC

Photo credit: Destination BC



Tumbler Ridge, BC

Photo credit: Destination BC

UNESCO GLOBAL GEOPARKS



Stonehammer, NB



Stonehammer, NB



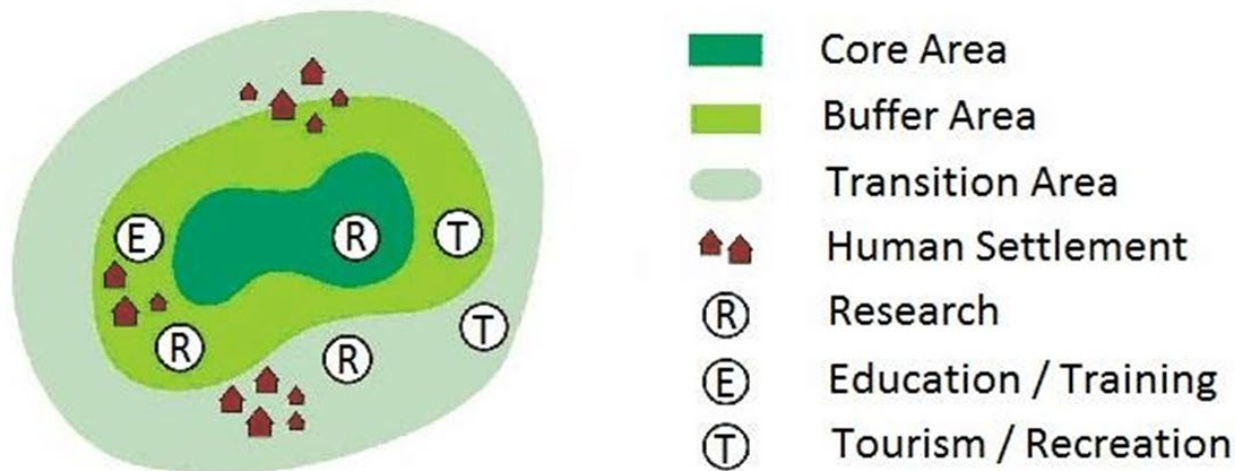
United Nations
Educational, Scientific and
Cultural Organization

UNESCO Man and Biosphere Programme - An Overview

- Intergovernmental Scientific programme launched in 1971 by UNESCO General Conference
- Goal: to seek answers as how humanity was affecting the biosphere and what could be done to avoid further degradation

How?

- Conservation and sustainable use of ecosystems, species and genetic resources;
- Fostering economic and human development; and
- Supporting the use of education and training, monitoring and other interventions to establish and sustain context specific relationships between conservation and development





**Ne
BN**

Niagara
Escarpment
Biosphere
Network

In 1990, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) designated the Niagara Escarpment Biosphere Reserve. The Biosphere represents an extensive stretch (725 km) of forested land in south-central Ontario which includes two major biomes, boreal needleleaf forests and temperate broadleaf forests.



The Niagara Escarpment Commission transferred its role and responsibilities related to the Niagara Escarpment Biosphere to the Transition Leadership Committee in 2019. Since that time, the Committee has been active conducting the work necessary to meet UNESCO criteria and obligations regarding the stewardship of biosphere reserves.



Part of the rationale of UNESCO for directing a renewed Niagara Escarpment Biosphere model was that it was no longer appropriate to have oversight nested within a government agency, namely the Niagara Escarpment Commission.



In 2021, the Transition Leadership Committee and Plenty Canada signed a Memorandum of Understanding to work together on this new co-governance structure. Work progressed and in March 2022, the Niagara Escarpment Biosphere Network (NEBN) became officially incorporated under provincial regulations.



**Niagara
Escarpment
Biosphere
Network**

The Network is now the official entity that is working on the mandate and designation of the Niagara Escarpment Biosphere in consultation with UNESCO.

NOW: Keeping the designation

- Periodic review every 10 years
- It starts with a self study to be submitted to the CCUNESCO, which selects two reviewers, site visit in early summer, comments to address mid-summer, resubmission to CCUNESCO, which sends it to UNESCO by September.
- It's the responsibility of all of us as a Biosphere is composed of communities (Indigenous and non-indigenous), educational and research institutions, private sector, non-governmental organizations, and governments (legislative component of the core zone).



United Nations
Educational, Scientific and
Cultural Organization



Man and
the Biosphere
Programme

A New Roadmap for the Man and the Biosphere (MAB) Programme and its World Network of Biosphere Reserves

MAB Strategy (2015-2025)

Lima Action Plan (2016-2025)

Lima Declaration

- 1. Conserve biodiversity, restore and enhance ecosystem services, and foster the sustainable use of natural resources**
- 2. Contribute to building sustainable, healthy and equitable societies, economies and thriving human settlements in harmony with the biosphere**
- 3. Facilitate biodiversity and sustainability science, education for sustainable development (ESD) and capacity building**
- 4. Support mitigation and adaptation to climate change and other aspects of global environmental change**

Reporting: the self-study

- The form consists of three parts:
- Part one is a summary highlighting the main changes in the biosphere reserve during the reporting period.
- Part two is more descriptive and detailed, referring to the human, physical and biological characteristics as well as to the institutional aspects.
- Part three consists of two Annexes (A): the first Annex (A.1) will be used to update the directory of biosphere reserves on the MABnet. The second annex will be used to provide promotion and communication materials of the biosphere reserve (A.2).

Table of content

- 1. Biosphere Reserve
- 2. Significant Changes in the Biosphere Reserve During the Past Ten Years
- 3. Ecosystem Services
- 4. The Conservation Function
- 5. The Development Function
- 6. The Logistic Function
- 7. Governance, Biosphere Reserve Management and Coordination
- 8. Criteria and Progress made
- 9. Supporting Documents
- 10. Addresses





Comments?
Questions?



What is the Niagara Escarpment Biosphere?

In recognition of its unique ecological characteristics, the Niagara Escarpment Biosphere (NEB) located in south-central Ontario was designated as United Nations Educational, Scientific and Cultural Organization (UNESCO) World Biosphere in 1990. It is the largest continuous stretch of forested area remaining within Ontario reaching 725 km from Lake Ontario to tip of the Bruce Peninsula. It encompasses two major biomes (Boreal Forest and Temperate Broadleaf Forest), contains 30+ regions/municipalities, and many other diverse natural and urban environments.

The NEB is comprised of three separate zones, including core zones, buffer zones and transitional zones, enveloping approximately 194,555 hectares of land. The unique composition of these three characteristic zones allows for the NEB to conserve biodiversity while simultaneously promoting sustainable development where appropriate. Given the expansive area of the NEB, it is appropriate to accommodate the needs of a number of partners and provide ample opportunity for community engagement. UNESCO does not subscribe to any single model of governance, therefore, governance across the Biosphere's of different countries varies significantly, depending largely on the objectives and goals of partners and nearby communities.

What is the Niagara Escarpment Biosphere Network?

Following the most recent periodic review of the NEB by UNESCO, fundamental changes were required to maintain the critical UNESCO Biosphere Designation. A key recommendation was how the NEB was governed and how it engaged with partners - especially Indigenous Peoples. To guide a governance transition, a Transition Leadership Committee (TLC) has been established to facilitate the transition.

The NEB has transitioned from a government oversight model to a citizen-led model, including emphasis on meaningful Indigenous engagement and partnership. In fact, TLC is in a co-management framework with Plenty Canada, an Indigenous led organization working to share resources with Indigenous Peoples and community groups around the world in support of environmental sustainability. The Niagara Escarpment Biosphere Transitional Leadership Committee has been working to establish the Niagara Escarpment Biosphere Network (NEBN) as the new entity that will focus on maintaining the biosphere designation in partnership with all communities within the NEB. In March 2022, the NEBN became officially incorporated under provincial regulations.



What is the difference between the Niagara Escarpment Commission and the Niagara Escarpment Biosphere Network?

The Niagara Escarpment Commission (NEC) is a provincially legislated body with a responsibility that focuses on its land use mandate under the Niagara Escarpment Planning and Development Act, guided by the Niagara Escarpment Plan. Ensuring compliance with its regulatory land use policies is an important function of the NEC.

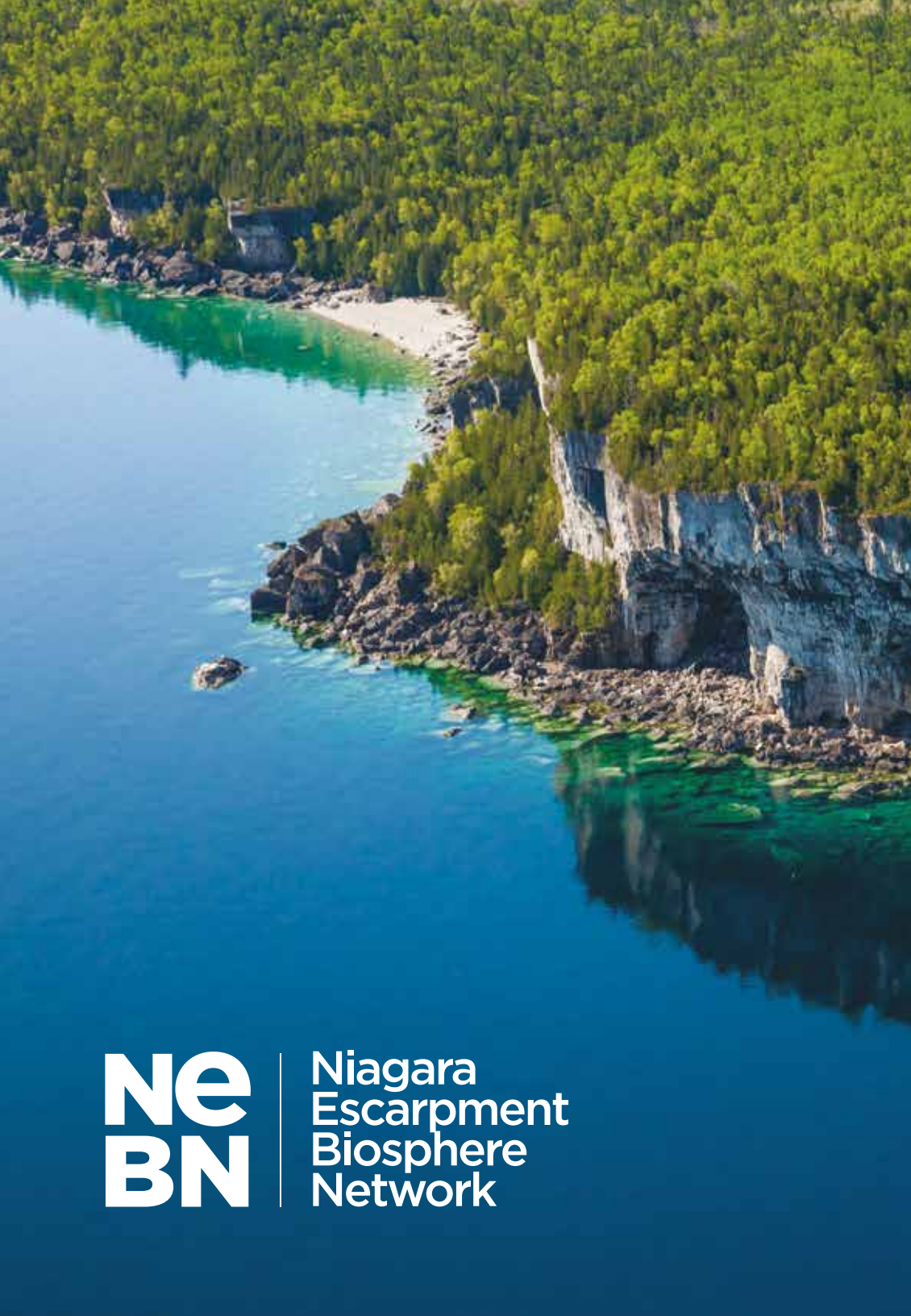
The goal of a UNESCO Biosphere is to promote biodiversity, conservation and relationships between humans and the environment. A recent UNESCO review of the NEB noted a need to better measure conservation, biodiversity, and human relation impacts, not just compliance. This includes promoting biodiversity not only within the NEB but also on adjacent lands. Although this work has been on-going by community groups for many years across the Niagara Escarpment, it has not been captured and networked in a way that provides meaningful inputs into the NEB.

The NEBN is a separate, provincially incorporated entity that will address the missing pieces of the UNESCO designation that includes measuring impacts on the biodiversity of the NEB. The NEBN is a community-led organization that includes partners within the NEB - including an important co-governance model with Indigenous Peoples.

Why your support is important to the NEBN?

To continue to maintain the important Niagara Escarpment Biosphere designation from UNESCO, the NEBN needs the support of First Nations, elected officials, community leaders, educational institutions, environmental groups, business organizations - in essence all groups that see the importance of the Niagara Escarpment as it has been protected for generations.

Through resolutions, stories, letters, and testimonials, the NEBN needs to verify to UNESCO that there is a strong and unified, cross-societal base of support for the continuation of the NEB. Additionally, it is important for UNESCO to see the widespread support for the NEBN as the networking agency that connects the Niagara Escarpment in a way that celebrates all of its benefits – environmental, cultural, economic, and social – with our communities.



**CELEBRATION
OF NATIONS**

UNESCO NIAGARA ESCARPMENT BIOSPHERE: CO-GOVERNANCE IN A TIME OF URGENCY

SUNDAY, SEPTEMBER 10, 2023, 2:00 PM - 3:30 PM

THE FILM HOUSE, FIRST ONTARIO PERFORMING ARTS CENTRE

250 ST PAUL ST., ST. CATHARINES, ONTARIO, L2R 3M2

**Ne
BN**

**Niagara
Escarpment
Biosphere
Network**

DESCRIPTION

The Indigenous organization Plenty Canada, which is currently supporting the launch of the Niagara Escarpment Biosphere Network as the official convener of the UNESCO Niagara Escarpment Biosphere, presents this critically important session dedicated to sustaining this broadly forested land area that boasts the highest level of species diversity among Canadian biospheres, including more than 300 bird species, 55 mammals, 36 reptiles and amphibians, 90 fish, and hundreds of varieties of special interest flora.

Numerous environmental crises are emerging today that are being witnessed and felt by the public. As over 500 forest fires have raged across Canada this year choking lungs as far south as the United States and as far east as southern Europe, to the deadly fungal disease Oak Wilt which is heading north toward Canada devastating forests, these and other climate change

influenced events are challenging our notions of basic environmental sustainability. In Niagara and up and down the UNESCO designated Niagara Escarpment Biosphere, and across a wide sector of informed conservation, education, and environmental groups, a broad movement is being formed that seeks to incorporate Indigenous value systems while promoting the establishment of co-governance models within organizations working to address these problems. With the Bruce Trail Conservancy, Niagara Parks, Brock University, Niagara College, and others the Niagara Escarpment Biosphere Network continues its launch event from last year to engage with the public at this session designed to gather input, support research, and outline the needs for data collection for the UNESCO Periodic Review.

As in other parts of the world, significant progress is also required to ensure the sustainability of the UNESCO designated

Niagara Escarpment Biosphere, that runs west from Niagara, and then north to Tobermory, extending some 700+ kilometres. Over the past year, sessions have been held with Indigenous nations on Manitoulin Island, where there exists an interest in linking to or extending the Niagara Escarpment Biosphere, and with conservation, environmental, and educational groups throughout the Niagara Escarpment corridor.

The Niagara Escarpment Biosphere Network operates under the principles of Two-Eyed Seeing and Indigenous co-governance to establish a worldview and operational decisions that incorporate the strengths of Indigenous knowledge and Western knowledge. Supporting organization Plenty Canada features on its Board of Directors the esteemed Elder Albert Marshall, who with his wife Murdena, were the proponents of the cross-cultural understanding known as Etuaptmumk, or Two-Eyed Seeing.



AGENDA:

- Traditional opening by **Karl Dockstader**
- Greetings by NEBN Chair **Patrick Robson**, Professor of Environmental Studies at Niagara College, and Algonquin Elder and Plenty Canada Executive Director **Larry McDermott**
- NEBN Updates by Professor of Biological Sciences at Brock University **Liette Vasseur**
- Engagement with Niagara and Iroquoia sections of the Bruce Trail, presentation by Bruce Trail Conservancy CEO **Michael McDonald** with **Ellen Savoia** and **Peter Rumble**.
- NEW FEATURE: Major John Norton Trail: Introduction of a new side trail on Niagara Parks lands by **Steve Barnhart**, **Jim Hill**, and **Tim Johnson**
- Discussion on UNESCO Periodic Review



PRESENTERS



Karl Dockstader, Oneida Bear Clan, is active in One Dish, One Spoon territories as an advocate for Indigenous peoples. He co-hosts the hit radio program One Dish, One Mic that airs in Niagara, London, Windsor, and Hamilton. Karl is a Bell Media radio news rotating talk show host on 610 CKTB's "The Drive" airing weekdays from 2:00 to 6:00 p.m. In addition to radio work, Karl has done TV work with CTV News Channel, appeared as a regular panellist on the politics show CTV Power Play for the 2021-2022 season, and done freelance work including having earned CBC and Canadaland by-lines.

As a self-described "Friendship Centre baby" Karl had the honour to serve as Executive Director of the Niagara Regional

Native Centre for two years. This work followed four years of frontline community work with Fort Erie Native Friendship Centre. Karl loves grassroots initiatives, is unafraid to take bold stances on matters that affect First Nations peoples, and has used art, communication, and podcasting to support community goal achievement.



Patrick Robson, MCIP, RPP, is president and chair of the Niagara Escarpment Biosphere Network. He holds a Bachelor of Applied Arts in Urban & Regional Planning from Ryerson and a Master of Arts in Politics from Brock University, and is currently a professor of Environmental Studies at Niagara College, teaching in the Environmental

Management and Assessment and the Ecosystem Restoration post-grad programs, as well as the Environmental Field and Lab Tech program. In March 2017, he was appointed to the Buffalo and Fort Erie Public Bridge Authority (a.k.a. Peace Bridge Authority). His past work life has included private sector planning consultant work, a planner with the Niagara Escarpment Commission, an investigator with the Ontario Human Rights Commission, and several progressive positions at Niagara Region, including Commissioner of Integrated Community Planning. Highlights of planning initiatives that have garnered awards include developing and then implementing the urban and Brownfield redevelopment regime known as Smarter Niagara Incentives Program, the Niagara Gateway Economic Zone Incentives Program, cross-border planning efforts in the Binational Niagara area, Great Lakes and St. Lawrence Cities Initiative planning support, and progressive policies related to agricultural viability. He and his wife Kelly are also hop farmers.

He served three terms as a Councillor in Wainfleet, Ontario and has taught Public Policy

at Brock University. He has also presented at numerous conferences regarding land-use and sustainability issues across Canada, in the U.S. (including one at the Library of Congress), Germany, The Netherlands, Japan, and South Africa.

Volunteer life includes having served on the Board of YMCA Niagara and is currently a member of the Niagara Escarpment Biosphere Transition Leadership Committee, the Indigenous Planning Advisory Committee of the Ontario Professional Planning Institute, as well as on the Board of the Golden Horseshoe Food & Farming Alliance.



Larry McDermott, Algonquin, is Executive Director of Plenty Canada, an Indigenous non-government organization devoted to the protection of Mother Earth, building healthy communities,

and promoting cross-cultural awareness of the value of Indigenous ways of knowing to achieve a sustainable environment for future generations. He is also a board member of the Niagara Escarpment Biosphere Network. A former three-time Mayor and long-time council member of Lanark Highlands, Chair of the Rural Forum of the Federation of Canadian Municipalities, and Commissioner of the Ontario Human Rights Commission, Larry is a member of numerous organizations including the International Indigenous Forum for Biodiversity, the Ontario Species at Risk Public Advisory Committee, the Canadian Environmental Network, UNESCO, and the Ontario Recovery Strategy for the American Eel. Larry also has served as a comprehensive claim representative for Shabot Obaadjiwan First Nation, is a certified tree marker and butternut assessor, and holds other environmental certifications. He lives in a 170-year-old log home on 500 acres of biologically diverse Algonquin land along the Mississippi River.



Liette Vasseur, board member of the Niagara Escarpment Biosphere Network, is a full professor in the Department of Biological Sciences at Brock University, where she is a member of the Environmental Sustainability Research Centre. She previously held the UNESCO Chair on Community Sustainability. Her research is interdisciplinary and links issues such as community-based ecosystem management, climate change adaptation and resilience, and sustainable agriculture. Her climate change adaptation research program encompasses different ecosystems from the rural community of Lincoln, Indigenous communities of San Juan, and in the Chimborazo, Ecuador. She is Honorary President of the Canadian Commission UNESCO and deputy chair and

vice-chair for North America of the Commission for Ecosystem Management with the International Union for Conservation of Nature (IUCN) and co-lead of the thematic group on Climate Change and Biodiversity Policy and Practice.



Michael McDonald is the Chief Executive Officer for the Bruce Trail Conservancy – named Canada’s Top Environmental Charity by Maclean’s and MoneySense in 2020. After a 23-year successful career in the private sector, Michael combined his business acumen with his love for people and passion for conservation. Michael works towards protecting natural spaces and stewarding the Bruce Trail, Canada’s oldest and longest public footpath. Michael is a proud graduate of McMaster University, formerly achieved the rank of Private in the Canadian

Armed Forces (reserves), and is a certified hike leader in Ontario. Michael is a lover of nature, and deeply values people’s personal connections to natural environments.



Ellen Savoia grew up in Prince George British Columbia, on Lheidli T’enneh First Nation territory. Ellen attended Fanshawe College, completing a landscape design diploma before attaining an Environment Studies degree from University of Waterloo. She recently retired from a career as a land use and parks planner, most recently with Niagara Parks. Since retiring Ellen volunteered with Niagara Bruce Trail Club maintaining a section of the trail, as well as sitting on their board as Vice President. When not on a trail, Ellen can be found gardening, in her sewing room or reading.



Peter Rumble first joined Bruce Trail in 1974 as a student in Hamilton. After a career with conservation authorities and the Ministry of Natural Resources, he became involved as a trail maintenance volunteer with the Iroquoia Club of the Bruce Trail Conservancy. He has held a variety of positions including trail captain, zone coordinator, and is currently Trail Development and Maintenance Director. He is also active at both the Club and Bruce Trail Conservancy in outreach and promotion.



Steve Barnhart, M.L.A., OALA has over 20 years’ experience in Environmental planning and design with the last 18 years in public sector landscape architecture. He is currently a senior executive with the Niagara Parks Commission responsible for the organization’s environmental planning and stewardship, cultural heritage, and landscape design. Steve oversees the development policy and planning strategy to delivery on the organization’s mandate of environmental and cultural stewardship for the Niagara River corridor. Prior to Niagara Parks Steve was with the City of Hamilton and responsible for Park Planning and implementation of open space capital projects and managing forestry and horticulture. Steve has worked on a wide range of projects including master plans, heritage restoration sites,

coastal wetland rehabilitation, waterfront development, transportation, storm water management systems and visual impact assessments, and provided expert witness testimony at the Environmental Review Tribunal. Steve is a registered Landscape Architect with the Ontario Association of Landscape Architects since 2000 and currently serving as the association’s president. Steve graduated with a Master of Landscape Architecture from the University of Guelph and with a Bachelor of Earth Science from the University of Waterloo. In 2016 Steve received the OALA Public Practice Award.



Jim Hill, who grew up in Niagara attending schools with a War of 1812 theme, Merritton High School and Brock University, started working at historic sites with a similar theme in 1985. For over thirty years, Jim has

worked for Parks Canada, the Friends of Fort George and for most of his career, the Niagara Parks Commission. He started with the Commission in 1996 and developed the Native interpretive programme at Old Fort Erie in an effort to add depth to the story of this important National Historic Site. Jim has been a regular contributor to local newspapers and historic journals. He is currently the Superintendent of Heritage for Niagara Parks, a position he has held since 2005. Jim led the efforts to enhance the historic sites of the Commission in anticipation of the 200th anniversary of the War of 1812 and coordinated the largest reenactments and commemorations during the bicentennial years. In his capacity as Superintendent, he assisted with the planning and unveiling of the Landscape of Nations Commemorative Memorial on Queenston Heights. Jim recently retired from the Reserve Army after thirty years as a Gunner, Sergeant, and finally a Captain with the Royal Canadian Artillery. He still holds a pilot’s license from his time as an Air Cadet and lives with his wife Jeannie and son Jack in Niagara Falls, Ontario.



Tim Johnson is senior advisor for Heritage and Legacy at the Niagara Parks Commission, senior advisor to the national Indigenous organization Plenty Canada, senior Indigenous curatorial advisor to the Royal Ontario Museum, Indigenous advisor on museums, heritage and legacy to Lord Cultural Resources, artistic director of The Great Niagara Escarpment Indigenous Cultural Map, and conceptual author and executive producer of the multiple award-winning documentary *RUMBLE: The Indians Who Rocked The World*.

He also holds board memberships with several organizations, including the Niagara Escarpment Biosphere Network, Niagara Peninsula Aspiring Geopark, Bruce Trail Conservancy,

Niagara-on-the-Lake Museum, McMichael Canadian Art Collection, and the Shaw Festival. Tim has also been instrumental in the development of several distinguished masterworks of public art in the Niagara Region during the past eight years. As the former Associate Director for Museum Programs at the Smithsonian Institution's National Museum of the American Indian, Tim managed the museum's largest organizational group across its facilities in Washington and New York. A long list of critically acclaimed exhibits and programs were produced during his tenure, creating an era that significantly advanced the institution's museology and reputation. Over the course of his work at the Smithsonian Tim edited, conceptualized, and strategically initiated several Smithsonian books showcasing Indigenous art and history. He also established the museum's Indigenous Community Services department and was co-founder and publisher of the museum's flagship quarterly membership magazine *American Indian*, now in its third decade of publication. Among his many highly successful Smithsonian programs was the museum's Mother Earth Festival, curated and implement-

ed in conjunction with Al Gore's global Live Earth initiative held on July 7, 2007, which diffused American Indian knowledge and scientific evidence concerning environmental sustainability to thousands in attendance and millions watching around the world. Produced to enhance public education about human induced climate change, it stands as one of the Smithsonian Institution's most widely viewed public programs. As a leading figure who brought the reality and ramifications of climate change to the forefront in America's capital, Tim also served on the executive committee of the Smithsonian's 'Living in the Anthropocene Initiative,' a pan-institutional committee formed to advance public education about climate change and the implications of human conduct on the planet.

You are encouraged to attend the special concert event on the evening of Saturday, September 9, 2023, in advance of the following day's UNESCO Niagara Escarpment Biosphere Network session.

BORDER CROSSING / BLUES

SAT. SEPTEMBER 9, 7:30 PM - PARTRIDGE HALL



Digging Roots



The Ripcords

In this concert event produced by Tim Johnson (*RUMBLE: The Indians Who Rocked The World*), two celebrated Indigenous award-winning bands, one from within Canada, the 2023 JUNO Award recipient **Digging Roots** — and — one from within the United States, the most recent 2022 NAMA Award recipient **The Ripcords**, will perform blues and rock infused songs that reveal the continuity of Indigenous cultures across the dividing line. Interspersed within the concert will be video segments that inform and regale the audience about the living history of Indigenous border crossing blues.

Tickets for Border Crossing / Blues available at firstontariopac.ca or call Box Office 905.688.0722

SUPPORTERS



United Nations
Educational, Scientific and
Cultural Organization



UNESCO Chair on
Community sustainability: from local to global,
St Catharines, ON, Canada



This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :



Environment and
Climate Change Canada

Environnement et
Changement climatique Canada

SAVE THE DATE!



Niagara
Escarpment
Biosphere
Network

INAUGURAL ANNUAL GENERAL MEETING OF THE NIAGARA ESCARPMENT BIOSPHERE NETWORK

Dear NEBN Members:

The first Annual General Meeting of the Niagara Escarpment Biosphere Network will be held **Thursday, September 14th, 2023** from 10:30 am to 3:00 pm at the Gathering Place by the Grand, 2593 Chiefswood Rd, Ohsweken, ON NOA 1M0

<https://gatheringplacebythegrand.ca/>

A detailed agenda will follow, but you can expect to receive an update on NEBN activities since our event last year and upcoming event this year at Celebration of Nations and participate in a discussion with NEBN Board members on what you think our collective priorities should be.

To register, please RSVP to Brad May, Secretary, at 4seeability@gmail.com call/text: **647-978-5945**.

We look forward to your participation in this inaugural event.

A handwritten signature in black ink, appearing to read 'Patrick Robson'.

Patrick Robson
Chair

A handwritten signature in blue ink, appearing to read 'Charlotte Winger Jones'.

Charlotte Winger Jones
Co-Chair



Niagara Escarpment Biosphere Network

<http://nebnetwork.org/>

**Niagara Escarpment Biosphere Network (NEBN)
Le Réseau de la biosphère de l'escarpement de la Niagara (RBEN)**

**Annual General Meeting – September 14, 2023 @ 10:30 am – 3:00 pm
Gathering Place by the Grand
2593 Chiefswood Rd, Ohsweken, ON N0A 1M0**

NEBN AGM Open Session with Networking (10:30 am – 3:00 pm)

- a. Opening Ceremony
- b. Land Acknowledgement
- c. Welcome and Opening Remarks - Chairs
- d. Participatory Exercise by Roundtables
- e. LIGHT LUNCH
- f. What We Heard – Current Board Members
- g. Special Acknowledgements and Awards
- h. Closing Ceremony
- i. Informal Networking
- j. Time Allocated for Special Project Discussions
 - i. Biodiversity Awareness
 - ii. Periodic Review

To register, please RSVP to Brad May, Secretary, at 4seeability@gmail.com call/text: 647-978-5945

January 25, 2024

Norman Ragetlie and Charlene Winger-Jones
Co-Chairs,
Niagara Escarpment Biosphere Network
c/o tashagunasinghe@plentycanada.com

Re: UNESCO World Biosphere Designation – 10-year Review

Dear Norm and Charlene,

Thank you for the presentation to the Niagara Escarpment Commission (NEC) on January 18, 2024, in follow-up to your letter of December 5, 2023 requesting the NEC provide a letter of support for the Niagara Escarpment Biosphere Reserve Network (NEBN) related to the UNESCO 10-year review. Following the presentation, the commissioners passed a motion that I should send a letter to NEBN to express our support for the work of the network to the extent that our mandates align.

The NEC is a statutory body that operates as an arm's length agency of the provincial government in accordance with the Niagara Escarpment Planning and Development Act. The mandate of the NEC is to develop, interpret and apply the Niagara Escarpment Plan policies which are intended to provide for the maintenance of the Niagara Escarpment and land in its vicinity substantially as a continuous natural environment, and to ensure only such development occurs as is compatible with that natural environment. I understand that the existence of the NEC and the Niagara Escarpment Plan was integral to the original Biosphere Reserve designation, and I am pleased to affirm that we continue to play the same role in land use planning and development within our jurisdiction.

The commission looks forward to a continued working relationship with NEBN and its partners.

Sincerely,



James Collard
Chair
Niagara Escarpment Commission



Council Meeting

Resolution Number 128-23

Title: Support Resolution for Niagara Escarpment Biosphere (NEB)

Date: September 11, 2023

Moved by Mayor Krantz

Seconded by Councillor Tesser Derksen

WHEREAS the Niagara Escarpment, from Queenston in the south to Tobermory in the north, has been recognized by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as a World Biosphere since 1990;

AND WHEREAS the Niagara Escarpment Biosphere (NEB) provides a range of very positive returns to Ontarians, including but not limited to promoting biodiversity of both flora and fauna, open landscape, productive agriculture and agri-tourism, traditional Indigenous knowledge and cultural history, ecosystem services, a living laboratory for learning, carbon sequestration, climate change mitigation and adaptation;

AND WHEREAS the NEB is integral to the protection and enhancement agenda for the Great Lakes, especially since several of Ontario's major riverine systems have their headwaters within the NEB that in turn feed into each of Lake Huron, Lake Erie, Lake Ontario and Georgian Bay;

AND WHEREAS oversight of the NEB has successfully transitioned from the Ontario governmental agency, the Niagara Escarpment Commission to a citizen-centred, not-for-profit organization, namely the Niagara Escarpment Biosphere Network (NEBN);

AND WHEREAS the NEBN has been established as a Co-Leadership model between Indigenous and Non-indigenous leaders, with a key objective of establishing the future direction of the NEBN as a model of delivering on the worthy goals of Canada's Truth and Reconciliation Commission as well as a demonstrated commitment to the United Nation's Declaration on the Rights of Indigenous Peoples;

AND WHEREAS the NEBN has made and continues to demonstrate its commitment to partner engagement and collaboration across many sectors and interests, including municipal, environmental, tourism, educational, youth, economic, research, and more;

AND WHEREAS the Town of Milton has demonstrated its commitment to the integrity of the NEB through policy and action over many decades;

AND WHEREAS the NEBN is seeking continuation of the official UNESCO Biosphere designation for the NEB, with the support of those who call the NEB home for work, play and study;

NOW THEREFORE BE IT RESOLVED THAT the Town of Milton strongly supports the continuation of the UNESCO Biosphere designation for the Niagara Escarpment and for the oversight model that has been established with the NEBN.

Chair

August 21, 2023

Sent Via Email: info@nebnetwork.org, PRobson@niagaracollege.ca,
walkingwatertar@gmail.com, amandaharwood@plentycanada.com

Niagara Escarpment Biosphere Network

RE: Niagara Escarpment Biosphere Network - Request for Endorsement

At their regular meeting of August 16, 2023, Council of the Town of Pelham received your request for endorsement, and endorsed the following:

WHEREAS the Niagara Escarpment, from Queenston in the south to Tobermory in the north, has been recognized by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as a World Biosphere since 1990;

AND WHEREAS the Niagara Escarpment Biosphere (NEB) provides a range of very positive returns to Ontarians, including but not limited to promoting biodiversity of both flora and fauna, open landscape, productive agriculture and agri-tourism, traditional Indigenous knowledge and cultural history, eco-system services, a living laboratory for learning, carbon sequestration, climate change mitigation and adaptation;

AND WHEREAS the NEB is integral to the protection and enhancement agenda for the Great Lakes, especially since several of Ontario's major riverine systems have their headwaters within the NEB that in turn feed into each of Lake Huron, Lake Erie, Lake Ontario and Georgian Bay;

AND WHEREAS oversight of the NEB has successfully transitioned from the Ontario governmental agency, the Niagara Escarpment Commission to a citizen-centred, not-for-profit organization, namely the Niagara Escarpment Biosphere Network (NEBN);

AND WHEREAS the NEBN has been established as a Co-Leadership model between Indigenous and Non-indigenous leaders, with a key objective of establishing the future direction of the NEBN as a model of delivering on the worthy goals of Canada's Truth and Reconciliation Commission as well as a demonstrated commitment to the United Nation's Declaration on the Rights of Indigenous Peoples;

AND WHEREAS the NEBN has made and continues to demonstrate its commitment to partner engagement and collaboration across many sectors and interests, including municipal, environmental, tourism, educational, youth, economic, research, and more;

AND WHEREAS Town of Pelham Council has demonstrated its commitment to the integrity of the NEB through policy and action over many decades;

AND WHEREAS the NEBN is seeking continuation of the official UNESCO Biosphere designation for the NEB, with the support of those who call the NEB home for work, play and study;

NOW THEREFORE BE IT RESOLVED THAT the Town of Pelham Council strongly supports the continuation of the UNESCO Biosphere designation for the Niagara Escarpment and for the oversight model that has been established with the NEBN.

On behalf of Council, thank you for your request for endorsement.

Yours very truly,

A handwritten signature in black ink, appearing to read 'W. Tigert', written in a cursive style.

William Tigert
Town Clerk
/jl

Via Email: info@nebnetwork.org

December 15, 2023

Norman Ragetlie, Co-Chair
Charlene Winger-Jones, Co-Chair
Niagara Escarpment Biosphere Network
Plenty Canada Headquarters
266 Plenty Lane
Lanark, Ontario
K0G 1K0

Re: Support for the Niagara Escarpment Biosphere Designation

Dear Mr. Ragetlie and Ms. Winger-Jones,

On December 7, 2023, the Hamilton Conservation Authority (HCA) Board of Directors adopted the following motion:

Whereas the Niagara Escarpment, from Queenston in the south to Tobermory in the north, has been recognized by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as a World Biosphere since 1990;

And whereas the Niagara Escarpment Biosphere (NEB) provides a range of very positive returns to Ontarians, including but not limited to promoting biodiversity of both flora and fauna, open landscape, productive agriculture and agri-tourism, traditional Indigenous knowledge and cultural history, eco-system services, a living laboratory for learning, carbon sequestration, climate change mitigation and adaptation;

And whereas oversight of the NEB has successfully transitioned from the Ontario governmental agency, the Niagara Escarpment Commission to a citizen-centred, not-for-profit organization, the Niagara Escarpment Biosphere Network (NEBN);

And whereas the NEBN has been established as a Co-Leadership model between Indigenous and Non-indigenous leaders, with a key objective of establishing the future direction of the NEBN as a model of delivering on the worthy goals of Canada's Truth and Reconciliation Commission as well as a demonstrated commitment to the United Nation's Declaration on the Rights of Indigenous Peoples;

And whereas the NEBN has made and continues to demonstrate its commitment to partner engagement and collaboration across many sectors and interests, including municipal, environmental, tourism, educational, youth, economic, research, and more;

And whereas the NEBN is seeking continuation of the official UNESCO Biosphere designation for the NEB, with the support of those who call the NEB home for work, play and study;

And whereas the Hamilton Conservation Authority has reaffirmed its ongoing management commitments of conservation areas within the Niagara Escarpment Parks and Open Space System of the NEB;

Now therefore be it resolved that the Hamilton Conservation Authority supports the continuation of the UNESCO Biosphere designation for the Niagara Escarpment and for the oversight model that has been established through the NEBN.

Please accept this correspondence for your information and consideration.

Sincerely,



Lisa Burnside

Chief Administrative Officer

October 4, 2023

Walter Sendzik,
NEBN Board Member
Plenty Canada Headquarters
266 Plenty Lane
Lanark, ON K0G 1K0

RE: Niagara Escarpment Biosphere Request for Endorsement

Dear Mr. Sendzik,

I am writing to advise that at a Town Council meeting held on September 26, 2023, Council adopted a resolution supporting the continuation of the UNESCO Biosphere designation for the Niagara Escarpment and for the oversight model that has been established with the NEBN.

The resolution reads as follows:

Whereas the Niagara Escarpment, from Queenston in the south to Tobermory in the north, has been recognized by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as a World Biosphere since 1990;

And whereas the Niagara Escarpment Biosphere (NEB) provides a range of very positive returns to Ontarians, including but not limited to promoting biodiversity of both flora and fauna, open landscape, productive agriculture and agri-tourism, traditional Indigenous knowledge and cultural history, eco-system services, a living laboratory for learning, carbon sequestration, climate change mitigation and adaptation;

And whereas the NEB is integral to the protection and enhancement agenda for the Great Lakes, especially since several of Ontario's major riverine systems have their headwaters within the NEB that in turn feed into each of Lake Huron, Lake Erie, Lake Ontario and Georgian Bay;

And whereas oversight of the NEB has successfully transitioned from the Ontario governmental agency, the Niagara Escarpment Commission to a citizen-centred, not-for-profit organization, namely the Niagara Escarpment Biosphere Network (NEBN);

And whereas the NEBN has been established as a Co-Leadership model between Indigenous and Non-indigenous leaders, with a key objective of establishing the future direction of the NEBN as a model of delivering on the worthy goals of Canada's Truth and Reconciliation Commission as well as a demonstrated commitment to the United Nation's Declaration on the Rights of Indigenous Peoples;

And whereas the NEBN has made and continues to demonstrate its commitment to partner engagement and collaboration across many sectors and interests, including municipal, environmental, tourism, educational, youth, economic, research, and more;

And whereas the Town of Caledon has demonstrated its commitment to the integrity of the NEB through policy and action over many decades;

And whereas the NEBN is seeking continuation of the official UNESCO Biosphere designation for the NEB, with the support of those who call the NEB home for work, play and study;

Now therefore be it resolved that the Town of Caledon strongly supports the continuation of the UNESCO Biosphere designation for the Niagara Escarpment and for the oversight model that has been established with the NEBN.

For more information regarding this matter, please contact the undersigned by e-mail to Patrick.Trafford@Caledon.ca or by phone at 905.584.2272 ext. 4069.

Thank you for your attention to this matter.

Sincerely,



Patrick Trafford
Acting Town Clerk

Cc: Patrick Robson, NEBN Chair, info@nebnetwork.org
Charlene Winger, NEBN Vice-Chair, info@nebnetwork.org
Amanda Harwood, Plenty Canada, amandaharwood@plentycanada.com

September 06, 2023

Niagara Escarpment Biosphere

Sent via email: info@nebnetwork.org

To whom it may concern:

Re: 2023-732

Please be advised that the following resolution was passed at the September 06, 2023 meeting of the Council of the Municipality of Grey Highlands.

2023-732

Whereas the Niagara Escarpment, from Queenston in the south to Tobermory in the north, has been recognized by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as a World Biosphere since 1990; and

Whereas the Niagara Escarpment Biosphere (NEB) provides a range of very positive returns to Ontarians, including but not limited to promoting biodiversity of both flora and fauna, open landscape, productive agriculture and agri-tourism, traditional Indigenous knowledge and cultural history, ecosystem services, a living laboratory for learning, carbon sequestration, climate change mitigation and adaptation; and

Whereas the NEB is integral to the protection and enhancement agenda for the Great Lakes, especially since several of Ontario's major riverine systems have their headwaters within the NEB that in turn feed into each of Lake Huron, Lake Erie, Lake Ontario and Georgian Bay; and

Whereas oversight of the NEB has successfully transitioned from the Ontario governmental agency, the Niagara Escarpment Commission to a citizen-centred, not-for-profit organization, namely the Niagara Escarpment Biosphere Network (NEBN); and

Whereas the NEBN has been established as a Co-Leadership model between Indigenous and Non-indigenous leaders, with a key objective of establishing the future direction of the NEBN as a model of delivering on the worthy goals of Canada's Truth and Reconciliation Commission as well as a demonstrated commitment to the United Nation's Declaration on the Rights of Indigenous Peoples; and

Whereas the NEBN has made and continues to demonstrate its commitment to partner engagement and collaboration across many sectors and interests, including municipal, environmental, tourism, educational, youth, economic, research, and more; and

Whereas municipality's/agency's name here has demonstrated its commitment to the integrity of the NEB through policy and action over many decades; and

Whereas the NEBN is seeking continuation of the official UNESCO Biosphere designation for the NEB, with the support of those who call the NEB home for work, play and study; now

Therefore be it resolved that the Municipality of Grey Highlands strongly supports the continuation of the UNESCO Biosphere designation for the Niagara Escarpment and for the oversight model that has been established with the NEBN.

CARRIED.

If you require anything further, please contact this office.

Sincerely,

Amanda Fines-VanAlstine
Manager of Corporate Services/Deputy-Clerk
Municipality of Grey Highlands

CLERK'S DEPARTMENT

August 15, 2023

NEBN (Niagara Escarpment Biosphere Network)

Dear Walter Sendzik, NEBN Board Member

Re: Niagara Escarpment Biosphere Request for Endorsement

This correspondence is to confirm that on August 14, 2023 West Lincoln Township Council adopted the following resolution with respect to the above noted matter:

Whereas the Niagara Escarpment, from Queenston in the south to Tobermory in the north, has been recognized by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as a World Biosphere since 1990;

And whereas the Niagara Escarpment Biosphere (NEB) provides a range of very positive returns to Ontarians, including but not limited to promoting biodiversity of both flora and fauna, open landscape, productive agriculture and agri-tourism, traditional Indigenous knowledge and cultural history, eco-system services, a living laboratory for learning, carbon sequestration, climate change mitigation and adaptation;

And whereas the NEB is integral to the protection and enhancement agenda for the Great Lakes, especially since several of Ontario's major riverine systems have their headwaters within the NEB that in turn feed into each of Lake Huron, Lake Erie, Lake Ontario and Georgian Bay;

And whereas oversight of the NEB has successfully transitioned from the Ontario governmental agency, the Niagara Escarpment Commission to a citizen-centred, not-for-profit organization, namely the Niagara Escarpment Biosphere Network (NEBN);

And whereas the NEBN has been established as a Co-Leadership model between Indigenous and Non-indigenous leaders, with a key objective of establishing the future direction of the NEBN as a model of delivering on the worthy goals of Canada's Truth and Reconciliation Commission as well as a demonstrated commitment to the United Nation's Declaration on the Rights of Indigenous Peoples;

And whereas the NEBN has made and continues to demonstrate its commitment to partner engagement and collaboration across many sectors

and interests, including municipal, environmental, tourism, educational, youth, economic, research, and more;

And whereas the NEBN is seeking continuation of the official UNESCO Biosphere designation for the NEB, with the support of those who call the NEB home for work, play and study;

Now therefore be it resolved that the Township of West Lincoln supports the continuation of the UNESCO Biosphere designation for the Niagara Escarpment and for the oversight model that has been established with the NEBN.

If you have any questions regarding the above, please do not hesitate to contact Justin Paylove Deputy Clerk at jpayscale@westlincoln.ca at 905-957-5129.

Yours truly,



Justin J. Paylove
Deputy Clerk

September 13, 2023

Township of Mulmur Resolution: Niagara Escarpment Biosphere

At the Council meeting held on September 6, 2023, Council of the Township of Mulmur passed the following resolution:

Moved by Horner and Seconded by Clark

Whereas the Niagara Escarpment, from Queenston in the south to Tobermory in the north, has been recognized by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as a World Biosphere since 1990;

And whereas the Niagara Escarpment Biosphere (NEB) provides a range of very positive returns to Ontarians, including but not limited to promoting biodiversity of both flora and fauna, open landscape, productive agriculture and agri-tourism, traditional Indigenous knowledge and cultural history, eco-system services, a living laboratory for learning, carbon sequestration, climate change mitigation and adaptation;

And whereas the NEB is integral to the protection and enhancement agenda for the Great Lakes, especially since several of Ontario's major riverine systems have their headwaters within the NEB that in turn feed into each of Lake Huron, Lake Erie, Lake Ontario and Georgian Bay;

And whereas oversight of the NEB has successfully transitioned from the Ontario governmental agency, the Niagara Escarpment Commission to a citizen-centred, notforprofit organization, namely the Niagara Escarpment Biosphere Network (NEBN);

And whereas the NEBN has been established as a Co-Leadership model between Indigenous and Non-indigenous leaders, with a key objective of establishing the future direction of the NEBN as a model of delivering on the worthy goals of Canada's Truth and Reconciliation Commission as well as a demonstrated commitment to the United Nation's Declaration on the Rights of Indigenous Peoples;

And whereas the NEBN has made and continues to demonstrate its commitment to partner engagement and collaboration across many sectors and interests, including municipal, environmental, tourism, educational, youth, economic, research, and more;

And whereas *the Township of Mulmur* has demonstrated its commitment to the integrity of the NEB through policy and action over many decades;

And whereas the NEBN is seeking continuation of the official UNESCO Biosphere designation for the NEB, with the support of those who call the NEB home for work, play and study;

Now therefore be it resolved that the *Township of Mulmur* strongly supports the continuation of the UNESCO Biosphere designation for the Niagara Escarpment and for the oversight model that has been established with the NEBN.

CARRIED.

Sincerely,

Roseann Knechtel

Roseann Knechtel, Deputy Clerk/Planning Coordinator



The City of Niagara Falls, Ontario

Resolution

No.11

August 15, 2023

Moved by: Councillor Lori Lococo

Seconded by: Councillor Tony Baldinelli

Municipal Resolution in Support of the Niagara Escarpment Biosphere Network

Whereas the Niagara Escarpment, from Queenston in the south to Tobermory in the north, has been recognized by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as a World Biosphere since 1990;

And whereas the Niagara Escarpment Biosphere (NEB) provides a range of very positive returns to Ontarians, including but not limited to promoting biodiversity of both flora and fauna, open landscape, productive agriculture and agri-tourism, traditional Indigenous knowledge and cultural history, eco-system services, a living laboratory for learning, carbon sequestration, climate change mitigation and adaptation;

And whereas the NEB is integral to the protection and enhancement agenda for the Great Lakes, especially since several of Ontario's major riverine systems have their headwaters within the NEB that in turn feed into each of Lake Huron, Lake Erie, Lake Ontario and Georgian Bay;

And whereas oversight of the NEB has successfully transitioned from the Ontario governmental agency, the Niagara Escarpment Commission to a citizen-centred, not-for-profit organization, namely the Niagara Escarpment Biosphere Network (NEBN);

And whereas the NEBN has been established as a Co-Leadership model between Indigenous and Non-indigenous leaders, with a key objective of establishing the future direction of the NEBN as a model of delivering on the worthy goals of Canada's Truth and Reconciliation Commission as well as a demonstrated commitment to the United Nation's Declaration on the Rights of Indigenous Peoples;

And whereas the NEBN has made and continues to demonstrate its commitment to partner engagement and collaboration across many sectors and interests, including municipal, environmental, tourism, educational, youth, economic, research, and more;

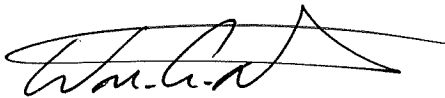
And whereas *The City of Niagara Falls* has demonstrated its commitment to the integrity of the NEB through policy and action over many decades;

And whereas the NEBN is seeking continuation of the official UNESCO Biosphere designation for the NEB, with the support of those who call the NEB home for work, play and study;

Now therefore be it resolved that the *City of Niagara Falls* strongly supports the continuation of the UNESCO Biosphere designation for the Niagara Escarpment and for the oversight model that has been established with the NEBN.

AND The Seal of the Corporation be hereto affixed.

Carried Unanimously



**WILLIAM G. MATSON
CITY CLERK**



**JAMES M. DIODATI
MAYOR**

December 21, 2023

Dear Norman Ragetlie and Charlene Winger-Jones,

The Niagara Peninsula Conservation Authority (NPCA) recognizes the importance of Canada's most unique and biologically diverse Niagara Escarpment Biosphere and fully supports the continuation of the UNESCO Biosphere designation for the Niagara Escarpment.

We are pleased to inform you that the NPCA Board of Directors, at their meeting on December 15th 2023 passed the enclosed resolution supporting your request. We would be happy to meet with you or your representatives to discuss this further. Please feel free to contact me should you have any questions.

Sincerely,



Chandra Sharma, MCIP, RPP
Chief Administrative Officer/Secretary-Treasurer

Email: csharma@npca.ca

At NPCA's Full Authority Board meeting on December 15, 2023, NPCA Board Members approved the following resolution:

Resolution No. FA-126-2023

Moved by John Metcalfe

Seconded by Diana Huson

Whereas the Niagara Escarpment, from Queenston in the south to Tobermory in the north, has been recognized by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as a World Biosphere since 1990;

And whereas the Niagara Escarpment Biosphere (NEB) provides a range of very positive returns to Ontarians, including but not limited to promoting biodiversity of both flora and fauna, open landscape, productive agriculture and agri-tourism, traditional Indigenous knowledge and cultural history, eco-system services, a living laboratory for learning, carbon sequestration, climate change mitigation and adaptation;

And whereas oversight of the NEB has successfully transitioned from the Ontario governmental agency, the Niagara Escarpment Commission to a citizen-centred, not-for-profit organization, the Niagara Escarpment Biosphere Network (NEBN);

And whereas the NEBN has been established as a Co-Leadership model between Indigenous and Non-indigenous leaders, with a key objective of establishing the future direction of the NEBN as a model of delivering on the worthy goals of Canada's Truth and Reconciliation Commission as well as a demonstrated commitment to the United Nation's Declaration on the Rights of Indigenous Peoples;

And whereas the NEBN has made and continues to demonstrate its commitment to partner engagement and collaboration across many sectors and interests, including municipal, environmental, tourism, educational, youth, economic, research, and more;

And whereas the NEBN is seeking continuation of the official UNESCO Biosphere designation for the NEB, with the support of those who call the NEB home for work, play and study;

And whereas the Niagara Peninsula Conservation Authority reaffirms our commitment through our 10-year Strategic Plan to undertake work that supports the UNESCO Biosphere designation for the Niagara Escarpment;

Now therefore be it resolved that the Niagara Peninsula Conservation Authority supports the continuation of the UNESCO Biosphere designation for the Niagara Escarpment and for the oversight model that has been established through the NEBN.

CARRIED

BRINGING HOME THE LIMA ACTION PLAN

for
UNESCO's Man and Biosphere Programme
and its World Network of Biosphere Reserves
2016-2025

Ontario's Niagara Escarpment - A UNESCO World Biosphere Reserve



United Nations
Educational, Scientific and
Cultural Organization

Organisation
des Nations Unies
pour l'éducation
la science et la culture



Niagara Escarpment
Biosphere Reserve

Réserve de la
biosphère de
l'escarpement du Niagara

OUTLINE

- What are UNESCO World Biosphere Reserves?
- History of UNESCO's Man and Biosphere (MAB) Programme
- World Network of Biosphere Reserves (WNBR)
 - Governance and Direction
 - Location
- Periodic Reviews
 - Results of the Niagara Escarpment Biosphere Reserve Periodic Review
- New Direction for the WNBR
- What's Next?



UNESCO World Biosphere Reserves

The key core complementary functions of a biosphere reserve include:

- **Conservation**
- **Sustainable Development**
- **Science and Education**



Ontario's Niagara Escarpment - A UNESCO World Biosphere Reserve



United Nations
Educational, Scientific and
Cultural Organization

Organisation
des Nations Unies
pour l'éducation
la science et la culture



Niagara Escarpment
Biosphere Reserve

Réserve de la
biosphère de
l'escarpement du Niagara

Biosphere Reserves are...

About PEOPLE, by people, for people

CONNECTING culture, nature and economy

UNDERSTANDING heritage, create a better future

Explore better SOLUTIONS in practice

Ways of LIVING, not only ways of conserving

SHARED values and language

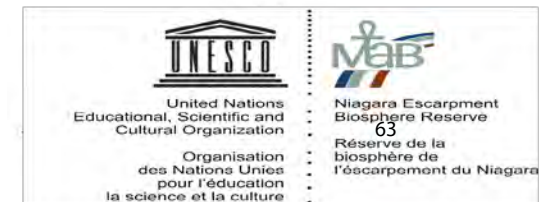
Fuelled by PASSION

Ontario's Niagara Escarpment - A UNESCO World Biosphere Reserve

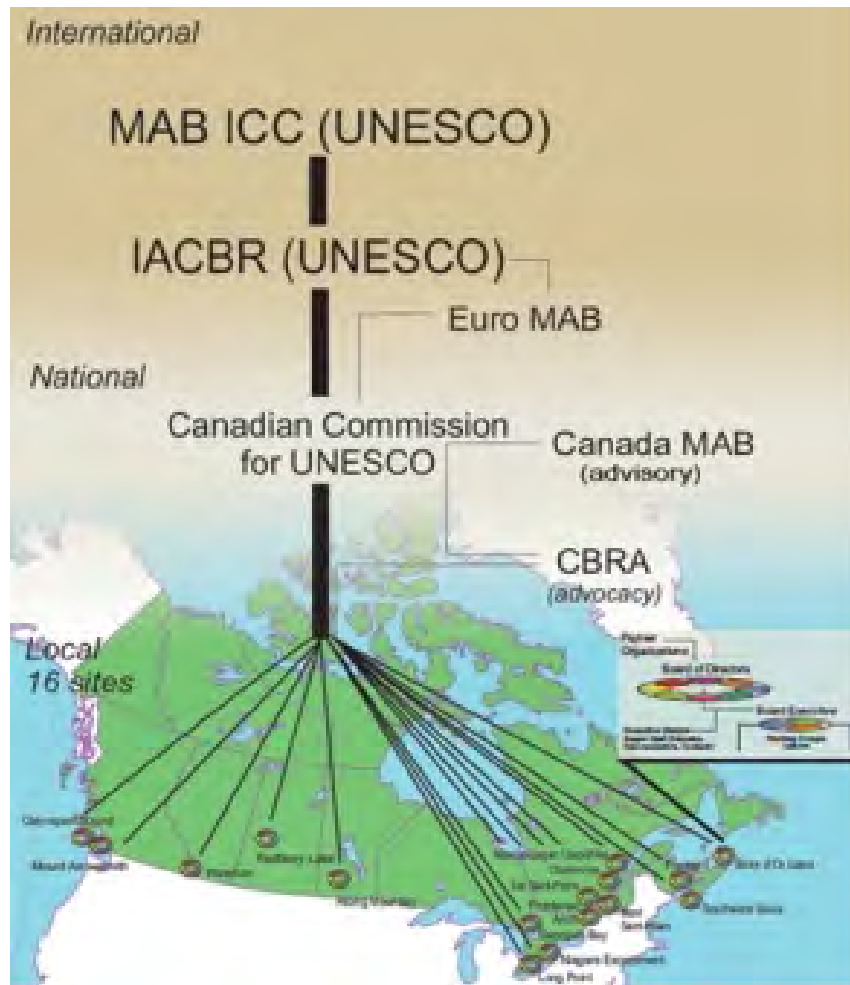


History of the UNESCO Man and Biosphere Programme

- 1971: The Man and Biosphere (MAB) Programme is established
 - 14 Project Areas
- 1984: Action Plan for Biosphere Reserves
 - 243 Biosphere Reserves (65 countries)
- 1995: Seville Strategy & Statutory Framework for the World Network of Biosphere Reserves (WNBR)
 - 324 Biosphere Reserves (82 countries)
- 2008: Madrid Action Plan for Biosphere Reserves 2008-13
 - 531 Biosphere Reserves (105 countries)
- 2016: Lima Action Plan for Biosphere Reserves 2006-25
 - 669 Biosphere Reserves (120 countries)



UNESCO World Network of Biosphere Reserves Governance



Ontario's Niagara Escarpment - A UNESCO World Biosphere Reserve

 United Nations Educational, Scientific and Cultural Organization	 Niagara Escarpment Biosphere Reserve
Organisation des Nations Unies pour l'éducation la science et la culture	Réserve de la biosphère de l'Éscarpement du Niagara

UNESCO Man and Biosphere (MAB) Programme

Vision:

“ A world where people are conscious of their common future and interaction with our planet, and act collectively and responsibly to build thriving societies in harmony with the biosphere”

The MAB Program and it's World Network of Biosphere Reserves serve this vision within and outside of biosphere reserves

Ontario's Niagara Escarpment - A UNESCO World Biosphere Reserve



UNESCO World Biosphere Reserves



United Nations
Educational, Scientific and
Cultural Organization



Niagara Escarpment
Biosphere Reserve
Réserve de la
biosphère de
l'escarpment
Organisation
des Nations Unies
pour l'éducation,
la science et la culture

World Network of Biosphere Reserves
Réseau mondial des réserves de biosphère
Red Mundial de Reservas de Biosfera
Weltnetz der Biosphärenreservate

2015 - 2016

669

UNESCO biosphere reserves
réserves de biosphère de l'UNESCO
reservas de biosfera de la UNESCO
UNESCO-Biosphärenreservate

120 countries
pays
países
Staaten

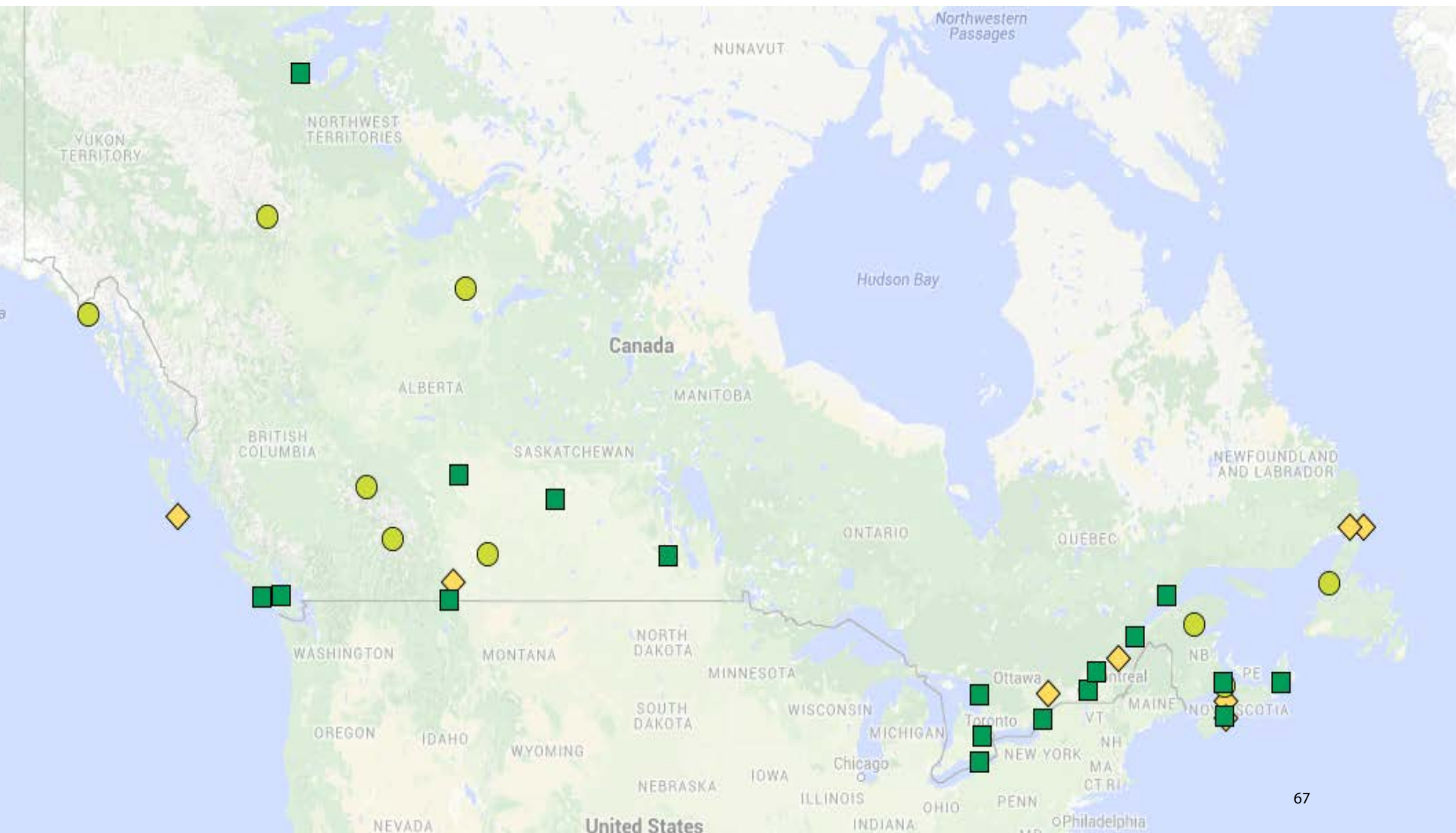


SC/EES/MAB/map2015-2016

Map scale: 1:100,000,000
Map projection: Standardized World Map
Projection of Biosphere Reserves
Scale: 1:100,000,000
Data source: UNESCO
Map scale: 1:100,000,000
Map projection: Standardized World Map
Projection of Biosphere Reserves
Scale: 1:100,000,000
Data source: UNESCO



UNESCO World Heritage Sites and Biosphere Reserves in Canada



18 UNESCO Biosphere Reserves: Canada



0. Biospheres Reserves of Canada
Réerves de la biosphère du Canada

World Network of Biosphere Reserves Periodic Reviews

The 1995 Seville Strategy established the statutory requirement to review a Biosphere Reserve every 10 years

Each is reviewed against the criteria outlined in the Statutory Framework

Mechanism to encourage BR managers to keep up to date with evolving concepts

BR should strive to be site of excellence to explore and demonstrate approaches to conservation and sustainable development at a regional scale

Ontario's Niagara Escarpment - A UNESCO World Biosphere Reserve



Let's Bring it Closer to Home



Ontario's Niagara Escarpment - A UNESCO World Biosphere Reserve



United Nations
Educational, Scientific and
Cultural Organization

Organisation
des Nations Unies
pour l'éducation
la science et la culture



Niagara Escarpment
Biosphere Reserve

Réserve 70a
biosphère de
l'escarpement du Niagara

UNESCO Connections – At Workshop Today

- 3 World Biosphere Reserves represented
 - Georgian Bay (Becky Pollock, Allison Graham, Felicia),
 - Long Point (Patti O’Reilly), and
 - Niagara Escarpment (Cecil Louis)
 - Bruce Peninsula Biosphere Association(Elizabeth and Jeremy Thorne)
- UNESCO Committee for Niagara on the Lake – Peter Harvey
- Convention on Biological Diversity – advisory committee for Communication, Education and Public Awareness - Leslie Adams
- UNESCO Chair at Brock University: Community Sustainability: From Local to Global - Dr. Liette Vasseur

Niagara Escarpment Biosphere Reserve Periodic Review

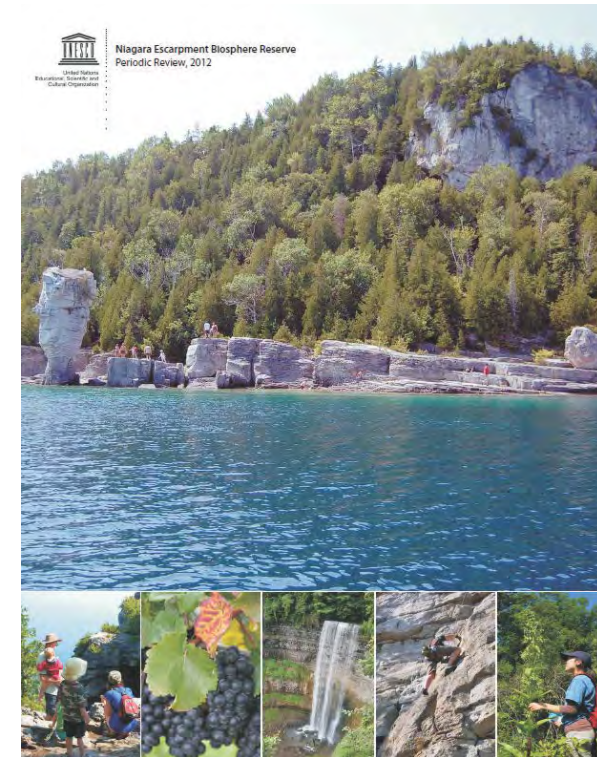
The Niagara Escarpment Biosphere Reserve was reviewed in 2002 and 2012/13

Self-study completed in 2012

CC UNESCO Review Team completed its report in 2013

Recommendations from Canadian Council for UNESCO (MAB ICC) in Fall 2014

Ontario's Niagara Escarpment - A UNESCO World Biosphere Reserve



Periodic Review Recommendations

MAB International Coordinating Council (MAB ICC)

1. Refrain from modifying the buffer and core zoning during legislative review of the Niagara Escarpment Plan
2. Promote sustainable development function based on a more balanced vision between human needs and conservation and clarify leadership for sustainable development planning
3. Encourage greater local collaboration
4. Increase collaboration with other Canadian BR and the WNBR (especially the EuroMAB Network)



Periodic Review Progress Reports by Niagara Escarpment Biosphere Reserve

NEBR provided two report backs (February 2015 and August 2015) including progress on:

- Establishing a network to encourage collaboration
- Participation in the EuroMAB Brand and Story Toolkit Pilot for BR
- Review of the Niagara Escarpment Plan and opportunities for NEBR residents to participate in land use planning policy development



NEBR Periodic Review Conclusions from MAB ICC – Lima, March 18,2016

- Appreciated the NEBR was implementing recommendations on core and transition zoning
- Noted the progress made to promote the sustainable development function and on collaboration with stakeholders to develop collaborative networks.
- Appreciated the participation of the NEBR in the EuroMAB Network and efforts made to promote understanding of the function of biosphere reserves

Good news.....

The MAB International Coordinating Council concluded that the Niagara Escarpment Biosphere Reserve **meets the criteria** of the Statutory Framework of the World Network of Biosphere Reserves.

Ontario's Niagara Escarpment - A UNESCO World Biosphere Reserve



Evolving Global Context for World Biosphere Reserves

- Global change in climate, biodiversity, population, and industrialization
- Sustainable Development
 - Rio 1992; Johannesburg 2002; Rio 2012; 2030 Agenda for Sustainable Development (2015)
- Convention on Biological Diversity
 - Rio 1992, Nagoya (Aichi) Protocol 2014
- Paris Climate Agreement (2015-16)

Ontario's Niagara Escarpment - A UNESCO World Biosphere Reserve



There is no “Plan B” because...



Ontario's Niagara Escarpment - A UNESCO World Biosphere Reserve

	
United Nations Educational, Scientific and Cultural Organization	Niagara Escarpment Biosphere Reserve
Organisation des Nations Unies pour l'éducation la science et la culture	Réserve de la biosphère de l'écartement du Niagara

New Direction for World Biosphere Reserves

MAB Strategy 2015-2020 Overarching GOAL:

Develop a world network of biosphere reserves as models of sustainable development, by improving governance, collaboration and networking

New Action Plan – ratified at the 4th World Congress on Biosphere Reserves in Lima, Peru in March 2016

New Direction for World Biosphere Reserves

4th World Congress of Biosphere Reserves

LIMA-PERU
14-17
March 2016



New Direction for World Biosphere Reserves



Ontario's Niagara Escarpment - A UNESCO World Biosphere Reserve

**1200 participants
from over
100 countries**

**Outcome:
Lima Declaration
and Action Plan**



United Nations
Educational, Scientific and
Cultural Organization

Organisation
des Nations Unies
pour l'éducation
la science et la culture



Niagara Escarpment
Biosphere Reserve

Réserve de la
biosphère de
l'écartement du Niagara

Ni
A

Lima Action Plan 2016-25: Content

- Vision and mission (from MAB Strategy)
- Link to the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals
- Implementation: MAB National Committees and MAB networks encouraged to prepare strategies and action plans
 - founded in national and regional realities and imperatives
 - contribute to addressing these and to implementing the Lima Action Plan at the global level
- Mid-term evaluation in 2020



Lima Action Plan 2016-25: Strategic Action Areas

- A. The World Network of Biosphere Reserves (WNBR) consisting of effectively functioning models for sustainable development
- B. Inclusive, dynamic and results-oriented collaboration and networking within the MAB Programme and the WNBR
- C. Effective external partnerships and sufficient and sustainable funding for the MAB Programme and the WNBR
- D. Comprehensive, modern, open and transparent communication, information and data sharing
- E. Effective governance of and within the MAB Programme and the WNBR



What's Next for the Niagara Escarpment BR?

- We all have responsibility for the Niagara Escarpment Biosphere Reserve!
- Together we will develop a work plan to support the Lima Action Plan
- Work to find innovative, inter-disciplinary projects that connect us (like Amazing Places!)
- Encouraging collaboration and partnerships through a more formal Network



Questions?



**Building Biosphere Capacity to Achieve
Sustainable Development Goals Through
Indigenous Partnerships**

A Review of Canadian Experience



EuroMAB Brockville

October 15th - 19th, 2013

Opening Ceremonies

Elder and Ambassador
Larry McDermott, Shabot
Obaadjiwan First Nation
(Algonquin) / Executive
Director, Plenty Canada



Recommendations

- EuroMAB Indigenous Working Group in Brockville, Ontario



Discussion Paper EuroMab 2013: Indigenous Participation in Canadian Biosphere Reserves

In part, the rationale for including Indigenous People stems from a strategic vision articulated by UNESCO. In 1995, the Statutory Framework for BRs explicitly included the function of sustainable development and subsequent documents indicate that maintaining cultural diversity and local livelihoods by involving local people were significant elements of the rationale for creating BRs (UNESCO 1996; 2000; 2002; 2008).

The present strategic plan, the Madrid Action Plan 2008-2013 (UNESCO 2008), also includes understanding and enhancing cultural diversity as part of the function of sustainable development. One of the 11 priority action items was that every BR should carry out a planning process that assures participatory management, “especially for traditional, local and indigenous communities.” (UNESCO 2008: 5).

Discussion Paper EuroMab 2013: Indigenous Participation in Canadian Biosphere Reserves

All 16 BRs in Canada are in treaty or non-treaty traditional territories, suggesting that these obligations are relevant to all participants in the BR program.

Through the support of the Canadian Commission for UNESCO and the Community Conservation Research Network, representatives from the Eskasoni Fish and Wildlife Commission, the Nuu-chah-nulth Tribal Council Fisheries Department, the Abenaki First Nation, the Mohawk Nation of Akwesasne and the Shabot Obaadjiwan First Nation shared with a wider circle of participants their advice and remarks on success factors for collaboration with First Nations in the context of Biosphere Reserves. The discussions culminated in the establishment of an Indigenous Collaboration Working Group (co-led by three Canadian Indigenous representatives involved in Biosphere Reserves) and a set of recommendations to guide on-going engagement. This was a positive development, sorely needed, as Canadian BR managers reported relatively little real action related to the engagement of Indigenous peoples in Canadian BRs.

Collaboration with Indigenous/Traditional Users of the Land

- ① Make more **time** for this kind of dialogue and relationship building at all levels (local, regional, etc.). Continue to invite indigenous voices to the conversation – and gather / act on their recommendations.
- ② Maintain **flexibility and patience**. Give conversations the time they need to breathe, hold space and time for cultural practices, understand that community and family matters are priorities, and understand community members are very busy.
- ③ Engage Indigenous communities as **rights holders** and the **hosts of biosphere reserves**; recognize that sites are located within their territories.
- ④ Add **meaningful indigenous representation** as a **criteria** for biosphere reserve **designation**.

- ⑤ **Base your approach to collaboration on an indigenous model**, such as the *Great Way of Peace: equity, respect, empowerment*.
- ⑥ Approach **capacity-building** as a **two-way** activity. What can you learn from one another?
- ⑦ **Value indigenous/traditional knowledge** as on-par with other forms of expertise in decision-making. As a start, learn and use local concepts/language.
- ⑧ **Speak from your heart** about your work, and about what you can do – and *not* do?
- ⑨ **Hire community members**. Individuals that have a long, rich history and relationship with the land, resources, and people have a lot to offer and can help build bridges.

Establishment of New Networks

- EuroMAB Indigenous Advisory Committee
- Canadian Biosphere Indigenous Working Group

Developing Relationships

- The real science is social science
- Leave your briefcase closed
- Keep your ears open



credit: photo Toomas Kokovkin, <http://foto.pelagis.eu/>

A 1700's Cross-Cultural Agreement

For forty years, he was the Holder of the sacred *Three Figure Welcoming Wampum Belt* from 1700, the one he sometimes also described as the sharing belt. Created out of the purple and white shells of the quahog in the distant past, the ancient wampum belt relics of the First Peoples recorded history, agreements, served as mnemonic devices, and integrated sacred in the *way of life*. This belt was particularly important to him — it was created before there was a Canada, when his ancestors, realizing newcomers were arriving in their lands in increasing numbers, sick, bereft and fighting old battles, made their statement.

The Indian in the centre drew the hands of the French and English together to entrench friendship, agreeing to share the vast land, the grand natural resources and their values in equal parts, and to forge a new and strong nation as envisioned by the prophecy of the Seven Fires. The fact that it was a sacred agreement was signified by the symbol of the Vatican on the side of the belt.



Empathic Traditions: How Indigenous Knowledge and New Media can save the Earth

“The unborn generations’ faces come toward us from our Mother Earth, still part of her flesh and spirit. They are the community of human beings whose welfare our actions today affects, and it is they who will judge the life that we who are living now leave to them”

(Thinking in Indian: A John Mohawk Reader 2010, editor Jose Barreiro)



Chelsey Johnson, Oneida Nation
M.A. Communication and New Media

Youth Empowerment Program



- Six Nations Waste Less
- Youth Reconnecting With Nature
- Our Traditions Our Future
- Implementing Traditional Indigenous Knowledge to Restore Our Wetlands
- Canadian Roots Exchange
- Growth Beyond the Garden (Swaziland, South Africa)

Earth Summit Treaties



STRATEGIC PLAN FOR BIODIVERSITY 2011-2020 AND THE AICHI BIODIVERSITY TARGETS

Strategic goal E. Enhance implementation through participatory planning, knowledge management and capacity-building

Target 18: By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.

UNDRIP: A Commitment to Improvement

Article 43

The rights recognized herein constitute the minimum standards for the survival, dignity and well-being of the indigenous peoples of the world.

Article 37

1. Indigenous peoples have the right to the recognition, observance and enforcement of treaties, agreements and other constructive arrangements concluded with States or their successors and to have States honour and respect such treaties, agreements and other constructive arrangements.

Article 27

States shall establish and implement, in conjunction with indigenous peoples concerned, a fair, independent, impartial, open and transparent process, giving due recognition to indigenous peoples' laws, traditions, customs and land tenure systems, to recognize and adjudicate the rights of indigenous peoples pertaining to their lands, territories and resources, including those which were traditionally owned or otherwise occupied or used. Indigenous peoples shall have the right to participate in this process.

Article 8

1. Indigenous peoples and individuals have the right not to be subjected to forced assimilation or destruction of their culture.

Lima Action Plan : Are We Making Progress?



Statement from members of the Canadian Biosphere Reserves Association and the Canadian-MAB Committee and a Co-Chair of the Working Group on Indigenous Peoples
March 15 2016

p. 9 B7 under "outcome"

Change from

An active and open interdisciplinary network of scientists sharing MAB vision and mission

to

An active and open interdisciplinary network of scientists **and indigenous and local knowledge holders** sharing **the** MAB vision and mission

Accepting the proposed amendments helps to eliminate the exclusion of Indigenous communities, empowering all BR participants to play an integral role in the development, implementation and governance biosphere reserves.

*"Dear Larry,
After taking into consideration the comments about many types of knowledge holders, the Outcome you were concerned about will refer to establishing a network of scientists/knowledge holders."*

Another reason why respectful relationships are important

“We scientists don’t know how to do that”

“I used to think the top environmental problems were biodiversity loss, ecosystem collapse and climate change.

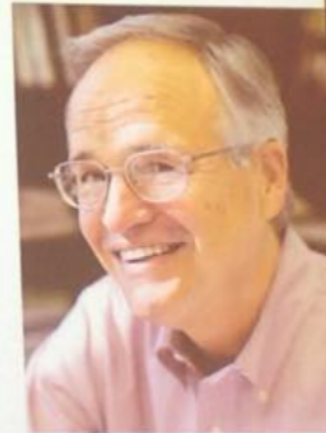
I thought that with 30 years of good science we could address those problems.

But I was wrong.
The top environmental problems are selfishness, greed and apathy...

...and to deal with those we need a spiritual and cultural transformation

- and we scientists don't know how to do that.”

Gus Speth



Two-Eyed Seeing

A Scientist Who Understands That We Need
To Work Together



Organisation
des Nations Unies
pour l'éducation
la science et la culture
UNESCO
United Nations
Educational, Scientific
and Cultural
Organization

Building Biosphere Capacity to Achieve Sustainable Development Goals Through Indigenous Partnerships

Recommendations For Lima Action Plan

UNESCO Sustainable Development Goals Adopted September 25th, 2015

Strategic Action Area A. The World Network of Biosphere Reserves Consisting of Effectively Functioning Models for Sustainable Development

Recommendation 1: Align the Lima Action Plan with the United Nations Standards expressed in MEAs and SDGs, as well as Human Rights Instruments. Specifically, effective Indigenous participation in the planning, implementation, and governance of BRs. Traditional Indigenous knowledge and cultures shall be present in all Biosphere Reserve Models in Nation States with any Indigenous population(s). All Outcomes, Actions, Outputs, Primary Responsibilities, and Performance Indicators in the Lima Action Plan should reflect effective Indigenous participation.

Building Biosphere Capacity to Achieve Sustainable Development Goals Through Indigenous Partnerships Recommendations For Lima Action Plan

UNESCO Sustainable Development Goals Adopted September 25th, 2015

Strategic Action Area B. Inclusive, dynamic and result-oriented collaboration and networking within the MAB Programme and the World Network of Biosphere Reserves

Recommendation 2: Align the Lima Action Plan with the United Nations Standards expressed in MEAs and SDGs, as well as Human Rights Instruments. All Outcomes, Actions, Outputs, Primary Responsibilities, and Performance Indicators in the Lima Action Plan shall reflect effective Indigenous participation, including the respectful utilization of Indigenous Knowledge Systems in all Biosphere Reserve Models in Nation States with any Indigenous population(s).

**Building Biosphere Capacity to Achieve Sustainable
Development Goals Through
Indigenous Partnerships
Recommendations For Lima Action Plan**

UNESCO Sustainable Development Goals Adopted September 25th, 2015

Strategic Action Area C. Effective external partnerships and sufficient and sustainable funding for the MAB Programme and the World Network of Biosphere Reserves

Recommendation 3: Align the Lima Action Plan with the United Nations Standards expressed in MEAs and SDGs, as well as Human Rights Instruments, including Article 39 of the United Nations Declaration on the Rights of Indigenous Peoples. All Outcomes, Actions, Outputs, Primary Responsibilities, and Performance Indicators in the Lima Action Plan shall reflect full and meaningful Indigenous engagement.

**Building Biosphere Capacity to Achieve Sustainable
Development Goals Through
Indigenous Partnerships
Recommendations For Lima Action Plan**
UNESCO Sustainable Development Goals Adopted September 25th, 2015

Strategic Action Area D. Comprehensive, modern, open, and transparent communication, information and data sharing

Recommendation 4: Align the Lima Action Plan with the United Nations Standards expressed in MEAs and SDGs, as well as Human Rights Instruments. All Outcomes, Actions, Outputs, Primary Responsibilities, and Performance Indicators in the Lima Action Plan shall reflect Indigenous viewpoints and utilize communication instruments.

**Building Biosphere Capacity to Achieve Sustainable
Development Goals Through
Indigenous Partnerships
Recommendations For Lima Action Plan
UNESCO Sustainable Development Goals Adopted September 25th, 2015**

Strategic Action Area E. Effective governance of and within the MAB Programme and the World Network of Biosphere Reserves

Recommendation 5: Align the Lima Action Plan with the United Nations Standards expressed in MEAs and SDGs, as well as Human Rights Instruments. All Outcomes, Actions, Outputs, Primary Responsibilities, and Performance Indicators in the Lima Action Plan shall reflect Indigenous involvement in the governance of the MAB Programme and the World Network of Biosphere Reserves.

A Special Miigwetch



Community Conservation
Research Network

The CCRN is a partnership of indigenous, community, university, governmental and nongovernmental organizations, with a base at Saint Mary's University in Halifax, Canada.



PLENTY CANADA

266 Plenty Lane
Lanark, ON KoG 1Ko

February 25, 2019

Linda Pim, Secretary/Treasurer
Niagara Escarpment Fund
mailbox@nefoundation.ca

David Ayotte, Director
Niagara Escarpment Commission
david.ayotte@ontario.ca

Dear Ms. Pim and Mr. Ayotte,

I wanted to write to you to express my concern regarding some aspects of the "*Environmental Protection for the "Niagara Escarpment Biosphere Reserve (NEBR) through Enhanced Community Engagement"* project for which you are currently soliciting Requests for Proposals (RFP).

In the RFP, it is noted that: "*Shared responsibility at a grassroots level is a key Biosphere Reserve objective required for ongoing designation,*" and; "*As a key component of a more grassroots governance , the interests of Indigenous Peoples/communities with Treaty rights and shared interests in the NEBR need to be fully recognized and opportunities provided to share their cultural perspectives, way of knowing and traditional knowledge.*"

You state that you are building on and expanding on the "*foundational work undertaken in 2015-18 by a multi-stakeholder working group*". I would like to take this opportunity to remind you of the role that Plenty Canada had in that preparatory work with respect to Indigenous engagement and describe to you what Plenty Canada has been doing to engage Indigenous Peoples in the NEBR since 2017.

Beginning in 2016, the Niagara Escarpment Commission (NEC) partnered with Plenty Canada to initiate an engagement process with Indigenous communities whose lands and activities intersect with the NEBR. Indigenous participation in NEBR initiatives is a key deliverable of the EuroMAB 2013 conference, the MAB Strategy 2015-2025, and the Lima Action Plan 2016-2025.

Plenty Canada, as the coordinator of the project provided the following services to the NEC, as convener of the NEBR:

- Developed an Indigenous Engagement Plan (Engagement Plan) for the NEBR; and
- Developed and delivered two outreach events for the NEBR Indigenous community.

The two outreach meetings were held at Six Nations Polytechnic in Six Nations of the Grand River and at the Bruce Peninsula National Park Visitor Centre in Tobermory and served to 1) explain the origins and objectives of UNESCO's NEBR, and 2) to assess interest and facilitate ideas for increasing Indigenous participation in the NEBR. The consensus that emerged from these two meetings supported Indigenous participation in the NEBR and prescribed that a "story-telling and mapping" project should be the first recommended pragmatic program developed to begin restoring Indigenous knowledge, visibility, and character to the Niagara Escarpment.

Importantly, on the matter of Indigenous participation in the NEBR, the participants in these 2017 meetings did not see themselves part of a "stakeholder network", instead, they believed they should be afforded a different relationship, based on recognition of rights, respect, co-operation, and partnership. For

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Website: www.plentycanada.com

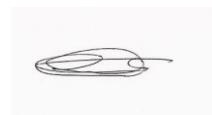
example, co-governance arrangements are one way of achieving this type of relationship by creating space for the healthy interaction of Canadian and Indigenous Peoples.

Since these outreach meetings in 2017, Plenty Canada has been working with its growing network of Indigenous allies to document, celebrate, and safeguard important Indigenous identity and heritage resources on the Niagara Escarpment. Our Indigenous cultural mapping program is producing an interactive map of the Niagara Escarpment that re-establishes Indigenous experience and voice upon this ancient and special geologic formation. This work, which is advancing well, will result in a visually stunning and deeply meaningful prototype on-line platform that will establish shared purpose and participation among Indigenous peoples of the NEBR and Manitoulin Island; which was always our intended objective.

We believe the strategic and foundational work we have completed to date has built a strong and engaged network of Indigenous peoples that will be supportive to the NEBR and its future management. This Indigenous alliance can be a doorway through which to look at governance of the NEBR and other challenging issues facing the environmental protection and sustainable development of this unique and important landform.

Plenty Canada would welcome the opportunity to meet with the RFP funders (Niagara Escarpment Foundation, the NEC, and Friends of the Greenbelt Foundation) to further discuss the work we have completed and explain how our work can be supportive of the future management of the NEBR, without the introduction of redundant processes. Please share this letter with your funding partner at the Friends of the Greenbelt Foundation.

Sincerely,



Larry McDermott
Executive Director

cc. Friends of the Greenbelt Foundation

Environmental Protection for the Niagara Escarpment Biosphere Reserve through Enhanced Community Engagement

Deliverable #3: Engaging and Activating Transitional Leadership for NEBR 2.0

October 18, 2019

Deliverable #3:

- Activity Summary
- Final Report with Recommendations

Prepared for:

- Niagara Escarpment Foundation
- Niagara Escarpment Commission

Prepared by:

- Terrapin Social Finance
- Good Roots Consulting



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ABOUT THIS REPORT

Terrapin Social Finance and Good Roots Consulting are pleased to share this final report of the project titled *Environmental Protection for The Niagara Escarpment Biosphere Reserve through Enhanced Community Engagement* which summarizes activities from the final deliverable - Deliverable #3, including:

- 3.1 Facilitate Network meeting to introduce implementation plan and begin implementation of new NEBR governance structure
- 3.2 Final project report to the Niagara Escarpment Foundation and the Niagara Escarpment Commission (September 15, 2019)

Activities under Deliverable #3 took place between July 30 - when 40+ NEBR participants gathered at Mono Community Centre in Dufferin County to review and provide input into a proposed transitional leadership model - and September 24, when 23 participants¹ regrouped at Mono Community Centre to confirm the Transitional Leadership Committee and four Working Groups, and to implement initial steps towards new leadership and governance for the Niagara Escarpment Biosphere Reserve - referred to as NEBR 2.0 throughout this report.

Efforts have been made to preserve the original language of NEBR participants e.g. guiding principles, mission statement suggestions and working group priorities.

This final report has been prepared with the newly established Transitional Leadership Committee (TLC) in mind as a primary audience in addition to the Niagara Escarpment Foundation and Niagara Escarpment Commission. The report is organized chronologically by activity, illustrating the developmental process that took place over the duration of the project, culminating in the September 24, 2019 workshop where the Transitional Leadership Committee and four Working Groups were established and empowered to take NEBR 2.0 forward in collaboration with the broader NEBR community.

Supporting documentation relevant to Deliverable #3 is included in the appendices to this report.

¹ Appendix item #1 - September 24 Meeting Attendees

EXECUTIVE SUMMARY

Activities following the July 30 workshop focused on establishing the TLC and Working Groups. A survey² circulated to all NEBR contacts yielded a slate of 17 volunteers that was representative across the geographic regions of the Niagara Escarpment, gender balanced and involving 8 different sectors including Indigenous fisheries, nature conservation, academia, sport, active transportation, municipal and provincial government, rural community development and forestry. Nine participants who expressed interest in serving on the TLC were asked to select from amongst themselves, five candidates to serve on the TLC. This procedure, involving a ranked ballot method, resulted in a TLC consisting of: Liette Vasseur (Southern region, academia and CC UNESCO), Norman Ragetlie (Central region, NGO – rural economic development), Megan Myles (Northern region, municipal government), Patrick Robson (Southern region, academia), and Victoria Serda (Northern region, NGO – Indigenous fisheries). Biographies of the TLC members³, provided to the Niagara Escarpment Foundation after the September 24 workshop, display the wealth of diverse experience that the members bring.

On September 24, 23 NEBR participants gathered to confirm the TLC and Working Groups, to revise Guiding Principles and articulate the NEBR 2.0 Mission, to review the scope of work involved in renewing the UNESCO designation, and to convene initial Working Group meetings and the inaugural meeting of the TLC.

The following headings indicate key themes arising from a facilitated Mission development activity.

1. Co-management
2. Network convening and knowledge exchange
3. Ecosystem services
4. External communications and collaboration
5. An evidence-based organization
6. Building capacity of regional organizations
7. Biosphere protection, renewal and enhancement
8. Public education and awareness
9. Designation renewal and strengthening
10. Inspiring change
11. Global presence

The Governance Working Group included individuals from Neyaashiinigmiing (Chippewas of Nawash) and Six Nations of the Grand River, providing the opportunity for candid discussion regarding one of NEBR 2.0's prime directives (both internally and from UNESCO) to create an organization inclusive of and relevant to Indigenous organizations and communities within the Niagara Escarpment Biosphere Reserve and those Indigenous communities beyond the NEBR who consider the Niagara Escarpment part of their traditional / ancestral lands. This discussion remained "high level" and succeeded in articulating key considerations for the TLC moving forward such as embedding the principle of co-management with Indigenous communities.

The Program Working Group placed priority on the renewal of the Biosphere Reserve designation. Details related to timing and process are contained in the scope of work presentation provided by John Stuart⁴ of the Niagara Escarpment Commission staff.

The Communications Working Group focused on the need for a communications plan that considers internal (NEBR community) and external communications while supporting the needs of the other Working Groups.

The Fundraising Working Group focused on the need to quickly establish the facility to receive charitable donations to support the financial needs of the TLC, followed by a case for support and collateral materials developed with the Communications Working Group that would allow NEBR 2.0 to begin fundraising.

² Appendix Item #2 - Survey to NEBR community to express interest in TLC &/or Working Groups

³ Appendix Item #3 - Niagara Escarpment Biosphere Reserve – Transitional Leadership Committee Biographies

⁴ Appendix Item #4 - September 24 Presentation Slides

A brief inaugural meeting of the TLC held at the end of the Sept 24 workshop confirmed that all decisions related to the NEBR would henceforth rest with the newly formed TLC and that the Niagara Escarpment Commission would assume a support role of Secretariat at the pleasure of the TLC.

KEY ACTIVITIES

This section describes activities undertaken in Deliverable #3 and illustrates how NEBR 2.0 leadership for both the Transitional Leadership Committee (TLC) and Working Groups was identified, engaged and activated.

Identifying Transitional Leadership

The July 30 workshop yielded a small but encouraging group of six volunteers willing to serve the transitional leadership required for the establishment of NEBR 2.0. To build greater engagement, two email communications were prepared - one as follow-up with July 30 participants and one addressed to the full NEBR mailing list (those who did not attend on July 30). The emails, sent August 9, served as both an invitation to the next workshop on September 24 as well as providing a summary of the July 30 workshop, with the presentation materials and a memo detailing the proposed transitional leadership structure. Recipients also received a link to an online survey where they were encouraged to express their interest in joining the Transitional Leadership Committee and/or one of the four proposed Working Groups. *(Note - these documents appear in the Appendices of this report)*. The invitation to the September 24 workshop and the link to the online survey were shared again on September 3, with a final reminder on September 13. The online survey for expressions of interest remained open to respondents until September 16.

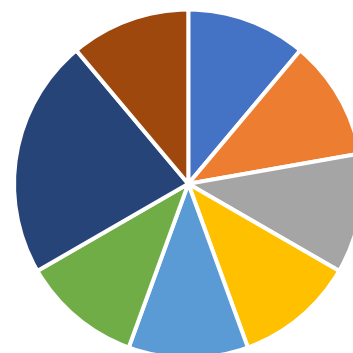
The chart below indicates interest generated by the July 30 workshop, the follow-up emails and the online survey.

Respondents	TLC	Working Groups
17	9	13

Of the nine individuals interested in serving on the TLC:

- Regional distribution
 - 3 from North
 - 3 from Central
 - 3 from South
- Gender distribution
 - 5 women
 - 4 men

Sectoral Representation

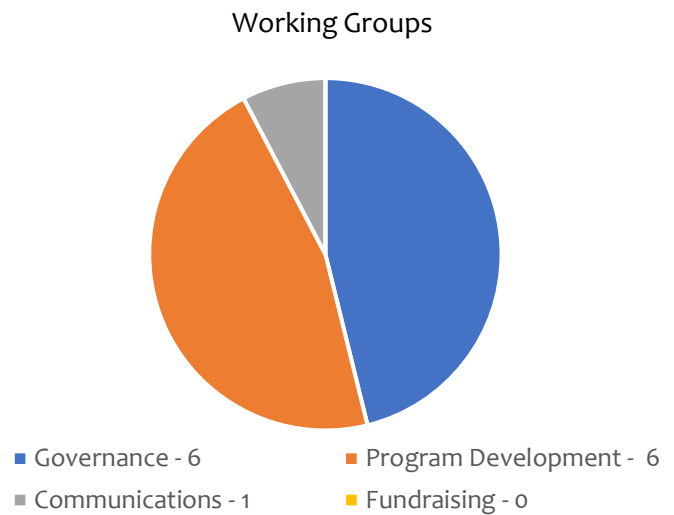


- NGO Indigenous Fishery - 1
- NGO Sport - 1
- NGO Active Transport - 1
- NGO Conservation - 1
- NGO - Rural CED - 1
- Municipal Government - 1
- Academia - 2
- Professional - 1

Of the 13 individuals who expressed interest in serving on one of the four Working Groups:

- Regional distribution
 - 4 from North
 - 5 from Central
 - 4 from South

- Gender distribution
 - 6 women
 - 7 men



Confirming Transitional Leadership

Deliverable #2 proposed a transitional structure (see Figure 1 below) led by a committee of five volunteers - to act as a nimble and responsive steering committee capable of completing the key transitional tasks associated with NEBR 2.0 within a proposed time frame of one year.

Transitional Leadership Committee

The full NEBR mailing list was contacted and asked to express their interest in serving on the TLC and because nine individuals self-identified, it was necessary to devise a democratic approach to confirm five individuals to fill the available positions. Since the full NEBR mailing list had been contacted three times by email and the survey was placed on the NEC and NEF websites, it was deemed suitable to ask the nine who had stepped forward, to vote amongst themselves for five individuals to fill positions on the TLC. This process was explained and agreed to by the nine candidates. Each provided expressions of interest⁵, which were shared with the group of nine. A second online survey⁶ was prepared. Each candidate was asked to review the expressions of interest, consider the desire to achieve regional and sectoral representation, diversity and skills, and to rank their top five candidates for the TLC via a confidential ballot, including themselves in their ranking.

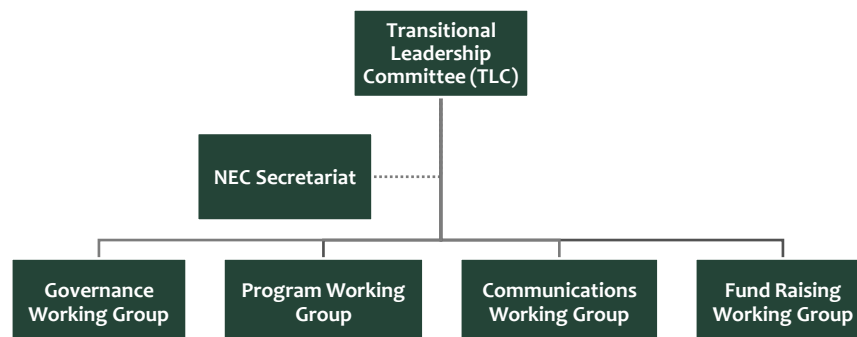


Figure 1: proposed transitional leadership structure

⁵ Appendix Item #5 - TLC Candidate expressions of interest

⁶ Appendix Item #6 - TLC Candidate Survey

The online survey resulted in the following individuals being confirmed as the inaugural members of the Transitional Leadership Committee of NEBR 2.0:

Committee Member	Region	Affiliation
Liette Vasseur	Southern	Brock University
Norman Ragetlie	Central	Rural Ontario Institute
Megan Myles	Northern	Municipality of Northern Bruce Peninsula
Patrick Robson	Southern	Niagara College
Victoria Serda	Northern	Baagida-Waad Alliance

Subsequent to the September 24 workshop, the Niagara Escarpment Foundation (NEF) requested short biographies of the TLC members for purposes of NEF’s final project report to the Greenbelt Foundation. Please see Item #3 in the Appendices.

Working Groups

All individuals contacted by email were given the opportunity to rank the four Working Groups in terms of their personal preference and expertise. A total of 13 individuals responded to the survey. The Governance and Program Working Groups were disproportionately favoured with 6 individuals on both and only one individual selecting the Communications Working Group. No one indicated a desire to serve on the Fundraising Working Group.

It was decided that better distribution of skills and individuals amongst the four Working Groups would be an important focus at the September 24 workshop, the results of which are reported in the next section of this report.

SEPTEMBER 24 WORKSHOP WITH NEBR PARTICIPANTS

A meeting of 23 individuals from organizations, sectors and regions across the Niagara Escarpment Biosphere Reserve gathered at the Mono Community Centre September 24 to help launch the Transitional Leadership Committee and the four Working Groups as discussed and refined at the July 30 workshop. Three-quarters of the participants had attended in July, while approximately one-quarter were new to the current process. Some had participated in NEBR planning activities in 2015-16 and 2018. Judging from comments made in the introductions at the start of the workshop and by the lack of clarifying questions posed in the various sections of the day's agenda, the group that gathered on September 24 seemed clear on its task and unified in terms of interest level and commitment to the day's tasks which included:

- Confirming TLC membership & Working Groups
- Articulating the NEBR 2.0 Mission
- Convening initial Working Group meetings
- Convening a brief inaugural TLC meeting

Review of Proposed Guiding Principles

The following compilation of guiding principles is based on work completed in 2015 and at the July 30 workshop.

NEBR 2.0 Proposed Guiding Principles:

- Facilitate an action oriented, results driven, collaborative approach to support the long-term sustainability of the NEBR.
- Accept as a first priority, sustaining the biosphere (its plants, animals, people and geology).
 - Strive to protect sacred sites and not monetize them.
- Encourage diverse and inclusive participation.
 - Understand, recognize and implement calls to action from the Truth and Reconciliation Commission of Canada and The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).
 - Create ethical spaces for Indigenous/non-Indigenous dialogue.
 - Build on the basis of co-management.
- Enshrine the notion that while the NEBR is a non-partisan organization, it may, from time to time have to speak out on matters of importance to the Niagara Escarpment and NEBR members
- Facilitate and maintain an accessible, open and transparent network which enshrines a democratic decision-making process and fosters effective and continuous communications.
- Recognize, celebrate and share the successes achieved by the network of individuals and organizations that comprise NEBR 2.0.
- Promote respect, build new relationships and embrace diverse ideas, knowledge, cultures, and experiences of all the network members.

UNESCO Biosphere Reserve designation renewal: Scope of Work

John Stuart of the Niagara Escarpment Commission staff provided a brief presentation on the scope of work involved in renewal of the UNESCO Biosphere Reserve (BR) designation (see Appendix items #4 & #7).

- Maintenance of the BR designation requires renewal every ten years and is initiated by the Canada MAB (Man and Biosphere) Committee. The next review is anticipated for 2022.
- The renewal process:
 - Must be:
 - transparent to stakeholders
 - inclusive
 - accessible
 - equitable
 - respectful
 - realistic
 - meaningful and useful
 - Requires deep reflection and setting strategic direction for next 10 years
 - Results in a detailed report which forms basis of UNESCO renewal assessment
 - Must show compliance with criteria of a functioning biosphere reserve (per Article 4 of the *Statutory Framework of the World Network of Biosphere Reserves*⁷ which provides the criteria that an area or must meet in order to qualify for the UNESCO Biosphere Reserve designation.
- The process involves:
 - Appointment of reviewer through Canadian Commission for UNESCO (CCU)
 - Reviewer and BR convener establish overall plan for review
 - Reviewer visits BR and participates in activities, interviews, etc.
 - Requires notice to public and network
 - BR prepares self-study document (outline provided by UNESCO & based on previous reviews)
 - Collaboration on the final report submitted to UNESCO
- The Self-Study:
 - Provides geographical and social context
 - Details the conservation function, sustainable development function
 - Illustrates NEBR's logistics function: e.g. research, monitoring, education, governance, and community engagement
 - 'Steering Committee' to guide self-study
 - NEC to provide support in secretariat role

Defining the NEBR 2.0 Mission

A priority arising from the July 30 workshop was the clear articulation of purpose for NEBR 2.0. To address this, a group exercise was undertaken at the September 24 workshop which focused on two related questions:

- What will NEBR 2.0 focus on?
- Where should limited resources go?

A process involving individual reflection, working in pairs and tabulating each pair's most cogent ideas resulted in 11 themes - see below. While there was insufficient time to word-smith these ideas into tightly

⁷ Appendix Item #7 - Statutory Framework of the World Network of Biosphere Reserves

worded statements, these materials will be useful ingredients for the TLC, supported by its Working Groups, to formulate powerful mission, vision and values statements and to define strategic priorities for the new organization once it becomes incorporated.

1. Co-management:

- Indigenous co-development
- A regional intersection of global goals through Indigenous land management and leadership (ie. Land Guardians)
- Reconciliation
- Improve meaningful Indigenous relationship-building
- Integrate Indigenous communities within NEBR

2. Network convening and knowledge exchange:

- Connecting and convening initiatives across bioregion
- Connect organizations doing NEBR work to share information and experience
- Connect groups
- Education other Niagara Escarpment organizations on how they can support process

3. Ecosystem services:

- Share evidence of ecosystem health/function in biosphere
- Recognize the value that nature brings to the economy

4. External communications and collaboration:

- Celebrate and encourage collaboration and engagement
- Build a constituency of support
- Share success stories
- Communication with public and stakeholders
- Be a conduit to posting of stories, research papers, local volunteer opportunities and events

5. An evidence-based organization:

- Values traditional Indigenous and Western academic science
- Collaboration and study

6. Building capacity of regional organizations:

- Regional organizational capacity builder for local groups
- Add capacity to member organizations
- Act as formal linkage to all Niagara Escarpment interests

7. Biosphere protection, renewal and enhancement:

- Protect the Niagara Escarpment for future generations
- Protect and enhance the Niagara Escarpment Parks and Open Space System (NEPOSS)
- Environmental protection
- Environmental preservation and renewal
- Environmental enhancements
- Biosphere development
- Promote preservation and stewardship
- Manage trees
- Improve measures to safeguard endangered species

8. Public education and awareness:

- Explain to the public what UNESCO designation means
- Educational initiatives: promoting knowledge of the NEBR
- Education

9. Designation renewal and strengthening:

- Renew and secure UNESCO biosphere designation
- Review and maintain biosphere reserve designation

10. Inspiring change:

- Challenge status quo
- Influence land use planning/land management stewardship activities
- Advocate for responsible use

11. Global presence:

- Connect NEBR to global network

NEBR 2.0 Working Groups

Of the 13 individuals who indicated a desire to join one of the Working Groups, six indicated interest in the Governance Working Group and six in the Program Working Group. Just one individual indicated an interest in serving on the Communications Working Group and nobody volunteered to join the Fundraising Working Group. When this reality was presented to the group, it was decided to rebalance the working groups (through another self-selection) in the interest of completing a break-out exercise.

Governance:

- Meredith Davis (facilitator)
- Norman Ragetlie (TLC)
- Michael Johnston
- Phil Monteur
- Deb Pella Keen
- John Haselmeyer
- Laura Robinson

Communications:

- Linda Pim (facilitator)
- Megan Myles (TLC)
- Patrick Lam
- Michael McDonald
- Bob Patrick

Program Development:

- John Stuart (facilitator)
- Robin Linn
- Don Avery
- Bob Barnett
- Brenda Carling
- Kevin Predon

Fundraising:

- Stephen Woeller (facilitator)
- Victoria Serda (TLC)
- Paul Toffoletti

For the break-out exercise, a TLC member and a separate facilitator were assigned to each Working Group and were asked to discuss the group's priority activities, the resources necessary and the expected results from undertaking the activities.

The Governance Working Group was fortunate to include individuals from Neyaashiinigmiing (Chippewas of Nawash) and Six Nations of the Grand River. This provided the opportunity for candid discussion regarding one of NEBR 2.0's prime directives (both internally and from UNESCO) to create a new organization that is inclusive of and relevant to Indigenous organizations and communities within the Niagara Escarpment Biosphere Reserve and those Indigenous communities beyond the NEBR who consider the Niagara Escarpment part of their traditional / ancestral lands. This discussion remained "high level" and succeeded in articulating key considerations for the TLC moving forward, including:

- Remember that equality is different from fairness: Equality is everybody getting the same thing and fairness is getting what you deserve
- Ask Indigenous people to co-build the governance model
 - Commit to co-management approach

- Reserve seats on the TLC for Saugeen Ojibway Nation (SON)⁸, Six Nations of the Grand River and Mississaugas of the Credit First Nation
- Extend formal invitations to each band council so they can decide what is the best process for selecting a representative who is community-backed
- Send appropriate information that clearly details what the goal of this organization is
- Recruit an Indigenous chair or co-chair
- Share the report that was prepared by Plenty Canada for the Niagara Escarpment Commission following the two Indigenous workshops in 2017
- Long-term:
 - Ensure the new organization can engage in environmental enforcement and has longevity
 - Support legal cases/environmental litigation that Indigenous communities on the Escarpment are engaged in

Program Working Group Notes: The Program Working Group placed priority on the renewal of the designation. Details related to timing and process are contained in the presentation provided by John Stuart earlier in the session (see Appendices, Item #4).

Activities	Inputs	Results	Time
Biosphere renewal			
Monitoring (natural environment)	Data; jurisdiction; people; methods; assessment/ interpretation	Data/ info hub; improved quality of biosphere; inform change	Annual/ biannual reporting
Network mapping (inventory)	Internet results; existing membership; people/time; Indigenous inputs	List of experts; increased understanding of capacity	ASAP
Enhancement of ecosystem services	Understanding community perception; research; collaboration	Education of decision-makers	
Monitoring (cultural/ social/ economic)			
Encourage hierarchy of protection	Categorization	Recognition of champions	

⁸ Saugeen Ojibway Nation, SON and the Chippewas of Saugeen Ojibway Territory is the name applied to Chippewas of Nawash Unceded First Nation and Saugeen First Nation as a collective per https://en.wikipedia.org/wiki/Saugeen_Ojibway_Nation_Territory accessed 10/14/19

Communications Working Group Notes:

Activities	Inputs	Results	Time
Develop communications plan	People time; Indigenous engagement action plan	Completed communications plan (vetted by TLC)	Jan 15, 2020
IT infrastructure: website; internal e-lists; doc sharing (e.g. Dropbox, GoogleDrive); tele/ videoconference for meetings	Need to one person to coordinate; People time, \$2,500/ 1st year	IT Plan	Feb 2020 (Website); Now: e-lists and doc sharing
Stakeholder inventory and Indigenous communities	Info sources: NEC, NEBR orgs, CC UNESCO, CBRA, Indigenous consultants' outputs		January 15, 2020

Fundraising Working Group Notes:

Activities	Inputs	Results	Time
Determine charitable facility "gifts / donations"	Partners with charitable status; agreements	Ability to receive charitable gifts; ability to approach foundations	Immediate
Writing the story "case" internal	People, skills and time, evidence, financial goal, consensus	Written case for support	November 30th
Collateral: simple to complex; brochure; website; business cards; proposal template	People, skills and time, design, printing, budget/\$	Public facing materials	
Fundraising plan: strategies, tactics, timeline, budget	People, skills and time: list of opportunities; prospects; key dates and deadlines; awareness of competition; budget	Fundraising plan actionable and activated	
Activities: ambassadors	List of prospective ambassadors; training; sales kit; volunteer coordinator; protocols - booking, reporting; database		
Asset map: spheres of influence and physical assets	People and time; database; knowledge		

Transitional Leadership Committee: Inaugural Meeting

With just three of five TLC members present, a very brief inaugural meeting of the TLC was held immediately after the September 24 workshop. The group consisted of Norman Ragetlie, Victoria Serda and Megan Myles. Absent were Liette Vasseur and Patrick Robson. It was decided to postpone official business until a full meeting could be scheduled within approximately two weeks' time.

The only order of business in this first meeting was the clear articulation that effective immediately, all decisions related to the NEBR would henceforth rest with the newly appointed Transitional Leadership Committee and that the Niagara Escarpment Commission would assume a support role of Secretariat to the TLC.

The meeting was then adjourned.

APPENDICES

Item #1 - September 24th Meeting Attendees

<u>Last Name</u>	<u>First Name</u>	<u>Organization</u>
Avery	Donald	Independent Researcher
McDonald	Michael	Bruce Trail Conservancy
Lam	Patrick	Ontario Alliance of Climbers
Carling	Brenda	Dufferin Bruce Trail Club
Haselmayer	John	Parks Canada
Robinson	Laura	Velo Canada Bikes
Serda	Victoria	The Bagida'waad Alliance & SauGreen for the Environment
Myles	Megan	Northern Bruce Peninsula
Monture	Phil	Six Nations of the Grand River Territory
Barnett	Robert	Escarpment Biosphere Conservancy
Linn	Robin	Six Nations Lands and Resources
Robertson	Susan	People Plan Community
Toffoletti	Paul	Iroquoia Bruce Trail Club
Pella Keen	Deb	Plenty Canada
Predon	Kevin	Bruce County
Robert	Patrick	Coalition on the Niagara Escarpment
Ragetlie	Norman	Rural Ontario Institute
Johnston	Michael	Neyaashiinigmiing Community Member
Stuart	John	Niagara Escarpment Commission
Lomuti	Julia	Niagara Escarpment Commission
Woeller	Stephen	Terrapin
Davis	Meredith	Good Roots
Pim	Linda	Niagara Escarpment Foundation

Item #2 - Survey to express interest in TLC &/or Working Groups

Express your interest.

Arguably, the UNESCO Biosphere Reserve mission has never been as relevant or needed as it is today.

Biosphere Reserves demonstrate positive relationships between human needs and protection of nature and the environment. They encourage and promote sustainable development, knowledge sharing, poverty reduction, well-being, respect, traditional knowledge and, improvement in our ability to address climate change.

Leadership of the NEBR is transitioning from the Niagara Escarpment Commission (NEC), an Ontario Government agency, to a proposed community-based organization where the NEBR can make a greater contribution to the lives and work of individuals, organizations and communities along the escarpment. This new leadership will be what we're calling "NEBR 2.0".

A Transitional Leadership Committee (TLC) of about 5 volunteers is being assembled for a one-year period to lead this transition. Volunteers are also being recruited to join one of four working groups (governance, fund raising, communications, program development) that will support the TLC through the transition. The Niagara Escarpment Commission will provide administrative support, technical expertise and institutional knowledge.

Are you interested in joining either the TLC or one of the working groups? Please use the form below to express your interest.

This web link will remain active until 5:00 PM on Friday September 20, 2019.

1. Your Name

2. Organizational Affiliation

3. Phone Numbers

Cell Phone

Land Line

4. Please express your interest in joining either the Transitional Leadership Committee or one of the working groups. Check both if you are interested in both.

The Transitional Leadership Committee

A Working Group

5. Please rank the following four priority areas in relation to your experience - where 1 is highest and 4 is lowest.

Organizational Governance

Fund Raising

Program Development

Communications

6. Briefly, why do you want to serve on the TLC or one of the working groups?

7. What experience, or special skills do you bring to the task of establishing an independent, community-based organization?

8. Are you able to contribute or help attract additional resources (volunteers, funds, in-kind support) to this project? Please describe.

9. Are you willing to commit 5 - 10 hours per month for a one-year period?

Yes

No

Please describe the commitment you are willing to make to founding the NEBR 2.0 organization.

10. Please share any additional information that will help explain your interest or potential contribution.

Item #3 - Transitional Leadership Committee Member Biographies

Megan Myles

Megan Myles grew up on the northern Bruce Peninsula where her family has lived for over five generations. Megan returned to the Peninsula full-time in 2015 and opened The Fitz Hostel in Lion's Head. In the fall of 2018, she was elected a councillor for the Municipality of Northern Bruce Peninsula (NBP). Prior to her municipal election, she served as Chair of the Bruce Peninsula Environment Group (2015-2017), initiated the NBP Sustainable Tourism Management Plan (2017), served on the steering committee of the Peninsula Action Committee for Education, and founded the Lion's Head Farmers' Market (2008). Megan graduated with a Bachelor of Arts and Sciences from Quest University Canada in Squamish, B.C., where she specialized in partner collaboration and environmental studies. She also earned an honourable mention for her undergraduate thesis on collaboration among small-scale farmers in rural Ontario (2013). She received the Lieutenant Governor's Ontario Medal for Young Volunteers (2011) and the Sources of Knowledge Award of Excellence (2016).

Norman Ragetlie

Norman Ragetlie is Executive Director of the Rural Ontario Institute (ROI). After early work with Pollution Probe in environmental advocacy and managing a Toronto food co-operative, Norman completed an MSc at the University of Guelph in rural planning. He then worked in municipal government for 10 years as a professional planner on an award-winning sustainable community development program and on natural heritage protection in Hamilton-Wentworth. He then worked for 10 years at the Ontario Ministry of Agriculture, Food and Rural Affairs on capacity building to support rural community economic development, engaging with many municipal and economic development stakeholders across Ontario to adapt new approaches to the local community context. He served as Chair of the Ontario Farmland Trust for seven years. A strong collaborator, Norman has led diverse partnership projects and studies at ROI on topics relevant to rural communities as well as conducting statistical analysis on Ontario rural geographies. He is a trail captain with the Sydenham Bruce Trail Club and lives on the shores of Georgian Bay in Grey County.

Patrick Robson

Patrick Robson holds a Bachelor of Applied Arts in Urban and Regional Planning from Ryerson University and a Master of Arts in Politics from Brock University. He is a Member of the Canadian Institute of Planners. Currently, Patrick is a Professor in the Environmental Management and Assessment post-graduate program at Niagara College. In March 2017, he was appointed to the Buffalo and Fort Erie Public Bridge Authority (a.k.a. Peace Bridge Authority). Previously, he held positions as a private sector planning consultant, a planner with the Niagara Escarpment Commission, an investigator with the Ontario Human Rights Commission and positions at the Regional Municipality of Niagara, including Commissioner of Integrated Community Planning. He served three terms as a Councillor in Wainfleet and has taught public policy at Brock University. He has also presented at numerous conferences across Canada and in the U.S. Germany, Japan and South Africa. He is currently on the Board of Directors of the Golden Horseshoe Food and Farming Alliance.

Victoria Serda

Victoria Serda has spent most of her life in Saugeen Ojibway Nation traditional territory as a settler ally, currently lives in Port Elgin with her husband Jamie, and enjoys spending time with her daughter Corrina and grandson Creegan in their community at Neyaashiinigiing (Chippewas of Nawash Unceded First Nation). Victoria sits on the board of SauGreen for the Environment, Bagida'waad Alliance (Neyaashiinigiing's fisher-led not-for-profit corporation), and the Climate Reality Project Canada. She served as a municipal councillor in Saugeen Shores from 2006 to 2010. By invitation, worked as a Strategic Advisor to the Chippewas of Saugeen First Nation Band Council for four years, doing community engagement and project development. She holds a Bachelor of Independent Studies degree specializing in democratic education and a post-graduate Certificate in Indigenous Governance and Administration. She hopes to help lead the Niagara Escarpment Biosphere Reserve into a meaningful and trusting relationship with Indigenous communities across the Escarpment, engage all communities together to support protection and enhancement of the current Biosphere ecosystems, and promote planning and action on the climate crisis.

Liette Vasseur

Dr. Liette Vasseur is a full professor in the Department of Biological Sciences at Brock University where she is also a member of the Environmental Sustainability Research Centre. Since 2014, she has held the UNESCO Chair on Community Sustainability: From Local to Global at Brock. Her research program is highly interdisciplinary and links issues such as community-based ecosystem management, climate change adaptation and resilience, and sustainable agriculture. She works in China, where she is a visiting scholar at Fujian Agriculture and Forestry University. Her work in Ecuador focuses on community sustainability and ecosystem-based adaptation to climate change of rural native communities in the Andean region of the Chimborazo. In Canada, in addition to her research program in sustainable agriculture, climate change and ecosystem management, she works with various groups on environmental stewardship, especially regarding conservation. She is also involved in women in science, technology, engineering and mathematics (STEM) in her program and is the past president of the Canadian Coalition for Women in Engineering, Science, Trades and Technology. She is President of the Canadian Commission for UNESCO (CCUNESCO). She also is the vice-chair for North American Region of the Commission for Ecosystem Management at the International Union for the Conservation of Nature and leads the thematic group on Ecosystem Governance. She has been involved with Southwest Nova and Fundy Bay Biosphere Reserves and has conducted periodic evaluations for the CCUNESCO.

Item #4 - September 24 Presentation Slides

GOOD ROOTS

Establishing NEBR 2.0

Niagara Escarpment Biosphere Reserve

Presentation to NEBR Participants

September 24, 2019

1

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GOOD ROOTS

Journey to NEBR 2.0

```

    graph TD
      A[Long history of good work] --> B[Terrapin & Good Roots engaged]
      B --> C[Literature review]
      C --> D[Interviews with other biosphere reserves]
      D --> E[Interviews with sample of NEBR participants]
      E --> F[NEBR meeting July 30, 2019]
      F --> G[Draft model - "transitional"]
      G --> H[Survey with NEBR participants]
      H --> I[NEBR meeting September 24, 2019]
      I --> J[NEBR 2.0 Initial TLC meeting]
      F --> K[Revised model TLC, working groups, NEC]
      K --> L[Process to confirm TLC & working groups]
      L --> M[NEBR meeting September 24, 2019]
  
```

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Today's Meeting Objectives

- Confirm TLC & working groups
- Articulate NEBR 2.0 Mission
- Assemble Working Groups
- Hold brief inaugural TLC meeting

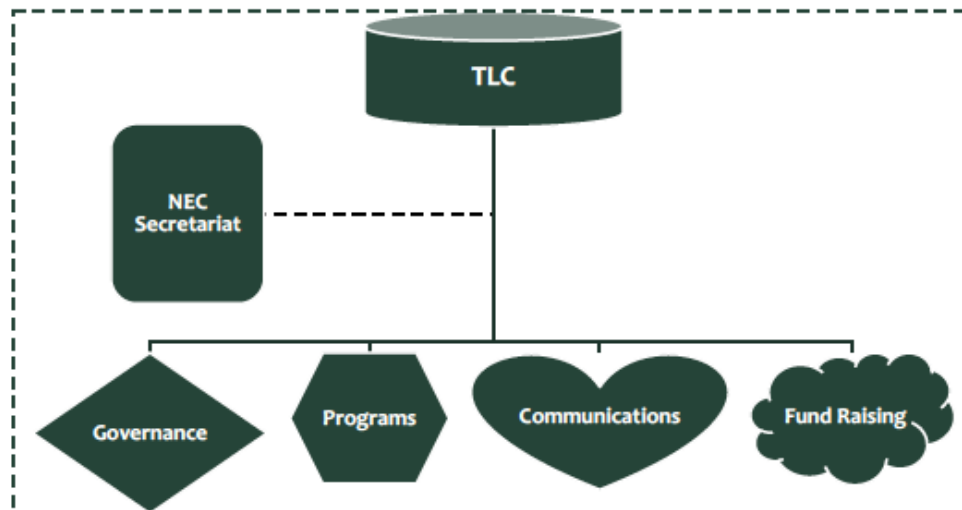


Meeting Agenda

- Presentation
 - Transitional model
 - TLC & working groups
 - Scope of work
- Exercise
 - Confirming our Mission
- Lunch
- Breakout
 - Working Groups
 - Priorities
 - Resources
 - Desired outcomes
- Wrap up
 - Confirm next steps
- Brief inaugural TLC meeting



Proposed Organizational Model



Guiding Principles

compiled from 2016 working group & July 30, 2019 workshop

- Facilitate an action oriented, results driven, collaborative approach to support the long term sustainability of the NEBR.
- Accept as a first priority, sustaining the “biosphere” (its plants & animals).
 - Strive to protect sacred sites and not monetize them.
- Encourage diverse and inclusive participation that is representative of civil society.
 - Adopt recommendations from the Truth and Reconciliation Commission of Canada.
 - Make it a priority to understand and create ethical spaces for Indigenous people.
- Enshrine the notion that while the NEBR is a non-partisan organization, it may, from time to time have to speak out on matters important to the integrity of the Niagara Escarpment, the Biosphere Reserve and/or its members.
- Facilitate and maintain an accessible, open and transparent Network which enshrines a democratic decision-making process and fosters effective and continuous communications.
- Promote respect, build relationships and embrace diverse ideas, knowledge, cultures, and experiences of all the Network members.
- Recognize, celebrate and share the successes achieved by the Network of individuals and organizations that comprise NEBR 2.0.

Expressions of Interest: TLC & Working Groups

- July 30 meeting of NEBR participants
 - An initial group of 6 individuals identified their interest to serve on the TLC or one of the working groups
- Survey
 - A follow up survey was distributed on the following dates to the NEBR mailing list seeking further expressions of interest.
 - August 9
 - August 27
 - September 3
 - September 13
- Total expressions of interest to serve on TLC or working group:

Respondents	TLC	Working Groups	Both
17	9	13	7

TLC – 9 individuals expressed interest

- Regional distribution
 - 3 from North
 - 3 from Central
 - 3 from South
- Gender distribution
 - 5 women
 - 4 men

Sectoral Representation



- NGO Indigenous Fishery -1
- NGO Sport -1
- NGO ActiveTransport -1
- NGO Conservation -1
- NGO -Rural CED -1
- Municipal Government -1
- Academia -2
- Professional -1

Transitional Leadership Committee

- Liette Vasseur
- Norman Ragetlie
- Megan Myles – pending MNBP approval
- Patrick Robson
- Victoria Serda

Working Groups – 13 individuals expressed interest

- Regional distribution
 - 4 from North
 - 5 from Central
 - 4 from South
- Gender distribution
 - 8 women
 - 9 men



Working Groups

- Governance
 - Patrick Robson
 - Meredith Davis
- Communications
 - Megan Myles
 - Linda Pim
- Program
 - Norman Ragetlie
 - John Stuart
- Fund Raising
 - Victoria Serda
 - Stephen Woeller

Notes from July 30: Governance/Leadership

- Understand this is a transitional phase of governance
 - **Working towards long-term governance at the end of 12 months**
- **Priority on maintaining designation** & relationship with UNESCO
- Establish/articulate a clear organizational purpose – essential to attract leadership
 - Establish tangible goals and evaluation strategy
- **Attract balanced, representative leadership for long term** –
 - **Must focus beyond current transitional phase**
 - **Must be relevant to Indigenous needs & priorities**
 - **Must be attractive to the next generation**
 - **Clear understanding of desired skills - focus on attracting the right talent**
- Must be flexible to facilitate participation from smaller orgs
- **Huge advantage given 1.3 M population within NEBR**
- Must be **nimble & flexible** to change with a changing environment
- Become a **connector** organization so people with common priorities can find each other

Notes from July 30: Program Development

- Program **priority – biosphere reserve designation renewal**
 - This involves becoming community based
 - Addressing the priorities of Indigenous communities and organizations
 - Taking action on climate change
 - Active transportation should be a priority: safe cycling
- Need a **strategic plan** working groups and member organizations can link their activities to
 - Should link to broader priorities e.g. Truth and Reconciliation Commission, UN Sustainability Goals, UNESCO's Man and Biosphere principles
- **Focus on Knowledge Translation & Exchange** : promote peer to peer exchange about great stuff going on within the BR
- Focus on **collaboration and partnerships**, including with corporations, landowners
 - Outreach programs focused on needs of land owners and municipal decision-makers
- Consider existing programs like **Canadian Council for UNESCO's** ecosystem service assessment – lots of good programmatic material available
- Monitor the health of the BR: pull together the data (e.g. Muskoka Watershed Council)

Notes from July 30: Communications

- **Strategic plan**
- Become the keeper and articulator of NEBR 2.0's **clear, compelling purpose**
- Use evaluation metrics in communications – **be evidence-based**
- **Make use of the existing capacity of other groups**
- **Be ahead of the curve with communications technology** use and adoption
- **Information/ data storage and sharing**
- **Re-establish Leading Edge conference**
- Support **Indigenous organizations & communities**
- Recognize successes: celebrate and make people feel like they can make a difference
- Focus on amazing places in the biosphere
- Reflect local importance
- Empower, be a vehicle for positive social change
- International recognition

Notes from July 30: Fund Raising

- **1.3 million people** live within the NEBR: A huge asset for fund raising
- Work with Comms WG to develop a great case for support and beautiful FR materials
- Focus on predictable **'operating funds'**:
 - membership fees, varying fee structure, in-kind investment, planned giving (wills and estates): endowments, bursaries
- **Build capacity for fund development across the network**, collaborate on grant applications, explore potential to become a funder
- **Engage private sector**: development, aggregate industry, corporations
- Need skilled, magnetic individual to drive fund development forward
- Possible funders: JW McConnell Foundation (Up to 30K to fund a start-up), Metcalf Foundation
- Opportunities for **in-kind support**: grad students: define in-kind equivalent
- Ability to leverage work done/being done
- Develop **social enterprises** in conjunction with funding sources

Acknowledgement



Biosphere Renewal - Scope of Work

- 2022 Scheduled Review
 - Initiated through CanadaMAB Committee
- Purpose:
 - Reflection and setting strategic direction for next 10 years
 - Production of a report
 - Information for reviewers to assess compliance with criteria of a functioning biosphere reserve (Article 4)
- Intention:
 - Clear, transparent, and fair
 - Open, inclusive, accessible, and equitable
 - Respectful
 - Realistic
 - Meaningful and useful



Biosphere Renewal - Scope of Work

- Process
 - Appointment of reviewer through Canadian Commission for UNESCO (CCU)
 - Reviewer and BR convener establish overall plan for review
 - Reviewer visits BR and participates in activities, interviews, etc.
 - Requires notice to public and network
 - BR prepares self study document (outline provided by UNESCO & based on previous reviews)
 - Collaboration on the final report submitted to UNESCO



Biosphere Renewal - Scope of Work

- Self-Study
 - Geographical and social context
 - Conservation Function
 - Sustainable Development Function
 - Logistics Function: Research, Monitoring, education, governance, and community engagement
- 'Steering Committee' to guide self-study
- NEC to provide support in secretariat role



Clarifying Questions



Exercise: Confirming our mission



Breakout: Working Groups



Breakout: Working Groups

- Tasks
 - Group agreement
 - Phones off
 - Hear everyone
 - Ask for clarification
 - Brainstorm & prioritize list of activities
 - List required inputs/resources
 - Describe desired results & timing
 - State your WG’s relationship to the other WGs
 - Create meeting schedule and format

Example – Fund Raising Group - Worksheet

Activities	Required Inputs	Desired Results	Timing
Case for support (internal document)	People time, evidence, financial goal, writing	Written case for support, shared script among NEBR people	Nov 30 2019
Develop collateral materials (external docs)	People time, design, printing, electronic, budget	Public-facing fund raising materials,	April 30, 2020
Fund raising calls	People time, prospect list, protocols, training, scheduling, calls made, call reports filed, follow ups scheduled	Friends, funding	June 30, 2020

Breakout: Working Groups

- Report back
- Next steps

Reflections/Closing Remarks



Meeting: Transitional Leadership Committee



TLC Agenda

- Review logistics – John
- Review high level work plan - Stephen
- Confirm meeting schedule end of 2019 –
- Closing Remarks - Linda

High-level work plan

2019	September					October				November				December					2020	
	2	9	16	23	30	7	14	21	28	4	11	18	25	2	9	16	23	30	01/01 to	09/30
Consultant's Activities																				
Prepare facilitation materials for Sept 24 meeting																				
Facilitate NEBR 2.0 meeting September 24																				
Confirm TLC & working groups membership																				
Facilitate Sept 24 meeting at Mono Community Centre																				
Write & submit final report																				
TLC Activities																				
Seek Indigenous participation and leadership	<i>Activities and timing to be determined by Indigenous communities in discussion with Transitional Leadership Committee</i>																			
Create TLC Terms of Reference																				
Create transitional budget & plan																				
Management Meetings																				
Governance Working Group Activities																				
Create terms of reference for Governance working group																				
Create governance specific budget & plan																				
Implement governance plan, including incorporation																				
Program Working Group Activities																				
Create terms of reference for Program working group																				
Confirm BR designation renewal activities & schedule																				
Create program specific budget and plan																				
Implement renewal plan																				
Communications Working Group Activities																				
Create terms of reference for Communications working group																				
Create Communications specific budget and plan																				
Implement communications plan																				
Fund Raising Working Group Activities																				
Create terms of reference for Fund Raising working group																				
Produce fund raising case for support																				
Create Fund Raising specific budget and plan																				
Identify and approach prospective donors and grantors																				

Item #5 - TLC Candidate Expressions of Interest

Liette Vasseur

- **Briefly, why do you want to serve on the TLC or one of the working groups?**

Knowing very well the Biosphere Reserves in Canada and their organisation as well as their roles and mandates, I can be useful in advising on the various aspects of what can work or not. My experience in doing periodic review can help advise on ways that governance and activities can be effective and ensure that all mandates (not only conservation can be achieved).

- **What experience, or special skills do you bring to the task of establishing an independent, community-based organization?**

I have been part of several organisations as founder, president, etc. including the establishment of Fundy Bay BR and helping for the application of the Southwest Nova BR. I have done periodic reviews in various BR of Canada. I also published through the CCUNESCO a manual for the assessment of ecosystem services, one of the obligation in the periodic review (self-study).

- **Are you able to contribute or help attract additional resources (volunteers, funds, in-kind support) to this project? Please describe.**

I will need to discuss with my university.

- **Please describe the commitment you are willing to make to founding the NEBR 2.0 organization.**

There should be a maybe! I don't mind if it is to ensure work done. I would be OK if we try to make most of the meetings electronically to avoid a 5-6 hours driving to get to and come back from a meetings

Victoria Serda

- **Briefly, why do you want to serve on the TLC or one of the working groups?**

To ensure proper diplomacy for Indigenous engagement, build from strengths through solution-oriented programming, & promote grassroots engagement in the new organization. It is important to protect Mother Earth and Niibi (the water) for future generations to the best of our ability, and also keep climate mitigation and adaptation at the forefront of the actions. It would also be good to see the Sustainable Development Goals and Index of Wellbeing metrics built into the planning, and for community members to be actively engaged.

- **What experience, or special skills do you bring to the task of establishing an independent, community-based organization?**

Community-based social entrepreneur for my whole life, with a majority of my work in Grey/Bruce...have formed multiple not-for-profit corporations, including the Grey Bruce Sustainability Network. Sat on the board of Community Foundation Grey-Bruce. Ran a volunteer centre/non-profit support office, founded and am on the board of SauGreen for the Environment, Bagida'waad Alliance (Indigenous Fisher-led environmental group), Climate Reality Project Canada. Served as a Municipal Councillor in Saugeen Shores from 2006-2010. Worked as a Strategic Advisor to the Saugeen First Nation Band Council for 4 years, hold a post-graduate Certificate in Indigenous Governance and Administration. Have developed Indigenous environmental diplomacy training in conjunction with Elders, have extensive experience in grassroots community engagement and asset-based community development implementation.

- **Are you able to contribute or help attract additional resources (volunteers, funds, in-kind support) to this project? Please describe.**

I have an extensive network through the Climate Reality Project internationally and provincially, as well as my own strong network regionally around Grey-Bruce. I have fundraised for environmental organizations extensively as well.

- **Please describe the commitment you are willing to make to founding the NEBR 2.0 organization.**

Using my networks to support the recruitment of additional capacity and resources, grant application advice, strategic planning, governance expertise.

- **Please share any additional information that will help explain your interest or potential contribution.**

I am trusted and invited to work in two Anishinaabe communities in my area (Saugeen and Nawash), and it will be key to the Biosphere's renewal to have proper Indigenous diplomacy and real engagement to be successful.

Laura Robinson

- ***Briefly, why do you want to serve on the TLC or one of the working groups?***

I am a founding member of the Owen Sound Cycling Club and have watched cycling become a viable form of transportation and recreation since the 1970's. This has allowed me to cycle in the Bruce and virtually all other areas of the Niagara Escarpment. As a founding member of the Bruce Ski Club (1977), I have xc skied in much of the Bruce, and areas such as Mono, Caledon, Albion, etc. Watching and experiencing the effects of climate change on these areas, from the saddle of a bike and from ski trails, has been life-altering. There is much at stake. Additionally, I coached mt biking and cross-country skiing for many years at Nawash First Nation and believe Indigenous knowledge will be crucial to where biospheres and the Earth in general are headed. We are at a precarious fork in the road.

- ***What experience, or special skills do you bring to the task of establishing an independent, community-based organization?***

As mentioned above, I am a founding member of both the Owen Sound CC and the Bruce Ski Club. I also helped found and get off the ground the national cycling advocacy organization, Canada Bikes. Most recently I helped found the Southampton Cultural Heritage Conservancy. For the past four years I have organized, with the faith community and Saugeen and Nawash, reconciliation events. My work, play and film, Niigaanibatowaad: FrontRunners is cited in the Truth and Reconciliation Commission Report as an example of how we can utilize sport, culture and art in reconciliation. In 2006 I received the Cum Laude Award from Southern Ontario Division (cross-country skiing) for commitment to the sport, 2008 the Nawash Chief's Award for coaching the Anishiinaabe Racers, 2012 Honourary Doctorate of Laws, York University for committed to equity in sport and physical activity, 2017 Second Nawash Chief's Award, 2018 Lifetime Achievement Award from Canada Bikes, 2019 lifetime commitment award from Bruce Ski Club.

- ***Are you able to contribute or help attract additional resources (volunteers, funds, in-kind support) to this project? Please describe.***

I believe both the Owen Sound CC and the Bruce Ski Club have a wonderful volunteer base and many members who are committed to the values of the biosphere. As mentioned above, I also have worked for a number of years--first as a coach and then as a organizer of reconciliation events--with Saugeen, Nawash and the local faith community. All of these groups care deeply about the biosphere, climate change and where we go from here. I believe there would be a number of excellent volunteers and in-kind support.

- ***Please describe the commitment you are willing to make to founding the NEBR 2.0 organization.***

Working with other local organizers to obtain local input for new plans; attending conference calls with the larger group, and taking on responsibilities that are doable and do not over-extend my commitment.

- ***Please share any additional information that will help explain your interest or potential contribution.***

I very much believe we need to understand the biosphere as a place where it should be easy to snowshoe, xc ski, paddle, hike, SUP, ride a bike in, and access through public transit--such as the Park Bus and other ways in which organizations seek to limit fossil fuel in transportation. We need to find a way to limit fossil fuel consumption and use in the biosphere. I joined the Mississauga Cycling Club in 1972 and started xc skiing that year too. Nearly 50 years later, I still believe we should experience the land and water in a gentle but profound way, self-propelled as often as possible. As a coach I tried to create an environment where young people would experience this kind of magic. At the same time, the First Nation youth I coached taught me just as much about their relationship with their traditional lands and water.

Robert Patrick

- ***Briefly, why do you want to serve on the TLC or one of the working groups?***

This network has never been more needed. I believe it is vital to maintain the UNESCO designation and this may be key.

- ***What experience, or special skills do you bring to the task of establishing an independent, community-based organization?***

27 years in the OPS as a project coordinator. Live on the Escarpment. On the board of three NGO environmental groups. Chair two.

- ***Are you able to contribute or help attract additional resources (volunteers, funds, in-kind support) to this project? Please describe.***

Maybe. CONE is financially strapped however we are restructuring and recruiting volunteers. Others involved in this task are from CONE member organizations.

- ***Please describe the commitment you are willing to make to founding the NEBR 2.0 organization.***

I will make myself available to do whatever the committee wishes me to do.

- ***Please share any additional information that will help explain your interest or potential contribution.***

Optimistic, empowered and ready to role. Have two homes that I can use as a work from base. Oakville and Lion's Head.

Bob Barnett

- ***Briefly, why do you want to serve on the TLC or one of the working groups?***

NEBR is NB and needs community involvement

- ***What experience, or special skills do you bring to the task of establishing an independent, community-based organization?***

Run the biggest Ontario-focussed land trust and its on the Escarpment substantially. 15 reserves are recognized by NEP.

- ***Are you able to contribute or help attract additional resources (volunteers, funds, in-kind support) to this project? Please describe.***

maybe

- ***Please describe the commitment you are willing to make to founding the NEBR 2.0 organization.***

depends on needs, certainly broadcast info in our newsletter and other communications

Please share any additional information that will help explain your interest or potential contribution.

- Our EBC is an important player in NE protection.

Norman Ragetlie

- ***Briefly, why do you want to serve on the TLC or one of the working groups?***

I care about the future of the natural legacy of the escarpment. I believe in partnerships and collaboration and support the evolution of a model that can integrate civil society, business/tourism interests and government agencies under a sustainability set of principles. I have organizational development experience and program experience that can be brought to bear.

- ***What experience, or special skills do you bring to the task of establishing an independent, community-based organization?***

I am an experienced NGO ED who raises funds and supports a Board and manages staff. I am an experienced volunteer chair of an NGO (7 years chair of the Ontario Farmland Trust). Professionally I have led community development initiatives for the province as a civil servant and sustainable community initiatives with a local government on the escarpment that engaged business, agency, community organizations and citizens. I have a substantive stakeholder engagement track record.

- ***Are you able to contribute or help attract additional resources (volunteers, funds, in-kind support) to this project? Please describe.***

Potentially. It really depends on how the development phases and components of the work are structured.

- ***Please describe the commitment you are willing to make to founding the NEBR 2.0 organization.***

I am able to meet once a month, prepare for those meetings by reading and understanding decisions that need to be made (Say 3-4 hrs per month) and also to meet with other stakeholders and/or seek resources through foundation grants or program sponsors for (say 2 hours or so per month.)

Megan Myles

- **Briefly, why do you want to serve on the TLC or one of the working groups?**

I recognize the rapid and large scale changes facing the NEBR, especially the northern peninsula. I want to continue to help bring different groups/organizations/levels of government together to address these challenges and help make "sustainable development" more understandable for residents in these communities.

- **What experience, or special skills do you bring to the task of establishing an independent, community-based organization?**

- Councillor, Municipality of Northern Bruce Peninsula (2018-Present) - Owner/manager, The Fitz Hostel (2015-Present) - Fathom Five Strategy Team, Fathom Five National Marine Park, Parks Canada (2017-2018) - Director/Secretary, Bruce Peninsula Biosphere Association (2007-09) - Chair, Bruce Peninsula Environment Group (2015-2017) - Steering Committee Member, NBP Sustainable Tourism Plan (2017-2018) - Founder & Manager, Lion's Head Farmers Market (2008-2010) - Interdisciplinary undergraduate degree from Quest University Canada, specializing in collaboration, community development & sustainability (2013)

- **Are you able to contribute or help attract additional resources (volunteers, funds, in-kind support) to this project? Please describe.**

Fairly extensive network in NBP, so likely volunteers and in-kind support, and potentially leads on funds.

- **Please describe the commitment you are willing to make to founding the NEBR 2.0 organization.**

Likely closer to 5 hours per month, but may be able to contribute more in the winter months.

- **Please share any additional information that will help explain your interest or potential contribution.**

Sarah King Head

- **Briefly, why do you want to serve on the TLC or one of the working groups?**

I could offer insights and expertise both as a grassroots heritage advocate in the Niagara region and as a published author and communicator. The initiative is extremely important and I believe I could help support the mandate and mission.

- **What experience, or special skills do you bring to the task of establishing an independent, community-based organization?**

I was one of the founding members of the Friends of Beaverdams Church, serving as Memberships Director for 4 years. Further to this, I helped establish the first website and social media presence, participated in countless fundraising initiatives and even published a book that chronicles the history of the community in which this important heritage building exists (both pre-contact Indigenous and European). I have nearly a decade's worth of experience working on municipal and heritage committees, dealing with everything from 1812 bicentennial activities to the mounting of the Ontario Heritage Conference in 2015.

- **Are you able to contribute or help attract additional resources (volunteers, funds, in-kind support) to this project? Please describe.**

I might be able to, but this is not something I would feel comfortable making a commitment to providing.

- **Please describe the commitment you are willing to make to founding the NEBR 2.0 organization.**

I could commit mostly seamlessly online: whether it be production/editing of promotional/communications materials or supporting the organisation's online presence. Moreover I would be prepared to help disseminate mission/mandate objectives and, in so doing, to encourage greater community involvement.

- **Please share any additional information that will help explain your interest or potential contribution.**

In addition to my experience in grassroots cultural heritage organisation development and support as well as my historical knowledge of the Niagara region (both Indigenous and European), the contribution I would most easily be able to provide would be through the production of didactics and/or promotional material both print and online. With a decade's worth of communications experience at an academic institution and as a journalist for an online weekly newspaper, I could help produce news releases and/or provide editorial support.

Patrick Robson

- **Briefly, why do you want to serve on the TLC or one of the working groups?**

As a former NEC planner, former Commissioner of Planning for Niagara Region and as a Professor of Environmental Studies at Niagara College, I have a keen interest in the entire Biosphere milieu

- **What experience, or special skills do you bring to the task of establishing an independent, community-based organization?**

Board governance, facilitation, and having founded and led strategic planning for a number of Boards, including YMCA Niagara, Land Care Niagara, Niagara 1812 Bicentennial Legacy Council, and the Niagara College Board of Governors. I currently sit as a federally-appointed member of the Buffalo and Fort Erie Public Bridge Authority (aka Peace Bridge Authority). I currently sit as Vice Chair of the Golden Horseshoe Food & Farming Alliance; I have received an award for Planning Excellence from OPPI for Niagara's Agricultural Policies and related programs, and a 'Brownie' Award from the Canadian Urban Institute for the Smarter Niagara Incentives Program (aimed at urban renewal, including Brownfield redevelopment); and, I facilitated then wrote the submissions for a number of organizations (i.e. Ontario Craft Wineries (then the Ontario Wine Council), Grape Growers of Ontario, and, Friends of the Greenbelt Foundation) for the Provincial Coordinated Review process.

- **Are you able to contribute or help attract additional resources (volunteers, funds, in-kind support) to this project? Please describe.**

Student energy as volunteers to conduct/assist with research, outreach and developing communications strategies (with strong emphasis on social media platforms)

- **Please describe the commitment you are willing to make to founding the NEBR 2.0 organization.**

provide process leadership and thought leadership

- **Please share any additional information that will help explain your interest or potential contribution.**

I have a vast array of Escarpment stories, especially in the Niagara and Hamilton areas - the biosphere can be more of an academic or symbolic recognition - it is the stories that bring it to life

Item #6 - TLC Candidate Survey

Please help select five individuals to serve on the NEBR Transitional Leadership Committee.
Please rank your top five candidates to serve on NEBR 2.0 Transitional Leadership Committee.

Keep in mind the composition of this small working group of five individuals must be as representative and diverse as possible. Please consider region, sector, gender, expertise & experience when making your selections.

Note: it is completely appropriate and expected you will include yourself in your selection.

1. Please rank your top five candidates for the NEBR 2.0 Transitional Leadership Committee, where 1 is your first choice and 5 is your fifth choice.

- Bob Barnett
- Laura Robinson
- Liette Vasseur
- Megan Myles
- Norman Ragetlie
- Patrick Robson
- Robert Patrick
- Sarah King Head
- Victoria Serda

Item #7 – Statutory Framework of UNESCO World Network of Biosphere Reserves

Introduction

Article 1 - Definition

Article 2 - World Network

Article 3 - Functions

Article 4 - Criteria

Article 5 - Designation procedure

Article 6 - Publicity

Article 7 - Participation in the Network

Article 8 - Regional and thematic subnetworks

Article 9 - Periodic review

Article 10 - Secretariat

Introduction

- Within UNESCO's Man and the Biosphere (MAB) programme, biosphere reserves are established to promote and demonstrate a balanced relationship between humans and the biosphere. Biosphere reserves are designated by the International Co-ordinating Council of the MAB Programme, at the request of the State concerned.
- Biosphere reserves, each of which remains under the sole sovereignty of the State where it is situated and thereby submitted to State legislation only, form a World Network in which participation by the States is voluntary.
- The present Statutory Framework of the World Network of Biosphere Reserves has been formulated with the objectives of enhancing the effectiveness of individual biosphere reserves and strengthening common understanding, communication and co-operation at regional and international levels.
- This Statutory Framework is intended to contribute to the widespread recognition of biosphere reserves and to encourage and promote good working examples. The delisting procedure foreseen should be considered as an exception to this basically positive approach, and should be applied only after careful examination, paying due respect to the cultural and socio-economic situation of the country, and after consulting the government concerned.
- The text provides for the designation, support and promotion of biosphere reserves, while taking account of the diversity of national and local situations. States are encouraged to elaborate and implement national criteria for biosphere reserves which take into account the special conditions of the State concerned.

Article 1 - Definition

Biosphere reserves are areas of terrestrial and coastal/marine ecosystems or a combination thereof, which internationally recognized within the framework of UNESCO's programme on Man and the Biosphere (MAB), in accordance with the present Statutory Framework.

Article 2 - World Network of Biosphere Reserves

1. Biosphere reserves form a worldwide network, known as the World Network of Biosphere Reserves, hereafter called the Network.
2. The Network constitutes a tool for the conservation of biological diversity and the sustainable use of its components, thus contributing to the objectives of the Convention on Biological Diversity and other pertinent conventions and instruments.
3. Individual biosphere reserves remain under the sovereign jurisdiction of the States where they are situated. Under the present Statutory Framework, States take the measures which they deem necessary according to their national legislation. 2

Article 3 - Functions

In combining the three functions below, biosphere reserves should strive to be sites of excellence to explore and demonstrate approaches to conservation and sustainable development on a regional scale:

- conservation - contribute to the conservation of landscapes, ecosystems, species and genetic variation;
- development - foster economic and human development which is socio-culturally and ecologically sustainable;
- logistic support - support for demonstration projects, environmental education and training, research and monitoring related to local, regional, national and global issues of conservation and sustainable development.

Article 4 - Criteria

General criteria for an area to be qualified for designation as a biosphere reserve:

1. It should encompass a mosaic of ecological systems representative of major biogeographic regions, including a gradation of human interventions.
1. It should be of significance for biological diversity conservation.
1. It should provide an opportunity to explore and demonstrate approaches to sustainable development on a regional scale.
1. It should have an appropriate size to serve the three functions of biosphere reserves, as set out in Article 3.
1. It should include these functions, through appropriate zonation, recognizing:
 - (a) a legally constituted core area or areas devoted to long-term protection, according to the conservation objectives of the biosphere reserve, and of sufficient size to meet these objectives;
 - (b) a buffer zone or zones clearly identified and surrounding or contiguous to the core area or areas, where only activities compatible with the conservation objectives can take place;
 - (c) an outer transition area where sustainable resource management practices are promoted and developed.
6. Organizational arrangements should be provided for the involvement and participation of a suitable range of inter alia public authorities, local communities and private interests in the design and carrying out the functions of a biosphere reserve.
7. In addition, provisions should be made for:
 - (a) mechanisms to manage human use and activities in the buffer zone or zones;
 - (b) a management policy or plan for the area as a biosphere reserve;
 - (c) a designated authority or mechanism to implement this policy or plan;
 - (d) programmes for research, monitoring, education and training.

Article 5 - Designation procedure

1. Biosphere reserves are designated for inclusion in the Network by the International Co-ordinating Council (ICC) of the MAB programme in accordance with the following procedure:
 - (a) States, through National MAB Committees where appropriate, forward nominations with supporting documentation to the secretariat after having reviewed potential sites, taking into account the criteria as defined in Article 4;
 - (b) the secretariat verifies the content and supporting documentation: in the case of incomplete nomination, the secretariat requests the missing information from the nominating State;
 - (c) nominations will be considered by the Advisory Committee for Biosphere Reserves for recommendation to ICC;
 - (d) ICC of the MAB programme takes a decision on nominations for designation. The Director-General of UNESCO notifies the State concerned of the decision of ICC.
2. States are encouraged to examine and improve the adequacy of any existing biosphere reserve, and to propose extension as appropriate, to enable it to function fully within the Network. Proposals for extension follow the same procedure as described above for new designations. 3

3. Biosphere reserves which have been designated before the adoption of the present Statutory Framework are considered to be already part of the Network. The provisions of the Statutory Framework therefore apply to them.

Article 6 - Publicity

1. The designation of an area as a biosphere reserve should be given appropriate publicity by the State and authorities concerned, including commemorative plaques and dissemination of information material.
2. Biosphere reserves within the Network, as well as the objectives, should be given appropriate and continuing promotion.

Article 7 - Participation in the Network

1. The designation of an area as a biosphere reserve should be given appropriate publicity by the State and authorities concerned, including commemorative plaques and dissemination of information material.
2. Biosphere reserves within the Network, as well as the objectives, should be given appropriate and continuing promotion. States participate in or facilitate co-operative activities of the Network, including scientific research and monitoring, at the global, regional and sub regional levels. The Statutory Framework of the World Network of Biosphere Reserves Proposals for extension follow the same procedure as described above for new designations.
3. Biosphere reserves which have been designated before the adoption of the present Statutory Framework are considered to be already part of the Network. The provisions of the Statutory Framework therefore apply to them.

Article 8 - Regional and thematic subnetworks

States should encourage the constitution and co-operative operation of regional and/or thematic subnetworks of biosphere reserves, and promote development of information exchanges, including electronic information, within the framework of these subnetworks.

Article 9 - Periodic review

1. The status of each biosphere reserve should be subject to a periodic review every ten years, based on a report prepared by the concerned authority, on the basis of the criteria of Article 4, and forwarded to the secretariat by the State concerned.
2. The report will be considered by the Advisory Committee for Biosphere Reserves for recommendation to ICC.
3. ICC will examine the periodic reports from States concerned.
4. If ICC considers that the status or management of the biosphere reserve is satisfactory, or has improved since designation or the last review, this will be formally recognized by ICC.
5. If ICC considers that the biosphere reserve no longer satisfies the criteria contained in Article 4, it may recommend that the State concerned take measures to ensure conformity with the provisions of Article 4, taking into account the cultural and socio-economic context of the State concerned. ICC indicates to the secretariat actions that it should take to assist the State concerned in the implementation of such measures.
6. Should ICC find that the biosphere reserve in question still does not satisfy the criteria contained in Article 4, within a reasonable period, the area will no longer be referred to as a biosphere reserve which is part of the Network.
7. The Director-General of UNESCO notifies the State concerned of the decision of ICC.
8. Should a State wish to remove a biosphere reserve under its jurisdiction from the Network, it notifies the secretariat. This notification shall be transmitted to ICC for information. The area will then no longer be referred to as a biosphere reserve which is part of the Network.

Article 10 - Secretariat 4

1. UNESCO shall act as the secretariat of the Network and be responsible for its functioning and promotion. The secretariat shall facilitate communication and interaction among individual biosphere reserves and among experts. UNESCO shall also develop and maintain a worldwide accessible information system on biosphere reserves, to be linked to other relevant initiatives.
2. In order to reinforce individual biosphere reserves and the functioning of the Network and subnetworks, UNESCO shall seek financial support from bilateral and multilateral sources.
3. The list of biosphere reserves forming part of the Network, their objectives and descriptive details, shall be updated, published and distributed by the secretariat periodically.

Dr. Danijela Puric-Mladenovic

[Forests in Settled and Urban Landscapes Applied Research Group](#)

Institute of Forestry & Conservation

Daniels Faculty of Architecture, Landscape, and Design, University of Toronto

Jan 3, 2023

2023 Self-Study

The Results of Forest Resampling in the Niagara Escarpment Biosphere Reserve

The research project looking at monitoring and forest change across the Niagara Escarpment started in 2011. Field sampling to support change analysis was conducted in 2011-12 (**p 11 2012 Self-Study**). The two objectives of forest sampling and research were :

1) Re-inventory forest stands originally sampled stand in 1979-81 and see whether **changes in forest structure and composition** are detectable; and also demonstrate the value and importance of broad-scale and long-term monitoring;

2) **Pilot Vegetation Sampling Protocol (VSP)** and establish a set of VSP plots to strategically link Niagara Escarpment forest monitoring with other VSP landscape scale monitoring and research efforts across southern Ontario.

Field sampling 2011/12 was achieved through partnerships between the Faculty of Forestry at the University of Toronto (now Institute of Forest Conservation, Daniels Faculty, University of Toronto), the Ontario Ministry of Natural Resources and Forestry (MNRF), Niagara Escarpment Commission, Niagara Escarpment Biosphere, and with support of local landowners. This effort to resample and analyze the Niagara Escarpment forests was one of the first studies of its kind in southern Ontario, and it was made possible thanks to the historical data collected by Steve Varga as part of an MSc study. The Point-Quarter (P-Q) forest inventory conducted in the 1980s was the only quantitative sampling of the area with information indicating the geographic location of samples, which allowed going back to these sites and resampling the original locations.

The analysis and report utilizing 2011/12 data were produced by Dr. Puric-Mladenovic, University of Toronto's Faculty of Forestry, with support from a post-doc, Yikalo Araya, the MNRF's Natural Heritage Information Centre (NHIC), and two graduate students from the master of forest conservation program.

Since the original forest sampling was done using the Point-Quarter method, the 2011/12 resampling involved re-locating original sites and resampling forests following the same Point-Quarter method. Of the original 111 sampling sites, 88 forest stands were re-located and re-measured on both private and public lands (Table 1). While an attempt was made to resample all the stands sampled in the historical survey, 20% (23) stands were not possible to sample due to a lack of landowner permissions to access the site or inability to access some of the sites on steep slopes and escarpment faces.

Table 1. Number of stands sampled on public and private lands.

Escarpment Section	Historical Public	Historical Private	Present Public	Present Private
Niagara Peninsula	20	20	14	9
Halton Section	14	5	12	5
Dufferin Section	5	7	5	5
Grey Section	14	9	13	9
Bruce Peninsula	12	5	12	4
Total	65	46	56	32

The analysis was done across the entire area escarpment area and across the five Niagara, Halton, Dufferin, Grey, and Bruce Peninsula sections (Figure 1). These sections reflect political, land use and environmental differences across the Escapement first noticed in the Niagara report by Riley et al. 1996. Most stands were sampled in the Niagara and Grey sections, and the least in the Dufferin section (Table 1).

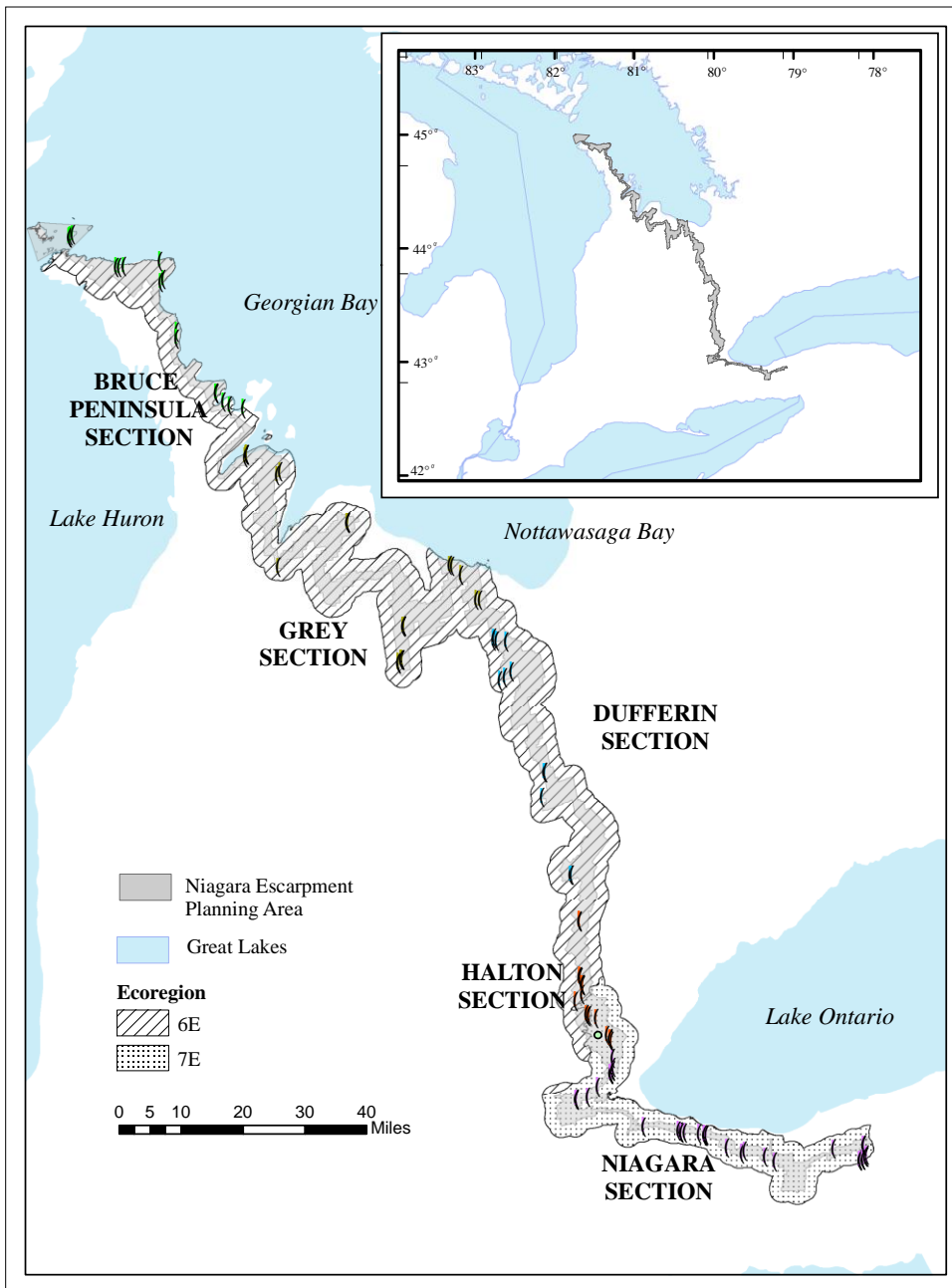


Figure 1. The location of the 88 sampled forest stands across the five sections (Niagara, Halton, Dufferin, Grey, Bruce Peninsula sections) of the Escarpment.

The original P-Q forest sampling by Steve Varga targeted stands on talus deposits, cliff edges, and other areas with rugged terrain. These sites were also in deeper parts of forests, away from land use pressures and built-up areas with urban and rural type developments. Most of the

stands selected in the 1980s were purposely selected and away from settlement areas, roads, and trail networks and were largely inaccessible to the general public and invasive plant species at the time. The 1980s sampling targeted late-seral communities within the core areas. Thus, sampled stands are not fully representative of the range of forest and vegetation types and conditions along the Niagara Escarpment and NE Biosphere.

However, the results of the change analysis show that significant vegetation changes have occurred even in these late-seral forests, in more tucked-away areas of the Escarpment. Findings indicated that for over 3.5 decades, there have been changes in forest structure and composition across the Niagara Escarpment. These changes have been observed in the forest canopy, shrub, and ground vegetation layers and have resulted from a combination of factors, including natural selection, human-induced disturbances, and other disturbances.

I. Results: changes in forest structure and composition

Changes in forest composition and structure from the 1980s to 2011/12 were analyzed using PQ data from 88 resampled stands. Changes were assessed across the five sections (Figure 1) by looking at several indicators, such as invasive plants, the importance of trees and saplings, ground vegetation, floristic quality, native and non-native species, and the presence and abundance of weeds.

One of the most significant changes observed across the resampled sites is an increase in the number of invasive plant species, their abundance, and forest stand homogenization. The resampling also demonstrated that besides natural shifts and successional changes in forests, some changes are driven by disturbances such as invasive plants, forest management, land use and forest pathogens.

1. Non-native plants and weed index.

A summary analysis based on the plant weed index (WEED) (Oldham et al. 1995) was conducted to assess the presence of non-native plants and understand their distribution over time. WEED index can also be used as one way of expressing the potential impact of alien and invasive species to displace native vegetation. Invasive species with the ability to alter the composition and structure of ecosystems are given an index of 3; plants that have an occasional impact on natural environments are assigned 2, and a value of 1 is assigned to plants that do not have an impact on natural ecosystems. Weediness scores, assigned by Oldham et al. (1995) to non-

native species, were assessed for both sampling periods (Figure 2). The analysis shows that about one-half of (more than 55%) the stands sampled in 2011/12 had an average weed index of 3. This ten-fold increase in the number of stands with the highest average weed index indicates that, if this trend continues, invasive species could pose a major threat to the integrity of the forest ecosystems and alter their structure, composition and functions on the Escarpment. Some of the notable invasive species with a WEED index of 3, such as garlic mustard, European buckthorn, and Tartarian honeysuckle, are discussed separately in the section below. The number of stands with an average weed index of 2 (plants that have occasional impact on natural environments) has almost doubled since the 1980s, increasing from 12 to 25 (Figure 2).

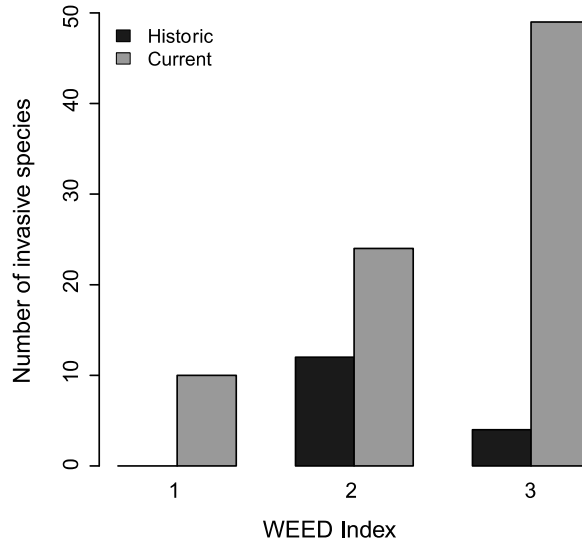


Figure 2. Number of stands (y-coordinate) with average weed index ranked from 1 to 3 (x-coordinate) for two time periods. The black bar indicates historical data, and the grey bar presents data.

2. Invasive plants

Invasive species are considered one of the major threats to global ecological change or biological diversity. Some of the invasive plants represent a severe threat to native species and plant communities as they aggressively invade communities and impact their structure, composition, and functions. Such impacts and changes were noticed on the Escarpment, where the most apparent change observed from the 1980s to 2011/12 is an increase in non-native and invasive plant species. The number of native and non-native species recorded indicates a 3.5 increase in non-native species. The historic survey recorded four invasive plants, Norway maple (*Acer platanoides*), garlic mustard (*Alliaria petiolate*), dame's rocket (*Hesperis matronalis*), and

bittersweet nightshade (*Solanum dulcamara*), while the sampling in 2011/12, found 18 species considered to be invasive across different parts of the Escarpment. Of the total 88 stands resampled in 2001-2012, 63% (56 of them) had aggressive invaders such as garlic mustard, dame's rocket, common buckthorn (*Rhamnus cathartica*), Tartarian honeysuckle (*Lonicera tatarica*), and white mulberry (*Morus alba*).

The findings also have demonstrated that two aggressive, non-native plant invaders, garlic mustard and common buckthorn, are more prominent within the more developed southern sections of the Niagara Escarpment, within eco-region 7e, than in other sections (Figure 1). The research results also indicate that these species' distributions are primarily promoted by the surrounding landscape, which includes urban development (trails, road density, and human settlement) that encroach on natural areas.

3. Floristic quality: the coefficient of conservatism (CC)

The analysis of data obtained from the two sampling periods looked at the changes in the floristic quality based on the coefficient of conservatism (CC). The Coefficient of Conservatism (CC) is a weighted numerical value assigned to plant species in relation to their sensitivity to disturbance and ability to tolerate human activities. In Ontario, the assigned CC value to a native plant ranges between 0 and 10, and they are relative to other plant species in the region. Plants that tolerate a variety of conditions and disturbances have a rank of 0-3. Plants that associate with a specific community but tolerate moderate disturbance have a rank of 4-6. Plants that thrive in late successional communities with minimal disturbance have a CC rank of 6-8. Plants that tolerate only a narrow range of conditions are ranked between 9-10 (Oldham et al. 1995).

The floristic quality of sites sampled along the Escarpment has also decreased over time as there is an increase in the relative number of plants that can tolerate disturbance (They have a Coefficient of Conservatism (CC) value of 0 – 3), while there is no increase in the number of plants with high degrees of fidelity (CC value of 9 – 10). The 1980s survey showed that about 11% of sampled plants had CC values ranging from 0 to 3, while 17% of plants from the 2011/12 survey were within this category. The majority of the plants from the historical survey (about 74%) and the 2011/12 survey (about 79%) had CC values ranging from 4 to 6. Those plants with high degrees of fidelity that are obligated to natural areas, having CC values of 9 – 10, account for only 2% of the species identified in both sampling periods.

The mean coefficient of conservatism values between the forests of 1980 and 2011/12 declined in 60% of the sampled stands. While these changes were less severe for the majority of stands, a few sites experienced a significant drop in CC. Findings indicated that floristic quality (expressed as CC) significantly declined in the Niagara Peninsula section of the Escarpment, which could be attributed to an increase in native plant species that can tolerate disturbance. However, in this area, there are fewer stands for which CC improvements were observed, likely due to a compositional shift towards late seral communities.

The results show that except for the Niagara Peninsula section of the Escarpment ($p < 0.05$), the four sections (Bruce, Grey, Dufferin, and Halton) did not show a statistically significant change in the floristic quality of native species, as their p values are 0.7974, 0.9573, 0.8498, and 0.1622, respectively (Figure 3).

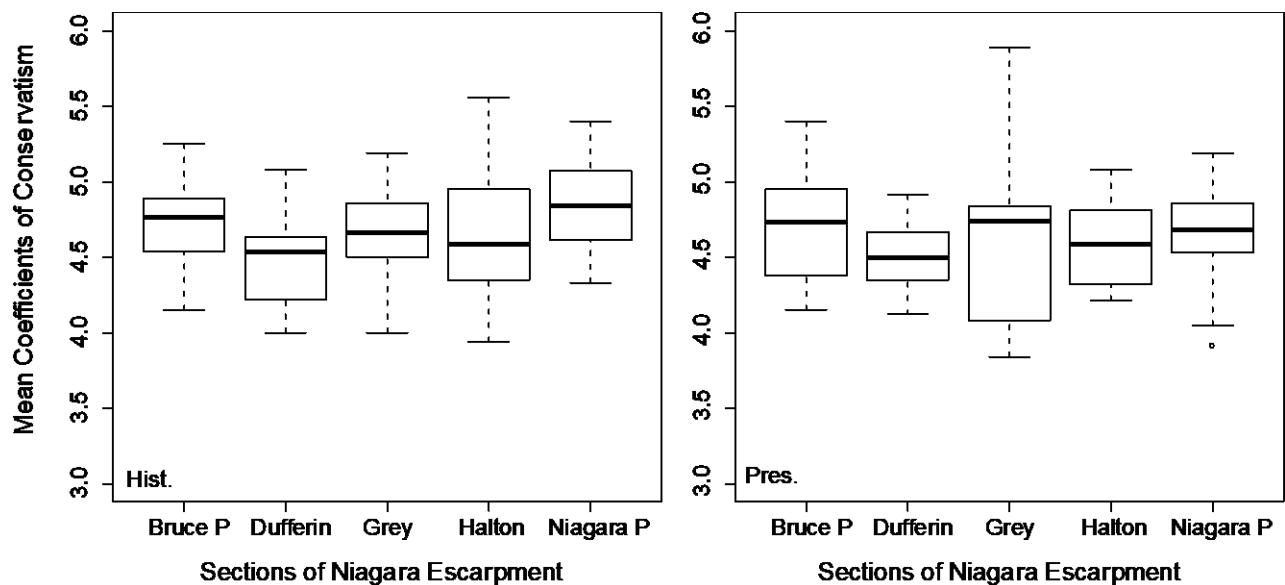


Figure 3. Boxplots of average Coefficients of Conservatism for stands across the five sections of the Niagara Escarpment: historical CC values (Hist. left)) and present-day (Pres. right).

4. The importance value of trees and saplings

IV (Importance value) was used as an objective measure of tree and sapling species abundance and dominance over different vegetation types and, as such, was used to compare changes in stand composition over time.

The findings indicate an increased dominance of shade-tolerant species and forest homogenization. For example, nearly all stands across different sections of the Niagara

Escarpment had a more mixed forest composition 30 years ago compared to the present. Sugar maple (*Acer saccharum*) and eastern white cedar (*Thuja occidentalis*) are the two most common and abundant canopy species across the stands. These two shade-tolerant species are the only tree species to have increased in average Importance Value (IV) across all sections of the Escarpment.

The research found that all stands across the different sections of the Niagara Escarpment had a more heterogeneous forest composition in the 1980s than in 2011/12. When looking at forest composition, the most notable change was an increase in shade-tolerant species and stand homogenization. Across the Escarpment, sugar maple and eastern white cedar are two of the most common and abundant canopy species. These two shade-tolerant species are the only species to have increased in average Importance Value (IV) across all sections of the Escarpment, suggesting a shift towards a more closed canopy and homogenized forests. For example, the importance of sugar maple increased across the majority of sampled stands, and in particular across the Niagara section of the Escarpment. Presently, over 60% of the sampled stands have sugar maple as the predominant species, compared to 37% of the stands in the 1980s. An increase in sugar maple IV and a decrease in IV for other tree species has indicated forest homogenization in some parts of the Escarpment. Historical stands that were dominated by sugar maple fell into two distinguishable groups. One was associated with elms, basswood, and white ash, and the second group included oaks, black cherry, shagbark hickory, and American beech. While these two forest communities still exist, the 2011/12 surveys revealed a stronger association between sugar maple and white ash.

Stands in the Niagara section of the Escarpment continue to be dominated by sugar maple. The 1980s surveys revealed that most of the stands in the Bruce Peninsula section of the Escarpment had birch associated with eastern white cedar. However, findings from the 2011/12 studies indicated that stands are more homogenized and dominated by eastern white cedar. Similarly, stands in the Halton section of the Escarpment, which historically had a more diverse canopy, also now have more homogenized stands. Stands in the Grey section of the Escarpment seem to have experienced the most change since many of them had more poplar and birch, which are indicative of stand disturbance.

American beech has declined in more than 50% of resampled escarpment stands. It has declined in both its frequency and dominance. The average IV value for American beech dropped across the Escarpment, but the change was not statistically significant. Analysis of the historical 1980s and recent data also indicates an overall decline in the abundance of American beech (*Fagus americana*) in more than 50% of resampled stands. In the past 30 years, this

species has declined in dominance across the Escarpment, which has been reflected in the average importance value dropping from 28 to 23. In some ways, the American beech has declined considerably from being a co-dominant species to a marginal tree species. Knowing that beech bark has spread across southern Ontario, it is expected that American beech has declined even more since 2011/12.

Similarly, red oak (*Quercus rubra*) has also declined in its abundance and frequency across the Escarpment. Red oak has also declined in abundance and frequency across the Escarpment. While historically, it was sampled in 64 stands. The 2011/12 survey found it present in only 42 stands. Similarly, its recorded diameter distribution indicated a lack of smaller, younger trees and, thus, a lack of regeneration.

The impact of Dutch elm disease (*Ophiostoma novo-ulmi*) (DED) on elms (*Ulmus spp.*) and their decline was noticeable in the original 1980s survey. Since then, the decline of elms has continued as the number and size of tree species from this genus have continued to decrease. American ash benefitted from the gap created by elm decline and grew in abundance across the stands within the Niagara Escarpment. The forest gaps created by elms appear to have been filled by white ash (*Fraxinus americana*), which extended its range across the Escarpment over 3-4 decades and in the 2011/12 survey, it was present in 67% of sampled stands. Interestingly, however, the average abundance of American ash within the canopy has remained relatively the same over time. While Ash represents a minor component of some stands, in other stands, it is a co-dominant species and comprises about 1/3 of canopy dominants. However, with the recent decline of American ash caused by emerald ash borer (EAB) (*Agrilus planipennis*), it is reasonable to expect that forests sampled in 2011/12 have experienced further ash decline, forest openings, changes in species composition, and, therefore another shift in forest composition is likely to be expected.

5. Changes in regeneration(seedlings)

The historical regeneration (seedlings) data shows three main groups of regeneration: a) sugar maple with ironwood and white ash; b) poplar and birch with striped maple; and c) eastern white cedar with yellow birch and white spruce. The recent data shows a similar trend in terms of sugar maple regeneration dominance. However, recent data also show an increase in the abundance of white ash regeneration. In some stands, poplar seedlings with balsam fir, white spruce, and eastern white cedar are observed to make regeneration. Striped maple (*Acer pensylvanicum*) shows increased importance within the forest seedling layer, which could be attributed to deer browsing pressure on the forests.

The findings demonstrate that alongside natural shifts and successional changes (e.g. white birch replaced by more shade-tolerant species), there are some changes (e.g. increase in invasive non-native plants) that should be carefully monitored and managed to promote forest health and diversity. While some of the changes observed in forest canopy can be attributed to successional changes and forest dynamics, forest management and conservation actions that promote tree and vegetation diversity, improved forest structure, and forest resilience should be used to encourage native species forest regeneration.

II. Pilot Vegetation Sampling Protocol (VSP) sampling

As part of the 2011/12 sampling, a pilot Vegetation Sampling Protocol (Puric-Mladenovic, 2015) VSP sampling was conducted (Figure 4). The VSP sampling was conducted at the same sites as P-Q sampling with the aim of evaluating the protocol and its merit in monitoring vegetation and its health on the Niagara Escarpment and further developing broad-scale monitoring. In addition, the pilot sampling enabled the information obtained to be comparable to other ongoing VSP monitoring efforts in southern Ontario. In total, Dr. Puric-Mladenovic and her team sampled 167 geo-referenced plots across 88 stands.

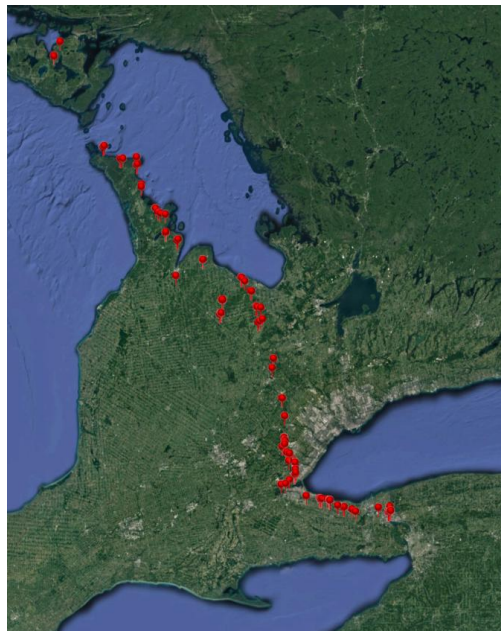


Figure 4. Geo-referenced VSP plots sampled across the Niagara Escarpment.

A set of 56 plots was utilized, and VSP data was tested in 2013. Dr. Puric-Mladenovic and MFC student Steven Parkes (2013) assessed various indicators derived from VSP-based data and how VSP data can be used in different ways to measure plant diversity, vegetation, and habitat

characteristics. Some of the indicators tested are total species richness, native and non-native species richness, basal area, biomass and carbon stock, deadwood, mast trees and many others that are part of the broader VSP research.

The total species richness of a vegetation community is one of the criteria that are readily derived from the VSP plot data. **Native species richness** considers the number of native species within a plot, versus **non-native species richness**, which considers the number of non-native species within a plot. As VSP plots are geo-referenced, VSP species richness can be easily linked with other criteria and spatial information such as land use type, distance to urban areas, housing density, prevalent vegetation types, soil type, and others. Detrimental factors within the NE that may affect species richness also include fragmentation, trails, human and wildlife disturbance, climate change, and invasive species. VPS data example shows total species richness across plots, average species richness, and total native and non-native species richness (**Table 2.**).

For example, one of the VSP plots, a **sugar maple-dominated** stand located on an escarpment dolostone bedrock plain, had a total of 50 species and an understory species assemblage with low non-native species coverage (5% or less). On the contrary, another plot in a different sugar maple stand, at Silver Creek 1, a mid-slope escarpment outlier valley, had the lowest species richness (6 species). This plot had a dominant over-story of sugar maple and a ground vegetation layer dominated by invasive garlic mustard (25% of the plot). It is worrisome that garlic mustard is one of the most abundant herbaceous species found within 56 plots of the NE.

Table 2. Total & Average Species Richness, Native and Non-native Species across 56 (400 m2) Plots and Per Plot

	56 NE Plots	Average per plot
Total Species Richness	227	26
Total Native Species Richness	169	22
Total Non-native Species Richness	38	4

VSP 2012 data collected helped identify the five most common woody species: sugar maple (*Acer saccharum*), white ash (*Fraxinus americana*), American basswood (*Tilia americana*), alternate-leaf dogwood (*Cornus alternifolia*), and ironwood (*Ostrya virginiana*). Data collected also helps identify the most frequently sampled herbaceous species: False Solomons Seal (*Maianthemum racemosum*), Garlic Mustard (*Alliaria petiolata*), Jack-in-the-pulpit (*Arisaema triphyllum*), Ziqzaq Goldenrod (*Solidago flexicaulis*), Broadleaf Enchanter's Nightshade (*Circaea lutetiana*) and Virginia Creeper (*Parthenocissus quinquefolia*) identified within the 56 plots.

The total mean **coefficient of conservatism** was also calculated from VSP plots and based on the average of the CC for native species. The total mean native species CC calculated was 4.57 across 56 plots sampled in 2012. This suggests that the 56 sampled NE plots are dominated by species that have a mid-range tolerance to disturbances.

The **Natural Areas Index** NAI across different plots was also compared. NAI is calculated by multiplying the mean CC score of all species by the square root of the identified number of native species (Oldham *et al.* 1995). For example, one of the plots, within a mixed stand dominated by sugar maple-red oak-white pine- ironwood- and bitternut hickory, on an Escarpment incised valley, has the highest mean NAI score because the plot has sensitive species like white-tinged sedge (*Carex albicans* var. *albicans*).

From the VSP data set Carolinian indicator species, Tulip tree (*Liriodendron tulipifera*), Sassafras (*Sassafras albidum*), Witch hazel (*Hamamelis virginiana*), type and their frequency were pulled out (Table 3).

Table 3. Species indicative of the Carolinian life zone inventoried across the 56 NE Plots

# of plots (of 56)	Carolinian Indicator Species
4	Tulip tree (<i>Liriodendron tulipifera</i>)
1	Sassafras (<i>Sassafras albidum</i>)
8	Witch hazel (<i>Hamamelis virginiana</i>)

The VSP information also provides information on understanding the **relative abundance** and frequency of a species in a given set of plots. VSP abundance, captured as absolute percent cover, shows that some invasive species often have significantly higher abundance when

compared to native species (Table 4). About 95%, 53 of 56 plots sampled contained invasive vegetative species, of which Garlic mustard, Common Dandelion, Bittersweet nightshade, Herb Robert and Common Buckthorn are the most frequent across the plots (Table 4). Garlic mustard was found to be the most abundant invasive herbaceous species and has the greatest maximum (75 %) percent cover across plots.

Table 4. The five most abundantly observed invasive species in 56 plots within the Niagara Escarpment.

Species Name	Number of Plots	Average % Cover	Maximum % Cover per plot
Garlic mustard <i>Alliaria petiolata</i>	34	< 0.5m: 9.03	75
Common Dandelion <i>Taraxacum officinale</i>	22	< 0.5m: 0.10	.1
Bittersweet nightshade <i>Solanum dulcamara</i>	21	< 0.5m: 0.50	4
Herb Robert <i>Geranium robertianum</i>	20	< 0.5m: 4.06	20
Common Buckthorn <i>Rhamnus cathartica</i>	18	0.5-2m: 4.26	20

Based on VSP data, it was possible to determine the average **basal area** across 56 plots, which is estimated to be 21.65 m²/400 m² (~ 541 m²/ha). Moreover, VSP base data, in combination with allometric formulas, was used to estimate biomass, which can be converted to carbon stock. For example, the plot's biomass may vary 8-fold from one plot to the other and thus across different forests (Figure 5), as seen in Plot 46, a white birch-black cherry stand on an Escarpment rim dolostone talus with silty clay loam in the crevices, versus Plot 21, sugar maple-tulip tree Escarpment incised valley lower slope. This difference in biomass is caused by differences in species, age class, forest type, and site conditions.

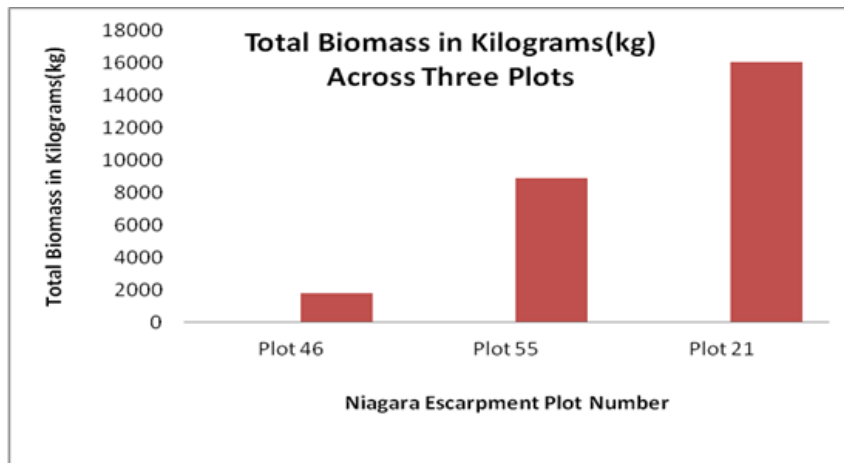


Figure 5. An example of biomass per plot (in kilograms) across three plots

VSP data show that plots in the NE typically have very limited **regeneration**, and one possible explanation, including over-browsing by the white-tailed deer, are lack of natural disturbance regimes, management practices favouring certain species, absence of gap phase and competition by herbaceous invasive species. In a few cases, there are plots with large trees, however, with almost no understory consisting of woody vegetation. A case of this was Plot 56, on the Escarpment, with six trees with DBH ranging from 16.3 cm to 52cm DBH. Also, the VSP regeneration sub-plots indicated the most frequently browsed species were white ash (*Fraxinus americana*) (37%), alternate-leaf dogwood (*Cornus alternifolia*) (21%), and chokecherry (*Prunus virginiana* var. *virginiana*) (21%), other (33%). For example, a VSP Plot 11, a 100% green ash stand, showed that regeneration beneath the stand was 99% green ash, except for one trace (.1%) amount of black maple seedling.

VSP base data helped characterize **mature forested plots and plots with elements of old growth**. These late seral forests are often characterized by trees with larger DBH, complex stand structures, large snags, downed woody debris, forest species sensitive to human land use, different canopy layers, and late succession species composition. VSP data are important for understanding the mix of **tolerant and intolerant species composition** for understanding forest succession, productivity biodiversity, and for encouraging the desired vegetation condition. For example (Figure 6), Plot 7, Clappison Escarpment Woods, a sugar maple- red oak- white oak stand on an Escarpment lower shale slope, has the greatest diversity of both intolerant and very tolerant species, whereas Plot 1, sugar maple-hemlock-ash stand on an escarpment incised valley talus slope has a greater tendency for tolerant species. This indicates that Plot 7 is a

younger forest. Plot 1 is a late seral forest, while Plot 9, a middle slope and slightly mounded, is in an intermediate succession with red oak- white-ash-black cherry stand,

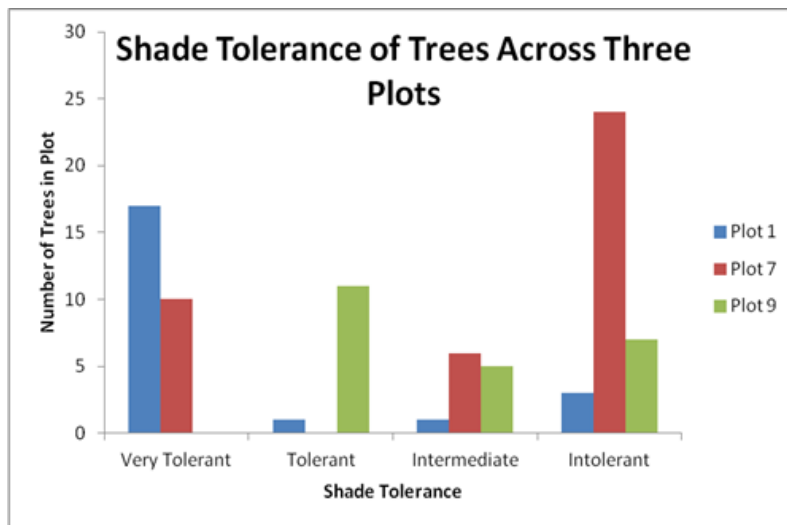


Figure 6. The number of shade-tolerant tree species across three VSP plots

3.3 Annex - Ecosystem services in Niagara Escarpment Biosphere.

Authors: Familusi O. Adekunle and Dr. Liette Vasseur.

Ecosystem services are all contributions from the natural world that benefit all living things including humans. Ecosystems provide goods and services such as food, clean water, climate regulation and recreational, cultural, or spiritual functions. These benefits are essential for human survival. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) introduced the concept of Nature's Contributions to People (NCP) as an alternative to the concept of ecosystem services (ES) (Diaz et al., 2018). NCP is defined as the contributions or losses that people obtain from nature (Diaz et al., 2015). The NCP concept allows to assess the quantitative and qualitative values of the contributions of nature to humans. The NEBN aims to gradually conduct assessment of the ecosystems using the NCP approach, as it is more inclusive considering the nature of the BR and its co-governance structure (Vasseur & Siron, 2019; Christie et al., 2019). However, at the present, since the organization is still in its development, Vasseur had, under the Erasmus program, a Master student from Nigeria (Familusi O. Adekunle) studying in Europe to come in Canada to develop a first valuation of the ecosystem services, mainly focusing on the valuation of the core area and part of the buffer zone.

Methodology

To obtain the valuation of the ES, Hierarchical Data Format (HDF) version 4 of the global landcover typology data at 500meters spatial resolution was obtained as global landcover Terra+ Aqua combined Moderate Resolution Imaging Spectroradiometer (MODIS) version 6 data product from the USGS earth explore website spanning 2001- 2020 (MCD12Q1). The classification followed the Food and Agricultural Organization's (FAO) Land Cover Classification System (LCCS) (Friedl & Sulla-Menashe, 2022). The FAO's LULC LCCS are nominal values representing Barren, Water Bodies, Evergreen Needleleaf Forests, Deciduous Broadleaf Forests, Mixed, Broadleaf/Needleleaf Forests, Open Forests, Sparse Forests, Dense Herbaceous, Sparse Herbaceous, Dense Shrublands (Table 1).

Table 1 (Class definitions represented in the analysis according to FAO's LULC LCC1 (Friedl & Sulla-Menashe, 2022).

Name	Value	Description
Barren	1	At least of area 60% is non-vegetated barren (sand, rock, soil) or permanent snow/ice with less than 10% vegetation.
Water Bodies	3	At least 60% of area is covered by permanent water bodies.
Evergreen Needleleaf Forests	11	Dominated by evergreen conifer trees (>2m). Tree cover >60%
Deciduous Broadleaf Forests	14	Dominated by deciduous broadleaf trees (>2m). Tree cover >60%.
Mixed, Broadleaf/Needleleaf Forests	15	Co-dominated (40-60%) by broadleaf deciduous and evergreen needleleaf tree (>2m) types. Tree cover >60%.
Open Forest	21	Tree cover 30-60% (canopy >2m)
Sparse Forests	22	Tree cover 10-30% (canopy >2m)
Dense Herbaceous	31	Dominated by herbaceous annuals
Sparse Herbaceous Forests	32	Dominated by herbaceous annuals
Dense Shrublands	41	Dominated by woody perennials (1-2m) >60% cover

The analysis was completed in ArcGIS for easier extraction of georeferenced raster data using the shapefile obtained from the Ontario GeoHub (Figure 1). To quantify annual spatial changes in LULC types, the ‘categorical change’ function in the change detection wizard was used to identify the “changed only” classes. The same process was done for each year from 2001 to 2020 to have an overall transformation within the two decades. The resulting rasters were analysed as sums of the area of similar LULC typology and temporal classifications. The vegetation data were a sub dataset of the MOD13A2’ Vegetation dataset. This NDVI (Normalized Difference Vegetation Index) was obtained at 1km spatial resolution. The data measured a derivation of spectral signature backscatter of the visible wavelength with the red (470nm) and blue (670nm) regions being more sensitive allowing to measure contrasts between the red and NIR thus usable for measuring vegetation.

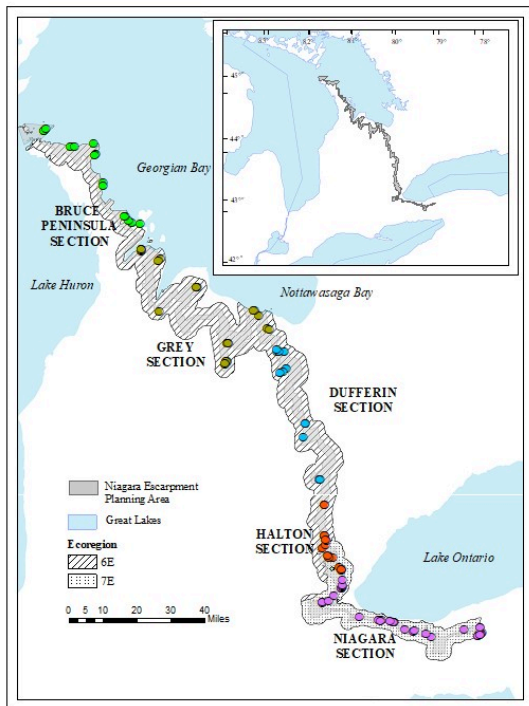


Figure 1. Area of the NEB assessed for ES.

Results

The area covered by the analysis was 197,000 ha, covering from the tip in the south in Niagara to the northern point in Tobermory. The major changes in terms of land cover occurred for 29% of the years from “Sparse Forest” with 30% maximum tree cover to “Dense Herbaceous Annuals” and from “Sparse Forest” to “Open Forests” in 28% of the case. Figure 3 describes the changes in land cover classification for each year. Notably, the extent of transformations between 2008-2009 exceeds the transformation between 2001 and 2020 indicating a rapid modification of the LULC type in 2009 but with a recovery after. Although a one-way ANOVA indicated significant difference with a p-value of $<2e-16$ for transformations within the decade, LULC types 22 \rightarrow 31 (Sparse Forests becoming Dense Herbaceous), and 22 \rightarrow 21 (Sparse Forests becoming Open Forests) are the most observable transformations for the 20-year period.

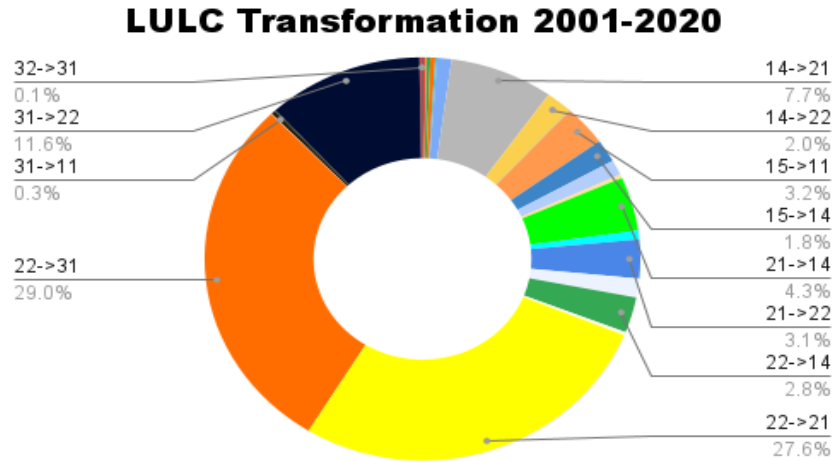


Figure 2. Transformations in land use cover between 2001 and 2020 (refer to Table 1 for the land cover type values).

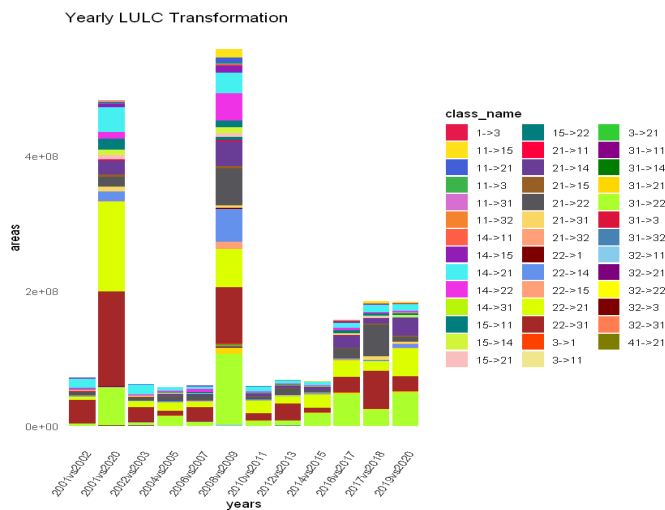


Figure 3. Spatial extent of the annual changes made to LULC classifications.

For valuation, the spatial transfer technique relied on works relative to the Southern Ontario region earlier conducted by Troy & Wilson (2006) and David (2023). The results are presented in Table 2 for regulating services. An estimated \$1.8billion worth of regulating ecosystem services was derived from the NEBR annually, but with the outlier event in 2009, which resulted in a \$125million loss in value addition (Figure 4).

Table 2. Valuation Scheme, price source, the spatial extent for LULC (2020), and the value estimation for 2020. The same estimation was done for all years from 2001 till 2020 (Figure 4).

E Service	Source	Barren1	Water Bodies 3	Evergreen Needleleaf Forests 11	Deciduous Broadleaf Forests 14	Mixed Broadleaf/Needleleaf Forests 15	Open Forests 21	Sparse Forests 22	Dense Herbaceous 31	Sparse Herbaceous 32	Dense Shrublands 41	Net Value (\$/yr)

			0	7766.2 25257	7091.0 35363	25680. 37968	12212.186 66	28123.8 9485	76799 .2246 8	34756.0 986	107.329 3366	0		
R · S ·	Habitat Creation and Maintenance	Growing Sites for Plant	Troy from Amigues, Boulloff, Desai, Gauthier and Kieth	0	10.3	\$2,428.40	2428.4	2428.4	2428.4	2428.4	94.73	2428.4	2428.4	\$367,666,557.74
	Pollination and Seed Dispersal	Continuous animal movement corridors	David Suzuki	1023	1023	\$1,023	1023	1023	1023	25	1023	18.88	1032	\$120,211,313
	Air Quality Regulation			992	992	\$992	992	992	992	992	992	992	992	\$190,996,083
	Climate regulation (GHG removal by trees)	CO (1.2kg/ha)	David Suzuki	0	0	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$230,963
	O3 (30kg/ha)		David Suzuki	0	0	\$227.59	227.59	227.59	227.59	227.59	227.59	227.59	227.59	\$42,051,838
	NO (7.5kg/ha)		David Suzuki	0	0	\$56.34	56.34	56.34	56.34	56.34	56.34	56.34	56.34	\$10,409,950
	SO (4.2kg/ha)		David Suzuki	0	0	7.71	7.71	7.71	7.71	7.71	7.71	7.71	7.71	1424577
	Particulate matter (16.8kg/ha)			0	0	\$84.25	84.25	84.25	84.25	84.25	84.25	84.25	84.25	\$15,566,885
	Freshwater Supply		David Suzuki		17690	1649	1649	1649	1649	1649	1649	1649	1649	442,070,500
	Freshwater quality	Particle filtration			45768	\$513	513	513	513	513	513	25	25	\$450,179,307
	Soil Protection	erosion prevention	David Suzuki air quality, and Carolyn Flood	6	516	\$516	516	516	516	516	516	516	50	\$99,348,769

		Control												
Soil formation		David Suzuki Fair Quality	10	10	\$10	10	10	10	10	10	10	10	10	\$1,925,364
Regulation of Detrimental Organisms	Parasite-Predator control	using nutrient regulation from Troy		2659.83	\$513.27	513.27	513.27	513.27	513.27	513.27	513.27	24.5	24.5	\$115,441,354.03

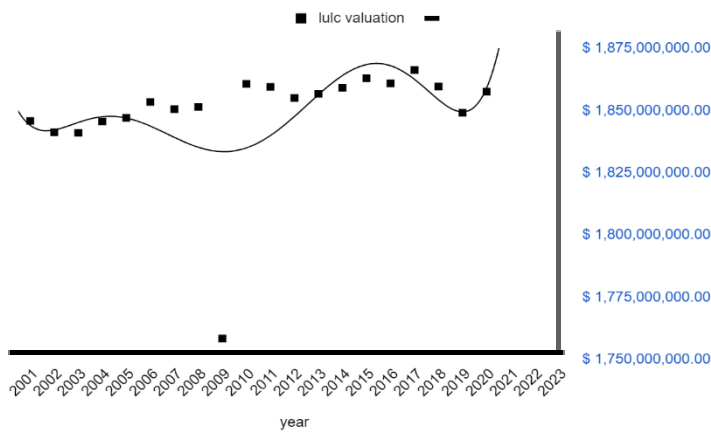


Figure 4. Annual valuation of the regulating services (material and non-material) provided by the NEB (values \$/yr).

Discussion

The analysis showed that in general while the valuation does not show major variation in net worth (except 2009), the type of land cover has however changed. The forests have been reduced considering the conversion from sparse forests to dense herbaceous annuals, which indicates significant deforestation in the NEB. The significant transformation of sparse forests to open forests may also account for the deforestation losses. The \$1.8 billion valuation represents about \$9,375 per hectare of land in the NEB.

A few other analyses have been completed over time for the Niagara Escarpment. For example, Ontario Ministry of Natural Resources SIG Study (2009) showed that the valuation of the forest was \$25,843/ha/yr and wetlands, \$15,171/ha/yr. Similar results have been published for the Greenbelt, in which the Niagara Escarpment is part of, with values of \$14,153/ha/yr for wetlands (David Suzuki Foundation (2008) for the Greenbelt Foundation). For the forests, however, their valuation for forests is only \$5,414/ha/yr. The recent report of the Office of the Auditor General of Ontario (2022) for the Niagara Escarpment management reports an estimated \$1.3 billion in ecosystem services in terms of clean water, pollination, and carbon storing. Similarly, the Nature Conservancy of Canada and the TD Bank Group have valued the forest of the Bruce Peninsula at \$19,400/ha. These valuations all demonstrate the importance of the conservation function of the Niagara Escarpment for the provision of several ecosystem services. The major reason relates to its

high level of biodiversity with at least 70 species at risk living on the Escarpment. Further, the Auditor's report shows that the Escarpment is a significant source of agriculture land representing in the Niagara Peninsula alone, \$1.4 billion/yr to the economy. The decline in valuation of forest may become a concern as forests provide carbon storage, air and water quality, soil preservation, nutrient cycling, and wildlife habitat among others.

Other local initiatives have also reported valuation of ecosystem services like the Grey Sauble Conservation Authority. A stated "Of the total Niagara Escarpment Plan area, approximately 35 percent occurs within the GSCA's watershed area. Many of GSC's properties occur within the Niagara Escarpment Plan area and make up a substantial portion of the Niagara Escarpment Parks and Open Space System" (Lanthier 2018, p. 2-2). This region reports that forested ecosystems represent 80% of their territory and can be valued at \$45.6 million and wetlands accounting for 12% of the land at \$22.8 million. Only considering the carbon sequestration from their forests, they estimate at \$813/ha/yr and considering the 9,400 ha of forest, the annual carbon value under the Ontario's Cap and Trade Program would be in the order of \$148,000/yr (at \$21/tonne).

In the future, the NEBN is highly interested in working with its partners to use the guide of Vasseur and Siron (2019) to better assess Nature's contributions to people (NCP) as a way to link NEBN priorities, ecosystem services through the NCP approach, as well as the UN Sustainable Development Goals. NEBN also aims to examine how this approach can be adjusted to better combine the Two-Eyed Seeing into this assessment and monitoring of the NCP, thus improving the involvement of all the groups along the NEB.

7.4.3 Annex - Niagara Escarpment Commission Members Biographies

The Niagara Escarpment Commission has 17 members (Commissioners) appointed by Order-in-Council. Nine members, including the Chair, represent the public-at-large and eight municipally-elected members represent counties, cities and regions within the Niagara Escarpment Plan area.

Jim Collard - CHAIR

Jim Collard has lived in Niagara-on-the-Lake since 1950. He is married with two children. Jim was an educator for thirty-two years. He served the D.S.B.N. as a Department Head of Business Studies at both Grantham High School and Sir Winston Churchill Secondary. Jim was subject area chair for Business Studies for the D.S.B.N. He was a teacher moderator for United Nations Debating, Ski Club and Yearbook production. In 2001, he was given an Outstanding Leader Award by the D.S.B.N. Jim was elected to Town Council in 1985 and served as councillor for thirty years. As such, he chaired all corporate committees and served on the Municipal Heritage Committee, Museum Board and Town Golf Committee. He has helped raise in excess of one half million dollars for community needs. In 2003, as part of the Arena Project, Jim was Citizen of the Year. He was a member of the Association of Ontario Municipalities Executive Board and Small Urban Caucus Chair and Convention Coordinator. An avid golfer and fisher, Jim looks forward to continued service to his town and province.

Laurie Golden - MUNICIPAL REPRESENTATIVE - BRUCE COUNTY

Laurie Golden is an Office Manager for Miller Lake Rona. Her community involvement includes serving as a committee member for St. Edmunds Recreation Committee, St. Edmunds Museum, and National Park Advisory Committee.

Dane Nielsen - MUNICIPAL REPRESENTATIVE - GREY COUNTY

Dane Nielsen is currently the Deputy Mayor of Grey Highlands and a Grey County councillor. He lives in a multi-generational home with his wife, two children and his wife's parents. He also has horses, goats, and chickens to keep him company on his 28-acre hobby farm. Owner of a small business in Eugenia, Dane has a passion for the Beaver Valley and the Escarpment as a whole, having hiked a lot of the Bruce Trail.

Lynn Kiernan - MUNICIPAL REPRESENTATIVE - PEEL REGION

Councillor Lynn Kiernan was first elected in 2018 and served her first term representing the residents and businesses of Ward 1 as Area Councillor. In October 2022, Councillor Kiernan won the support of her community to continue to serve as the Ward 1 Councillor. During her first four years, Councillor Kiernan acted on significant issues for residents and business such as: being a persistent and strong advocate for much-needed safety measures for the highway 10 corridor as well she championed the development and approval of the aggregate interim control bylaw in collaboration with the Forks of the Credit Preservation Group. She has a long history of community involvement and will continue supporting grass roots, resident-led organizations. Prior to entering the political world, Councillor Kiernan enjoyed a successful

career in the investment industry. Councillor Kiernan has lived in Caledon all her life and currently resides in the village of Inglewood.

Gordon Krantz - MUNICIPAL REPRESENTATIVE - HALTON REGION

Gordan Krantz has been serving the Milton community continuously since 1960. Elected as a Local Councillor to Milton Town Council in 1965 and as Mayor and Head of Milton Town Council in 1980. Also, Mayor Krantz has been an essential contributor to the Region of Halton's growth plan, by serving on the Regional Municipality of Halton Town Council since 1980, Conservation Halton Board of Directors since 1973, the Niagara Escarpment Commission for three terms and various Ad-Hoc and Standing Committees. Mayor Krantz is a founding member and strong supporter of the Greater Toronto Marketing Alliance.

Albert Witteveen -MUNICIPAL REPRESENTATIVE - NIAGARA REGION

Albert Witteveen has been sitting as a volunteer on boards within the community and on committees at the Niagara Region. His list of involvement includes, Waste Management Advisory and Steering Committees, Chair of the Agriculture Policy Action Committee, Chairman of the Ontario Hop Growers Association, Chairman of the Niagara North Federation of Agriculture. Member of the Industry Advisory Committee at Niagara College.

Matt Francis -MUNICIPAL REPRESENTATIVE - CITY OF HAMILTON

Matt Francis is newly elected as councillor to represent the City of Hamilton in Ward 5 for the 2022-2026 term of council. Matt has been a key figure in a number of community initiatives, most notably spearheading the successful "Save Our Pier - Hamilton Beach Community" campaign. Matt has dedicated years of service to his community in many volunteer and leadership capacities. Matt has a passion his community, sport, outdoors and the Niagara Escarpment which his home is situated adjacent to. This is where Matt spends quality family time exploring and enjoying.

Douglas Measures -MUNICIPAL REPRESENTATIVE - SIMCOE COUNTY

Doug Measures has resided in Simcoe County since 1977. He has been an elected official with the Township of Clearview since 2006 and had a 36-year career in local community television.

Michael Curley -PUBLIC AT LARGE

Michael Curley is a Business Owner operating a Project and Construction Management Company in Grimsby, Ontario. Mr. Curley has a Chartered Professional Accountants (CPA) designation. Michael's career highlights include projects for IBM Canada, Microsoft, the Government of Ontario, local school boards, library design and construction and community centers. His financial background provides extensive training and experience with projects and cost controls and management, treasury management and financial and stakeholder reporting.

Gordon Driedger -PUBLIC AT LARGE

Gordon Driedger is the President of Skyline Retail Asset Management Inc. and is accountable for all aspects of Skyline's growing retail real estate portfolio across Canada. Gord has over 30 years of experience in Canadian and international real estate markets. Gord holds membership and is

active in many industry organizations including Corenet Global, International Council of Shopping Centres, and the Canadian Institute of Planners/Ontario Professional Planners Institute. Gord is also active in his community as Board member of a not-for profit seniors housing corporation and non-profit children's charity. Gord is currently Chair, of the Halton Hills Committee of Adjustment. Gord Driedger received a Bachelor of Environmental Studies in the School of Urban and Regional Planning from the University of Waterloo and a Masters of Corporate Real Estate from the Corenet Global organization.

Ron Gibson -PUBLIC AT LARGE

As project manager, and later project director of a joint initiative between municipal Chief Administrators and the Province of Ontario, Ron oversaw the planning and implementation of a series of innovative pilot projects to advance accounting, asset management, and performance reporting in the municipal sector. This required coordinating, collaborating and consolidating the work of over 600 members on 35 project teams from 15 municipalities, 42 professional associations, and 5 Ontario Ministries. Best practices and lessons learned were shared through workshops across Ontario. As a consultant to the Asia Productivity Organization, Ron trained representatives from 21 countries on advanced business improvement methodologies. Prior to this, he held management positions at the Region of Niagara, in Community Planning (Special Projects) and Community Services (Quality Assurance and Program Evaluation). Born and raised in Grimsby on a farm near the Bruce Trail, Ron is committed to balancing conservation and development per the NEPDA.

David Hutcheon -PUBLIC AT LARGE

David Hutcheon teaches Municipal Government at Humber College, Toronto. A long time environmental advocate he served as a volunteer on the Humber Watershed Task Force and Alliance, Toronto and Region Conservation Authority. For his work on the Humber River, David received the S. George Rich Award for Planning Excellence Grand Prize, Canadian Institute of Planners. He has served as Vice Chair of the Environmental Review Tribunal and a Hearing Officer for appeals and hearings related to the Niagara Escarpment. Prior to this he was a Toronto City Councillor, Budget Chief and Commissioner of the Toronto Harbour Commission. David has a Master of Public Administration from the University of Western Ontario. He is a recipient of the Confederation Medal of Canada.

Johanna Chevalier -PUBLIC AT LARGE

Johanna Chevalier is a former Peel Council member & former Town of Caledon Council member. Johanna has served on the Greenbelt Council, Golden Horseshoe food & farming alliance (Chair), Credit Valley Conservation Authority (vice chair), Peel Community Safety and wellbeing, Peel Diversity, Equity & Anti-Black Racism (Chair) Peel Public Health (Chair). Johanna currently works as a consultant in the private sector and continues to serve the community of Halton and Peel as a volunteer for Caledon Community Services, Credit Valley Conservation Foundation, Peel Anti-Human trafficking SPT, Burlington Minor Football Assc., GHFFA and Volta Research. Johanna resides in Halton Region where she is raising four teenagers and enjoying the view of the escarpment.

Ken Lucyshyn -PUBLIC AT LARGE

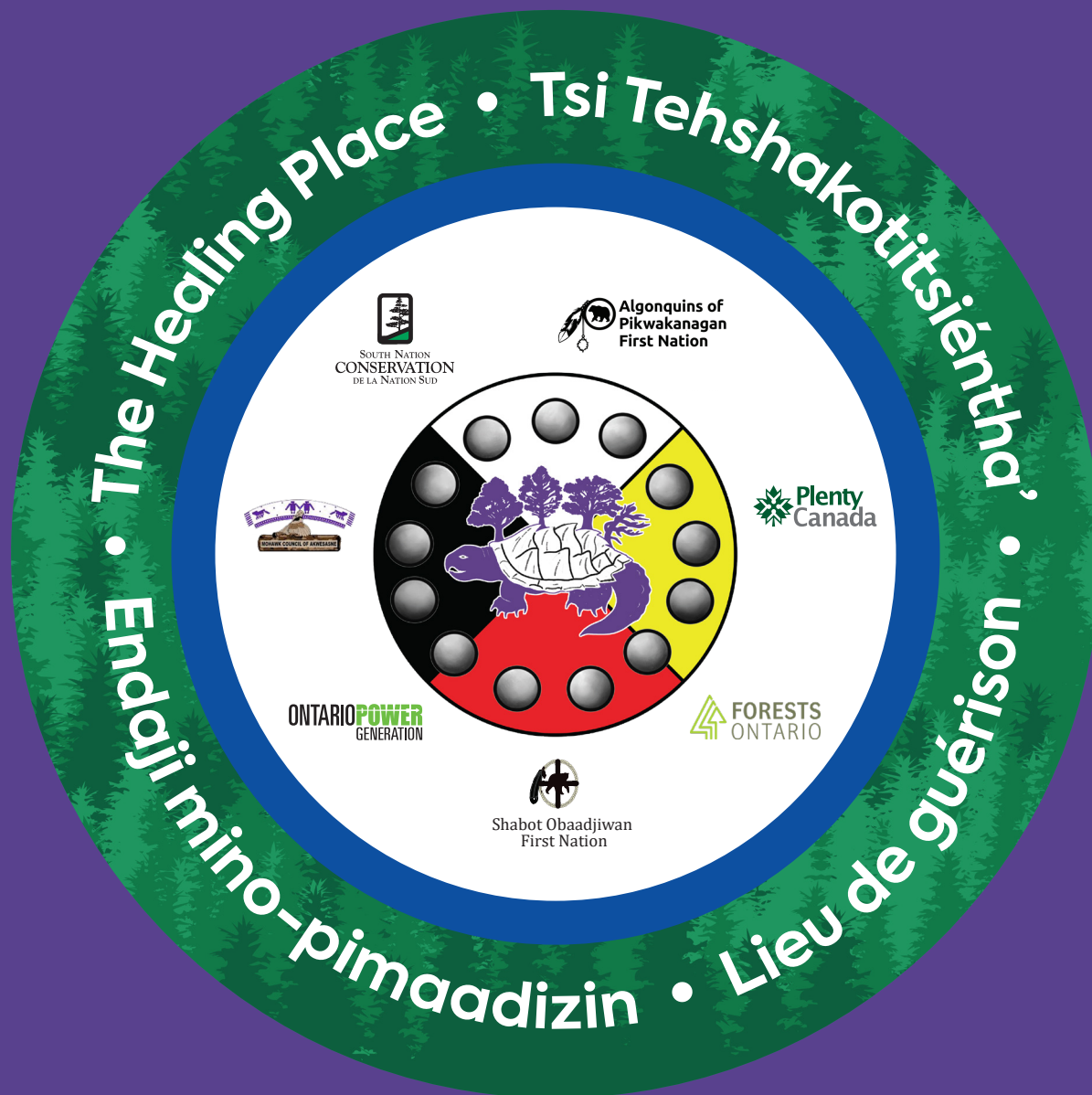
Ken is an Executive Vice President operating an aggregate and road building business in Southern Ontario for over 20 years. Ken brings to his position an extensive background serving on numerous industry organization boards including The Ontario Stone Sand & Gravel Association (OSSGA), The Ontario Aggregate Resources Corporation (TOARC) and the Cornerstone Standards Council. For several years, Ken served on the Niagara Escarpment Commission's Public Interest Advisory Committee (PIAC) as well as the St Catharines Rodman Hall Arts Centre. Ken is a large supporter of research and development supporting sustainable forward thinking land rehabilitation and stewardship.

Duncan McKinlay -PUBLIC AT LARGE

Duncan McKinlay brings a passion for environmental stewardship, sustainable land use planning and progressive rural communities, as seen through his work as a municipal councillor, county councillor and Grey County Warden. He has worked in agriculture as a farm manager and as a farm specialist in a rural mental health facility for children. Currently, he is a beef farmer at Farview Farm in Ravenna, Ontario with his wife Susan. Enjoyment of the outdoors is shared with their three children and ten grandchildren. Duncan believes strongly in our duty to leave our environment and our communities better than we found them.

Jennifer Vida -PUBLIC AT LARGE

Born and raised in the Niagara Region, Jennifer Vida left the area to pursue education and career development. Jennifer ultimately ended up settling back in Niagara to continue her passion in development. Jennifer is a mother of one. For 18 years, Jennifer has been working as a planner to facilitate wise land development and construction throughout the province in cities that included Ottawa, Toronto, Oakville and the entire Niagara Region. Jennifer has a passion for building and has developed a deep and abiding respect for the beautiful landscape we are so lucky to be blessed with in the Niagara Region. Jennifer received a Bachelor of Urban and Regional Planning from Ryerson University and she maintains professional memberships as a Registered Professional Planner (RPP) with the Ontario Professional Planners Institute and is a member of the Canadian Institute of Planners (MCIP). Jennifer also sits on the Government Liaison Committee for the Niagara Home Builders Association (NHBA). Jennifer is passionate about her industry and strives to play a role in how it progresses.



Reconciliation and Climate Change Planting

Reconciliation and Climate Change Planting

The Healing Place • Tsi Tehshakotitsié́ntha' • Endaji mino-pimaadizin • Lieu de guérison



The Healing Place is a community green space located on the traditional territories of the Algonquin and Mohawk Nations in eastern Ontario. It was created in the fall of 2020 through a Reconciliation and Climate Change Planting event planned through collaborative partnership.

The project partners have committed to continued maintenance and expansion of the site, as well as to the creation of a Healing Place network across the province and country in order to meaningfully engage Indigenous and non-Indigenous communities in a restorative process, creating physical places of healing while at the same time cultivating safe, ethical spaces.

More than a planting site or event, The Healing Place represents an important step forward in the journey towards reconciliation.

The Seed: Background

The seed for this project was first planted at the 2019 Assembly of First Nation's Climate Change Summit in Whitehorse, Yukon, when Eli Enns (Tla-o-qui-aht First Nation; Cofounder, CEO, and President of the IISAAK OLAM Foundation) and Curtis Scurr (Mohawk of the Bay of Quinte; Associate Director of the Assembly of First Nation's Environment Sector) approached Larry McDermott (Algonquin from Shabot Obaadjiwan First Nation; Executive Director of



Plenty Canada), pictured top left, with the idea of offsetting event participants' travel-related carbon emissions through tree planting. Larry in turn presented the idea to Chris Craig (member of Algonquins of Pikwakanagan; Senior Forestry Technician at South Nation Conservation), pictured middle left, and together they brought the idea to South Nation Conservation and the Eastern Ontario First Nation Working Group.



From there, the partnership grew, and the Reconciliation and Climate Change Planting Working Group was formed to advance the project; they committed to meeting on a regular basis to build their relationships with each other and plan the planting event.



The name of the site, The Healing Place, was born from a comment made by Abraham Francis (Mohawk from Akwesasne; Environmental Services Manager for the Mohawk Council of Akwesasne), pictured bottom left, regarding how forests are seen as safe and healing places by many, especially so by Indigenous peoples. Additionally, the name speaks to both the medicinal applications and traditional uses of the species planted there. The name also reflects the opportunity and necessity to build relationships and heal some of the pain that systemic oppression and violence towards Indigenous peoples has caused throughout Canada's history.

The Roots: Governance



From the start, the intent of this project was more than simply planning a planting event; rather, it was – and still is – about creating and maintaining a space of healing. As such, following a few initial meetings, project partners recognized the need to invest in a governance structure that accommodates Indigenous and non-Indigenous ways of transferring knowledge, tradition, and ceremony.

The Working Group dedicated several meetings to discuss governance structure and negotiate how two different First Nation ways could be incorporated. Following these discussions, the group adopted components of both traditional Algonquin and Haudenosaunee ways of governance, which have always been practiced out of respect for each other and all creation (and have become second nature to South Nation Conservation).

The overall success and impact of The Healing Place was contingent upon a strong root system – a governance structure founded upon ethical space, two-eyed seeing, and the concept that all voices are equal and important. The following methodology guided all project activities:

- **Begin each meeting with a traditional opening.**
Ceremony is a major part of all First Nations gatherings; conducting a prayer, smudging, or both is a way for all to become united in the same space, mind, heart, and spirit.
- **Pass the feather.**
This allows all the opportunity to speak and be part of a circle as equals.
- **Use the Two Row Wampum Belt, One Bowl One Spoon Wampum Belt, the Friendship Belt, and the 1764 Royal Proclamation Belt as a guide.**
There is a need to identify that the group is non-political, and to create ethical space where all can be comfortable not to worry about retribution of words spoken during group gatherings.
- **Flexible governance.**
Ensure various voices are heard and skill sets are used efficiently. Accommodate needs of both oral Indigenous and western written knowledge transfer systems.
- **Group consensus.**
All share a common end goal, and each member has equal opportunity to participate in discussion and decision making.
- **End each meeting with a traditional closing.**
This allows us to collectively express our gratitude for the opportunity to share our responsibilities for the continuation of all life and learn from each other.

Despite needing to convene virtually due to the COVID-19 pandemic, the Working Group was able to meet regularly without sacrificing traditional ceremony elements.

The Trunk: Partnership



The Healing Place is a unique project in many senses. It is the first local project of its kind where so many different partners and perspectives have been unified around a collective impact.

This project brought partners from Indigenous, non-Indigenous, and different First Nations backgrounds together, building upon the positive beliefs and stories that each group shares and facilitating both Indigenous-to-non-Indigenous and Indigenous-to-Indigenous knowledge transfer.



Also unique, the establishment of The Healing Place relied upon equal parts relationship building and project management, with heavy focus placed upon creating trust between partners. The partnership formed through The Healing Place is an ongoing entity, and is made up of:

- Algonquins of Pikwakanagan
- Mohawks of Akwesasne
- Shabot Obaadjiwan First Nation
- Assembly of First Nations
- Plenty Canada
- South Nation Conservation
- Forests Ontario
- Ontario Power Generation

Though each partner contributed unique resources and insight to the group, all worked together collaboratively to support the development of the governance structure, explore how reconciliation and two-eyed seeing could guide event planning, work to incorporate Indigenous teachings directly into the planting site plan, and discuss how The Healing Place could continue to engage community members, support the sharing of stories, and act as an educational resource long after planting.



“*When we put trees in the ground, we create more than just a physical forest that we see. We create an environment in which the mental, physical, emotional, and spiritual are all cultivated – they are all honoured, they are all part of that experience. When we do something like that together, we bond and become stronger in our relationships.*”

At one level, this planting event is a small gesture; at another level, it’s hugely important. It brings a number of partners into the process, it allows us to tell our stories as we see them, and it gives us an opportunity to learn from each other and to help others learn about what’s really important. To me, that is reconciliation. ”

Larry McDermott

The Branches: The Site and Event

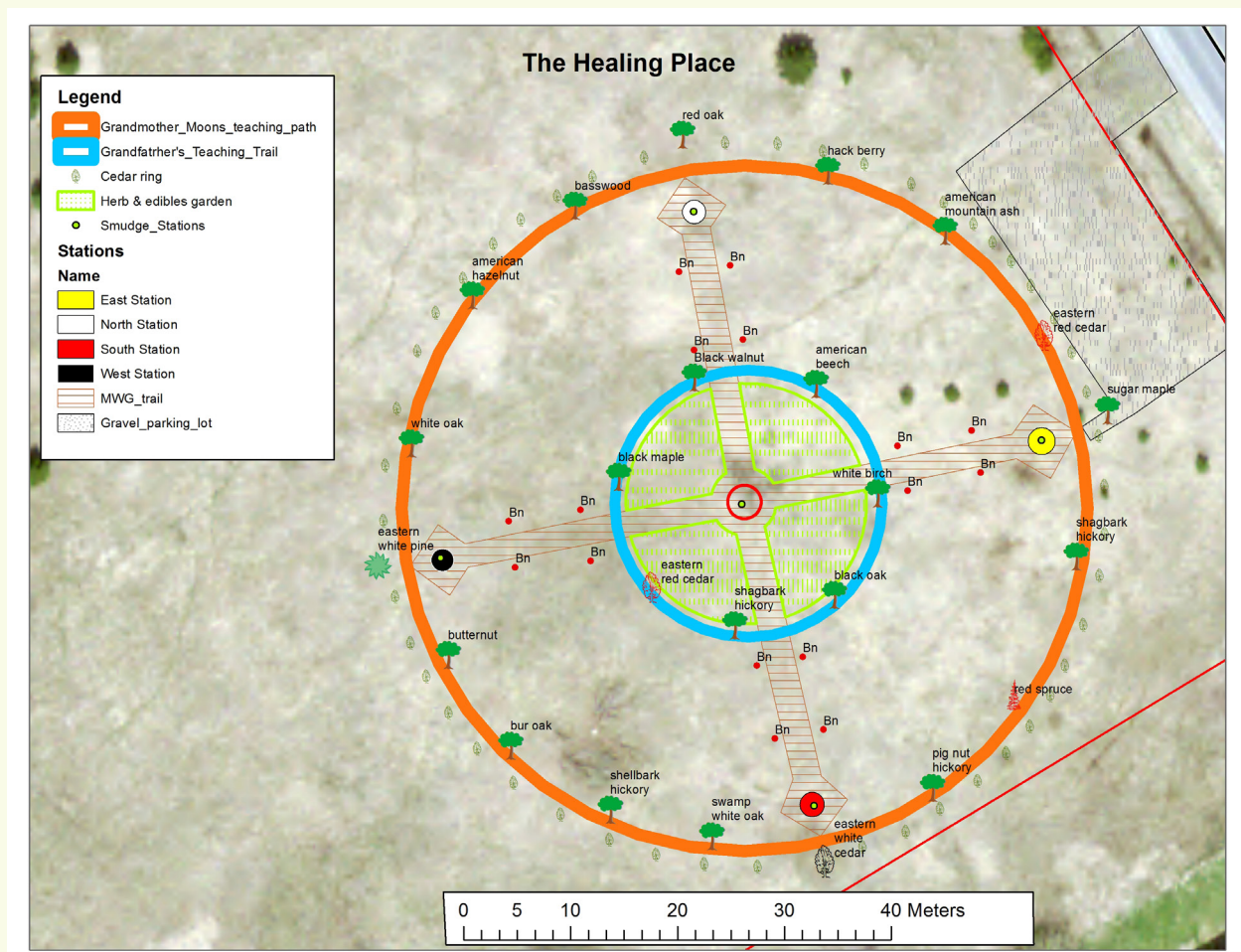


The Healing Place, planted on September 23, 2020 (National Tree Day), stands on the traditional territories of the Algonquin and Mohawk Nations in Shanly, Ontario. The 89-acre site, located on South Nation Conservation property, is home to several grassland Species at Risk, including the Bobolink, Eastern Meadowlark, and locally significant Gorgon Checkerspot butterfly.

Indigenous knowledge was interwoven into every aspect of The Healing Place, including species selection, site design, and graphic representation. In total, over 250 culturally significant trees, shrubs, and other species were planted according to a design by Chris Craig based on the medicine wheel and other cultural considerations.

Like the circle of life, the medicine wheel has no beginning and no end. The four pillars of life (mental, spiritual, emotional, and physical connections) and cardinal directions are represented in the wheel's spokes. Each colour of the wheel (white, yellow, red, and black) reflect the four elements all life depends upon: fire, earth, air, and water. Plant species and their locations were selected intentionally based upon cultural considerations.

- The east, where we enter and leave the circle, is also the entrance and exit to the site. Each direction is marked by a culturally significant tree: Red Oak in the north, Sugar Maple in the east, White Cedar in the south, and White Pine in the west.
- Medicinal herbs and berries such as strawberries, raspberries, red currant, white currant, gooseberries, and black berries were planted in the centre of the site.
- Seven trees were planted in the interior of the wheel and 13 along the exterior of the wheel to represent the seven Grandfather teachings and the 13 moons, respectively.
- An outside ring of Eastern White Cedars enclose the site, providing a quiet, safe place for self-healing.
- The land-based culture of Indigenous people intrinsically incorporates the presence of endangered tree species, such as the Butternut, and keystone tree species, such as the Sugar Maple, that ultimately promote biodiversity.



Twenty-five community and First Nations partners gathered to help plant The Healing Place. The planting event commenced with a traditional opening ceremony featuring a drum circle, smudging, offering of tobacco, and the Words Before All Else. The majority of the event was live streamed on Facebook for those unable to attend. It should be noted that interest in participating in this event was extremely high, but attendance had to be limited due to COVID-19 restrictions.

Funding from Assembly of First Nations, TD Bank Group, Enbridge Gas, and Ontario Power Generation was integral in supporting the establishment of The Healing Place. The site was donated through the Ecological Gift Program by John Gruntke with the intention to preserve ecological integrity.

The Forest: Vision for the Future



Truly, The Healing Place is more than a planting site or green space. It's about acknowledging and celebrating the connection between land and Indigenous culture. It's about stimulating difficult but important conversations. It's about beginning to restore land, health, language, and relationships. It's about working together to co-create an alternative future.

Our vision is simple: A network of Healing Places across the country where community members from both Indigenous and non-Indigenous backgrounds can come together and participate in the healing process of reconciliation, so that we may all learn how to move forward together. We will work towards this vision by continuing to maintain, expand, and identify opportunities for education on this site, while also carrying the idea to other communities.

Planting can support reconciliation only when it meaningfully engages all involved in a participatory manner. As such, it is each of our responsibilities to work together. As a group, we have made a long-term commitment to The Healing Place and the continual learning that comes with it; we have made a commitment to the concept of feeding the bundle and polishing the belt. We recognize that this is not a project with an end date, but rather an eternal lesson with its own heartbeat.

[Join Us On Our Journey](#)

To learn more and get involved with The Healing Place, please contact:
healingplaceinfo@plentycanada.com

“

This is a story that we tell; this is going to be a healing story that has many lessons, has many teachings for future generations. We're not just the descendants of our ancestors, we are future ancestors as Indigenous peoples, as people of this land.

Abraham Francis





The Healing Place • Tsi Tehshakotitsiéntha' • Endaji mino-pimaadizin • Lieu de guérison