



Niagara Escarpment Biosphere Network

Additional Resources Annex

Niagara Escarpment Biosphere

2024 Self Study



photo ©MarkZelinski.com

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

Niagara Escarpment Biosphere
Network Launch Presentation at
Brown Homestead
April 22, 2022

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**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



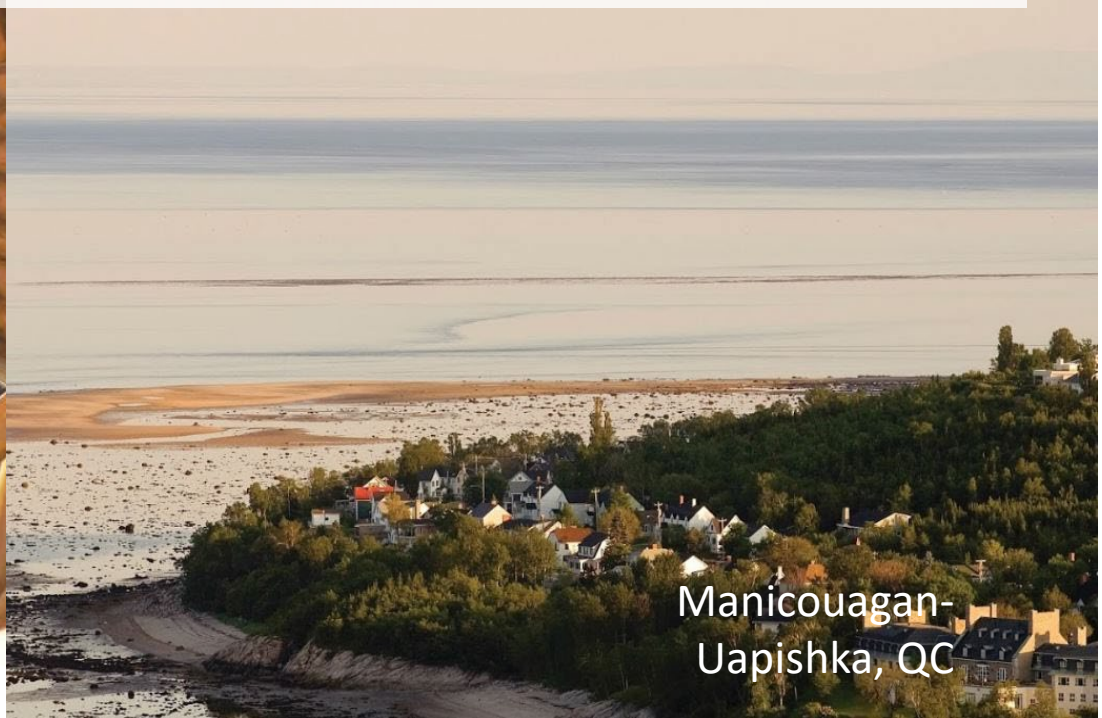
Clayoquot Sound, BC

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



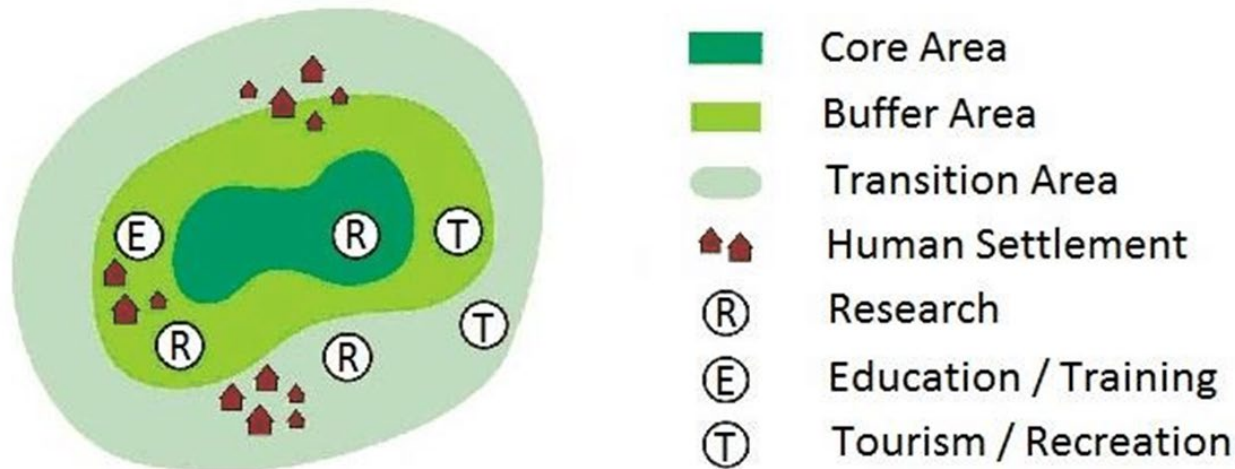
United Nations
Educational, Scientific and
Cultural Organization

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





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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
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- 7. Governance, Biosphere Reserve Management and Coordination
- 8. Criteria and Progress made
- 9. Supporting Documents
- 10. Addresses





Comments?
Questions?



**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

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**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



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,



William Tigert
Town Clerk
/jl



A Healthy Watershed for Everyone

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

Sent via E-Mail: info@nebnetwork.org

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

The Municipality of Grey Highlands

206 Toronto Street South, Unit One - P.O. Box 409 Markdale, Ontario N0C 1H0
519-986-2811 Toll-Free 1-888-342-4059 Fax 519-986-3643
www.greyhighlands.ca info@greyhighlands.ca

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

The Municipality of Grey Highlands

206 Toronto Street South, Unit One - P.O. Box 409 Markdale, Ontario N0C 1H0
519-986-2811 Toll-Free 1-888-342-4059 Fax 519-986-3643
www.greyhighlands.ca info@greyhighlands.ca

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 jpaylove@westlincoln.ca at 905-957-5129.

Yours truly,

A handwritten signature in cursive script that reads "J Paylove".

Justin J. Paylove
Deputy Clerk



758070 2nd Line E
Mulmur, Ontario
L9V 0G8

Local **(705) 466-3341**
Toll Free from 519 only **(866) 472-0417**
Fax **(705) 466-2922**

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;

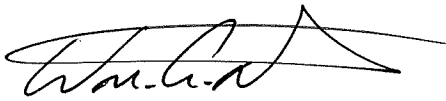
And whereas *The City of Niagara Falls* has demonstrated its commitment to the integrity of the NEB through policy and action over many decades;

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**

BRINGING HOME THE LIMA ACTION PLAN

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

June 23, 2016

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'écartement 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



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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



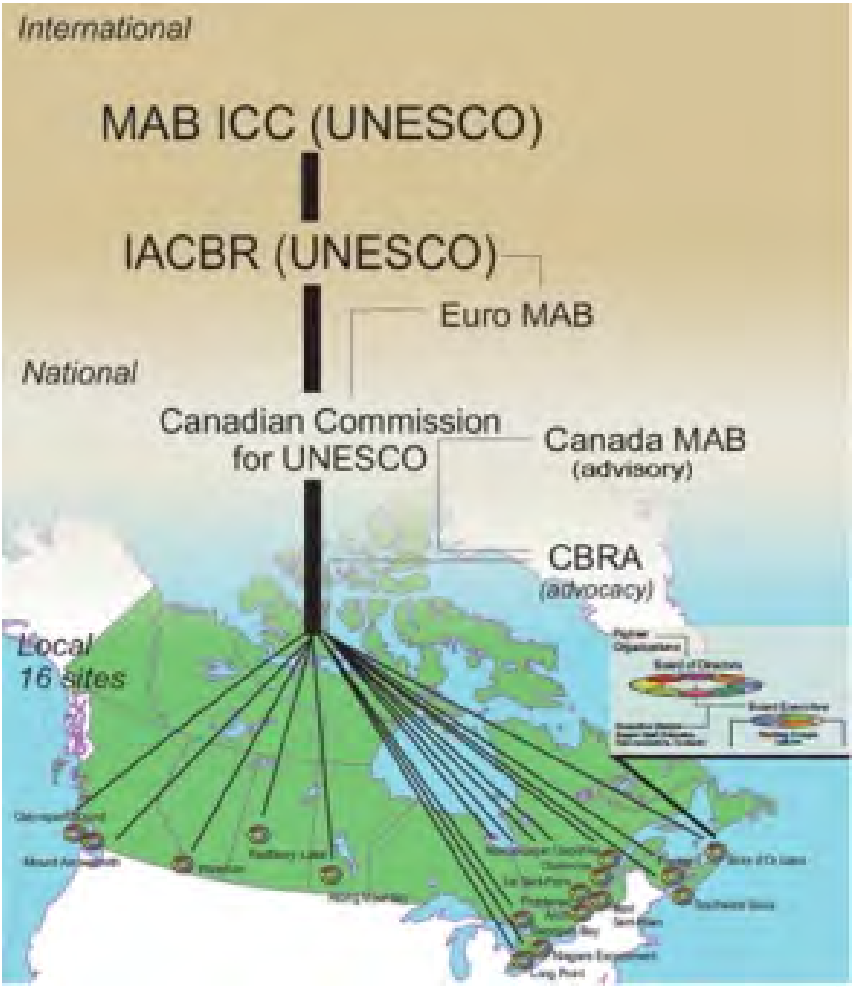
History of the UNESCO Man and Biosphere Programme

- 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)

Ontario's Niagara Escarpment - A UNESCO World Biosphere Reserve



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'écartement du Niagara

UNESCO Man and Biosphere (MAB) Programme

Vision:

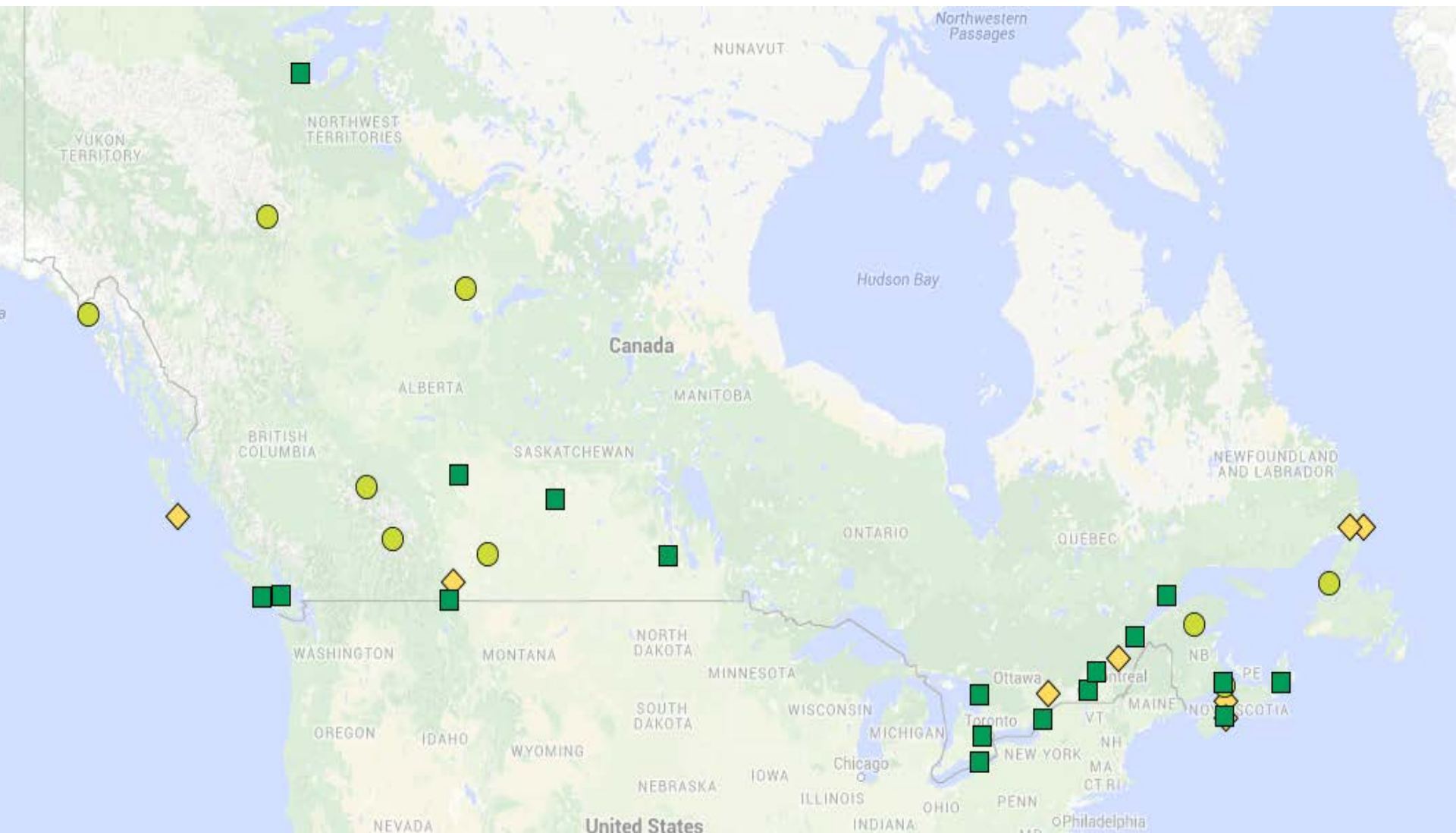
“ A world where people are conscious of their common future and interaction with our planet, and act collectively and responsibly to build thriving societies in harmony with the biosphere”

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 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



NIAGARA ESCARPMENT

A UNESCO World Biosphere Reserve

A place where people share a way of living with nature that builds a future we're proud of



Ontario's Niagara Escarpment - A UNESCO World Biosphere Reserve



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la science et la culture



Niagara Escarpment
Biosphere Reserve

Réserve de la
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

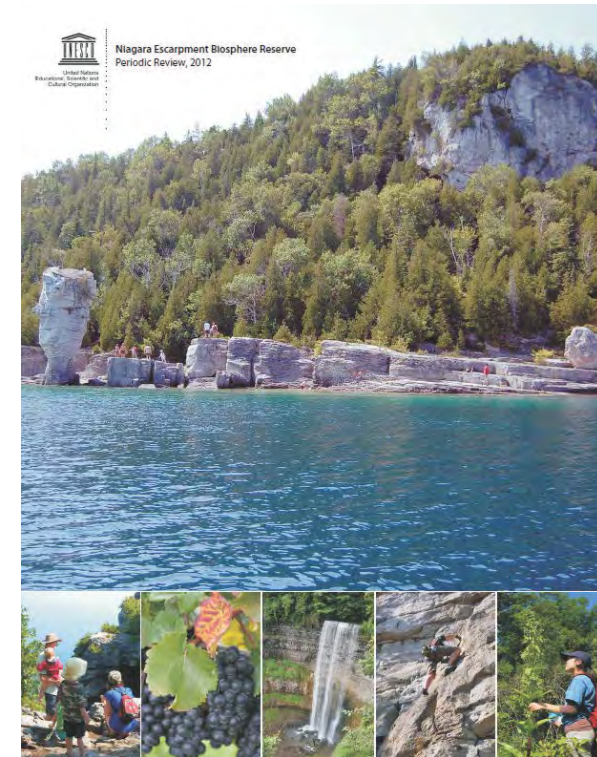
The Niagara Escarpment Biosphere Reserve was reviewed in 2002 and 2012/13

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



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la science et la culture



Niagara Escarpment
Biosphere Reserve

Réserve de la
biosphère de
l'écartement du Niagara

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?





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

Phone: (613) 278-2215 Fax: (613) 278-2416
Website: www.plentycanada.com

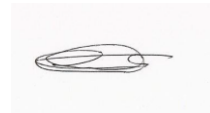
example, co-governance arrangements are one way of achieving this type of relationship by creating space for the healthy interaction of Canadian and Indigenous Peoples.

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

GOOD 
ROOTS

 **terrapi**n
SOCIAL FINANCE

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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.

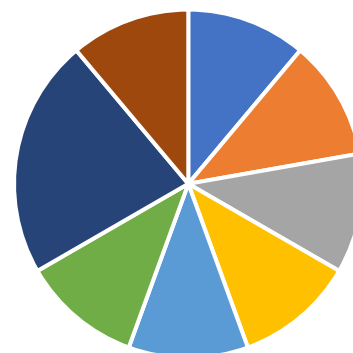
The chart below indicates interest generated by the July 30 workshop, the follow-up emails and the online survey.

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

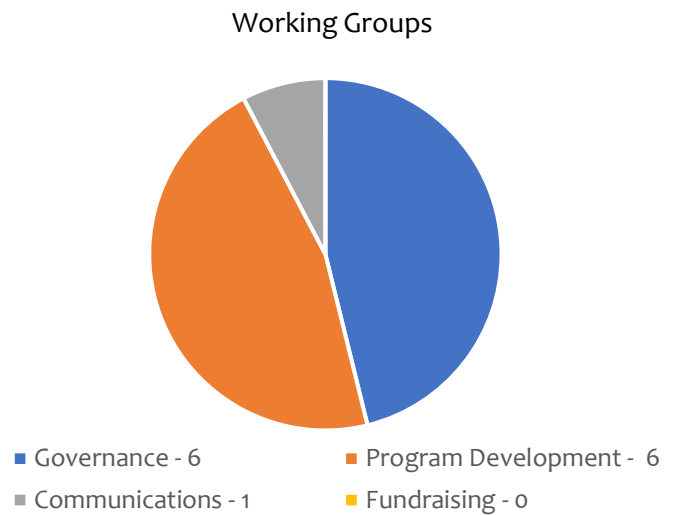


- NGO Indigenous Fishery - 1
- NGO Sport - 1
- NGO Active Transport - 1
- NGO Conservation - 1
- NGO - Rural CED - 1
- Municipal Government - 1
- Academia - 2
- Professional - 1

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.

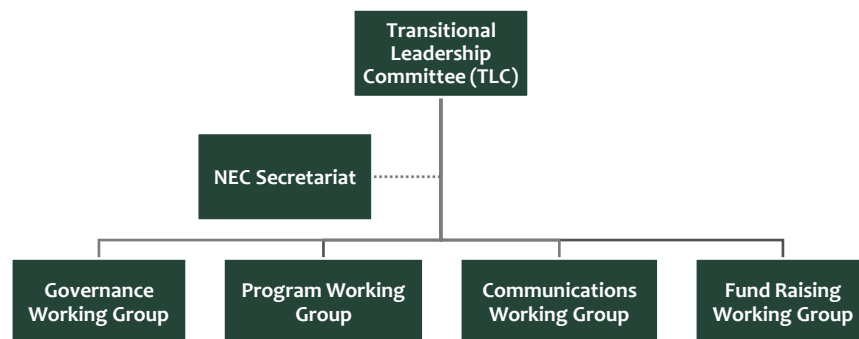


Figure 1: proposed transitional leadership structure

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



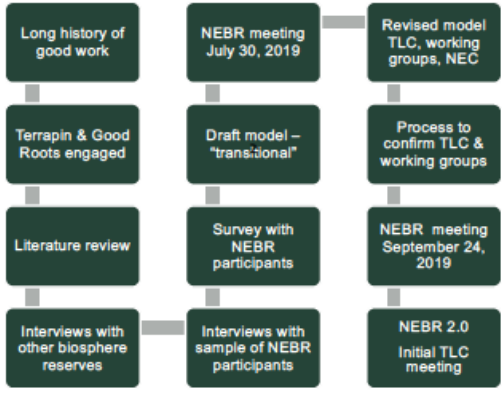
September 24, 2019

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GOOD ROOTS

Journey to NEBR 2.0



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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[NEBR meeting July 30, 2019]; E --- F[Draft model - "transitional"]; F --- G[Survey with NEBR participants]; G --- H[Interviews with sample of NEBR participants]; H --- I[Revised model TLC, working groups, NEC]; I --- J[Process to confirm TLC & working groups]; J --- K[NEBR meeting September 24, 2019]; K --- L[NEBR 2.0 Initial TLC meeting];
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GOOD+ ROOTS

Today's Meeting Objectives

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



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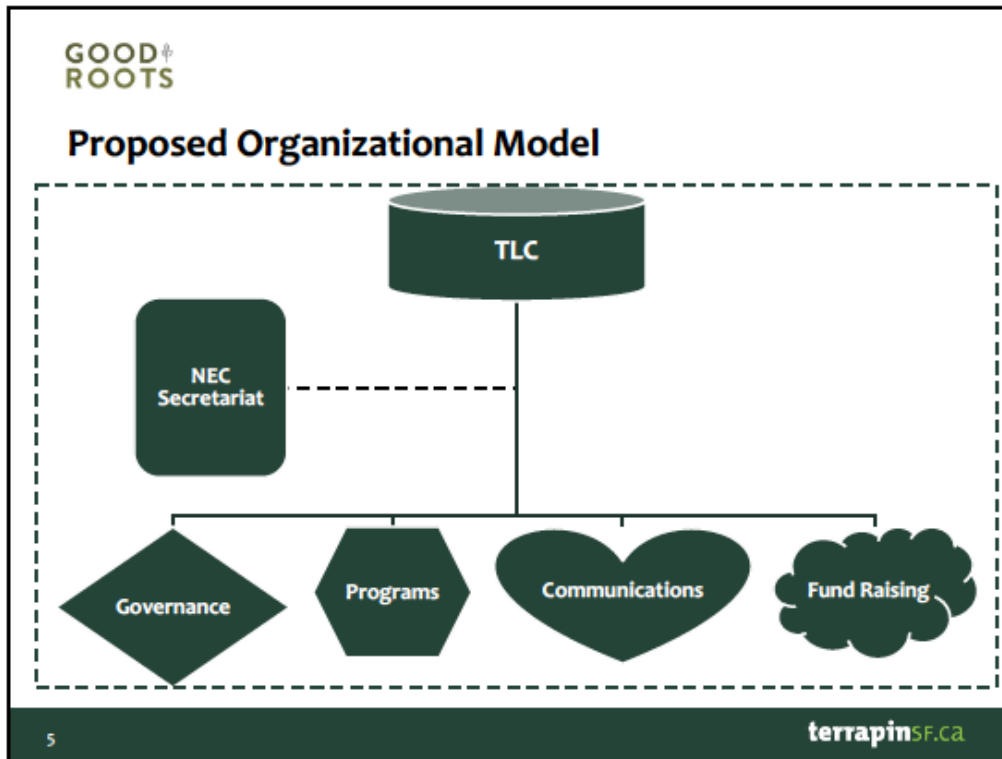
GOOD+ ROOTS

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**



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- GOOD ROOTS**
- ## 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.
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GOOD ROOTS

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

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GOOD ROOTS

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

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GOOD ROOTS

Transitional Leadership Committee

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

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GOOD ROOTS

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

Working Group	Count
Governance	8
Program Development	6
Communications	1
Fundraising	0

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Working Groups

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

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GOOD
ROOTS

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

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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)

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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

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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



**GOOD+
ROOTS**

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



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**GOOD+
ROOTS**

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



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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



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Clarifying Questions



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GOOD
ROOTS

Exercise: Confirming our mission



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GOOD
ROOTS

Breakout: Working Groups



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GOOD ROOTS

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

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GOOD ROOTS

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

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GOOD⁺
ROOTS

Breakout: Working Groups

- Report back
- Next steps

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GOOD⁺
ROOTS

Reflections/Closing Remarks



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GOOD
ROOTS

Meeting: Transitional Leadership Committee



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GOOD
ROOTS

TLC Agenda

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

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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.

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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).

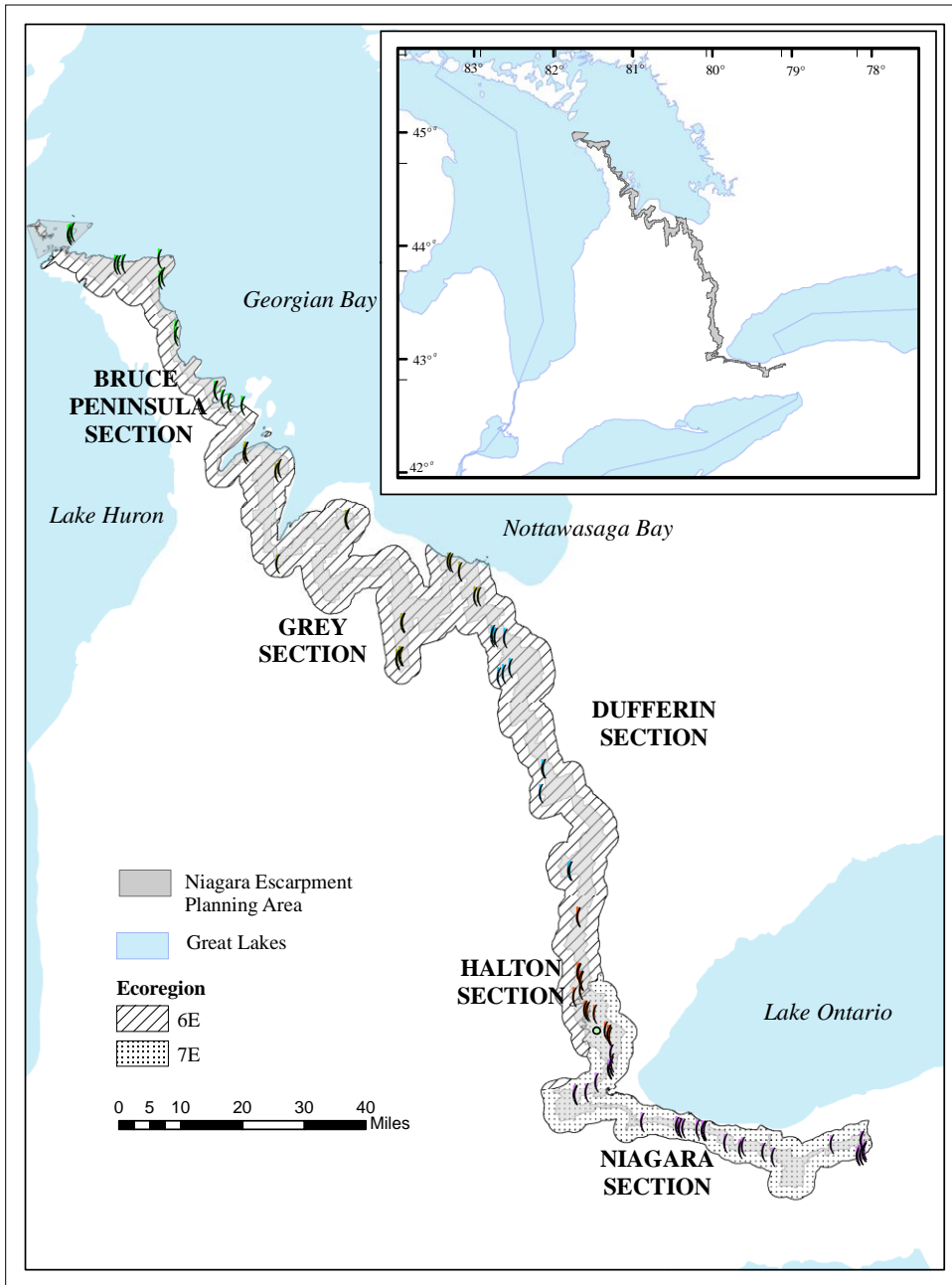


Figure 1. The location of the 88 sampled forests stands across the five sections (Niagara, Halton, Dufferin, Grey, Bruce Peninsula sections) of the Escarpment.

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).

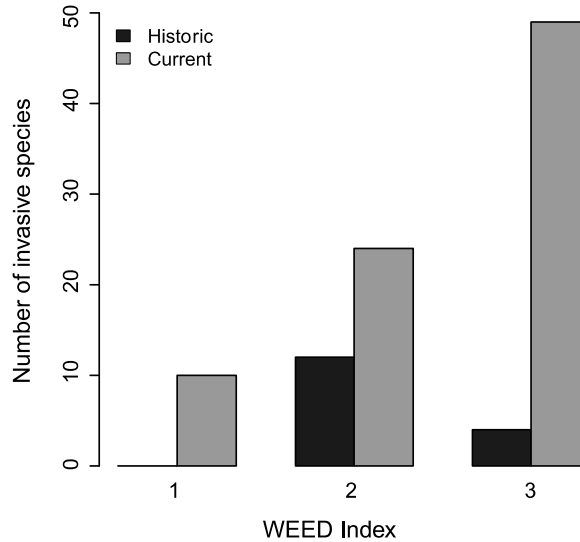


Figure 2. **Number of stands (y-coordinate)** with average weed index ranked from 1 to 3 (x-coordinate) for two time periods. The black bar indicates historical data, and the grey bar presents data.

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).

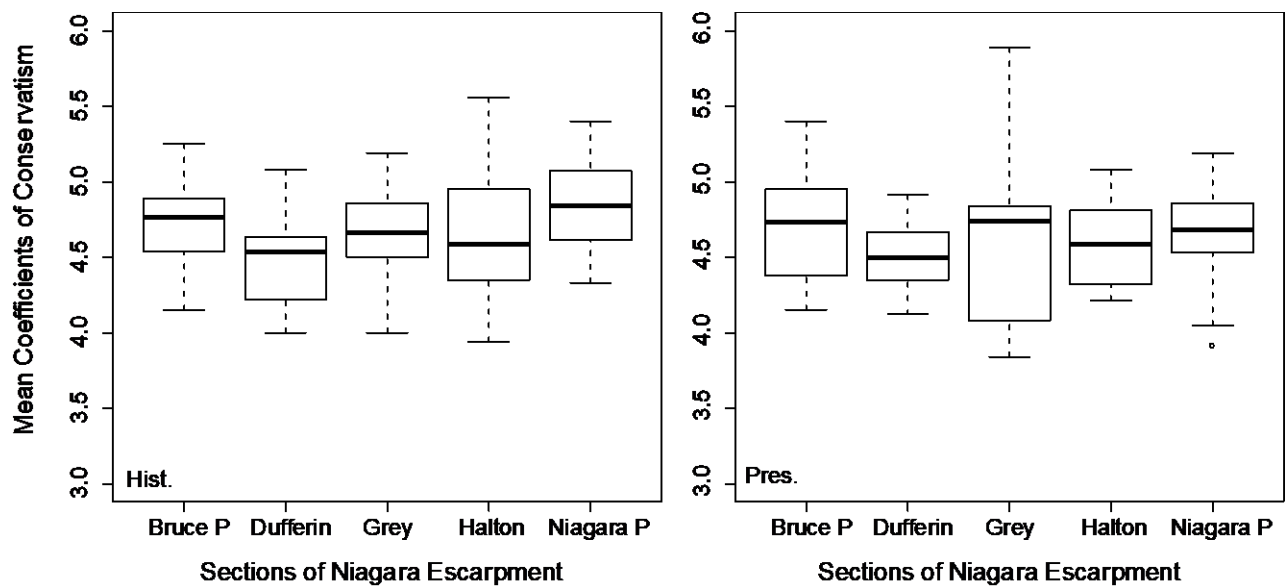


Figure 3. Boxplots of average Coefficients of Conservatism for stands across the five sections of the Niagara Escarpment: historical CC values (Hist. left)) and present-day (Pres. right).

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.

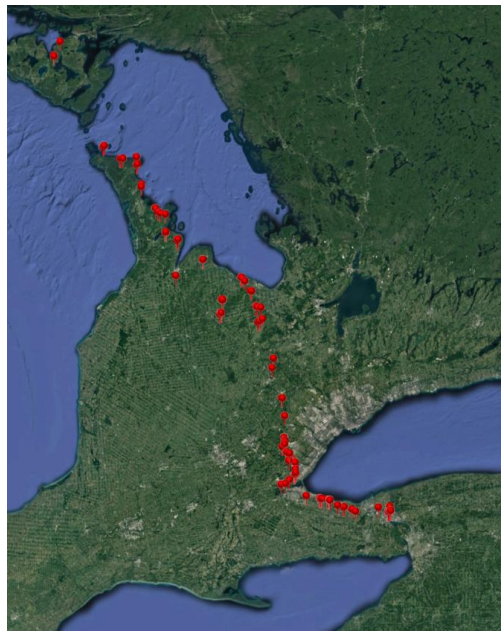


Figure 4. Geo-referenced VSP plots sampled across the Niagara Escarpment.

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.

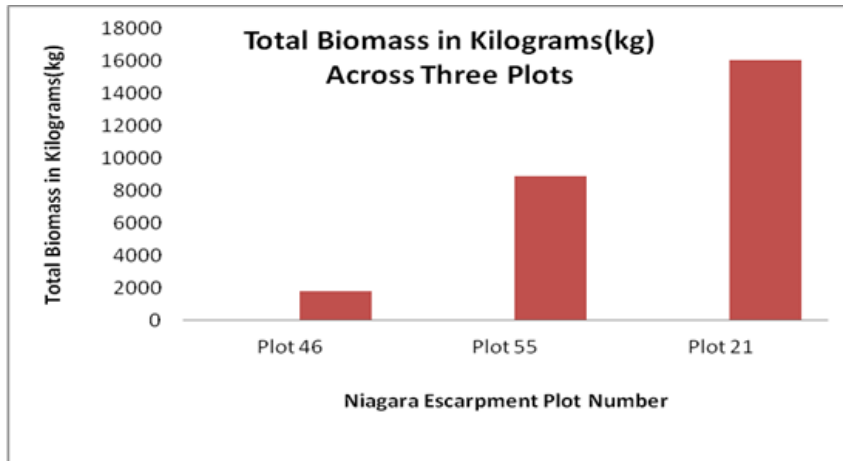


Figure 5. An example of biomass per plot (in kilograms) across three plots

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,

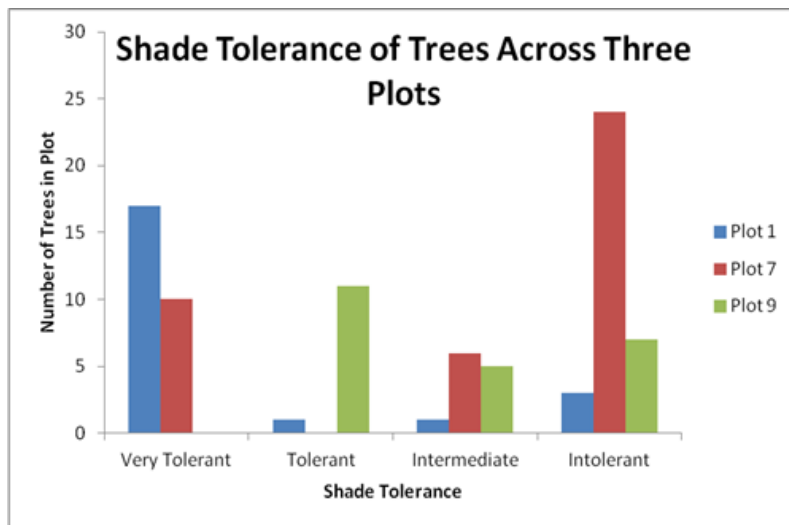


Figure 6. The number of shade-tolerant tree species across three VSP plots