

***Tracking the Big Picture:
Ecological Change in Carolinian Canada***



**Royal Botanical Gardens, Burlington
November 5, 2013**

Carolinian Canada and Royal Botanical Gardens (RBG) are partnering to bring you the 2013 Carolinian Canada Ecosystem Recovery Forum, with the theme of monitoring ecological change across the Carolinian life zone. The Forum will explore the rapid advances in remote sensing tools, the flowering of citizen science initiatives, the monitoring of rare species populations and habitats, and many other related topics, with inspiring keynote speakers and informative concurrent sessions.

We will ask where do all the data go, and how are they best used to rebuild healthy ecosystems? Are we seeing recovery or are things getting worse? Who is monitoring what? Are we monitoring the right things? How does it all fit together? And how can we help each other?

The Forum will explore the tools and methods to help our understanding of ecological change in Canada's most biologically diverse and threatened region. Participants will be inspired by new ideas and state of the art techniques, and have a chance to share and learn from the conservation successes and challenges of experts and peers.



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***Tracking the Big Picture:
Ecological Change in Carolinian Canada***

Daytime Event

8:30 – 9:00 **Registration** (refreshments)

9:00 – 9:10 **Welcome & Introduction**
Tys Theysmeyer, Head of Natural Lands, Royal Botanical Gardens

Forum Themes & Goals
Don Pearson, Chair, Carolinian Canada

9:10 – 10:45 AM **Keynote Speakers**
Moderator: Michelle Kanter, Carolinian Canada Coalition

9:10 – 9:30 **The Ecological History of Southern Ontario**
John Riley, Author / Nature Conservancy of Canada

Summary and key questions for today and the future.

9:30 – 9:55 **Carolinian Canada 2113 – Towards a Sustainable Future?**
Steve Hounsell, Ontario Biodiversity Council

The future is all about the choices that we collectively make. Current and emerging threats to biodiversity will be juxtaposed against some encouraging signals that society is waking up to the importance of pursuing a more ecologically sustainable future. We appear to be “strategy rich and implementation poor”. Will we wake up in time “to protect what sustains us”?

9:55 – 10:20 **Finding Common Ground on Indigenous and Non-Indigenous Historical Ecology: Re-thinking Walpole Island, Chatham-Kent, and Lambton county as a greater cultural and physical ecosystem**
Clint Jacobs & Jared MacBeth, Walpole Island First Nation
and Rick Fehr, Western University

This presentation will bring together community-based researchers and faculty from the First Nations Studies Program at Western to discuss historical ecology and the traditional territory around Walpole Island First Nation.

The presentation will consider ways of engaging both Indigenous and non-Indigenous peoples through research and activities that emphasize the cultural value and history of place. The talk concludes with ways Indigenous and non-Indigenous peoples can come together to work toward common restoration efforts.

10:20 – 10:45

Monitoring the Big Picture in Carolinian Canada

Jarmo Jalava, Director of Ecosystem Recovery, Carolinian Canada Coalition

Carolinian Canada's work and interests range from "The Big Picture" vision, through ecosystem- and species-based recovery strategies, to Conservation Action Plans (CAPs) for biodiversity hotspots, to on-the-ground implementation with partner agencies, community groups and individual landowners. This presentation will pose some questions: What are we monitoring in Carolinian Canada? Are our conservation efforts working? What are our critical information needs? What monitoring techniques are available to us? And, hopefully, offer a few answers.

10:45 – 11:00

Break (refreshments)

11:00 – 12:30 PM Concurrent Sessions

20-minute presentations per group, with 5-10 minutes after each presentation for questions.

Group A: Monitoring Landscapes and Large Systems

Moderator: Ron Wu-Winter, Vice Chair, Carolinian Canada Coalition

A1

SOLRIS 2010: The Next Iteration of Land Cover Mapping in Southern Ontario

11:00 – 11:30

Joel Mostoway, Ontario Ministry of Natural Resources

SOLRIS (Southern Ontario Land Resources Information System) is a land cover inventory showing the extent and distribution of natural and cultural features across the landscape for the Mixedwood Plains Ecoregion using the year 2000 as the baseline reference. SOLRIS is now being updated to 2010 imagery using a simple, proven process called "Change Detection." This will allow the Ontario Ministry of Natural Resources (OMNR) to monitor changes in land cover over the past 10 years and report on trends.

A2

Monitoring Land Cover Trends – the Middlesex Experience

11:30 – 12:00

Terry Chapman, Upper Thames River Conservation Authority

In order to identify significant landscape features for Municipal Planning Documents, many municipalities and conservation authorities in Southwestern Ontario have been working to update natural heritage feature data. This presentation will 1) the discuss the types of natural features being identified and collected, how those features are collected, and the imagery being used to update the data; 2) how the data relates to the Natural Heritage Reference Manual (NHRM) for Natural Heritage Policies of the Provincial Policy Statement, leading to the inclusion of data in Municipal Planning Documents; and 3) other uses of natural heritage mapping beyond the NHRM.

A3 **Monitoring Land Cover Trends, the Chatham-Kent Experience**
12:00 – 12:30 **Tom Beaton, Municipality of Chatham-Kent**

Group B: Site- and Species- Scale Monitoring and Project Reporting
Moderator: Mary Elder, Senior Planner, Norfolk County & Board of Directors,
Carolinian Canada Coalition

B1 **Natural Heritage Information Centre**
11:00 – 11:30 **Jim MacKenzie, Ontario Ministry of Natural Resources**

The Natural Heritage Information Centre (NHIC) has been working with conservation partners to track Ontario's biodiversity for the past 20 years. We maintain the official provincially tracked species lists and the provincial record for tracked species observations. We work within the international conservation science community to assign conservation status ranks for species in Ontario. We also manage natural heritage features information for all natural area types across Ontario.

B2 **Overview of Citizen Science Initiatives**
11:30 – 12:00 **Becky Stewart, Bird Studies Canada**

In Canada alone, tens of thousands of people log hundreds of thousands of hours doing what they love, monitoring birds, through such programs as Breeding Bird Atlases, Breeding Bird Surveys, National Harvest Surveys, Nocturnal Owl Surveys, and Christmas Bird Counts. Citizen science data generate hundreds of scientific publications, improve museum collections, and guide wildlife management and public policy. Bird Studies Canada is dedicated to the conservation of wild birds and their habitats and is built on the enthusiastic contributions of thousands of citizen scientists. Key to the success of Bird Studies Canada and its programs is engaging volunteers in meaningful research and monitoring that in turns drives on-the-ground conservation action and stewardship. Today, we'll discuss how we can harness the power of citizen science to affect conservation at multiple spatial scales including the many successes and challenges we face in light of an ever-changing landscape.

B3 **Jefferson Salamander and the King Road Seasonal Closure**
12:00 – 12:30 **Lesley Matich, Conservation Halton**

This presentation will discuss the process leading to the seasonal closure of King Road in Burlington during the annual migration of Jefferson Salamanders. Conservation Halton's Long Term Environmental Monitoring Program (LEMP) was able to feed directly into the planning process and complement monitoring work being undertaken in support of an adjacent development project. Public support of the project has been overwhelmingly positive, and future commitments by the City of Burlington will hopefully ensure that this conservation success story continues in perpetuity.

12:30 - 1:30

Lunch

1:30 - 3:30 PM

Concurrent Sessions (continued)

20-minute presentations per group, with 5 minutes after each presentation for questions, and 5-minute project updates from CAP partners.

Group A: Monitoring Landscapes and Large Systems

Moderator: Brian Craig, President, Long Point World Biosphere Reserve Association & Board of Directors, Carolinian Canada Coalition

A4
1:30 – 1:55
Update on Ecological Land Classification (ELC) for Ontario: a framework for inventory and monitoring
Harold Lee, Ontario Ministry of Natural Resources

This presentation will discuss the efforts the Ontario Ministry of Natural Resources has been taking to re-engineering ELC over the last 11 years, with the goal of the classification to be provincially standardized and consistent. The SELC Technical Committee was established in 2008, and has been actively involved with overseeing the development and refinement of the new ELC in southern Ontario. This collaboration will make sure that the ELC fulfills practitioner needs and the gaps that have been identified, and is easily related to the older ELC.

The SELC team is working with our collaborators to re-engineer, design, test, and update the ELC. By engaging ELC practitioners, and working with them to establish their needs and applications of ELC we aim to deliver the new SELC in 2012-13.

1:55 – 2:00
Students Monitoring for Climate Change
Alice Casselman, Association for Canadian Educational Resources

Whats new at ACER? ACER has new sites, new partners, new programs and has published new research while expanding established programs. We are working with 9 school boards. ACER has expanded to include Niagara, community mapping and risk management workshops around climate change impacts in your backyard. When you hug a tree, use a measuring tape!

A5
2:00 – 2:25
Vegetation Sampling Protocol / Landscape Monitoring Applications
Dr. Danijela Puric-Mladenovic, Ontario Ministry of Natural Resources

This presentation will discuss: 1) Existing inventory and monitoring in southern Ontario and how it compares to monitoring around the world; 2) Vegetation information needs in multifunctional and settled landscapes; and 3) What is Vegetation Sampling Protocol (VSP) and what is not?

- What is different and new about VSP
- The compatibility of VSP methodology with other inventory and monitoring efforts and protocols
- The existing and potential VSP applications
- VSP inventory and monitoring vision

2:25-2:30 **Pollinators at Risk Initiative**
Victoria MacPhail, Wildlife Preservation Canada

Wildlife Preservation Canada's mission is to save animal species at risk from extinction in Canada and overseas through hands-on intervention work. We are working on eight animal species in the Carolinian Zone and have another eleven species from this area on our priority waiting list; updates on two of these species and on some recent plant research will be given in this presentation. Visit www.wildlifepreservation.ca for more information on our work.

A6 **Nature for Niagara's Future: Our best effort at developing a**
2:30 – 2:55 **Natural Heritage System**
Deanna Lindblad, Niagara Peninsula Conservation Authority

After the completion of the Natural Areas Inventory for Niagara, the Nature for Niagara's Future Project involved the assessment of the data for the overall contribution of the natural heritage features to the ecosystem. Based on best available science, a cross section of stakeholders came together to work towards a set of common goals. Using a consensus-based approach to scenario development, the stakeholders learned to appreciate each other's points of view as they worked through many challenges. Hear about our successes and failures on the road to a Natural Heritage System for Niagara.

2:55 – 3:00 **An update on Landscape Conservation projects from the Canadian**
Wildlife Service, Ontario Region
Graham Bryan, Canadian Wildlife Service, Environment Canada

CWS-ON has just released the third edition of How Much Habitat is Enough? (HMHE3). The 3rd edition has been expanded to 127 pages with revised guidelines, more explanatory text, more references and new grassland guidelines. The grassland guidelines focus on existing and potential grassland landscapes, and to complement this advice CWS is working on a project to identify such landscapes. CWS hopes to integrate both HMHE3 and the grassland project into ongoing conservation blueprinting work.

A7 **The Living Infrastructure of Lower Spencer Creek – Restoring the**
3:00 – 3:30 **Future**
Hazel Breton, Hamilton Conservation Authority

This presentation will focus on the work conducted through the Lower Spencer Creek Integrated Subwatershed Study. The first phase of this project built an inventory of existing information, developed an extensive monitoring program to supplement missing information, and subsequently developed a characterization of the watershed, subwatershed and stream reach condition. A multidiscipline approach was taken that included groundwater, surface water, water quality, fluvial geomorphology, terrestrial and aquatic assessments. Integration between disciplines was key to characterizing the natural systems. Simulations will be carried

out to assess impact of future changes, the results of which will be used as input into a framework for implementation under the headings Planning and Policy, Rehabilitation and Retrofit, Stewardship, Monitoring, and Research and Development.

Group B: Site- and Species- Scale Monitoring & Project Reporting Results, Trends, Challenges and Applications

Moderator: Owen Williams, Board of Directors, Carolinian Canada Coalition

B4 Wetland & Species At Risk Monitoring 1:30 – 2:00 Dr. Pat Chow-Fraser, McMaster University

Turtles are one of the most endangered taxonomic groups, and in Ontario, 7 of the 8 native species of freshwater turtles are listed as species-at-risk (SAR). Their population declines have been attributed to habitat loss and degradation that are the direct result of human activities. One such species is the Blanding's turtle, which is listed as threatened. Because of competing demands for limited space in urban, agriculturally and recreationally developed areas, we want to replace the traditional approach of applying a set buffer around resident wetlands to designate turtle habitat, with one that relies on using GIS, remote sensing techniques and high-resolution tracking data to identify critical habitat and movement corridors on a site-by-site basis. We want to enable governments and landowners to conserve the most important areas required for survival of the SAR. Similarly, we are using GIS and remote sensing to map large areas (60m x 60m) colonized by the invasive Phragmites throughout the coastal zone of the Great Lakes. This is a collaborative project with scientists from Michigan Technological University and will produce a binational GIS map of Phragmites and other wetland vegetation around the shoreline of all five Great Lakes.

B5 Studying Eastern Flowering Dogwood at the Spooky Hollow Nature 2:00 – 2:25 Sanctuary Jen Baker, Hamilton Naturalists' Club

Over the last two years, the Hamilton Naturalists' Club (HNC) has been conducting a comprehensive inventory of more than 1,400 Eastern Flowering Dogwoods at its Spooky Hollow Nature Sanctuary. The presentation will summarize the monitoring approaches being followed to assess the health of this endangered species. Jen will also provide initial thoughts on the effect of stewardship activities, including a prescribed burn and conifer thinning, on the health of the Eastern Flowering Dogwoods.

2:25 – 2:30 Thames Talbot Land Trust: Elgin Greenway CAP Update Stan Caveney, Thames Talbot Land Trust

Land securement, restoration and stewardship form EGCAP's conservation tripod. The Thames Talbot Land Trust's goal is to acquire prime lands within or connecting protected natural areas that lie within 5km of Elgin County's 100km-long Lake Erie coastline. The EGCAP planning process identified severe limitations in the scope and data available on SAR distribution in the county. This information is needed to help select prime targets for securement. Carolinian

Canada recently announced a two-year SAR Natural Heritage Study in Elgin County that will greatly assist the Land Trust in its conservation deliberations.

B6 **Implementing and Monitoring Conservation Actions in NCC's
2:30 – 2:55** **Priority Natural Areas, Southwestern Ontario**
Wendy Cridland, Nature Conservancy of Canada

Wendy Cridland will provide an overview of the Nature Conservancy of Canada's (NCC's) work in implementing Natural Area Conservation Plans in two highly significant natural areas in southwestern Ontario – Southern Norfolk Sand Plain and Pelee Island in western Lake Erie. She will highlight land acquisition and habitat restoration work accomplished to date and describe how the effectiveness of these actions is being monitored over time.

2:55 – 3:00 **Ausable Bayfield Conservation Authority: CAP Update**
Kate Monk, Ausable Bayfield Conservation Authority

Kate will share a few highlights from the past year at Ausable Bayfield Conservation Authority, including efforts to control Pragmites and turtle monitoring.

B7 **Monitoring Breeding and Improving Habitat for RBG's at Risk Birds**
3:00 – 3:30 **Lindsay Barr, Royal Botanical Gardens**

The Royal Botanical Garden's diverse nature sanctuaries provide critical habitat for many of Carolinian Canada's species at risk birds. In addition to RBG's annual breeding bird point count surveys, this spring ecologists monitored for specific species at risk birds by conducting habitat searches. The information collected from these monitoring activities will be used to help protect and improve habitat for species at risk. RBG has already begun a project to restore critical habitat for the Acadian Flycatcher by removing invasive shrubs and trees from the interior forest. During this presentation, Lindsay will discuss the monitoring process and ongoing work that is being done to improve and recover habitat for species at risk birds at RBG.

3:30 – 3:40 **Health Break** (refreshments)

**Moderator: Don Pearson, Lower Thames Valley Conservation Area
& Chair, Carolinian Canada Coalition**

Session Moderator Reports: 5-minute summaries of key trends, information gaps, integration needs and approaches, other key points, from each of the four session moderators.

- **Mary Elder**, Senior Planner, Norfolk County; Board of Directors, Carolinian Canada Coalition
- **Brian Craig**, President, Long Point World Biosphere Reserve Association; Board of Directors, Carolinian Canada Coalition
- **Ron Wu Winter**, Toronto and Region Conservation Authority; Vice Chair, Carolinian Canada Coalition
- **Owen Williams**, Board of Directors, Carolinian Canada Coalition

Panel Reports: Monitoring challenges, future needs, implications of PPS changes, ESA changes, biodiversity offsets, and respond to audience questions

- **Anne Bell**, Ontario Nature
- **Michelle Kanter**, Carolinian Canada Coalition
- **Steve Hounsell**, Ontario Biodiversity Council
- **John Riley**, Nature Conservancy of Canada

4:30 – 4:35 PM **Closing Remarks**
Don Pearson, Chair, Carolinian Canada Coalition

4:35 – 6:30 **Dinner:** On your own. Group reservations may be made at local restaurants.

Evening Event

6:30 – 7:30 PM **Poster displays & Networking** (refreshments)
RBG Auditorium and Lobby

Displays from citizen science programs and local conservation initiatives.

7:30 – 8:30 **RBG's Speaker Series**
Introduction, RBG Auditorium
Tys Theysmeyer, Head of Natural Lands, Royal Botanical Gardens

Ontario Reptile and Amphibian Atlas
Tanya Pulfer, Ontario Nature

Citizen Science for the Birds
Becky Stewart, Bird Studies Canada

Feature Presentation

The Once and Future Great Lakes Country: An Ecological History

John Riley, Author, and Senior Science Officer, Nature Conservancy of Canada

The Once and Future Great Lakes Country is a history of environmental change in the Great Lakes region, looking as far back as the last ice age, and also reflecting on modern trajectories of change, many of them positive.

North America's Great Lakes country has experienced centuries of upheaval. Its landscapes are utterly changed from what they were five hundred years ago. The region's superabundant fish and wildlife and its magnificent forests and prairies astonished European newcomers who called it an earthly paradise but then ushered in an era of disease, warfare, resource depletion, and land development that transformed it forever.

John Riley chronicles how the region serves as a continental crossroads, one that experienced massive declines in its wildlife and native plants in the centuries after European contact, and has begun to see increased nature protection and re-wilding in recent decades. Yet climate change, globalization, invasive species, and urban sprawl are today exerting new pressures on the region's ecology.

Covering a vast geography encompassing two Canadian provinces and nine American states, *The Once and Future Great Lakes Country* provides both a detailed ecological history and a broad panorama of this vast region. It blends the voices of early visitors with the hopes of citizens now.

8:30 – 9:00 PM **Poster Displays & Networking** (continued)
John Riley Book-Signing

Speaker & Moderator Biographies

Jen Baker, Land Securement Specialist, Hamilton Conservation Authority

Jen Baker has been a volunteer with the Hamilton Naturalists' Club for over 10 years and has served as the only staff person since 2008. As the Land Trust Coordinator she works to secure natural lands for permanent protection and helps to steward the HNC's nature sanctuaries with a focus on protecting species at risk. She also coordinates the HNC's popular hands-on education program that teaches students about local wildlife and gets them out in nature. Prior to joining the HNC, Jen worked at Ontario Nature for almost 10 years in a variety of roles, including Boreal Program Manager and Nature Network Manager. Jen enjoys being outside as much as possible whether it's running, trekking to Machu Picchu, hiking Gros Morne Mountain, or paddling a quiet lake.

Lindsay Barr, Terrestrial Ecologist, Royal Botanical Gardens

As the terrestrial ecologist at Royal Botanical Gardens, Lindsay is dedicated to sustaining the biodiversity of RBG's natural lands through monitoring and restoration. Since 2008, Lindsay has initiated long term forest and breeding bird monitoring programs at RBG and has focused her work on the restoration of Tallgrass prairie and Carolinian forest habitat within RBG's nature sanctuaries. Lindsay grew up in Hamilton and is personally connected to the landscape and passionate about preserving the health of the local environment for the diverse number of species that call it home. Lindsay graduated from Trent University with a BSc Honours in Environment and Resource Science and holds a post-graduate certificate from Niagara College in Ecosystem Restoration.

Tom Beaton, D.H.T., CMM1, Manager, Parks, Cemeteries & Horticulture Community Services Division, Municipality of Chatham-Kent

Since graduating from the Niagara College Department of Horticulture, Tom's career in Horticulture has spanned the past 35 years. Starting with golf course and landscape interests, Tom's career expanded to include the Welland Parks Department, the Royal Botanical Gardens, and the Horticultural Society, Parks Department and Cemeteries Department in Chatham Kent. Tom is currently Manager Parks, Cemeteries and Horticulture for Chatham-Kent.

Tom is responsible for the management of the Municipal Active Communities portfolio that includes Trail development, Active Transportation and a Greening Strategy. He was instrumental in forming a partnership agreement in support of a Greening Strategy for the Municipality of Chatham-Kent. In the last 5 years, through 1.5 M in successful grant writing applications, 500,000 trees have been planted through private partnership agreements, increasing Chatham-Kent's new forest cover by 100 plus acres per year. Over 8,000 trees have been planted on Municipal properties as well.

Anne Bell, Director of Conservation and Education, Ontario Nature

Anne has been directing Ontario Nature's conservation and education programs since 2007. She holds a Ph.D. in environmental studies and has almost 20 years of experience working as an environmental educator, researcher and advocate for government and non-profit organizations. Anne loves to go birding, camping, swimming, and skiing and to play hockey with her husband and two young daughters, Kestrel and Castilleja.

Hazel Breton, Manager, Water Resources Engineering, Hamilton Conservation Authority

Hazel Breton is a Professional Engineer who has been working in the Water Resources field for over 29 years. She has spent about 4 years working for private consultants and about 25 years working for Conservation Authorities in Ontario. Hazel's work has focused on development of watershed and

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subwatershed plans, water quality and quantity strategies, guideline work for stormwater management, natural channel design water budgets and water allocation. Currently she is the Manager of Water Resources Engineering at the Hamilton Conservation Authority.

Graham Bryan, Biodiversity Coordinator, Canadian Wildlife Service, Environment Canada

Graham holds an MSc from the University of Toronto and has worked for non-government organizations and government agencies with a focus on natural heritage conservation, land trusts and protected areas. As the Biodiversity Coordinator for CWS-Ontario Region, Graham is concerned with the conservation of ecosystems and landscapes to protect and recover wildlife species. He accomplishes this through providing the best available science advice to Canadians and helping coordinate the actions of the Canadian Wildlife Service in Ontario.

Alice Casselman, Hon.BSc. M.Ed., Association for Canadian Educational Resources (ACER)

During her 35 year science teaching career, Alice founded the charitable Association for Canadian Educational Resources (A.C.E.R.Inc.) to develop, train, equip, provide resources and programs for students and communities to monitor and report changes in trees and forests locally using international protocols. She also helped establish the Council of Outdoor Educators of Ontario (COEO) and Canadian Outward Bound Wilderness School (COBWS). Alice Casselman has a life-long love of science, the outdoors, teaching, sharing and encouraging others to do the same!!

Stan Caveny, Thames Talbot Land Trust

Stan and his wife Anita own an old farm flanking a wooded ravine near the Lake Erie shoreline in West Elgin. As a retirement project they are attempting to restore and enhance the ecological functions of the property's pre-settlement Carolinian swamp and upland forest habitat. Stan is past president of the Thames Talbot Land Trust, a director with the Lower Thames Valley Conservation Authority, and a member of several naturalist clubs in Middlesex and Elgin counties. He is active in the Landowner Leadership program recently introduced by the Carolinian Canada Coalition.

Terry Chapman, Geographical Information System (GIS) Specialist, Upper Thames River Conservation Authority

Terry was born and raised in rural Southwestern Ontario (south of Tillsonburg in the metropolis of Frogmore, in the centre of the Carolinian Life Zone). From a young age, influenced by his parents and peers, he took an interest in how nature works and how we should effectively and efficiently manage our natural environment. (There's not much else to do in Frogmore).

Terry has a formal background as a Soil Engineering Technologist from Sir Sandford Fleming College. He has been employed by the Ausable Bayfield Conservation Authority and the Upper Thames River Conservation Authority for a combination of 25 years of experience. He participates in a number of provincial committees that support GIS/Mapping functionality and data collection standards for the Conservation Authorities across the province of Ontario. His background supports his interest in the natural environment and how GIS/mapping assists in monitoring, analysis and reporting change within a watershed jurisdiction.

Dr. Pat Chow-Fraser, Professor of Biology and Director of Life Sciences at McMaster University

Dr. Chow-Fraser is Professor of Biology and the Director of Life Sciences at McMaster University in Hamilton. She and her students conduct research on the ecology, conservation and restoration of coastal wetlands and streams in the Great Lakes basin. One of the primary goals is to assess the long-term health

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of wetlands by using information on the species composition of fish, birds, plants and macro-invertebrates found in wetlands to indicate the negative effects of human activities and unfavourable water-level regimes. Her students use remote sensing, geographic information systems, radio-telemetry and other landscape ecology techniques to determine how naturally occurring fish and wildlife use their habitat. This information is then used to find best options to protect and conserve their critical habitat.

Brian Craig, President, Long Point World Biosphere Reserve Association

Brian Craig recently retired from Parks Canada, Southwestern Ontario Field Unit, as a Landscape Ecologist and was previously a Senior Science Advisor with Environment Canada's Ecological Monitoring and Assessment Network Coordinating Office. His interests include biodiversity conservation, landscape restoration, and ecological monitoring. He is a Director with the Canadian Biosphere Reserves Association, the Long Point World Biosphere Reserve Foundation and the Carolinian Canada Coalition. Brian joined the Carolinian Canada Board of Directors in 2007. Currently he and his sweetie are restoring 50 acres along Big Creek in Norfolk County to Carolinian Forest, Tall grass Prairie, and Wetland.

Wendy Cridland, Program Manager, Nature Conservancy of Canada

Wendy Cridland is Program Manager for the Nature Conservancy of Canada's Southwestern Ontario subregion where she oversees land conservation within strategically defined natural areas, focusing on securement of priority properties and managing these lands to conserve and enhance native habitats and associated plants and animals. Prior to this appointment, Wendy coordinated NCC's Conservation Volunteers in Ontario. Wendy has also worked for Bird Studies Canada and Long Point Region Conservation Authority and has volunteered locally for the Long Point World Biosphere Reserve Foundation and the Norfolk Environmental Advisory Committee. Wendy has a B.A. (Honours) in Geography from Wilfrid Laurier University and a M.A. in Geography from the University of Waterloo.

Mary Elder, Senior Planner, Norfolk County & Board of Directors, Carolinian Canada Coalition

Mary Elder is a Registered Professional Planner and works as a Senior Planner for Norfolk County. Previously she was a Policy Planner with the Region of Haldimand-Norfolk and a member of Carolinian Canada. In addition to group facilitation and policy development, sustainable rural development and environmental planning are her main planning interests. She is the staff liaison for the Norfolk Environmental Advisory Committee. Mary has lived in Chatham-Kent, Lambton, Huron and Norfolk Counties, all municipalities that are part of Carolinian Canada. Mary has a B.E.S. in Geography from the University of Waterloo.

Rick Fehr, Acting Director of the First Nations Studies Program at Western University, London

Rick Fehr is originally from Wallaceburg, Ontario, and is the Acting Director of the First Nations Studies Program at Western University, London. He has a PhD in Environmental Studies from York University.

Steve Hounsell, Ontario Biodiversity Council, Trees Ontario, Canadian Business and Biodiversity Council, Biodiversity Awareness Network, and Algonquin to Adirondacks Collaborative

Steve Hounsell is a recently retired biologist who spent his career with Ontario Power Generation (OPG) and the former Ontario Hydro, where he managed OPG's biodiversity programs. Steve, an ardent supporter of sustainability and the conservation of biodiversity, is the Chair of the Ontario Biodiversity Council, the

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President of Trees Ontario, and a current director of the Canadian Business and Biodiversity Council, the Biodiversity Education and Awareness Network and the Algonquin to Adirondacks Collaborative. Steve is a Past President of Ontario Nature and a past director of the Natural Step Canada.

Jarmo Jalava, Director of Ecosystem Recovery, Carolinian Canada Coalition

Jarmo Jalava has devoted more than 30 years of his life to conservation work in Ontario, the past seven with Carolinian Canada. He has authored or co-authored numerous scientific reports, essays and popular articles in the fields of ecology and the environment, including: "The Big Picture: A Natural Heritage Vision for Carolinian Canada"; baseline ecological studies of two of Ontario's UNESCO World Biosphere Reserves (Niagara Escarpment and eastern Georgian Bay); recovery strategies for 17 designated species-at-risk; and life science inventories of more than 200 natural areas in Ontario. Jarmo's vision is to promote the informed protection and recovery of ecosystems, sustainable land uses and lifestyles, and deep reverence for the natural world, by applying his experience as an ecologist, writer, songwriter, educator and facilitator. Jarmo was presented the Steve Hounsell Greenway Award by Ontario Nature in 2013 for his work in promoting the "Big Picture" vision for southern Ontario.

Clint Jacobs, Natural Heritage Coordinator, Walpole Island Heritage Centre

Clint Jacobs is an Anishinaabe from Bkejwanong Territory, Walpole Island First Nation. For the past 15 years he has been the Natural Heritage Coordinator of the Walpole Island Heritage Centre, and is a founding member of the Walpole Island Land Trust.

Michelle Kanter, Executive Director, Carolinian Canada Coalition

Michelle Kanter has held the position of Executive Director of the Carolinian Canada Coalition since 2003 and has been involved with the Coalition since its inception in 1984. With 25 years of conservation experience in wildlife research and land stewardship, she has worked with a broad range of stakeholders around the world. As a consultant, she developed an award-winning community stewardship program and at the Nature Conservancy of Canada, she helped protect some of the best remaining natural areas in the Carolinian Life Zone. She currently sits on the Ontario Species at Risk Policy Advisory Committee.

Harold Lee, Land Classification Ecologist, Ontario Ministry of Natural Resources

Harold Lee has a MSc from University of Ottawa (with Dr Paul Keddy), in plant community ecology. Harold has worked for MNR and the ELC program since 1993 (20 years). Harold has developed and implemented across southern Ontario, the ELC First Approximation, the ELC Training Manual, developed and delivers the ELC Training Course, and is currently helping to lead the refinement and implementation of ELC provincially, and its new products.

Deanna Lindblad, Restoration Project Lead, Niagara Peninsula Conservation Authority

Deanna Lindblad is a Restoration Ecologist that has had the privilege of working in Niagara for the past 16 years. She has been with the NPCA for 12 of those years working on both the Stewardship team and in the Planning Department. She coordinated the Natural Areas Inventory and the subsequent Nature for Niagara's Future Project. She lives on the north shore of Lake Erie with her husband and two children.

Jared Macbeth, Project Review Coordinator, Walpole Island First Nation

Jared Macbeth is originally from California, and is currently the project review coordinator for WIFN's external projects program and liaisons between WIFN and the surrounding non-Indigenous communities.

Jim Mackenzie, Coordinator, Ontario Natural Heritage Information Centre, Ontario Ministry of Natural Resources

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Jim Mackenzie is a graduate of Lakehead University who has served with the Ministry of Natural Resources for 25 years. Jim has worked in many locations across Ontario and has been with the Natural Heritage Information Centre for the past 12 years. Jim has held many leadership positions within the international conservation community including Chair for NatureServe Canada. Jim and his family enjoy living on the north shore of Lake Ontario where they can witness the eternal cycle of seasons and wonders of migration.

Victoria MacPhail, Pollinators at Risk Initiative Biologist, Wildlife Preservation Canada

Victoria MacPhail is an ecologist with a Masters of Science degree in Environmental Biology from the University of Guelph, with a specialization in pollination biology. She is a founding member of, and currently Co-Chair and Director of Publicity and Outreach for Pollination Guelph, a volunteer-run organization that works to protect pollinators and their habitats. She is currently working for Wildlife Preservation Canada on their Pollinators At Risk Initiative.

Lesley Matich, Terrestrial Planning Ecologist, Conservation Halton

Lesley Matich is a graduate of the University of Guelph, where she completed her H. B. Sc. (Environmental Sciences) in Environmental Geography. For the past seven years, she has been the Terrestrial Planning Ecologist with Conservation Halton, where she provides technical review of planning and permit applications dealing with wetlands, wildlife habitat and Natural Heritage Systems. Lesley has worked in the private, public and NGO sectors over the past 10 years, covering a variety of ecosystems across Ontario. Lesley is also a graduate of the Young Conservation Professionals program.

Kate Monk, Stewardship and Conservation Lands Supervisor, Ausable Bayfield Conservation Authority

A graduate of the University of Waterloo, Kate has more than 20 years of experience in watershed conservation. At the Ausable Bayfield Conservation Authority, she helps landowners do stewardship projects on their properties and supervises the conservation of the 10,000 acres the ABCA owns. Kate represents Conservation Authorities on the Ontario Phragmites Working Group. In her spare time, Kate enjoys traveling and spending time outdoors hiking, birding and gardening.

Joel Mostoway, Remote Sensing Analyst, Natural Resources Information Management Section, Ontario Ministry of Natural Resources

Joel Mostoway, Remote Sensing Analyst with the Natural Resources Information Management Section – OMNR. Joel has been employed with MNR for over 12 years, contributing to the development of many land cover products. In addition to SOLRIS, the remote sensing staff within the Natural Resources Information Management section are currently mapping land cover in Ontario's Far North.

Don Pearson, General Manager/Secretary-Treasurer, Lower Thames Valley Conservation Authority

Don Pearson joined the Lower Thames Valley Conservation Authority on January 1, 2013 following nearly 8 years as General Manager of Conservation Ontario, the umbrella organization of Ontario's 36 Conservation Authorities. Prior to joining Conservation Ontario, Don spent two years as Chief Administrative Officer of the County of Perth. Don was the General Manager of the Upper Thames River Conservation Authority for 22 years, where under his leadership the Authority earned a reputation for excellence and innovation in

environmental management and community engagement. He is a member of the Boards of Ontario Heritage Trust, Carolinian Canada Coalition, and the Canadian Water Network; and has been a member of the Ontario Biodiversity Council and Trees Ontario since 2005. He holds a Master's Degree in Public Administration from the University of Western Ontario and an Honours Science Degree from the University of Waterloo.

Danijela Puric-Mladenovic (BSc, MSc, PhD all in Forestry)

Danijela's work focuses on applied science and research that support conservation, restoration and long-term strategic planning and management of forests, green areas and trees in settled, developed and urbanized landscapes. She works with Ontario Ministry of Natural Resources, Science and Research Branch, Biodiversity and Monitoring Section, Natural Heritage Information Centre, and is also an Assistant professor with the Faculty of Forestry, University of Toronto.

Her work has an emphasis on: spatial and vegetation analysis; predictive modeling and mapping of present, past and future vegetation and species distributions; development and implementation of integrative and broad-scale inventory and monitoring protocols that support efficient collection of field data for various modeling, mapping, reporting and management needs; urban forest inventory and monitoring; urban forest conservation and planning.

Danijela also teaches a number of graduate and professional courses. She also works closely with stakeholders, partners and community groups engaged in forest and landscape conservation, protection, management and planning.

John Riley, Author, and Senior Science Advisor, Nature Conservancy of Canada

John L. Riley is senior science advisor, Nature Conservancy of Canada. He has had careers as a botanist, geologist, ecologist, and conservation professional with the Royal Ontario Museum, the Ontario Geological Survey, and Ontario Nature. He lives in Mono, Ontario.

Becky Stewart, Ontario Program Manager, Bird Studies Canada

Becky Stewart has been working in the field of conservation for 11 years. Throughout her career, Becky has developed numerous citizen-science based research, stewardship and conservation initiatives for wild birds and their habitats. She joined Bird Studies Canada in 2006 as the Coordinator of the Maritimes Breeding Bird Atlas, one of the largest, volunteer-based wildlife monitoring programs ever undertaken in the Atlantic Region. In 2010, she became the Program Manager of BSC's Atlantic Region and recently took on the management of Bird Studies Canada's Ontario Programs.

Owen Williams, Board of Directors, Carolinian Canada Coalition

Owen Williams retired in 2009 after 35 years with the Ontario Ministry of Natural Resources as a biologist and program coordinator. Popular stewardship programs were designed and led by Owen that enabled over 600,000 people to complete over 21,000 projects. He helped organize four national stewardship conferences and wrote Canada's Stewardship Agenda (2002). He was a founding member of the Ontario Invasive Plant Council and became Chair of the Board and is currently President. His experience enabled him to become an entertaining speaker. Owen enjoys photography and canoeing, camping, hiking and travelling with his wife, 3 children and 5 grandchildren.

Ron Wu-Winter, Watershed Forester, Grand River Conservation Authority & Vice Chair, Carolinian Canada Coalition

Carolinian Canada Ecosystem Recovery Forum 2013

Ron Wu-Winter is the Watershed Forester at the Grand River Conservation Authority. He has significant experience both promoting and implementing forest management and stewardship projects in southern Ontario. Ron has a diverse work and educational background in biology, education and forest conservation – from teaching high school ecology in a small Inuit village on Canada's treeless tundra, to administering Ontario's Managed Forest Tax Incentive Program, to his current position overseeing forestry and restoration projects for approximately 25,000 acres of publicly owned woodlands.