THE LAKE HURON CENTRE FOR COASTAL CONSERVATION

presents

Is the Coast Clear?

6th Conference on Lake Huron's Coastal Environment

Friday, August 20, 2010

Oakwood Conference and Resort

Grand Bend Ontario

Registration - 8:00 to 8:50 am

Program—9:00 am to 4:00 pm

About the Coastal Centre

Formed in 1998, the Lake Huron Centre for Coastal Conservation is a registered non-profit, charitable organization dedicated to the conservation and wise stewardship of Lake Huron's coastal ecosystems.

The Centre is governed by a volunteer Board of Directors, staffed by professional resources managers, and supported by a Board of Technical Advisors. The Centre's four priorities include ***Water Quality, Biodiversity, Coastal Processes and Climate Change***. The Centre's work is focused on research, education and public outreach.

Our Mission:

To provide leadership and expertise, in collaboration with partners, to achieve a healthy Lake Huron coastal ecosystem.

Leadership in Coastal Conservation since 1998.

P.O. Box 178

Blyth, Ontario Canada

N0M 1H0

(519) 523-4478

www.lakehuron.ca

Welcome

Matt Pearson
Chair, The Coastal Centre

Welcome to "Is the Coast Clear?", the Coastal Centre's sixth biennial conference on Lake Huron's coastal environment. The theme for this year's conference is **"The Living Coast: biodiversity and the health of Lake Huron."** in support of the United Nation's declaring 2010 the International Year of Biodiversity. We are pleased to be hosting this conference in beautiful Grand Bend, on the shores of Lake Huron.

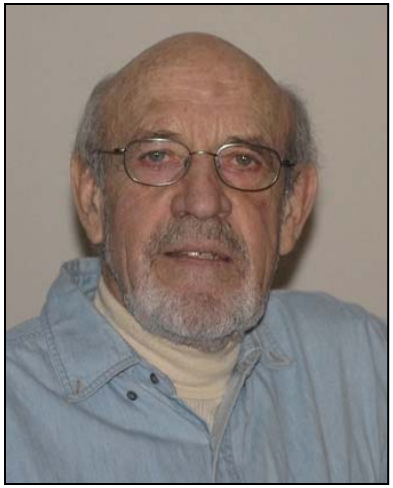
Coastal communities along Lake Huron face a number of environmental challenges, both now and in the future. The Centre has invited experts from a wide range of disciplines to make presentations on issues of importance that will help in our understanding of some of these challenges and how we might face them. "Is the Coast Clear?" is an opportunity for participants to ask questions and share ideas.

On behalf of our Board of Directors, I thank you for being part of this forum, and wish you an exciting and informative day!

Keynote Speaker

Bill Andrews

***Professor Emeritus,* University of Toronto**



Bill Andrews is *Professor Emeritus* of Environmental Science at the Ontario Institute for Studies in Education at the University of Toronto, where he taught Chemistry, Environmental Science, Outdoor Education, and Science Education over a period of 37 years. He is the author of over 40 books and 130 journal articles and professional papers on environmental issues.

Bill is also an environmental consultant, writer, and speaker, with an emphasis on local and global strategies for building a sustainable future. His current work includes sustainable forest management, agricultural nutrient management, and the landscaping of urban and rural properties to maximize biodiversity while creating wildlife habitat and low maintenance gardens.

Bill operates a 60 ha (132 acre) ecological preserve on the Maitland River in North Huron, where for 40 years, his objective has been to maximize biodiversity by using management strategies that integrate ecological and economic considerations.

Agenda at a Glance

Opening remarks - 9:00 to 9:15 am

Keynote Address– Bill Andrews, 9:15 to 10:00 am

Break - 10:00 to 10:30 am

Concurrent Session 1 - 10:30 to 11:10 am

Break - 11:10 to 11:30 am

Concurrent Session 2 - 11:30 to 12:10 pm

Lunch - 12:10 to 1:20 pm

Concurrent Session 3 - 1:20 to 2:00 pm

Break - 2:00 to 2:20 pm

Concurrent Session 4 - 2:20 to 3:00 pm

Break - 3:00 to 3:20 pm

Wrap-up Plenary - 3:20 to 4:00 pm

"How can we expect to preserve and protect biodiversity if we don't even know the names of the plants and animals that share our neighbourhood?" **Robert Bateman**

About our Speakers

Robin Davidson-Arnott—Robin Davidson-Arnott grew up in Trinidad, W.I. and came to Canada in 1966 to attend university. He obtained a B.A. in Geography from the University of Toronto in 1970 and a Ph.D. in 1975 from the same institution, specialising in Coastal Geomorphology. After teaching at Toronto for a year he obtained a position as Assistant Professor at the University of Guelph in 1976 where he has remained ever since. He was promoted to Professor in 1988 and retired in September, 2009. Robin's primary research interests are in coastal geomorphology and sedimentology and in the application of these to coastal management. Much of this work has been carried out in the Great Lakes and on the east coast of Canada but he has also been involved in collaborative work in California, Ireland and Denmark. He continues to be active in research and professional service as a *Professor Emeritus*.

Paul Carroll—Paul Carroll grew up as a "wharf rat."He had the privilege of gamming with the last of the "old salts" from Goderich Harbour. His first part-time job was working on the fishing tug *Larry John*, for Ab and Florence Leonard. His interest in the waterfront has persisted. As a member of Council and Reeve for the Town of Goderich in the early 1970s, he brought forward the first comprehensive Waterfront Development Plan for the long-term evolution of the shoreline.

He has written many articles related to marine heritage and was recently awarded the Ontario Marine Heritage Award 2010 for the Save Ontario Shipwrecks organization for his recent authorship role in several

marine history books and his latest work on the *WEXFORD*.

Paul is a lifelong resident of Huron County whose primary career in education took him from his classroom teacher role through the administrative ranks to the role of first Director for the Avon-Maitland District School Board. In his retirement, in addition to a hobby of watercolour painting, Paul and his wife Mary have been exploring warmer waters in their sailboat, *SolSean*, and recently completed a round trip from the Florida Keys to Guatemala.

Patrick Doran—Patrick Doran is currently the Director of Science in Michigan, where he leads state-wide investigations of conservation priorities. This includes the identification and prioritization of important conservation areas, as well as the development and implementation of conservation strategies and measures of success.

Patrick received his Ph.D. from Dartmouth College, where he studied the causes and consequences of spatial variation in the distribution and abundance of forest breeding songbirds in the White Mountains of New Hampshire. Patrick received a dual Master's in Ecology and Environmental Science from Indiana University where he studied the effects of forest fragmentation on the breeding success of forest dependent songbirds. He received his undergraduate education at Villanova University. Patrick has also held positions as a Habitat Biologist with the Washington Department of Fish and Wildlife, as well as Senior Ecologist/GIS Analyst with The Wildlands Project.

In his life outside of TNC, Patrick enjoys every possible minute engaged in some sort of outdoor or sporting

activity with his wife, Heather, and two children, Griffin and Carly.

Janice Gilbert - Janice received her Master of Environmental Studies from U. of Waterloo, and her PhD from Ohio State U. Janice has worked for the Ministry of Natural Resources as a wetlands Ecologist, researching wetland systems for over 15 years. She has recently accepted a position with Ontario Parks. Janice has become one of the leading researchers on Phragmites in Ontario, and has focused particularly on practical approaches to control this invasive plant.

Frank Letourneau - *Licensed Pesticide Applicator with Dover Agri Serve.* He has over 18 years experience with Phragmites control. He is a strong advocate for the proper use of pesticides in environmentally sensitive areas and for ensuring safety precautions are taken before, during and after pesticide use.

Arunas Liskauskas -Arunas is a management biologist with the Ontario Ministry of Natural Resources, Upper Great Lakes Management Unit, Lake Huron Office. He has been with the unit since 1993 and has worked on various projects including walleye rehabilitation, esocid spawning surveys, nearshore fish community surveys as well as assisting in the development of Lake Huron Environmental Objectives. He has a Hon. BSc. in Fisheries from the University of Guelph and an MSc. in Fish Genetics also from the University of Guelph.

Alistair McKenzie - Alistair is an ecologist who has worked throughout Ontario on mammals, birds, vascular plants and restoration ecology. After completing an

Honours Bachelor of Science program in wildlife biology from the University of Guelph, he proceeded to complete a Master of Science in Spatial Ecology at the University of Toronto. He currently works for Ontario Parks at Pinery Provincial Park as the Resource Management & Natural Heritage Education Supervisor. He oversees the delivery of a dynamic educational program along with active resource management of rare species and communities. Alistair is a member of several national recovery teams for species at risk and is a co-author and designer of the popular St. Thomas Field Naturalists Photo Field Guide Series.

Chuck Southam—Chuck is a Water Resources Engineer with the Boundary Water Issues Unit of Environment Canada. He has worked for Environment Canada for more than 28 years at the Canada Centre for Inland Waters in Burlington, Ontario providing engineering support for Great Lakes basin water resource activities and studies, and promoting public awareness and understanding of Great Lakes water level and outflow conditions. Chuck is the Canadian On-Site Representative for the International Niagara Committee, the Secretary for the Canadian section of the (International) Coordinating Committee on Great Lakes Basic Hydraulic and Hydrologic Data, and is a departmental spokesperson on matters relating to Great Lakes' water levels and flows. Chuck has bachelors and masters degrees in Civil Engineering from the University of Waterloo and an Education degree from Brock University.

Richard Whitman—Richard L. Whitman is the station chief and a research ecologist at the U.S. Geological Survey, Great Lakes Science Center, Lake Michigan

Ecological Research Station. Dr. Whitman received his Ph.D. from Texas A&M University in Wildlife and Fisheries Science. He was an associate professor at Indiana University NW for ten years and served as chief scientist for Indiana Dunes National Lakeshore for six years before becoming the chief of the Lake Michigan Ecological Research Station, where he has been for the past 15 years. He is an internationally recognized expert in the occurrence and distribution of indicator bacteria in temperate waters and has produced over 150 scientific papers during his career. His scientific contributions include descriptions of new species, identification of new exotic species within the Great Lakes, discovery of new, non-enteric sources of indicator bacteria, and development of modeling paradigms for recreational water quality.

2010 International Year of Biodiversity

"Biodiversity is Life.
Biodiversity is Our Life."

Agenda

9:00 am—Plenary Session—Terrace Room

Opening Remarks

Pam Scharfe, Vice-*Chair, The Coastal Centre*

Greetings

Mayor Oke, Municipality of South Huron

First Nation Prayer

Elder, Kettle and Stony First Nation

Keynote Address

Bill Andrews, *Professor Emeritus, University of Toronto*

10:00 am—Break

10:30 am—Concurrent Session 1

Room A - Terrace Room

Getting Beach Water Quality Information in Real Time —Richard Whitman, United States Geological Survey. Great Lakes beaches are monitored for *E. co*li bacteria to assess the potential public health risk for recreational swimmers. *E. coli* are used as an indicator of sewage contamination, as their presence may be associated with pathogens and viruses that can cause minor to serious illnesses. In recent years, shortcomings in the current monitoring protocols have been recognized. Foremost among these are the occurrence of naturally

occurring populations of *E. coli* in sand, algae, and soils; the lengthy laboratory assay required for analyzing *E. coli*; and the natural variation in *E. coli* populations.

These findings have highlighted the need for faster and more accurate measurements of microbiological water quality. Several approaches are being attempted currently, including molecular analyses for alternate indicators and predictive models that determine expected water quality based on water and weather conditions. In a series of studies, we have explored the use of rapid molecular methods in a variety of coastal waters to determine their reliability for beach monitoring. We have also developed and refined numerous predictive models at individual and groups of beaches to provide more timely estimations of water quality. We have expanded this concept to extensive lengths of coastline to explore the natural fluctuations in these bacteria. In the current development of new national standards for recreational water quality, it is critical to consider an understanding of the interactions of bacteria communities with their environment and the recreating public.

Room B - Huron Room

Lake Huron Biodiversity Conservation Strategy — Patrick Doran, The Nature Conservancy. Lake Huron is the fourth largest lake in the world, and has the world's longest freshwater coastline and collection of freshwater islands. Numerous globally rare ecosystems, natural communities, and species are associated with Lake Huron. Experts from agencies, organizations, and academic institutions from the U.S. and Canada were engaged through a series of workshops to inform a comprehensive biodiversity conservation strategy for Lake Huron.

The Conservation Action Planning process was used to develop this strategy using expert input and analysis of the

best available information. The conservation strategy identified focal conservation features that represent the biodiversity of Lake Huron and the status, or viability, of these features. Across these features, the most significant threats to Lake Huron biodiversity include invasive species, development, climate change, dams, and incompatible agricultural practices. We report strategies that have been identified to address threats and enhance the viability of the biodiversity features, and recommend how these strategies should be applied in the basin. We describe the structure of the plan, how the plan will be disseminated, and our vision for implementation.

11:10 am—Break

11:30 pm—Concurrent Session 2

Room A - Terrace Room

Beach Processes—the foundation of life on our shores—Dr. Robin Davidson-Arnott, *Professor Emeritus*, University of Guelph. Coastal sand dunes form landward of the top of most sandy beaches. Sand transported from the beach by wind is trapped by vegetation leading to the growth of a foredune. Foredune height, morphology and rate of growth depend on a number of controlling factors, including winds (speed and direction), vegetation height and density, beach width and factors such as rain, snow and ice which inhibit sand transport by wind. Storm events producing high water levels and large waves are also important since they trim back vegetation thus providing a wide beach from which sand can be transported and extreme events lead to dune erosion and possibly to overwash on spits and baymouth barriers. Sand stored in the foredune thus acts as a physical barrier protecting points

inland from wave action and the sand eroded from the dune acts to stabilise the beach profile. On marine coasts this beach/dune interaction is also moderated by changing water levels due to tides while in the Great Lakes seasonal and decadal changes in lake level beach and dune dynamics through the effect on wave action and vegetation cover. In addition to the dynamics produced by natural processes, human activities can also have a significant impact on coastal dunes though these impacts can be minimised through simple management practises. This presentation will present an overview of the processes controlling beach dune interaction, with examples from both marine coasts and the Great Lakes, and some suggestions for management.

Room B - Huron Room

The Common Reed Invasion—Provincial Initiatives—*Janice Gilbert, Ontario Parks, and Frank Letourneau, Dover Agri Serve*. Common Reed (*Phragmites australis)* is an invasive grass species that is causing detrimental damage to coastal beaches and wetland areas in Ontario, reducing biodiversity and destroying viable habitat for native species, including Species at Risk. Research into the control of Phragmites in natural areas, and a series of test projects, identified that the use of glyphosate herbicide was the most effective method of controlling large stands of the invasive. Use of herbicide in environmentally sensitive areas is a challenge, but with the proper protocols, it can substantially reduce Phragmites populations.

12:10 pm—LUNCH—Dining Room

1:20 pm—Concurrent Session 3

Room A—Terrace Room

Hitting a New Low? - Lake Levels on the Upper Great Lakes—*Chuck Southam, Environment Canada*. This presentation is designed for people that would like to know more about the ups and downs of Great Lakes water levels. The purpose of the talk is to explain how and why water levels fluctuate and to put the current low water level conditions on the upper lakes into perspective. To further general understanding, descriptions are kept simple and the use of technical jargon and acronyms avoided.

Room B—Huron Room

Lake ecology: The status of Fisheries in Lake Huron—*Arunas Liskauskas, Ontario Ministry of Natural Resources.* The Lake Huron aquatic ecosystem is experiencing profound changes to the composition and dynamics of its fish communities. Most of these recent changes are a consequence of the continued introduction of invasive exotic species which have altered food webs affecting the most minute plankton species as well as to top predator fishes. Current fish communities are also recovering from a historic legacy of overexploitation, habitat destruction, and earlier exotic invaders such as the sea lamprey. Fisheries management responses to these stressors have included controls on commercial and recreational harvest, habitat rehabilitation as well as rehabilitative stocking. Some progress has been made with increased evidence of natural reproduction of lake trout and walleye in various parts of the Lake Huron basin. These tentative steps toward fish community recovery may be short lived with the ongoing destabilizing effects of exotic species proliferation, habitat alteration and climate change.

2:00 pm—Break

2:20 pm—Concurrent Session 4

Room A—Terrace Room

The Wexford: Elusive Shipwreck of the Great Storm, 1913—*Paul Carroll, Goderich*. By telling the sad tale of the steamer *WEXFORD*, and using visual media, participants will be able to re-live her story, emulate the terror of her crew on her final voyage, and, share images of the shipwreck as she sits today. The condition of the wreck will show the 100 year environmental impacts on this priceless marine heritage artifact, as well as the more recent ruination imposed by careless, sometimes ruthless, visitors to this nearby underwater site. Participants will be able to consider the impact of vessel traffic that has numbered up to several thousand divers each year.

The presentation, derived from the author's recent book, *The WEXFORD: Elusive Shipwreck of the Great Storm, 1913* will be richly illustrated with rare documentary photos, fine marine art illustrations and underwater survey photography. For those who wish to pursue the topic in more depth, signed, tax-exempt copies of the book will be available.

Room B—Huron Room

Dune Ecology: protecting a rare coastal environment - *Alistair McKenzie, Resource Management & Natural Heritage Education Supervisor, Pinery Provincial Park*—The sand has been delivered via a conveyor belt in the lake, but now what? Join Alistair to discover how you take a pile of beach sand and convert it into one of the finest examples of a freshwater coastal dune

complex in Canada. By their nature, dune complexes are extremely rare in Ontario and consequently the species of plants, insects, birds and mammals that reside in dunes are often similarly rare. All species that call dunes home display an amazing array of special adaptations for life at the extremes – baking hot, nutrient poor, freezing cold, dry and harsh. The most important species that frequents dunes are humans – they hold the power to either destroy dunes or ensure their continued survival. Join me to marvel at the diversity of dune biodiversity and learn how you can reduce your impacts when you visit dune ecosystems.

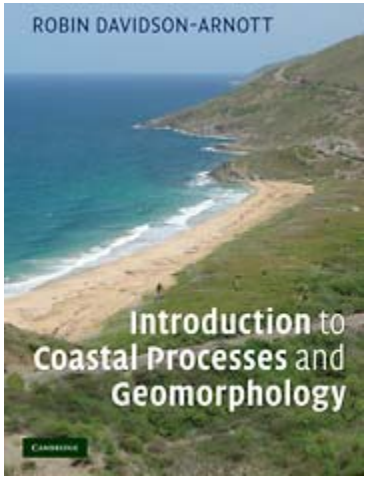
3:00 pm—Break

3:20 to 4:00 pm—Plenary Session—Terrace Room

Wrap-up—What have we learned? Where do we need to go? - *Pat Donnelly, The Coastal Centre*

Thank you for participating in our conference!

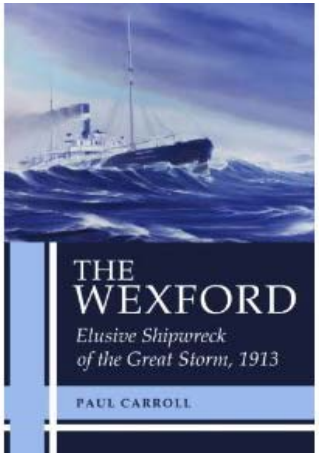
Authors at this Conference



Buy this book
at the registration desk

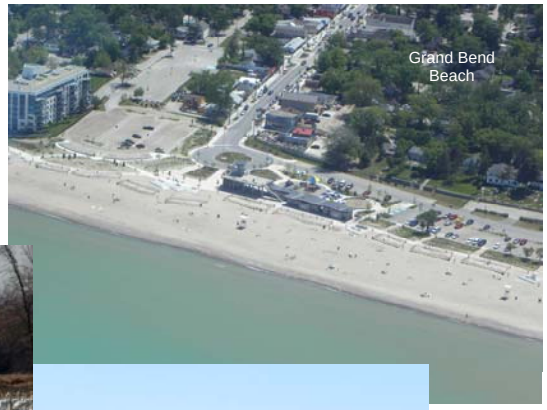
Robin Davidson-Arnott has indeed written the book on coastal processes and the form and function of beaches. While he takes a world view, many of his examples come from the Great Lakes where he has done a great deal of his research. If you're interested in beach science, this is an essential reference.

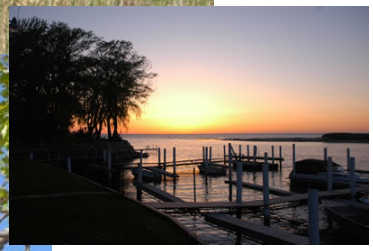
Paul Carroll has written about the history of the Wexford from her British origins in 1883, through the transition to become a 'Laker', her crew, the eventful storm, the 87 year search, her ultimate discovery in southern Lake Huron and the controversy over how she should be protected.



Buy this book
at the registration desk

Views from the local Coastline





Exhibitors

- *Nuclear Waste Management Organization*
- *BM Ross*
- *Dune Conservation— the Coastal Centre, and Lake Huron Pitcher's Thistle-Dune Grasslands Recovery Team*
- *Huron County Clean Water Project*
- *Septic System Re-inspection Program—Huron County Health Unit*
- *Beach Display—Huron County Health Unit*
- *Lake Huron Bi-National Partnership*
- *LURA Consulting*

Please take some time to visit each of these exhibits

"We find ourselves ethically destitute just when, for the first time, we are faced with ultimacy, the irreversible closing down of the earth's functioning in its major life systems. Our ethical traditions know how to deal with suicide, homicide and even genocide, but these traditions collapse entirely when confronted with biocide, the killing of the life systems of the earth, and geocide, the devastation of the earth itself."

Conference Sponsors

NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

Southeast Shore Working Group

Thank you to our sponsors for supporting this year's coastal conference!

Help the Cause of Coastal Conservation

The Coastal Centre was founded in 1998 with the goals of protecting and restoring Lake Huron's coastal environment and promoting a healthy coastal ecosystem.

While many environmental advocacy groups address local issues within the region, the Coastal Centre is the only grassroots organization focused on protecting the coastal environment lake-wide. Our specific area of concern is the coastline from Sarnia to Tobermory, Manitoulin and south shores of Georgian Bay.

Through education, research, community stewardship and its technical advisory service, the Coastal Centre helps individuals, community groups and municipalities work with the coastal environment to minimize their impact.

The Lake Huron Centre for Coastal Conservation is a registered non-profit, charitable organization dedicated to the conservation of Lake Huron's natural shoreline environment. By supporting its efforts, you will help to ensure that we pass on a positive environmental legacy to our future generations.

Consider making the Coastal Centre one of your charities-of-choice. All donations receive a charitable tax receipt.

A donation brochure is included in your package, or you can visit our website at:

www.lakehuron.ca

and click on "Help Us." There are a number of options identified for donating to the Centre. Each contribution helps us fulfill our mandate of working toward a healthy coastal environment.

The Lake Huron Centre for Coastal Conservation

Board of Directors

Matthew Pearson, Chair (Sarnia)

Pamela Scharfe, Vice Chair (Bayfield)

Nancy Turcotte, Treasurer (kincardine)

Brian Luinstra, Past Chair (Kincardine)

Gordon Boyd, Director (Saugeen Shores)

Ben Van Deipenbeek, Director (Ashfield-Colborne-Wawanosh)

Stephanie Donaldson, Director (Grand Bend)

Doug Freiburger, Director (Saugeen Shores)

Dianne Sutter, Director (Sauble Beach)

Anne Eadie, Director (Kincardine)

Brian Kelly, Director (Port Elgin)

Jo-Anne Harbinson, Director (Hanover)

Bonnie LaFontaine, Director (Ashfield-Colborne-Wawanosh)

Professional Staff

Geoff Peach, Coastal Resources Manager
Patrick Donnelly, Coastal Resources Manager
Kristin Freiburger, Communications & Fundraising Coordinator
Annzley Clark, Coastal Research Intern

the Coastal Centre

THE LAKE HURON CENTRE FOR COASTAL CONSERVATION

www.lakehuron.ca