

LAKE HURON SOUTHEAST SHORE Newsletter

A CANADIAN EFFORT IN SUPPORT OF THE LAKE HURON BINATIONAL PARTNERSHIP - SUMMER 2008

Why Focus on Lake Huron's Southeast Shore?

The southeast shoreline and watersheds of Lake Huron run from Sauble Beach south to Sarnia, and include the watersheds of the Saugeen, Maitland, Bayfield, and Ausable rivers, as well as smaller tributaries such as the Pine, Penetangore, Nine Mile and Eighteen Mile rivers. Within these watersheds, there are many small creeks, drains, gullies, and ravines which flow to the shoreline. Beginning in the headwaters of the area and moving downstream towards the shoreline, the majority of the land constitutes one of the most productive areas of farmland in Ontario. The ribbon of shoreline along Lake Huron provides one of the longest continuous stretches of beachfront in the Great Lakes and has enjoyed a long history of recreational use and cottaging.

Episodes of poor water quality, algal fouling and aesthetic problems, have been occurring in this area for more than 20 years. Public attention to the problems in the 1980s led to the Clean-Up Rural Beaches (CURB) Program, funded by Ontario Ministry of the Environment (OMOE) and implemented by Conservation Authorities up until the mid-1990s.

Since 2000, beach advisories and algal fouling incidents have again become more prevalent and resulted in the formation of the Lake Huron Southeast Shore Working Group. The Working Group is a collaborative effort of federal and provincial agencies, health units, conservation authorities, and non-government organizations such as the Lake Huron Centre for Coastal Conservation (LHCCC) and Environmental Defense. The mandate of the Working Group is to promote a collaborative, science-based approach to problem identification and recommendation of remedial measures.

To characterize local water quality issues, the Working Group commissioned the LHCCC to compile all available background information in a 2004 report called *Lake Huron's Nearshore Water Quality: A Preliminary Report on Historical Nearshore Water Quality Information for Southeastern Lake Huron*. Around the same time, beach closings due to elevated bacterial levels led to the formation of the Lake Huron Science Committee, a multi-agency committee led by OMOE that undertook a detailed analysis

of background information with the intention of producing a scoping document to guide future work.

The report, which was released in April 2005 and can be found at <http://www.ene.gov.on.ca/envision/techdocs/5077e.pdf>, outlined four key recommendations for further research, including how small and larger tributaries impact *E.coli* at the beach as well as trying to define some of the beach-scale impacts. These reports have helped guide the research and management activities of the Working Group. They also identified some significant unknowns such as the fate of pollutants when they reach the shoreline, the mechanisms for bacterial survival in beach sand, and the interaction between algae and bacteria in increasing bacterial survival at the beach. Ongoing research has been working to address these unknowns and information on these projects is provided throughout the newsletter.

While research is ongoing, on-the-ground planning and implementation efforts have also been underway throughout this region. These activities include best management practice programs such as the Huron County Clean Water Program, promotion of the Environmental Farm Plan and Nutrient Management Plan incentive programs, the release of both a shoreline and non-farm landowner stewardship manual and septic re-inspection programs to name a few.



The Southeast Shore area of interest. Credit: Environment Canada.

Blue Flag Celebrates the Protection of Ontario's Beaches

The Blue Flag is a well known international eco-certification program for beaches. The Blue Flag lets Ontarians and visitors know which beaches are best for swimming. As a symbol of high quality, Blue Flag beaches must adhere to 27 environmental standards, which are categorized under water quality, environmental education, environmental management, as well as safety and services.

The program is operated internationally by the Foundation for Environmental Education. Environmental Defence, a national charitable organization, is a member of the Foundation and operates the Blue Flag program in Canada.

Blue Flags have been flying across Ontario since 2005 and in 2007 some of Ontario's beaches joined over 2,600 beaches in 36 countries. To date, Ontario has ten beaches certified under the Blue Flag program: six in the City of Toronto (Woodbine, Cherry, Hanlan's Point, Ward's Island, Centre Island and Gibraltar Point Beach); Sauble Beach in the Town of South Bruce Peninsula; Station Beach in the Municipality of Kincardine; Wasaga Beach Provincial Park; and Rotary Cove Beach in the Town of Goderich. This year, we expect to see 12 Blue Flags flying on beaches across the province.



Lake Huron Binational Partnership

Since its formal endorsement by the Great Lakes Binational Executive Committee in 2002, the Lake Huron Binational Partnership has coordinated lakewide environmental activities in the Lake Huron basin. The United States Environmental Protection Agency, Environment Canada, Michigan Department of Environmental Quality, and Ontario's Ministries of the Environment and Natural Resources form the core of the Partnership by providing leadership and coordination. A flexible membership is being promoted by the Partnership on an issue-by-issue basis, which is inclusive of other agencies and levels of government, Tribes/First Nations, non-government organizations and the public.

The Partnership approach focuses on pollution reduction activities in areas of importance and directly pursues on-the-ground activities to protect areas of high quality habitat. In addition, existing stakeholder and agency forums are used as much as possible to support the goals of the partnership.

Initially, the Partnership identified three binational lakewide issues to focus on: contaminants in fish and wildlife, biodiversity and ecosystem change, and fish and wildlife habitat. Domestically, nutrient and bacterial pollution along the southeast shore, and more recently, water levels have also been main concerns.

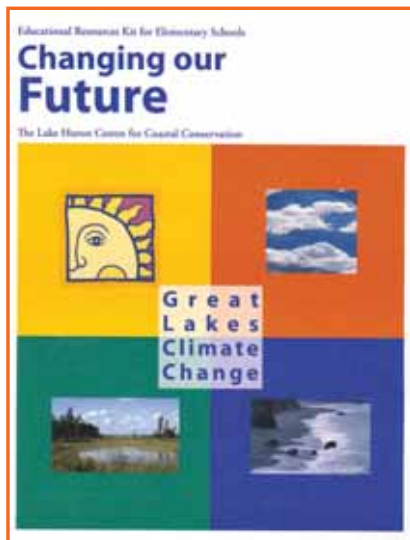


The beach at Pinery Provincial Park near Grand Bend. Credit: Environment Canada.

There are many benefits to flying the Blue Flag. On top of bringing international recognition to your beach, the Blue Flag helps to:

- encourage improvements to water quality and the beach;
- promote community stewardship;
- create and promote responsible tourism; and,
- reassure those who visit and enjoy your beach that the highest environmental standards are being met and the entire coastal ecosystem is protected.

To join the program or find out more, contact Blue Flag Canada at www.BlueFlag.ca or email info@blueflag.ca



The "Changing our Future" Educational Resource Kit is a great resource for schools. Credit: Lake Huron Centre for Coastal Conservation.

Changing our Future: An Educational Resources Kit on the Great Lakes and Climate Change

In 2002, the Lake Huron Centre for Coastal Conservation developed an educational resources kit on Climate Change and the Great Lakes. The kit was developed as a package of teacher resources, student fact sheets and activities to enable teachers and students at the Grade 8 level to study Climate Change locally. The kit is divided into sections that include Natural Climate History, The Greenhouse Effect, Impacts to Local Ecosystems, Impacts to Coastal Communities and Actions to Adapt to or Mitigate Impacts to Climate Change.

In 2007, the Canadian Climate Impacts and Adaptation Research Network (C-CIARN) provided the Coastal Centre with funding to update the kit and target a local school board to receive copies. As a past partner with the Coastal Centre, the Avon Maitland District School Board was selected to receive one copy of the kit for each of its fifty elementary schools. The schools began delivering the kit during the 2007-08 school year. New revisions to Ontario's curriculum have included climate

change as an important cross-curricular issue at the elementary and secondary levels.

A Teacher from Seaforth Public School characterized the Centre's kit this way:

I wanted to let you know how excited I am about teaching this new unit and how useful this resource will be to me. A lot of time and effort have been expended to make this topic interesting, factual, and accessible to students in the elementary setting. Well done!! The fact that it concentrates on the Great Lakes region can only make it more relevant for my students. Thank you for all your hard work. I look forward to teaching this important curriculum topic for years to come.

Similar comments have been received from teachers at Wingham Public School and East Wawanosh Public School within the Avon Maitland District School Board.

Environmental Youth Summit a success in 2007... a second Summit planned for Fall 2008

Last September, 29 Grade 12 students and seven teachers from within the Lake Huron Basin, including students from Goderich, Exeter and Wingham were brought together for three days in Tobermory for the 1st Lake Huron-Georgian Bay Watershed Environmental Youth Summit.

The purpose of the Youth Summit was to foster a community-based approach to restoring and protecting the lands and waters of the Lake Huron-Georgian Bay watershed through education, awareness and community action. During the weekend's interactive program, students were given the necessary background information and resource materials to become active environmental ambassadors within their own communities. The students then returned home to their communities

and began making presentations at their schools, municipal councils and to local organizations interested in taking action on the environment.

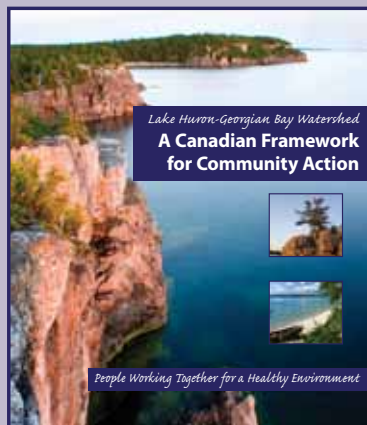
Students, teachers and representatives from various federal and provincial government agencies camped at Bruce Peninsula National Park. The organizers of the Youth Summit also had the use of the facilities of Parks Canada's Fathom Five Visitor Centre to provide students with presentations and information sessions on water quality, fish and wildlife resources and the importance of local community action.

Following up on the success of last year's Summit, a second Youth Summit is being planned for the fall of 2008 in Parry Sound.



2007 Environmental Youth Summit participants with Gord Miller, Environmental Commissioner of Ontario. Credit: Randy French.

Canadian Framework For Community Action



The Lake Huron-Georgian Bay Watershed Canadian Framework for Community Action is now available! This is a new resource for people interested in taking action on land and water stewardship activities to sustain a healthy Lake Huron and Georgian Bay environment for future generations.

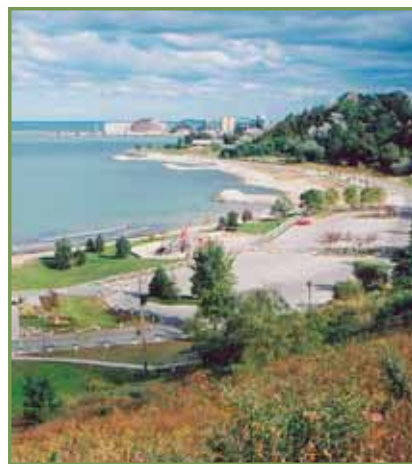
You can download a copy of the framework and sign the charter at <http://www.lakehuroncommunityaction.ca>. Photo Credit: Environment Canada.

Lake Conference to be held in Goderich this August

The 5th Annual "It All Ends Up in the Lake" Conference will be held on Saturday, August 23rd from 8:30 am to 1:00 pm at the Columbus Centre, Parsons Court in Goderich, Ontario. The keynote speaker will be Gord Miller, Environmental Commissioner of Ontario.

This annual community conference focuses on the impacts of human activity on Lake Huron. Last year's conference theme focused on Water Quality Report Cards with presentations including information on beach water monitoring in Huron County, water quality reports from various local associations, water quality initiatives in the County of Huron, and the Lake Huron nearshore and your role in determining the state of the local watershed.

Approximately 150 people attended last year's event along with over 25 exhibitors. The conference was financially supported by the Huron County Clean Water Project.



Rotary Cove Beach in Goderich. Credit: G. Strathdee, Tourism Goderich.

Lake Huron Facts

- Lake Huron is the second largest Great Lake by surface area and the fifth largest freshwater lake in the world.
- Lake Huron has the longest shoreline of the Great Lakes, including the shorelines of its 30,000 islands.
- Lake Huron is home to the largest freshwater island in the world: Manitoulin Island.
- Lake Huron was the first of the Great Lakes to be discovered by European explorers.

Source: <http://www.glin.net/lakes/ref/huronfact.html> and Great Lakes Basin brochure, 1990, Michigan Sea Grant.

SE Shores *E. coli* Research... More Questions than Answers

High levels of *Escherichia coli* (*E. coli*) bacteria frequently and persistently occur in both nearshore lake water and beach sands on the shores of Lake Huron. Although this is a common problem at beaches throughout the Great Lakes, little is actually known about the source of this *E. coli* and how long it survives. A team of scientists from Environment Canada, Ontario Ministry of Environment, and Ontario Ministry of Agriculture, Food and Rural Affairs are undertaking a number of research studies designed to understand the sources, fate and persistence of *E. coli* at beaches. Ultimately, this knowledge will be used to reduce *E. coli* levels along the beaches of Lake Huron.

Key research questions being addressed by the research scientists include:

- 1) Are septic systems at beachfront residences and shoreline communities contributing to *E. coli* along the shoreline?
- 2) What impact do discharges such as large river systems or small drains have on *E. coli* loadings at beaches, and what conditions in the lake bring this *E. coli* to shore?

- 3) How reliable and accurate are the *E. coli* DNA fingerprinting methods at identifying the source/host of *E. coli* isolates found at beaches?
- 4) What is/are the source(s) of the very high levels of *E. coli* found in the nearshore beach sand?
- 5) To what extent does the lake act as a source of *E. coli* to nearshore beach sand, and under what conditions does this occur?
- 6) To what extent does the nearshore beach sand act as a source of *E. coli* to nearshore waters, and under what conditions does this occur?
- 7) What is the relationship between algae and *E. coli* along the shoreline?
- 8) Can mathematical models of the watersheds and rivers, creeks, drains, etc. draining to the shore predict *E. coli* loading from agricultural areas in the rivers and at the shoreline?

Work is ongoing to try and answer some of these questions. Some findings to date and ongoing work can be found at www.lakehuroncommunityaction.ca.



Scientists sample sand at Southeast Shore beaches to learn more about sources, fate and persistence of *E. coli* at beaches. Credit: Environment Canada.



A busy Bruce Beach. Credit: Lake Huron Centre for Coastal Conservation.

Workgroup undertakes Beach Economic Impact Study

On a sunny hot summer day there is nothing better than heading to a beach along the Lake Huron shoreline to sit, relax and cool off. But what happens when water quality at the beach is not suitable for swimming at your local destination? Do people head to a different beach, do they stay at home and how does that affect local businesses and services?

The economic importance of beach tourism is well understood by destination marketers such as Chambers of Commerce and tourism business operators, but there are few studies to determine the effect of beach postings or closings on the local economy. The effect of beach postings on the local

economy has been looked at in other areas in North America but not in Canada or Ontario.

This lack of relevant studies on the economic importance of beach tourism is the impetus for a study being commissioned by the Lake Huron Southeast Shore Working Group. The study area is the Lake Huron shoreline from Sarnia to Sauble Beach and includes the counties of Lambton, Huron, and Bruce. Phase 1 including a summary of background information and the development of a survey has been completed. This summer the survey will be taken out to local beaches to get an idea of people's beach travel and spending habits.

Great Lakes Beaches Sanitary Survey Pilot Project

The Huron County Health Unit participated in the development of a beach sanitary survey tool that will help to identify sources of contamination at beaches located in the Great Lakes. Beach sanitary surveys allow beach monitoring agencies to identify unknown sources of beach contamination and inform the public about any potential pollution impacting a beach. This information will help the public make informed decisions before swimming and reduce their risk of swimming-related illness.

In 2006, the U.S. Environmental Protection Agency (USEPA) developed a new strategy to protect and restore the Great Lakes. One of the strategy's eight priority elements is to address beach water quality. To that end, the USEPA is working with the Great Lake states and provinces to develop a beach sanitary survey tool to identify sources of contamination at Great Lakes beaches. The Huron County Health Unit was asked to participate in the development of the survey tool.

Beaches are monitored for microorganisms such as *E. coli* which serves as indicators of fecal contamination. Beaches may be contaminated by single or multiple sources (i.e., agricultural runoff, sewage treatment plant/lagoon bypasses, malfunctioning septic systems, fecal materials from pets/wildlife/birds, swimmers, etc.). Despite monitoring efforts, about half of all beach advisories are caused by unknown sources.

The sanitary surveys will enable beach managers to more efficiently use their resources, apply survey results to develop predictive models, and provide recommendations for remediation of sources of bacterial pollution at beaches.

In May 2007, the USEPA awarded a total of \$546,700 in grant funds to nine recipients from seven states and the Huron County Health Unit, the only Canadian agency. The survey tool was applied to approximately 60 beaches that summer. The grant recipients were responsible for:

- assisting with finalizing an instruction manual for use with Sanitary Survey forms and data entry templates; and
- reporting findings on:
 - identification of pollution sources or identification of potential pollution sources for further investigation;
 - data analysis in development of statistical correlations between poor water quality and meteorological and beach conditions (toward predictive models); and;
 - information to use in planning and allocation resources for remediation.

The Huron County Health Unit was awarded \$28,426 to pilot the survey tool at the three public beaches in Goderich and two in Bayfield, five days a week (Monday to Friday) for a total of 13 weeks. The survey tool will be used at all of Huron County's public beaches in 2008.

Green Ribbon: Recognizing Excellence in Coastal Stewardship

In Spring 2007, the Lake Huron Centre for Coastal Conservation prepared a draft guide outlining a program to recognize coastal communities who are actively engaged in beach stewardship activities and implementing Best Management Practices. The Green Ribbon program resembles the International Blue Flag program in requiring recipients to meet a series of environmental stewardship and environmental education criteria. While the Blue Flag program targets high use municipal public beaches, the Green Ribbon program focuses on lower use rural beaches.

In April 2008, Huron-Bruce MPP Carol Mitchell introduced a resolution which was passed in the Legislative Assembly in support of the Green Ribbon program.

The Green Ribbon program continues to be under development and the Coastal Centre is working with local beach associations to pilot the program. It is intended that the program be offered publicly along Lake Huron in 2008-09.

Did You Know...

Every day, 24 million people drink water that is drawn from the Great Lakes, treated, and delivered to their taps. Nine million more people rely on rivers, wells, and small inland lakes in the surrounding watershed. Drinking water from public systems is tested thousands of times a year to ensure that it is safe. Source: Environment Canada and USEPA's Our Great Lakes Report, 2005.

Local Communities Take Action for the Environment

Increased awareness about global environmental issues has translated to local community action along the coast of Lake Huron. Local people are not only developing their own individual action plans to address environmental issues on their own property, but they are also forming groups to protect local creeks and waters. A new initiative of the Lake Huron Framework is a pilot project to develop a watershed plan for the area north of Bayfield, Ontario. The local community is developing a plan to protect and enhance water quality and natural features while balancing the needs of agriculture and development.

Community groups along the coast of Lake Huron have received national recognition for the role that they are playing to improve their environment. In the Green Cottageing 2007 edition of Cottage Life magazine, The Friends of Sauble Beach received an award for their role in producing a beach management plan to protect dunes and preserve the coastal environment north of Southampton. Other groups are looking at their own unique aquatic systems and working together to develop either long-term strategies to protect these features or they are helping neighbours secure funding and technical assistance to address sources of pollutants.

In 2006 and 2007, more than one hundred people in the Grand Bend area attended workshops, clean-up days and meetings to develop a Long-Term Management Plan for the Old Ausable River Channel (OAC), the pond-like ecosystem that runs through The Pinery Provincial Park. Due to the unique hydrology of this abandoned river channel, the OAC is now home to three rare fish species. As part of the Carolinian Canada Zone there are also many interesting and significant plant species on adjacent

lands. Outside of the provincial park, both sides of the OAC are developed with permanent homes and some commercial businesses. An historical tow path located along the channel and the channel itself support passive recreational activities such as walking, bicycling, canoeing and kayaking. Tom Prout, General Manager at the Ausable Bayfield Conservation Authority, said, "The management plan will help to address the adjacent and sometimes conflicting land uses and ensure that the unique ecosystem is protected for the long-term benefit of the Grand Bend community." Funding for The OAC Long-Term Management Plan has come from various local, provincial and federal agencies, and the greatest contributor has been the local Grand Bend Community Foundation.

The Pine River Watershed Initiative is one example of a watershed group that is working with local, provincial and federal agencies to acquire funding and technical support to improve local watersheds. In 2006 and 2007, the group completed five watershed projects that directly improve water quality in Pine River, near Ripley, Ontario, south of Kincardine under Environment Canada's Adopt A Watershed Pilot Project. Anne Eadie, a landowner and councillor of Huron-Kinloss and member of The Pine River Watershed Initiative, knows that a community group can act as a catalyst to get things done in the watershed. As a landowner in the farm community she knows that many of her colleagues have been intending to make land use changes that will improve water quality. However, sometimes people don't know where to start, or they have limited time and resources to keep a project moving forward. That's where The Pine River Initiative fits in. This committee of Huron-Kinloss Council helps secure funding, assists with the paperwork, and

acquires necessary expertise and labour to complete a project.

For more information about how your community can act to improve local watersheds, please contact: Mari Veliz, Healthy Watersheds Coordinator, at the Ausable Bayfield Conservation Authority, at (519) 235-2610 or 1-888-286-2610.



Anne Eadie, a landowner and councillor of Huron-Kinloss presents Dan Middlekamp and his son with a certificate acknowledging the first completed Pine River Watershed Initiative project. Photo credit: S. Bender, Lucknow Sentinel.

New Stewardship Guides for Citizens and Municipalities

Local people are more interested than ever in protecting the health of their environment, but often wonder "What can I do to help?" They can now have some of their questions answered in two new stewardship guides that have been prepared for the area.

The *Rural Landowner Stewardship Guide for the Lake Huron Watershed* has just been released as an environmental self-assessment program for rural non-farm residents (people who own rural properties but are not farmers). The new initiative follows on the heels of the highly successful Stewardship Guide for the Lake Huron Coastline. Environmental self-assessments are now available for farmers, cottagers and the rural non-farm landowner with the release of this guide.

The *Rural Landowner Stewardship Guide for the Lake Huron Watershed* is fashioned after the successful

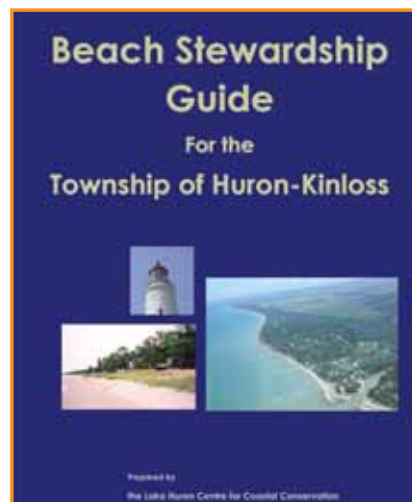
Environmental Farm Plan for agricultural landowners but it is aimed at engaging rural non-farm residents in the protection of their natural environment through individual actions. The Guide helps rural non-farm landowners evaluate their property and identify areas where they might positively impact the local environment.

The Guide itself is a series of worksheets that landowners work through. Worksheets cover topics ranging from wells and septic systems to managing forest, stream and wetland ecosystems. Once landowners have completed the Guide, they will be able to create an action plan for environmental improvements that can be undertaken on their property. The Guide also contains valuable stewardship tips and resource information.

To view and/or download the Stewardship Guide, go to <http://theguide.huronstewardship.on.ca/> and follow the links. For more information, please contact Mari Veliz at 519-235-2610 or 1-888-286-2610.

In 2006-07, the Lake Huron Centre for Coastal Conservation prepared a *Beach Stewardship Guide for the Township of Huron-Kinloss* through Environment Canada's Habitat Stewardship Program for Species at Risk. Key issues addressed in the Guide included beach and dune conservation, nearshore water quality, terrestrial invasive species, stewardship education and rules and regulations.

The Guide is intended to assist the Municipality to manage its waterfront in an environmentally sustainable manner. Council has been using the guide as a basis for forming its waterfront policies. Huron-Kinloss has recently assumed jurisdiction of its waterfront from the Ontario Ministry of Natural Resources. The Guide has also been designed to assist cottagers in improving the quality of their local beach and dune ecosystems. Local Beach Associations will be presenting the guide to their members in summer 2008.



Left and above: Covers of the two new stewardship guides available to local citizens and municipalities. Credit: Lake Huron Centre for Coastal Conservation (left) and Ausable Bayfield Conservation Authority (above).

For More Information

For more information on the Southeast Shore Working Group, go to www.lakehuroncommunityaction.ca and follow the link at the bottom of the page.

Southeast Shore Working Group member organizations are: Environment Canada; Ontario Ministry of the Environment; Ontario Ministry of Natural Resources; Ontario Ministry of Agriculture, Food and Rural Affairs; Ontario Ministry of Tourism; Ausable Bayfield Conservation Authority, Maitland Valley Conservation Authority, Saugeen Valley Conservation Authority and St. Clair Region Conservation Authority; Huron County Health Unit; Grey Bruce Health Unit; Environmental Defense; Lake Huron Centre for Coastal Conservation; and Bruce Power.