Healthy Lake Huron

Clean Water, Clean Beaches

Newsletter
Summer 2015

This Issue:

Healthy Lake Huron participants and supporters

Federal Government – Environment Canada, Parks Canada, Fisheries and Ocean Canada

Ontario Provincial Government – Ministry of the Environment and Climate Change, Ministry of Natural Resources and Forestry, Ministry of Agriculture, Food and Rural Affairs, Ministry of Municipal Affairs and Housing

Municipal/County Councils – Bruce County, Huron County, Lambton County

Health Units – Grey Bruce Health Unit, Huron County Health Unit, Lambton Public Health

Conservation Authorities – St. Clair Region, Ausable Bayfield, Maitland Valley, Saugeen Valley, Grey Sauble

Other Organizations – Bruce Peninsula Biosphere Association, Environmental Defence, Lake Huron Centre for Coastal Conservation, Pine River Watershed Initiative, Western University

International Stakeholders – Lake Huron Binational Partnership

Communities lend a helping hand in Lambton Shores

Volunteers pose after planting wetland plants, shrubs and trees at the Forest sewage lagoons.

St. Clair Region Conservation Authority (SCRCA) staff have been busy over the last year meeting with landowners to discuss opportunities to further a healthy Lake Huron. It is clear that Lambton Shores residents want to improve water quality to ensure their beaches remain healthy and a vibrant part of the community.

Here are a few highlights:

√ Postcards were mailed to shoreline and rural landowners in Lambton Shores, reminding them of the grants available for stewardship projects. We sent out more than 1,300 postcards!

√ Working with the local Communities in Bloom group, the Municipality of Lambton Shores and the Lambton Shores Trail Group, we've been planting wetland plants, shrubs and trees to restore the retired Forest sewage lagoons. Funding for this project came from TD Friends of the Environment Foundation.

√ The SCRCA display at the three-day Forest Fall Fair showcased some of the animals that live in local watersheds, like the endangered Eastern Foxsnake, Snapping Turtles, a number of minnow species, and Freshwater Shrimp. This was an opportunity to meet with families and promote stewardship grants that support healthy natural areas.

See Lambton Shores on page 4...

Piping Plover recovery on Huron

Piping Plover is an endangered species that nests on beaches in the Great Lakes. In 2007, a pair of Piping Plovers nested at Sauble Beach, Ontario. This was the first known nest of this species in the Ontario portion of the Great Lakes since the mid-1970s.

Since that time, Piping Plover have continued to nest at Sauble Beach and also at Wasaga Beach, Oliphant, Carter Bay (on Manitoulin Island) and Port Elgin. In 2014, there were three locations, a total of eight pairs and 13 chicks fledged. Port Elgin was a new location.

Piping Plover is a small shorebird, identified by its dark neck–band, dark band between the eyes, orange legs and orange beak with a black tip (an image of the adult can be found on page 3). They lay their eggs in a nest on the beach, called a scrape.

Photo: Lake Huron Centre for Coastal Conservation

Piping plover fledgling stops to eat at Port Elgin beach in 2013, before heading south for the winter.

The adult male and female take turns incubating the eggs for approximately 28 days. Chicks are mobile right away and forage on the beach along with the adults. Both the adults rear the chicks, which are able to fly at around 4-5 weeks of age.

See Piping Plover on page 3...

Plastic pollution: the solution is you

Plastic pollution is emerging as a serious threat to the Great Lakes. Recent studies by US researchers have discovered that concentrations of plastic in the Great Lakes are higher than those in the Great Pacific Garbage Patch – a sea of floating plastic spanning hundreds of square kilometres discovered in the Pacific in the 1970s.

Plastic littered across the landscape eventually makes its way to the lake through stormwater drains, creeks, streams, and rivers. Once in the lake, plastic floats and can be carried out into the lake, or wash along the shore.

Shoreline litter is a mix of what washes in from the lake and what is left behind by beachgoers. The most common plastic litter items found on Lake Huron beaches are cigarette butts and single-use items such as cups, forks, and bottles. It is also quite common to find plastic fragments (pieces of the original item), because plastic only breaks up into smaller and smaller pieces; it never biodegrades.

Large plastic litter items can entangle and harm wildlife, carry aquatic species beyond their normal range, and decrease the aesthetic beauty of the Great Lakes. Small pieces of plastic may be mistakenly ingested by local wildlife causing choking, or if swallowed, malnourishment and/or starvation.

Plastic fragments continue to degrade until they become microplastic pieces. Microplastics can also come from other surprising sources such as personal care products including facial cleansers and body scrubs that contain the ingredients polyethylene and polypropylene, both micro-bead plastics. Synthetic fibres from laundered clothing are also a source because, like personal care products, the synthetic microfibre materials are small enough to wash through sewage treatment plants directly into the lake. Even plastic pellets, industry's raw plastic material used to create virtually all plastic products, are being found in the lake and on the shore. These pellets are likely coming from spills during transport over land and/or water.

Conclusive impacts from all this plastic in the Great Lakes remain undetermined. The State University of New York is currently looking at ingestion rates of plastic and they are finding plastic in the stomachs of various species of fish and cormorants. Since plastic absorbs persistent organic chemicals such as DDT and PCBs, there is growing concern that plastic may be increasing

Photo: Lake Huron Centre for Coastal Conservation

Black's Point Beach in Huron County, 30 volunteers removed 1,044 pieces of litter from the beach; 470 items were tiny plastic and foam pieces.

toxic exposure rates in aquatic food chains, and ultimately in humans. Studies investigating this concern are forthcoming.

The Ontario Government is currently studying the types of plastics found in Lake Ontario with the ultimate goal of identifying specific sources, thus informing new preventative policies. Preliminary results suggest that there are many types and sources of plastic pollution in the lake, including the infamous micro-bead.

While some companies that produce personal care products with micro-beads are volunteering to remove the ingredient by 2017, the Ontario Legislative Assembly has introduced Bill 75, "Micro-bead elimination and monitoring act." If passed, this bill would ban the manufacture and sale of products containing micro-beads in Ontario within two years of royal ascent, and require the Ontario Ministry of Environment and Climate Change to continue to monitor the Great Lakes for the presence of micro-beads.

Meanwhile, check the ingredients on your personal care products and throw out any that contain micro-beads; do not put them down the drain. Buy products that use recycled plastics, or other alternatives. Always dispose of used plastic responsibly; this includes cigarette butts – yes, cigarette butts are made of plastic.

Beach clean-up events remain a very important last-resort option for keeping plastic out of our Great Lakes. Sign up for a clean-up online at the Great Canadian Shoreline Clean-up website (www.shorelinecleanup.ca), or contact the Coastal Centre to organize a clean-up along Lake Huron's coast (www.lakehuron.ca).

Efforts continuing in the Bayfield North Watersheds

Since 2008, the Bayfield North Watersheds have been an area of interest for the Ausable Bayfield Conservation Authority, other local and government agencies, and residents.

Co-operative projects between agencies and landowners have included developing a watershed management plan, as well as conducting a watershed-based best management practices evaluation (WBBE) project called Crops and Creeks Huron. The purpose of these projects has been to improve water quality in the small gullies flowing directly into Lake Huron, north of Bayfield.

This project area has also provided the opportunity to monitor the effectiveness of agricultural best management practices (BMPs) in improving water quality.

The management plan has been completed (http://www.abca.on.ca/page.php?page=bayfield-north) and the WBBE project has wrapped up (http://www.abca.on.ca/page.php?page=crops-and-creeks-huron); however, work in this watershed is ongoing.

Landowners continue to implement new BMPs within these watersheds including planting cover crops on six fields, completing one wetland project, and planting 60 trees to help stabilize a lake bank property. Partnerships with the Ontario Ministry of Agriculture, Food and Rural Affairs, the Ministry of Environment and Climate Change, Environment Canada, and the University of Guelph have supported stream and BMP monitoring. In 2014, monitoring continued at three berm sites, two tile drain sites, and a cover crop site.

Research conducted in this area has helped the Healthy Lake Huron partners document how BMPs can be effective at both the site scale and the watershed scale. These results show that a system of ACTion BMPs, which Avoid, Control, and Trap/Treat erosion and runoff, can have a positive impact on improving water quality. Specifically, these are BMPs that:

- help **Avoid** runoff and improve soil structure and infiltration include reducing tillage, managing nutrient application, and using cover crops.
- **Control** runoff include berms, grassed waterways, and wetlands.
- **Trap and Treat** runoff are found at the field edge, such as planting and maintaining riparian buffers.

In the Bayfield North Watersheds, monitoring and modelling efforts have demonstrated that one of the best ways to reduce runoff is to keep a field in permanent cover (e.g., hay or pasture). As this is not always possible, a combination of ACTion BMPs will help improve soil health and reduce runoff.

The project partners would like to thank residents of the Bayfield North Watersheds who continue to help them learn from their stewardship efforts.

Community of Bayfield implementing watershed plan

People living around the Bayfield River continue to implement recommendations from the Main Bayfield Watershed Plan. The watershed plan works with the four principles of the Lake Huron-Georgian Bay Framework for Community Action: Building Awareness, Supporting Community Involvement, Taking Action, and Measuring Success.

Many of the recommendations from this community-based plan help to address the challenges of urban and rural stormwater runoff. Recommendations include establishing buffers and rain gardens, creating wetlands or berms, maintaining crop residue, following nutrient management plans, and planting windbreaks and trees on marginal land.

To help build awareness, a spring rain barrel blitz saw community groups in Bayfield, Brucefield and Vanastra and three schools sell more than 320 rain barrels to watershed residents. This equates to more than 70,000 litres of stormwater being captured per storm event, and diverted away from local creeks and storm sewers. An additional 35 watershed residents learned how to capture stormwater by creating rain gardens on their property. The community is also working towards creating a demonstration rain garden to help promote rain gardens as a stormwater management tool to local homeowners.

Photo: Ausable Bayfield Conservation

Shown in photo, from left to right, are Sandy Scotchmer, Kate Lloyd-Rees, and Erica Clark, volunteers who are helping to collect water quality monitoring samples in the Bayfield area.

Landowners in the Wise Drain subwatershed, near Clinton, participated in a watershed walk to better understand how water moves across the land and how to manage stormwater flows. Walking the landscape during the spring melt when water is moving across the landscape helps to determine what actions might have the greatest benefit for soil and water conservation, and work best with farming operations. Next steps include helping interested landowners take action on their properties, and walking another watershed this spring.

The Fred A. and Barbara M. Erb Family Foundation, a U.S. foundation dedicated to nurturing environmentally healthy and culturally vibrant communities in metropolitan Detroit and to supporting initiatives to restore the Great Lakes Basin, provided Ausable Bayfield Conservation with $100,000 for continued outreach and implementation of the plan in 2014–2016. Funding was also received through the Ontario Ministry of the Environment and Climate Change, and Environment Canada.

To view the plan, visit abca.on.ca/page.php?page=bayfield-main.

Citizen scientists help collect water quality data

Citizen science often involves volunteers who assist researchers by collecting information. Ausable Bayfield Conservation provided training for the volunteers, who collected water quality data from stormwater outfalls along the Bayfield Main Beach.

The volunteers collected samples every two weeks and during rain events throughout July and August. The samples were then analyzed for concentrations of *Escherichia coli* (*E. coli*) and phosphorus – a nutrient that can sometimes cause algal blooms.

The data collected by the volunteers will help project partners (Ausable Bayfield Conservation, Huron County Health Unit, and Municipality of Bluewater) to determine whether stormwater from the Bayfield area is having an impact on the beach and lake.

Piping Plover

...Continued from page 1.

Threats to the species include habitat destruction, human disturbance and predation. Provincial and federal agencies strive to manage the threats that persist on the breeding grounds in order to protect adults, nests and juveniles and to increase fledgling success.

Photo: Lake Huron Centre for Coastal Conservation

Adult pair keep watch while the chicks forage in the strand lines at Sauble Beach, summer 2014

In addition to these activities, volunteer programs have been developed at both Sauble Beach and Wasaga Beach. Dedicated volunteers share information about Piping Plovers with beachgoers. They also take part in reporting sightings and recording observations.

The recovery of this species is a multifaceted program that combines habitat protection, threat mitigation, education and outreach, inventory and monitoring, scientific study and local stewardship.

The success of the Piping Plover recovery program is not only linked to reducing threats and increasing the fledgling success rate but it is also attributed to habitat protection and the conservation of dune grassland ecosystems in the Great Lakes. Piping Plovers rely on these habitats to breed and raise their young. Beach stewardship and the protection and restoration of these environments is critical to the success of this recovery program.

If you would like to assist with the Piping Plover recovery program please visit PloverLovers.com or contact Craig Todd at the Ontario Ministry of Natural Resources and Forestry at (519) 371- 8465, craig.todd@ontario.ca.

Garvey-Glenn Watershed Soil

When it comes to improving water quality, our solutions become more effective the closer we get to the source of the problem. Much of the 'non-point source' phosphorus and nutrients in Lake Huron are the result of soil erosion, and soil erosion is largely the result of poor field management and soil exhaustion.

The Maitland Valley Conservation Authority is working with farmers in the Garvey-Glenn watershed to measure the health of their soils and improve field management. Funding from the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) has kick-started the Soil Health Project in this 4000-acre watershed just north of Goderich.

Farmers have updated their soil tests and met with soil health experts to create a strategy to improve soils and balance their nutrient levels, making sure they don't over-apply nutrients. The project has also supported aggregate stability sampling across the watershed and funded farmers to demonstrate cropping practices that reduce soil erosion.

Garvey Creek water quality data clearly show that the majority of sediment and phosphorus enters Lake Huron in the non-growing season (November to April), especially during the spring melt. It is common for farmers to plow after the fall harvest so that the field is ready for spring planting, but this means the soil is left bare and vulnerable. Rain and snow melt form runoff pathways in bare fields and both soil and nutrients are carried straight to the lake.

The best way to control soil erosion in fields is to cover the soil with crops and/or residue. Farmers who plant a crop after harvest (like rye, oats, or clover) are helping to hold soil in place over the winter with living roots. Other farmers choose not to plow, or till only in strips, leaving stalks and crop stubble on the surface of the field to protect soil.

Field management strategies such as cover crops and strip tillage, along with regular soil testing and nutrient balancing, will improve soil quality and water quality. The Soil Health Project is working with farmers towards the watershed-wide adoption of these best management practices.

Photo: Maitland Valley Conservation Authority

Planting cover crops after the harvest will help reduce soil erosion over the winter.

Healthy Lake Huron partnership

The Healthy Lake Huron – Clean Water, Clean Beaches campaign is a concerted effort to address nuisance algae concerns and to promote safe and clean beaches and shorelines from Sarnia to Tobermory.

Five key watersheds have been identified as priorities for immediate action. The group is now working together with local partners to develop and support the implementation of watershed management plans, with specific targeted actions, as well as monitoring and research needs, for each priority area. For more information, please visit HealthyLakeHuron.ca.

Watershed	Contact Person
Pine River	Adrienne Mason, pineriverwin@yahoo.ca, 519-395-5538 Pine River Watershed Initiative Network, www.pineriverwatershed.ca
	Jo-Anne Harbinson, j.harbinson@svca.on.ca, 519-367-3040 ext. 235 Saugeen Valley Conservation Authority, www.svca.on.ca
Garvey-Glenn	Geoff King, gking@mvca.on.ca, 519-335-3557 Maitland Valley Conservation Authority, www.mvca.on.ca
North and Main Bayfield	Mari Veliz, mveliz@abca.on.ca, 519-235-2610 or 1-888-286-2610 Ausable Bayfield Conservation Authority, www.abca.on.ca
Lambton Shores	Jessica Van Zwol, jvanzwol@scrca.on.ca, 519-245-3710 St. Clair Region Conservation Authority, www.scrca.on.ca

Lambton Shores

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√ SCRCA partnered with a local landowner who was interested in determining if his farming practices influenced phosphorus levels leaving his fields. He compared nutrient levels in water samples collected from two outlets of a winter wheat field and one outlet from a field using conventional tillage with bean stubble.

While this was a very limited sample, it was interesting to note that the conventionally tilled field water sample contained three-times more phosphorus and nitrogen and two-times more dissolved solids than the water sample from the cover crop field.

In Lambton Shores, cover crops are worth it!

√ We circulated a fact sheet about cover crops to local farmers and had a great discussion about these findings at the Lambton Soil and Crop Improvement Association meeting.

√ Students from Hillside School at Chippewas of Kettle and Stony Point First Nation went wading in Shashawandah Creek to use dip nets, turn over rocks, and check minnow traps to find aquatic bugs and fish. SCRCA staff talked about the life cycles and biology of these species and how they can be used to monitor the health of a stream.

Students from Chippewas of Kettle and Stony Point First Nation's Hillside School wade in Shashawandah Creek looking for aquatic life.

√ On a cold, windy November day, SCRCA staff planted more than 1,000 native dune grass plugs in C.J. McKewen Conservation Area. The dune rehabilitation project was supported with funding from the Ontario Ministry of the Environment and Climate Change. Dune-grass roots help secure sand on the beach and reduce erosion by wind and water.

2015 is the International Year of Soils

On December 5, 2014 the United Nations declared 2015 the International Year of Soils (www.fao.org).

Huron County Clean Water Project celebrates 10 years

Stewardship projects helping Lake Huron

The County of Huron has provided grants to county residents and community groups for a decade through the Huron County Clean Water Project. The county has helped citizens complete more than 1,790 projects to protect groundwater and water quality in creeks, rivers, and Lake Huron since the first payments were paid in 2005.

Reaching the 10-year milestone has demonstrated the commitment of the county and citizens to the cause of water quality. Several landowners, particularly farmers, have done multiple projects over the years. Having a long-term source of funding enables them to raise their portion of the project costs and incorporate projects such as erosion control into their crop rotations. Some farmers undertake stewardship projects such as decommissioning wells, planting windbreaks and installing berms as soon as they buy a new farm.

Any landowner or organization in Huron County can apply for funding for stewardship projects by calling the Ausable Bayfield or Maitland Valley Conservation Authorities. Grants range from $750 to $5,000 depending upon category, and applicants may make several applications at the same time.

The county initiative has provided more than $2.18 million in funding over the past decade to county landowners and community groups. That investment led to completed projects valued at more than $8 million. Each dollar contributed by the county has led to $3.70 of work from applicants and complementary programs such as national, provincial, and local sources.

Local landowners have completed 1,790 projects with county support. They have:

- Completed 509 tree planting projects
- Decommissioned 417 unused wells
- Upgraded 332 private wells in need of upgrade
- Decommissioned 75 liquid manure storages
- Fenced cattle out of more than 40 kilometres of streams
- Planted more than 160 hectares of trees
- Established more than 106 kilometres of windbreaks
- Completed seven new Forest Management Plans

Financial incentives are provided for windbreak and tree planting, upgraded wells, proper decommissioning of old wells, decommissioning of manure storage sites, and fencing cattle out of streams. Eligible projects also include wetland creation, diversion of water from manure and exercise yards, erosion control, stewardship guide implementation, stormwater management, fragile land retirement, and community and special projects.

Individual landowners in Huron County are also eligible to apply for 50 per cent funding, up to a $1,000 grant maximum for Forest Management Plans and Woodlot Enhancement.

The Huron County Clean Water Project has been funded by the County of Huron and is delivered by the Maitland Valley and Ausable Bayfield conservation authorities.

For information on the program, grant rates, and eligible projects visit www.mvca.on.ca or www.abca.on.ca or call (519) 335-3557, (519) 235-2610 or toll-free 1-888-286-2610.

Lake Huron: the power of community

People who live, work, and play on the shores of Lake Huron are drawn to its beautiful blue waters and sandy beaches. Now, they are taking action to protect them. Along the southeast shoreline, people from Sarnia to Tobermory have been getting involved in efforts to improve water quality and restore the Lake Huron ecosystem.

Community groups are cleaning up beaches, helping restore wetlands and protecting habitats with assistance from Ontario's Great Lakes Guardian Community Fund.

Established in 2012 as part of Ontario's Great Lakes Strategy, the fund provides grants of up to $25,000 to community groups for grassroots activities. Last year, close to $150,000 was awarded to seven projects in Lake Huron watersheds including:

- Restoring wetlands, planting trees and providing community education to help Parkhill and surrounding local communities in the Ausable watershed and Middlesex County from the headwater areas to the beaches at Port Franks and Grand Bend, through the Middlesex Stewardship Council and the Ausable Bayfield Conservation Foundation.
- Improving and protecting native brook trout habitat along the headwater areas of Beaver River through community engagement and awareness programs — a Beaver River Watershed Initiative with the Grey Sauble Conservation Authority.
- Reducing sediment transport in Spring Creek to create new spawning beds and help enhance fish habitat productivity and improve water quality led by the Hepworth Anglers Club.
- Planting trees, restoring wetlands and enhancing the watercourse to protect water quality in the main Bayfield watershed, surrounding local communities, and farmland between Clinton and Bayfield with the Bayfield Ratepayers Association and the Ausable Bayfield Conservation Foundation.
- Naturalizing and stabilizing the banks along the Maitland River, as well as enhancing in-stream habitat by implementing bioengineering site designs to create 2.75 hectares of new green space in the town of Gorrie, Howick Township, with the Howick Optimist Club and the Maitland Valley Conservation Authority.
- Re-establishing habitats and native plants, reducing soil and beach erosion and engaging the Sarnia community to enhance the ecological functions of five area public beaches with Return the Landscape and the Corporation of the City of Sarnia.
- Restoring fish and wildlife habitat on the east side of Jericho Creek within the Mud Creek watershed in Lambton County to conserve and enhance biodiversity in the region with the Rural Lambton Stewardship Network and the Ausable Bayfield Conservation Foundation.

To learn more about these efforts to protect the Great Lakes visit ontario.ca/environment-and-energy/great-lakes-and-watersheds.

Footprints to Forests fights climate change

The wait is over. The website is here: footprintstoforests.com. The website gives people a new and local way to compensate for their personal carbon footprint.

Your carbon footprint represents the greenhouse gas emissions released by typical aspects of your day-to-day life, such as use of a car or truck or other vehicle, energy to heat and run your home, and air travel (if you travel by air). Trees help to capture carbon dioxide and other greenhouse gases. This reduces the impacts of climate change on the planet and in your local area. Trees also provide other benefits such as habitat for diverse species and improved water quality.

The site includes an easy-to-use carbon calculator. You can use the calculator to find out how many tonnes of greenhouse gases are produced by your activities. The calculator also tells you how much it would cost to compensate for the impacts of your vehicle use, home energy use, and air travel. In addition, the site provides information on how many trees will be planted locally with the help of your donation.

The Maitland Valley and Ausable Bayfield conservation authorities launched the new website, which is the key action of the Carbon Footprints to Forests program, created with the financial support of the County of Huron.

Carbon dioxide and other greenhouse gases push average temperatures up but trees can help to reduce the impacts of climate change and help us adapt to the changes we are experiencing in weather and climate. People can support the planting of trees through the new website. This will help the local area adapt to our changing climate and weather extremes, according to the partners in this project.

"As trees grow, they remove carbon dioxide from the atmosphere," said Kate Monk, Ausable Bayfield Conservation's Stewardship, Land and Education Manager. "Trees also provide shade and cooling effects when it's hot, and limit the impact of snow and wind during the wintertime. That helps us adapt to extreme weather events in a changing climate."

Compensating for your carbon footprint is easy. First, use the quick and easy calculator at footprintstoforests.com to find out your carbon footprint. Then, make a donation for all or part of your footprint cost. Your local conservation authority will then put that money to work by planting trees. This will help your local area to mitigate greenhouse gases and adapt to changes in weather and climate.

"We think people will find it interesting to figure out how much greenhouse gas is released from their daily activities like driving a car or heating a home," Monk said. "It is also interesting to know how many trees it takes to compensate for that carbon footprint."

Some people may be able to donate the entire cost of their carbon footprint, Monk said, but some people may only be able to donate to compensate for part of it. "If you are able to donate all of your carbon footprint, that's great, but we are thankful for all donations, large or small," she said. "Every tree counts."

You may not be in a position to donate at this time but the partners behind the new website invite you to visit the website anyway to find out more about the greenhouse gas emissions that come from home energy use and travel by vehicles or planes.

Safe Swimming Checklist

Three W's of Safe Beach Use

You are often the best judge of water quality for swimming or other recreational uses. By checking weather, water and websites, you can quickly and easily gauge water quality and decide if it is safe to swim.

Weather:

Be aware of recent local weather conditions. Storms or heavy rains typically result in high bacterial counts and unsafe water quality for the next 24-48 hours. It is wise to wait a couple of days after a storm before visiting the beach again.

Water:

After arriving at the beach, a quick visual inspection of the water is one of the best ways to judge if it's safe to go in. Visual indicators of unsafe water quality include water that is murky with suspended mud or sediment (usually caused by wavy conditions) and the presence of large numbers of birds and bird droppings. If you do venture in but can't see your feet when standing waist deep, you should get out. Rip currents, undertows and heavy wave action increase risk to swimmers.

Websites:

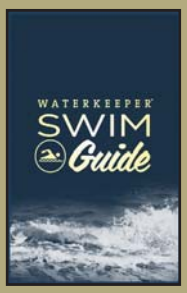
Before you go to the beach, check with the local public health unit to see if local beaches have posted closures.

Grey Bruce County:
Online: www.publichealthgreybruce.on.ca
By Phone: 519-376-9420 ext. 2501 or
Toll Free 1-800-263-3456

Huron County:
Online: www.huroncounty.ca/health
On Twitter: www.twitter.com/huronbeachinfo
By Phone: 519-482-5119 ext. 2501 or
Toll Free 1-877-837-6143

Lambton County:
Online: www.lambtonhealth.on.ca
By Phone: 519-383-8331 or
Toll Free 1-800-667-1839

Swim Guide



Some of Lake Huron beaches are included in the new Swim Guide created by Lake Ontario Waterkeepers, a charity in Ontario working to ensure the Great Lakes stay swimmable, fishable and drinkable. Although the project began on Lake Ontario, Swim Guide is now an international project.

The guide provides current water quality information for hundreds of Great Lakes beaches including over 30 Lake Huron public beaches.

The free Swim Guide can be downloaded to an iPhone® or Android device, or can be accessed online, at www.theswimguide.org.

Ontario's climate change adaptation board game

WeatherCheck!

Adapting to the impacts of climate change and extreme weather events can be a complex and daunting task. We can increase our ability to adapt by working together to identify the impacts, opportunities, strategies and common goals we face with climate change. But Ontario has a very diverse population of people and organizations. How can we come together to take action?

To help start discussions around climate change, the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) has developed WeatherCheck! Ontario's Climate Change Adaptation Board Game. The game is designed for small groups to increase their awareness of climate change impacts and opportunities, particularly in the agriculture and food sectors.

WeatherCheck! board game – let's talk about climate change!

Before starting board game play, participants are introduced to climate change and extreme weather events through a short presentation by a facilitator, using materials provided by the ministry.

Then it is active learning as participants are divided into teams to make decisions, and choose adaptation strategies and actions based on challenges and opportunities from climate change and extreme weather events. Working through the scenarios and examples together leads to thought-provoking dialogue around climate change, and how we all can have a role in climate change adaptation. As play progresses, the teams come together as a group to continue the discussions and share ideas individually – and together – for taking action on climate change.

How might climate change affect Lake Huron and the surrounding communities? Let's start that conversation. WeatherCheck! materials can be obtained to facilitate your group discussions. For more information, contact Dave Bray, Environmental Specialist at OMAFRA, at (519) 271-4771, dave.bray@ontario.ca.

Pine River Watershed: wetlands, topsoil, and headwaters

Wetlands are extremely efficient multi-taskers.They filter and purify water, replenish and store groundwater, provide excellent biodiversity and act as natural water retention ponds year-round.

Wetlands also provide an outdoor classroom where students can learn about aquatic ecosystems, wildlife species and the interrelationships involved with a natural environment.


McLarty Oxbow wetland was created at the McLarty Environmental Study Area (ESA), on the Pine River in fall 2014.


A student at the McLarty Oxbow wetland showing a froglet that developed in the wetland.

A 'dirt'y secret

Have you ever wondered why there is such productive farmland in Southern Ontario?

Here's a hint: it certainly did not happen overnight. In fact, it took millions of years for our rich topsoil to develop.

This painstakingly slow process occurred at the bottom of the many wetlands and lakes that covered this landscape a long time ago. As aquatic plants and other organisms lived, died and decomposed, they left remnants of organic material behind that helped form the nutrient rich topsoil that we depend on today. Our challenge is to look after this precious topsoil, keep it on the land and ensure its continued health for many years to come.

Over the last few years, two projects have been completed in this priority watershed that involved the construction of human-made berms to help keep topsoil on the land and reduce sedimentation in surrounding waterways.

It has been estimated that these two berms alone will help keep 100 tons of topsoil on the landscape annually! This is comparable to the weight of nine school buses!

Headwaters: where water meets soil

The function of headwaters is much like the function of our own head, it is the place where decisions are made for the rest of the body, or in this case the rest of the watershed.

The headwaters of any river system are made up of many small trickles of water that might dry up for many months of the year, but act just like the capillaries in our bodies that bring fluid to our major veins and arteries. Like a collector lane full of cars on a major highway, most droplets of water in a river can be traced backwards to a contributing pathway in the headwaters.

It is the health of these headwaters that determines the health of the downstream water bodies, such as the Pine River and Lake Huron.


Appreciation Day bus tour takes local residents on a tour of recent projects. Seen here is the Eadie Berm, designed to slow down water and reduce soil erosion. Funding for this berm was provided by Environment Canada, County of Bruce and the Ontario Ministry of the Environment and Climate Change.

Caring for the coast starts with learning about the coast

When we think of Lake Huron we often conjure images of sandy beaches and the serenity of gentle waves reaching the shore. Lake Huron's coastline is really a complex web of interacting features and processes working in a delicate balance, providing us with a rich diversity for all to enjoy. The Lake Huron coastline is made up of ecosystems unlike any others in the province. It is the result of 10,000 years of evolution, developing coastal features and life forms that have unique adaptations to the coastal environment.

Coastal bluffs have either developed from past lake levels, or are currently evolving. The evolving ones erode naturally and provide a vital source of sand for beaches downshore. Along other parts of the shoreline, relatively more stable bluffs tend to have tree cover established, and this vegetation helps to prevent erosion, including landslides. Maintaining this vegetation cover is important, despite the urge some people get to want a clear, unobstructed view of the lake.

Dune systems not only provide important habitat for some of the rarest plant and animal species in Ontario, but also contribute to maintaining good quality beaches, provide protection from storms, and capture blowing sand. Dune systems only comprise about 1.5% of Ontario's Great Lakes coastline, making them a rare landform. They are also one of the most vulnerable ecosystems, and are in decline, mainly because of human activities. These declining ecosystems are leading to a decline in beach quality.

Coastal wetlands are different than their interior cousins. Coastal wetlands are linked to lake levels and they change with the changing water levels. These wetlands are not only important for purifying the water, but they provide habitat for over half of Lake Huron's native fish populations. Ontario has lost over 75% of its coastal wetlands due to development pressures.

Alvars are very special ecosystems that are located on the Bruce Peninsula and Manitoulin Island. They are characterized by limestone bedrock with a very shallow soil layer and specially adapted plants. Alvars are globally rare.

Photo: NASA/Chris Hadfield

Expedition 35A view of the Great Lakes from the International Space Station, capturing lakes Superior, Huron, Michigan, Erie and Ontario as well as the drainage basin shared by the United States and Canada.

Many of the special ecosystems along the shoreline (dunes, bluffs, wetlands, alvars) are at risk because of people's activities that damage fragile plants, or alter the processes that sustain these ecosystems. As a result, the quality of our coast is deteriorating. Adopting practices that minimize our impacts and respect the needs of these remarkable ecosystems will lead to a brighter future for our coast.

Learn about Lake Huron's coastal environment (www.lakehuron.ca). The more you know, the more you'll appreciate the wonders of our natural coastline.

Lake Huron: yours to enjoy, yours to protect

Lake Huron is the second largest Great Lake, and the fifth largest freshwater lake on earth. Its shoreline, the longest of all the Great Lakes, is well known for its spectacular beaches and world famous sunsets. Lake Huron provides numerous recreational opportunities for all to enjoy, including a healthy sport fishing industry. Its freshwater is the life pulse of 2.4 million people who drink its waters every day. If you are one of the lucky people who drink, swim and fish in Lake Huron's waters, always remember the Lake is yours to enjoy, but also yours to protect. Visit us on the web at HealthyLakeHuron.ca and send us an email. We'll answer your questions or connect you with one of our partners so you can help keep Lake Huron's waters clean and healthy.

Photos: Dan Holm (ruralstormwater.com), Lynn Wilkelis (sunset image)

We would love to hear from you!

Did you find the Healthy Lake Huron newsletter helpful? What other topics would you like to read about? Please take a few minutes to take our 2015 Healthy Lake Huron Readership Survey at HealthyLakeHuron.ca. Respond by July 1 for a chance to win a stainless-steel re-useable water bottle while supplies last. Your comments matter to us – take the survey today!