



ECONOMY & CULTURE

The Society of the Great Lakes

What are ecosystem services and how do they support the economy and culture of the Great Lakes region?

GREAT LAKES FACT SHEET



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Ecosystem Services

The value of the ecological systems of the Great Lakes region is often overlooked in traditional economic measures used to evaluate costs and benefits. Ecosystems create and maintain soil, protect biodiversity, recycle nutrients and play a role in maintaining the balance of oxygen and carbon dioxide that affects climate and rainfall patterns. These ecosystem services provided by the natural environment are essential for human survival. Ecosystems also provide recreational opportunities and aesthetic value that enhance the quality of life of the inhabitants of a region.

In 2005, the United Nations Millennium Ecosystem Assessment (MEA), a four-year study involving more than 1,300 scientists worldwide, grouped ecosystem services into four broad categories: *provisioning*, such as the production of food and water; *regulating*, such as the control of climate and disease; *supporting*, such as nutrient cycles and crop pollination; and *cultural*, such as spiritual and recreational benefits.

Ecosystem services can be a challenge to describe in monetary terms. The economic value of the fishing industry is well understood because there is a price on the fish that are caught and sold. However, the availability of clean water and suitable habitat, which are crucial to the success of a fishery, are not easily quantified or valued. The typical means of evaluating the health of the region's economy and measuring its wealth do not readily account for the non-renewable resource depletion and pollution that are often associated with economic growth. Difficult as it can be, the valuing of ecosystem services is essential to more effective decision making for the natural environment because these services are at the heart of the long-term prosperity and well-being of the region.

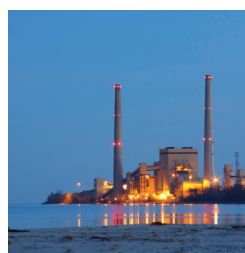


THE SOCIETY OF THE GREAT LAKES

The concept of ecosystem services is essential to understanding the economy and culture of the Great Lakes region, one of the most prosperous and diverse societies in the world. The natural riches and advantages of the region have provided a strong foundation for the development of complex and successful economies. At the same time, the residents of the Great Lakes Basin draw other, less tangible benefits from the lakes and the landscape they shape. People living in the region have ready access from major urban centres to a natural environment that plays a key role in shaping the lifestyle and culture of the region. The grandeur and beauty of the Great Lakes landscape have long held special significance for the inhabitants of the region and fired the imaginations of its artists and thinkers.

ECONOMY

From the first Aboriginal settlements more than 10,000 years ago, the Great Lakes region has offered easy access to transportation through its waterways, rich agricultural soil and mineral deposits, and an abundance of wildlife for hunting and fishing. These same riches drew the first European explorers, traders and settlers into the heart of the continent. Today, the Great Lakes support close to half of Canada's industrial capacity. They provide water for power generation, commercial fisheries, agriculture, manufacturing, pulp and paper production, and food processing. The lakes remain a vital shipping route for iron ore, coal and grain for overseas markets, with major ports such as Thunder Bay, Hamilton and Toronto located on their shores. The basin supports more than 50 per cent of Canada's manufacturing and 25 per cent of its agricultural output. If the region as a whole stood alone, it would represent the second-largest economic unit in the world, second only to the United States.



The lakes are an energy powerhouse. Electricity is the primary form of energy generation in the region, but there is increasing interest in developing oil and gas reserves beneath the lakes and in the lakes basin. The water resources of the Great Lakes are also in demand for the development of alternatives to fossil fuels, such as ethanol and biodiesel.



Commercial fisheries in the Great Lakes region include whitefish, smelt, walleye and perch operations. Lake Erie's yellow perch and walleye fisheries are among the largest and most valuable in North America, while Lake Huron supports fish farms for rainbow trout. Sport fishing is a major tourist attraction contributing to the economy of the Great Lakes region. Anglers from around the world flock to the lakes to enjoy steelhead, bass, lake trout and salmon fishing.



One-third of the land within the basin is used for agriculture. Agricultural products from the region include dairy, grain, corn, soybeans, and fruit and vegetables as well as specialty products such as wine. Introduced in 2005, Ontario's *Greenbelt Act* protects approximately 1.8 million acres of environmentally sensitive and agricultural land from urban development in order to ensure the continued strength of the province's agricultural sector.



The Great Lakes offer outstanding opportunities for tourism and recreation – everything from pristine wilderness parks to beaches in major cities. The region supports tourism year round, with activities ranging from ice fishing, skiing and snowmobiling to cottaging, hiking, bird watching, sport fishing and hunting, boating, swimming and diving.

Developing the economic potential of the Great Lakes Basin has enabled the communities of the region to enjoy an extraordinarily high standard of living and quality of life. But economic development and the population growth accompanying it are also at the root of some of the very serious challenges the region faces: climate change, urban sprawl, harmful pollutants in the air and water, invasive species, and threats to biodiversity and wildlife habitat.

CULTURE

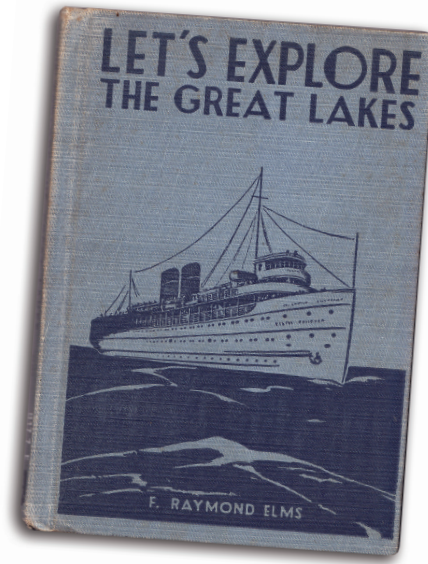
The natural, often wild beauty and abundance of the Great Lakes landscape have been a profound source of spiritual and artistic inspiration for people living around the Great Lakes, beginning with the earliest Aboriginal inhabitants. The petroglyphs now protected in Petroglyphs Provincial Park in Ontario are an example of how the richness of the Great Lakes landscape shaped the cultural traditions of First Nations peoples living in the area. Consisting of about 900 carvings on a flat expanse of rock, the petroglyphs are thought to be from 600 to 1,100 years old. They present a vivid panorama of life in the Great Lakes region in the period before European contact, with images including turtles, snakes, birds, boats and people. Today the site is considered sacred by the Anishinabe, who call it Kinooamaagewaapkong, meaning "the rocks that teach." The ongoing vitality of these Aboriginal traditions is evident in the painting of the Woodland School, a style of art initiated in the 1960s by Norval Morrisseau, who drew on traditional Anishinabe visual imagery, myths and legends in his painting.

The grandeur of the Great Lakes landscape also shaped the imagination of European settlers. Herman Melville expresses this in *Moby Dick*, where he writes of the Great Lakes, "For in their interflowing aggregate, those grand fresh-water seas of ours, – Erie, and Ontario, and Huron, and Superior, and Michigan, – possess an ocean-like expansiveness, with many of the ocean's noblest traits; with many of its rimmed varieties of races and of climes."

The history of Canadian painting offers one of the most notable examples of the cultural influence of the Great Lakes landscape. At the beginning of the 20th century, Canadian art was strongly influenced by the styles of painting dominant in Europe – the general opinion at the time being that the Canadian landscape was too rough and untamed to be a suitable subject for art. A Canadian style began to emerge around the time of the First World War, with the works of the Group of Seven and Tom Thomson, who often took as their subjects the landscapes of the Great Lakes Basin. The Group's manifesto, printed in their 1920 exhibition program, clearly expressed their nationalist aesthetic: "Art must grow and flower in the land before the country will be a real home for its people." This declaration helped to define Canada's cultural identity at a pivotal time in its history.

The Great Lakes continue to be central to the cultural imagination of people living in the region. Singer-songwriter and activist Sarah Harmer has worked to raise awareness about the importance of protecting the unique ecosystem of the Niagara Escarpment through her "I Love the Escarpment" concert tour and her work with the advocacy group Protecting Escarpment Rural Land (PERL). The lakes have also featured in the work of other musicians, such as Gordon Lightfoot, Stan Rogers, and The Tragically Hip. In literature, "Alice Munro country" – the area of rural, small-town Ontario west of Toronto and east of Lake Huron that is so central to much of Alice Munro's work – has emerged as one of the most distinctive and compelling literary landscapes in contemporary fiction.

The work of other writers, such as Margaret Atwood and Jane Urquhart, also demonstrates how the history and landscape of the Great Lakes continue to vitalize the society around them.

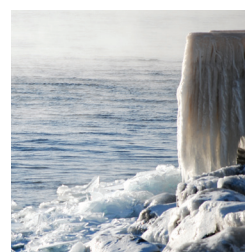


STEWARDSHIP—CITIZEN INITIATIVES

Communities and individuals play a key role in the protection of the Great Lakes. Stewardship activities in the region are on the rise, and a growing number of people are now making informed decisions about how choices in their daily lives affect the health of the lakes. The passion that many people feel for the Great Lakes landscape has inspired a wide range of citizen initiatives to help protect these valuable resources. These include conservation efforts, participation in monitoring programs, and shoreline cleanups and other activities aimed at strengthening public engagement and improving governance.

The following are just a few examples of current stewardship initiatives in the Great Lakes region:

- In 2012, the Ontario government announced the creation of a Great Lakes Guardian Community Fund to support initiatives undertaken by community groups and organizations to help restore their own corner of the lakes.
- For centuries, Aboriginal groups have sought to live in harmony with the Great Lakes and to demonstrate a sense of responsibility for the protection of the waters. This ongoing effort is demonstrated in the Mother Earth Water Walk, a journey made on foot by a group of Anishinabe men and women around each of the Great Lakes to raise awareness about the human impact on the lakes and the importance of protecting the water.
- A partnership between Environment Canada and the conservation organization Nature Canada, NatureWatch is a series of volunteer monitoring programs that encourages the public to become citizen scientists. The programs – FrogWatch, IceWatch, PlantWatch and WormWatch – provide a means for individuals to contribute in a meaningful way to some of the most pressing concerns affecting the environment.



WHAT CAN YOU DO?

- **Connect with nature:** Enjoy a hike along one of the region's many trails, become a nature surveyor for your local conservation authority, or spend a night under the stars at a provincial or national park. Connecting with the natural landscape of the Great Lakes region helps to foster a spirit of environmental stewardship.
- **Invest in the Great Lakes economy:** Where possible, support the local economy by considering the origin of your purchases. By choosing agricultural products grown in the Greenbelt or fish from Great Lakes fisheries, you can help these industries remain strong.
- **Get involved:** Look for opportunities to get involved in public consultations on important issues related to the economy and culture of the Great Lakes Basin and on agreements and legislation that affect the region. Urge government, businesses and other organizations to take action on Great Lakes issues.



SELECTED RESOURCES

For more information on the economy and culture of the Great Lakes, consult the following resources:

Environment Canada. Putting a price on Canada's ecological goods & services. <http://www.ec.gc.ca/envirozine/default.asp?lang=en&n=B31D9D94-1>

McMichael Canadian Art Collection. The collection - The Group of Seven. <http://www.mcmichael.com/collection/seven/index.cfm>

Mother Earth Water Walk. <http://www.motherearthwaterwalk.com/>

Nature Canada. <http://www.naturewatch.ca/english/>

Ontario Ministry of the Environment. Great Lakes Guardian Community Fund. http://www.ene.gov.on.ca/environment/en/funding/great_lakes_fund/index.htm

Ontario Ministry of the Environment. Ontario's Great Lakes Strategy. http://www.ene.gov.on.ca/environment/en/resources/STDPROD_101828.html

Ontario Ministry of Natural Resources. How ecosystems function. http://www.mnr.gov.on.ca/en/Business/Biodiversity/2ColumnSubPage/STEL02_166813.html

Ontario Ministry of Natural Resources. The Great Lakes. Connected to Our Economy and Our Way of Life. http://www.mnr.gov.on.ca/en/Business/GreatLakes/2ColumnSubPage/STEL02_173888.html



POLLUTION PROBE
CLEAN AIR. CLEAN WATER.

150 Ferrand Drive, Suite 208
Toronto, Ontario Canada M3C 3E5

Tel 416.926.1907
Fax 416.926.1601

www.pollutionprobe.org

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PHOTOS

Cover: Canoe, Agawa Rock pictographs, Lake Superior Provincial Park, Ontario. The pictographs at Agawa Rock are thought to date from the 17th and 18th centuries. Photo © Celeste Snyder

Ecosystem Services: Honeybee. © goosie ~gander

Culture: *Let's Explore the Great Lakes* by F. Raymond Elms, published by Albert Whitman & Company, Chicago, Illinois, 1953. Photo © Cathi Bruhn.

Stewardship: Grandmother Josephine Mandamin. Mother Earth Water Walk, 2011, Lake Superior. © Anna Martineau Merritt

What Can You Do? Green Frog (*Rana clamitans*), Franklin Island, Georgian Bay Biosphere Reserve, Lake Huron. © Terry A. McDonald - luxborealis.com