

What is biodiversity?

Biodiversity is the variety of life on Earth. It includes all living things and the ways they interact with each other and their environment. Simply put, biodiversity is life. There are three levels of biodiversity: *genetic diversity*—the variety of genetic information contained in individual plants, animals and micro-organisms; *species diversity*—the variety of species, and; *ecosystem diversity*—the variety of habitats, ecological communities and ecological processes

Why is biodiversity important?

Biodiversity is about being connected. All species, including humans, depend on each other to survive. Humans depend, directly and indirectly, on biodiversity for clean air and water, food and fibre, tourism, and amazing outdoor experiences like hiking, fishing and canoeing.

Conserving Ontario's biodiversity is important because healthy ecosystems sustain healthy people and a healthy economy.



Colin D. Jones, NHC Archives



United Nations Decade on Biodiversity



Scott Bishop

What is Ontario's Biodiversity Strategy, 2011?

Ontario's Biodiversity Strategy, 2011 is an exciting new framework that builds on the 2005 Strategy and sets out an ambitious conservation agenda for Ontario over the next decade.

The renewed Strategy challenges us to take responsibility and do our part in conserving the wealth of natural resources in Ontario. We all have a role to play.

What is the relationship between the State of Ontario's Biodiversity 2010 report and Ontario's Biodiversity Strategy, 2011?

The State of Ontario's Biodiversity 2010 report tells us our job is not done — we still have work to do. The actions set out in Ontario's Biodiversity Strategy, 2011 were developed to respond to pressures identified in the report and will help improve the state of Ontario's biodiversity.



For additional information about the state of Ontario's biodiversity, and Ontario's Biodiversity Strategy visit ontariobiodiversitycouncil.ca



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State of Ontario's Biodiversity 2010 Summary

Ontario Biodiversity Council

What is a biodiversity indicator?

Measures that summarize information from monitoring programs are called indicators and tell us about the status and trends in Ontario's biodiversity. The biodiversity indicators used for this report are presented in three different sections: pressures on Ontario's biodiversity; the state of Ontario's ecosystems and species; and, conservation efforts and sustainable use. Each indicator reports on the status, trends (changes through time) and the level of confidence in the information.



Heather Bickle, OMNR



Peter Uhlig, OMNR

What is the State of Ontario's Biodiversity 2010 report telling us?

The report shows that we are demanding too much from our province's resources. Increasing pressures are leading to biodiversity loss especially in southern Ontario. On the bright side, efforts to conserve Ontario's biodiversity have increased over the last decade. These findings are similar to reports from other countries around the world that released biodiversity reports in 2010—the International Year of Biodiversity.



Alin Dextrase, OMNR

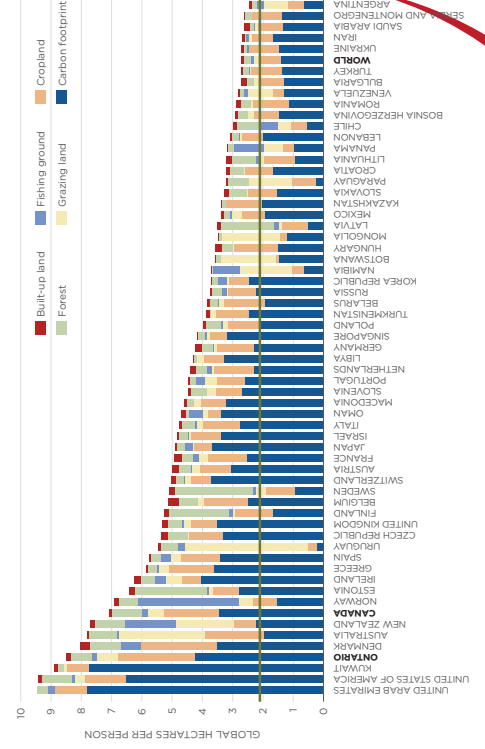
Why report on the state of Ontario's biodiversity?

In order to protect biodiversity we have to understand it, and we need to measure what we have. The State of Ontario's Biodiversity 2010 report is one of a number of tools to help us learn about and appreciate biodiversity in Ontario. It also helps us to evaluate the good work we are doing to conserve biodiversity. The 29 indicators that were assessed provide a snapshot of the status of biodiversity across the province and help us pinpoint areas where more protection or research is needed.

Sample of key indicators

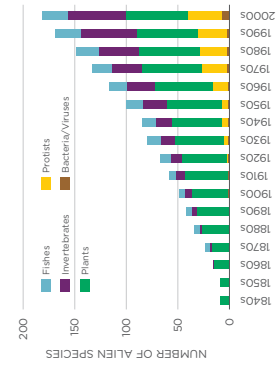
Reporting on the state of biodiversity is helpful in many ways. The information in the report shows some of the impacts that we are having on our natural resources and the work that is being done to change that. Using indicators, the report paints a picture of how different aspects of biodiversity are affected. Graphs and maps of some of the key indicators are shown below and highlights of all 29 indicators are in the table on the right.

Ecological Footprint



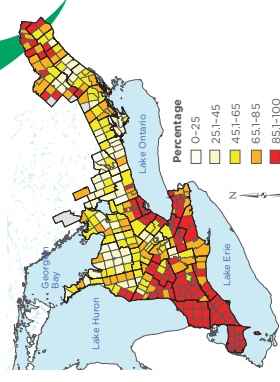
Ontario's Ecological Footprint compared to the Ecological Footprints of a selection of countries with available data, 2005. Green line is the world average biocapacity of 2.1 gha per person.

Invasive Alien Species in the Great Lakes



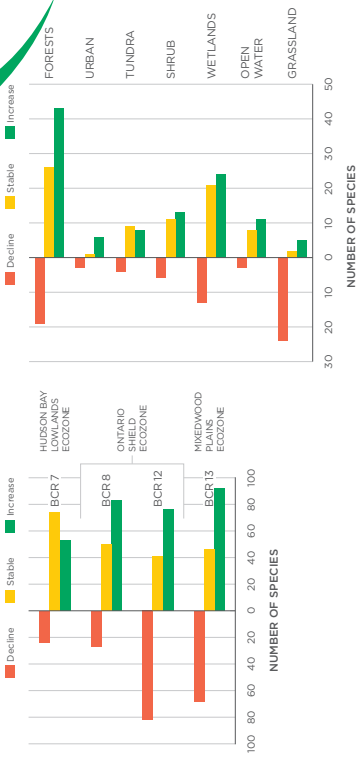
Cumulative number of aquatic alien species in the Great Lakes by decade (note: protists includes algae, diatoms and protozoans).

Wetland Loss in Southern Ontario



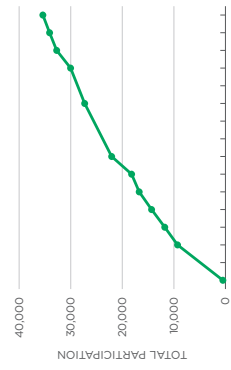
Loss of original wetland area by township, from 1800 to 2002.

Species Diversity—Trends in Ontario's Breeding Birds



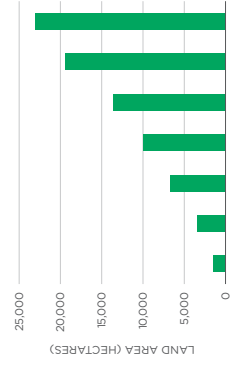
Number of bird species showing long-term declining, stable or increasing trends in Ontario by Bird Conservation Region (left) and by habitat type (right).

Sustainable Management—Environmentally Sustainable Agriculture Program



Number of participants in the Canada-Ontario Environmental Farm Plan program, 1994–2009.

Biodiversity Stewardship—Area with Stewardship Activities



Cumulative area with stewardship activities in Ontario, 2002–2008.

Summary of status and trends for each indicator used in the State of Ontario's Biodiversity 2010 report.

INDICATOR	STATUS	TREND
Ecological Footprint	high per capita footprint and limited biocapacity	↕
Habitat Loss—land cover	significant habitat loss in Mixedwood Plains, but limited habitat loss in the Ontario Shield and Hudson Bay Lowlands	↕
Habitat Loss—road density in southern Ontario	67% increase in total length of road from 1935–1995, length of paved road increased almost 5-fold over this period	↘
Habitat Loss—corridors in the Ontario Shield	low road densities except southern portion and near urban centres, small increase in road area 2001–2005 (0.02%)	↕
Habitat Loss—aquatic stress index	high stress index values in Mixedwood Plains and southern Ontario Shield, low values in Hudson Bay Lowlands	↕
Invasive Alien Species—Great Lakes	large number of alien species present in Great Lakes (186), and invasion rate has increased	↘
Pollution—ground-level ozone	increasing background levels and increasing 8-hour peak levels during the summer	↘
Pollution—freshwater quality index	58% of sites with good or excellent ratings, but 41% with fair, marginal or poor ratings mostly in southwestern Ontario	↕
Climate Change—Great Lakes ice cover	decline in percentage of ice cover on all five Great Lakes between 1970–2008	↘
Climate Change—condition and survival of Polar Bears	reduced condition and survival rates for male and female Polar Bears in all age classes	↘
Forests—extent of forest cover and disturbance	amount of forested land remained stable between 1998 and 2002	↔
Forests—fragmentation in Mixedwood Plains Ecozone	4 of 5 zones have >30% forest cover, but largest zone (SW) has only 17% with limited habitat for forest-interior birds	↕
Wetlands—losses in southern Ontario	from 1982–2002, wetland losses continued in the Mixedwood Plains at a rate of 0.17% per year.	↘
Rare Ecosystems—extent and protection	54% of prairie/savannah habitat legally protected, 92% of dune habitat protected, only 21% of alvar protected	↕
Great Lakes—Great Lakes shoreline hardening	> 30% of Lake Erie shoreline and 25% of Great Lakes connecting channels have high proportion of hardened shoreline	↘
Great Lakes— <i>Diporeia</i> abundance in Great Lakes	drastic declines in abundance in all Great Lakes except Lake Superior over the last 10–20 years	↘
Inland Waters—alterations to stream flow	not assessed	?
Inland Waters—fragmentation by dams	not assessed	?
Species Diversity—changes in General Status rankings	919 of 1,063 species had same ranks in 2000 and 2005, 10 species moved to higher ranks because of increased risks	↔
Species Diversity—trends in Ontario's breeding birds	most species increasing or stable (especially forest birds and northern birds), aerial foragers and grassland birds declining	↔
Protected Areas—protected areas and conservation lands	11.3% of Ontario Shield, 10.0% of Hudson Bay Lowlands, and 3.5% of Mixedwood Plains protected	↕
Protected Areas—ecological representation	minimum representation thresholds have not been achieved for any ecodistrict, Ontario Shield has best representation	↕
Sustainable Management—forest certification	area under forest certification increased dramatically since 2002, 80% of licenced land base certified in 2008	↗
Sustainable Management—agriculture	65% of Ontario farms (35,000) have participated in environmental farm plans since 1992	↗
Stewardship—area enhanced for biodiversity	cumulative and annual area enhanced for biodiversity continued to increase from 2002 to 2008	↗
Stewardship—volunteer efforts to conserve biodiversity	between 2006 and 2008, 33,000 Ontarians volunteered annually on biodiversity conservation initiatives	↕
Stewardship—participation in tax incentive programs	participation rate in conservation tax incentive programs (CLTIP and MFTIP) increased 11% between 2002 and 2008	↗
Urban Biodiversity—wooded area in urban landscapes	wooded areas account for 7.8% of the 4,765 km ² of urban landscape within the Mixedwood Plains Ecozone	↕
Financing—expenditures and charitable giving	since 2001, spending by biodiversity-related ministries has increased significantly.	↗

TREND: ↗ Improvement ↘ Deterioration ↔ No Change ↕ Mixed ↔ Baseline ? Undetermined