



INDICATOR: BIODIVERSITY IN ONTARIO’S ELEMENTARY AND SECONDARY SCHOOL CURRICULA

STRATEGIC DIRECTION: Engage People

TARGET: 1. By 2015, biodiversity is integrated into the elementary, secondary and postsecondary school curricula, including schools of business.

THEME: Conservation Response – Education and Awareness

Background Information:

Changes in the Earth’s environment and its natural systems, including the loss of biodiversity, have emerged as a matter of increasing concern around the world. While the issues are complex and diverse, there is a shared recognition that solutions will arise only through committed action on a global, national, regional, local, and individual scale (Pooley and O’Connor 2000). Schools have a vital role to play in preparing young people to take their place as informed, engaged and empowered citizens who will be pivotal in shaping the future of our communities, our province, our country, and our global environment (Ontario Ministry of Education 2007).

In Ontario, the curriculum taught in elementary and secondary schools is mandated province-wide by the Ministry of Education. Environmental education, including learning about biodiversity, is recognized as an important part of Ontario’s curriculum. In 2009 the Ontario government made a commitment that environmental education, as defined in *Acting Today, Shaping Tomorrow: A Policy Framework for Environmental Education in Ontario Schools*, would be part of every child’s learning and that responsible environmental practices would be fostered across Ontario’s education system (Ontario Ministry of Education 2009).

This indicator provides a narrative assessment of the integration of biodiversity into the elementary and secondary curricula.

Data Analysis:

Information about the integration of biodiversity into elementary and secondary school curricula was provided by the Ontario Ministry of Education. The Ontario curriculum consists of 8 elementary curriculum documents and 32 secondary curriculum documents. Elementary curriculum is standard from Grades 1-8. In secondary school, students generally work towards an Ontario Secondary School Diploma, which requires a combination of compulsory and optional credits from a variety of disciplines. Compulsory credit requirements include at least two credits in science and one credit in geography.

Results:

Trend: Improvement	Data Confidence: High	Geographic Extent: Provincial
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Status:

- Biodiversity has been integrated into the elementary and secondary school curriculum and opportunities to learn about biodiversity have increased in revised curriculum. The Ministry of



Education continues to use the Standards for Environmental Education in the Curriculum to guide revisions, resulting in an increased focus on environmental issues such as biodiversity and related issues including habitat loss, invasive and endangered species, climate change and ecosystems.

- The Standards for Environmental Education in the Curriculum (2008) help curriculum writers incorporate environmental education expectations and opportunities, such as learning about biodiversity, across the curriculum. The standards frame learning around four themes – community, knowledge, perspectives, and action – and are designed to prepare students to support environmental sustainability by bridging the gap between their awareness of issues and their ability to take action.
- In elementary curriculum, which is mandatory, students learn about biodiversity in subject areas such as Social Studies, History and Geography and Science and Technology, as appropriate. In secondary schools, students learn about biodiversity in the mandatory courses in Gr. 9 Geography and Gr. 10 Science. Other opportunities to learn about biodiversity exist in courses in Science, Geography, Technological Education, and in other disciplines where biodiversity is used as the context for learning.
- In Social Studies, Grades 1-6; History and Geography, Grades 7 and 8 students learn about the human-created and natural world and gradually delve into impacts of human activities on the natural world. As students mature, they learn about how they can make choices that minimize the negative impacts of their actions and they learn how environmental stewardship can take place at the personal, national and international level. In this curriculum, concepts and issues such as respect for natural systems, land use, pollution, habitat loss, resource extraction, and action plans to reduce environmental impacts are introduced and students' learning deepens and expands as they progress through the grades. Biodiversity is the focus of a strand in Grade 6 Science. Students learn to:
 - Assess human impacts on biodiversity, and identify ways of preserving biodiversity;
 - Investigate the characteristics of living things, and classify diverse organisms according to specific characteristics; and
 - Demonstrate an understanding of biodiversity, its contributions to the stability of natural systems, and its benefits to humans.
- In Grade 10 Science, the Biology strand focuses on sustainable ecosystems and human activity. Students learn to:
 - Analyse the impact of human activity on terrestrial or aquatic ecosystems, and assess the effectiveness of selected initiatives related to environmental sustainability;
 - Investigate some factors related to human activity that affect terrestrial or aquatic ecosystems, and describe the consequences that these factors have for the sustainability of these ecosystems; and
 - Demonstrate an understanding of the characteristics of terrestrial and aquatic ecosystems, the interdependence within and between ecosystems, and the impact humans have on the sustainability of these ecosystems.
- Canadian and World Studies, Grades 9-10 contains curricula for Gr. 9 Geography, Grade 10 History and Gr. 10 Civics and Citizenship. These courses are a mandatory component of the Ontario



Secondary School Diploma. In these courses, students develop the skills they need to solve problems and communicate ideas and decisions about significant developments, events and issues. Biodiversity and related issues such as pollution, climate change, impacts of consumption, land use and issues of civic importance such as environmental responsibility are explored extensively.

Links:

Related Targets: N/A

Related Themes: N/A

Web Links:

Ontario Ministry of Education. 2008. Standards for Environmental Education in the Curriculum
<http://www.edu.gov.on.ca/eng/teachers/enviroed/standards.html>

Ontario Ministry of Education. The Ontario Curriculum, Social Studies, Grades 1-6; History and Geography, Grades 7-8, 2013.
<http://www.edu.gov.on.ca/eng/curriculum/elementary/sshg18curr2013.pdf>

Ontario Ministry of Education. The Ontario Curriculum Grades 1-8: Science and Technology, 2007.
<http://www.edu.gov.on.ca/eng/curriculum/elementary/scientec18currb.pdf>

Ontario Ministry of Education. The Ontario Curriculum, Grades 9 and 10: Canadian and World Studies, 2013. <http://www.edu.gov.on.ca/eng/curriculum/secondary/canworld910curr2013.pdf>

Ontario Ministry of Education. The Ontario Curriculum, Grades 9 and 10: Science, 2008.
http://www.edu.gov.on.ca/eng/curriculum/secondary/science910_2008.pdf

Ontario Ministry of Education. The Ontario Curriculum, Grades 9 and 10: Technological Education, 2009.
<http://www.edu.gov.on.ca/eng/curriculum/secondary/teched910curr09.pdf>

Ontario Ministry of Education. The Ontario Curriculum, Grades 11 and 12: Technological Education, 2009. <http://www.edu.gov.on.ca/eng/curriculum/secondary/2009teched1112curr.pdf>

References:

Ontario Ministry of Education. 2009. Acting Today, Shaping Tomorrow: A Policy Framework for Environmental Education in Ontario Schools. Queens Printer for Ontario, Toronto, Ontario.

Pooley, J. A., and M. O'Connor. 2000. Environmental education and attitudes: Emotions and beliefs are what is needed. *Environment and Behavior* 32:711-723.

Ministry of Education. 2007. Shaping Our Schools Shaping Our Future Environmental Education in Ontario Schools. A Report of the Working Group on Environmental Education. Queens Printer for Ontario, Toronto, Ontario.

Citation

Ontario Biodiversity Council. 2015. State of Ontario's Biodiversity [web application]. Ontario Biodiversity Council, Peterborough, Ontario. [Available at: <http://ontariobiodiversitycouncil.ca/sobr> (Date Accessed: May 19, 2015)].