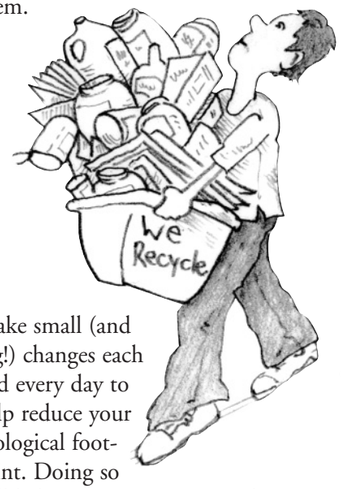
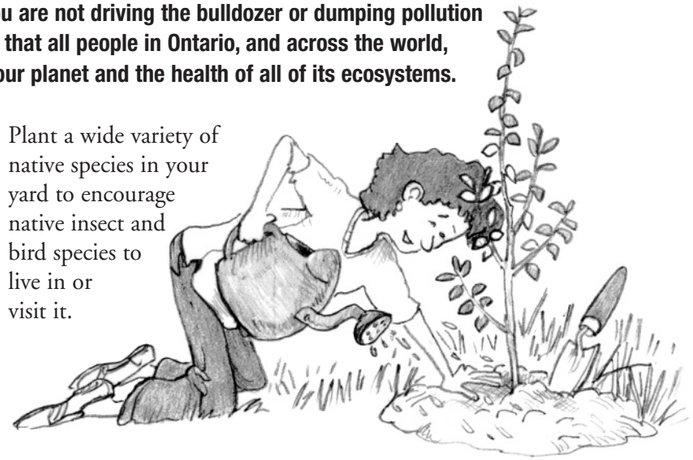
What you can do to help

You may feel that you can do nothing to help reduce the threats to ecosystems or to protect the biodiversity of the planet — after all, you are not driving the bulldozer or dumping pollution into our water and air.Here are some things that all people in Ontario, and across the world, can do to help maintain the biodiversity of our planet and the health of all of its ecosystems.

- Learn more about the causes and consequences of the loss of biodiversity. Teach other people how they may live more simply to help reduce their personal impact on the world around us.
- Talk to your parents about reducing the amount of pesticides, herbicides and fertilizers they use around your home.
- Always follow the 3 Rs — reduce your consumption of materials, reuse them if possible, and recycle them.



- Make small (and big!) changes each and every day to help reduce your ecological footprint. Doing so will help maintain our natural ecosystems and biodiversity in many ways.
- Plant a wide variety of native species in your yard to encourage native insect and bird species to live in or visit it.



- Walk or take your bike to school.
- Cows release large amounts of a greenhouse gas called methane into the atmosphere through their natural digestion process. The build-up of greenhouse gases has been linked to many negative environmental outcomes including loss of both habitats and biodiversity. Reduce the amount of methane entering our atmosphere by asking your family not to eat meat one day a week.
- To calculate your family's ecological footprint and learn ways to reduce it, check out the Ecological Footprint website at www.myfootprint.org.
- If your school or local community has an environmental club, join it and take part in activities that raise people's awareness about the importance of preserving our natural spaces and species

Reasons why some countries have large ecological footprints

United States — overconsumption, poor environmental laws, large population

New Zealand and Ireland — both are island nations so they must import goods by ship or plane

Qatar and United Arab Emirates — both are located in desert regions so they must import a variety of goods; overconsumption, due to the great wealth of these countries

Ontario Nature protects wild species and wild spaces through conservation, education and public engagement.

Ontario Nature is a charitable organization representing more than 30,000 members and supports and 140 member groups across Ontario.

To learn more about other ways you can support Ontario Nature please contact our Director of Development, Kimberley MacKenzie at 1-800-440-2366 ext 236 or by email at kimberleym@ontarionature.org.

Thank you for being an important part of Ontario's strong voice for nature.

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The International Year of

Biodiversity

A year of celebration, action and hope

American kestrel

A recent report suggests that between 10 and 30 percent of all mammals, birds and amphibians are threatened with extinction. Whole ecosystems are also being threatened. The main threats are due to alteration, fragmentation and destruction of habitat, the introduction of invasive species, increased pollution, human population growth, overconsumption of natural resources, the production of massive amounts of garbage, and the impacts of climate change.

The United Nations has declared 2010 the International Year of Biodiversity. Take time to celebrate the unique and varied life that exists on our planet, the species with which we interact every day and those that we can only imagine.

What is biodiversity and why is it important?

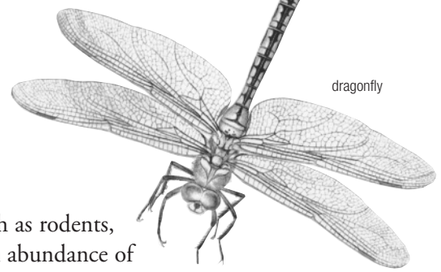
"Biodiversity" refers to the variety or number of different species in a region or on the earth. From the tiniest insect to the largest creature to ever live on earth, the blue whale, all species play an important part in the health of our ecosystems. A region rich in biodiversity is one that has an abundance of different species living in it. The tropical rainforests or Canada's vast forests and wetland ecosystems are good examples. The variety of species that inhabit ecosystems is a result of billions of years of evolution and the factors, such as soil, water and temperature that exist within the natural environment.

Throughout history, but especially recently, humans have had a dramatic impact on the health and well-being of ecosystems and the species in them.

As humans destroy and alter the natural environment of a region, we reduce its biodiversity by reducing the number of different species in it. A less diverse ecosystem may be unable to resist and rebound from changes such as floods, fires or diseases. Maintaining the biodiversity of the planet is important for the survival of all species, not just humans. We must preserve our diverse natural ecosystems because they provide not only clean air, fresh water, food, fuel and medicines, but also vital habitat, pristine views and quiet places to relax and reconnect with nature.

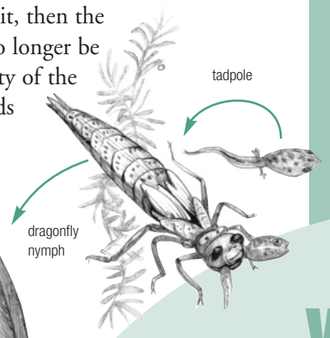
Ontario Nature

Everything in nature is interconnected



For a wolf to survive, enough smaller animals, such as rodents, must be available on which it can prey. To have an abundance of rodents, the ecosystem must provide enough grain, their main food. To produce enough grain for rodents to survive, there must be enough rain and not too many insects that feed on the grain. To keep the insect population in check, the ecosystem must contain enough birds, reptiles and amphibians to prey on the insects.

The connections between species are an endless cycle. When a change occurs in one area of this interconnected system — sometimes called a **food web** or the **web of life** — drastic and long-lasting changes can occur within this, and neighbouring, ecosystems. For example, if a wetland is drained and filled and a housing subdivision is built on it, then the plants, animals and other species that relied on the wetland may no longer be able to live in that area or in surrounding locations. The biodiversity of the area will have been changed from one with dozens or even hundreds of species to one that might contain only grass and a few different species of trees. When an area loses diversity, often it cannot be regained.

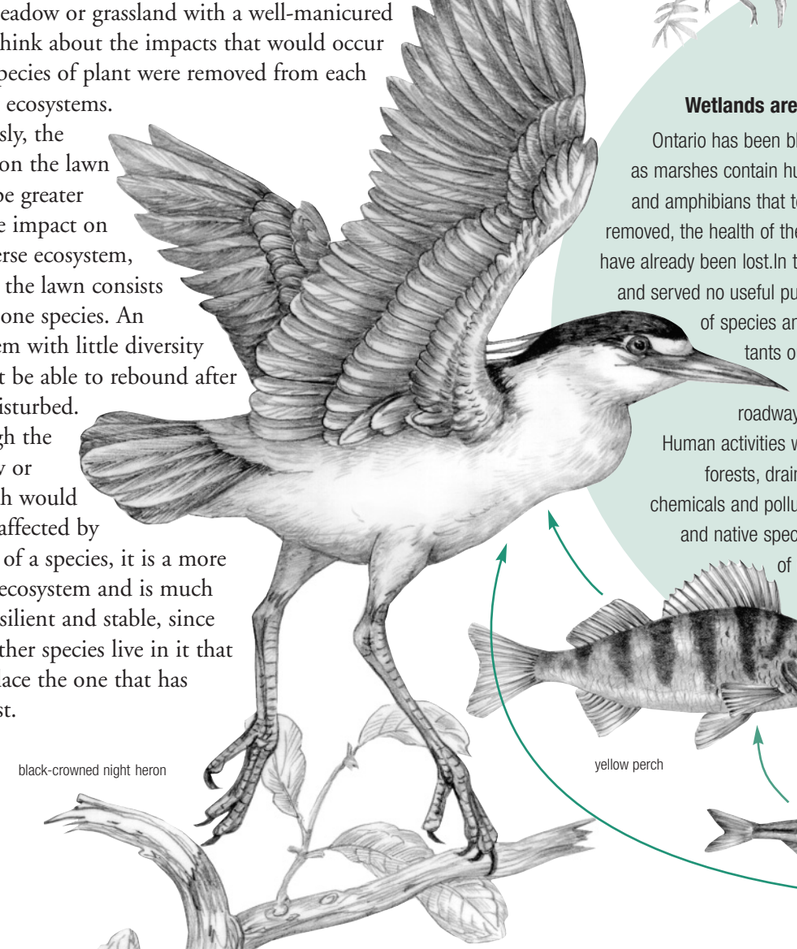


One way to try to understand the importance of biodiversity in an ecosystem is to compare a diverse, wild meadow or grassland with a well-manicured lawn. Think about the impacts that would occur if one species of plant were removed from each of these ecosystems. Obviously, the impact on the lawn would be greater than the impact on the diverse ecosystem, because the lawn consists of only one species. An ecosystem with little diversity may not be able to rebound after being disturbed. Although the meadow or savannah would also be affected by the loss of a species, it is a more diverse ecosystem and is much more resilient and stable, since many other species live in it that can replace the one that has been lost.

Wetland Web of Life

Wetlands are one of the most ecologically diverse ecosystems in the world.

Ontario has been blessed with an abundance of these natural areas. Wetlands such as marshes contain hundreds of species of plants, insects, mammals, birds, fish, reptiles and amphibians that together, create an intricate and complex food web. If one species is removed, the health of the entire ecosystem is in jeopardy. Unfortunately, many wetlands in Ontario have already been lost.In the past, wetlands were viewed as being wastelands, areas that bred disease and served no useful purpose. We now know that wetlands provide vital habitat for a wide variety of species and are important in retaining water, preventing flooding and filtering pollutants out of our water. Although we know this, wetlands continue to be degraded as a result of excessive pollution and the need for more agricultural lands, roadways and subdivisions to support the ever growing human population. Human activities worldwide are causing a reduction in biodiversity. Oil drilling, mining, clearcutting forests, draining wetlands, farming on marginal rainforest land and releasing chemicals and pollutants into our water, air and soil have devastating impacts on natural spaces and native species. Many losses of biodiversity are irreversible. If a species is forced out of its natural habitat, it may have no place to go. Once a wetland is drained and a housing development built, the area will never again be the pristine and productive ecosystem it once was.



Wow, Canadians have big feet!

You have probably not given the size of your feet much thought but, to many environmentalists and scientists, the size of your feet means a lot! Everything in the global ecosystem is connected. Its health and the level of biodiversity in it affects us, and everything we do — from breathing and eating to reading a book, watching television or flying to a foreign country — affects the biodiversity. In doing these activities, we are both using the natural resources of the earth and adding waste to it.

The amount of land and natural resources needed to sustain a population, that is, what that population consumes, can be calculated and is known as its **"ecological footprint."** You can calculate your personal and household ecological footprint by taking a short quiz on the Ecological Footprint website at www.myfootprint.org.

The global average ecological footprint for a person — that is, the amount of land needed to maintain that person's current level of consumption — is about 2.6 hectares. The average Canadian's ecological footprint is 5.8 hectares, more than twice the global average per person! Compare that to the ecological footprint of people in most African nations, where less than one hectare is required to sustain their lifestyles. The amount of land, including its water resources, available worldwide per person is about 1.8 hectares. These numbers just don't add up, do they? When we use more land and water resources than are available, we have a significant negative impact on the health of the global ecosystem and its biodiversity — the plants, insects, birds, fish, reptiles, amphibians and mammals that live in it.

The United States, New Zealand, Ireland, Qatar and the United Arab Emirates are countries that have some of the largest ecological footprints in the world. Can you guess why their footprints are so big? (See the end of the *Nature Note* for some of the reasons.)

People who hope to reduce the impacts of threats to biodiversity try to follow and promote the concept of sustainable development. The term "sustainable development" refers to "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Although sustainable development includes the careful use and management of our natural resources, such as trees and minerals, it also includes not paving over all of our natural areas and not adding large volumes of pollution, which are often invisible, into the air, soil and water.

The earth has been the home to countless species for eons. We are responsible for keeping it safe for generations to come.

We sometimes forget that we are just one of the millions of species on earth.

The biodiversity of an area may be threatened because of overhunting of a particular species. Some people hunt predators such as coyotes and wolves because they are seen as being pests that kill livestock and may even hunt household pets. The population of a species may also be greatly reduced as a result of overharvesting. An example of this is the American bison, which was once abundant across the Canadian prairies. People overhunted the bison for meat and for their skin, known as hide, which was used as leather. The loss of species has long-lasting, negative impacts on the health of the ecosystem in which they live and its overall biodiversity.

We, as humans, have to remember that we are an integral part of the biodiversity of the planet. We have a special role to play, however, since we are capable of destroying the biodiversity that surrounds us. We alone can preserve it, not only for ourselves and our future generations, but also for all other species with which we share the planet.