

# Climate Change and Biodiversity

Biodiversity is the variety of life on Earth. It includes variability within and between all living things, and the ecosystems they inhabit.

Climate change threatens natural ecosystems and human well-being. Hotter temperatures and changes in precipitation patterns can cause milder winters, storms, floods and droughts.



Photo: COA/MNR, Masthead © Ontario Tourism

Stream restoration

## How are Climate Change and Biodiversity Connected?

Human activity is causing our climate to change more rapidly than ever before. Biodiversity can help reduce the impact and severity of climate change.

Forests, grasslands, and wetlands all absorb and store carbon. They also help guard against erosion, drought, and flooding that will accompany more extreme weather. Ecosystems with a diverse range of plant and animal species are better able to withstand the impacts of environmental stresses and reduce the risk of a catastrophic impact to life on earth.

At the same time, climate change has the potential to dramatically alter biodiversity. Climate change alters the timing of natural events, the distribution and abundance of plants and animals, and interactions between species.

## What Can You Do?

**Become a Citizen Scientist.** Help scientists track changes in the environment by contributing to “citizen science” monitoring programs like Naturewatch and the Invading Species Awareness Program.

[www.naturewatch.ca](http://www.naturewatch.ca) or  
[www.invadingspecies.com](http://www.invadingspecies.com)

**Conserve and restore habitats** by planting a tree or cleaning up a park, ravine, or river near where you live. For more information contact the Ontario Stewardship Program. [www.ontariostewardship.org](http://www.ontariostewardship.org) or [www.ontario.ca/plantatree](http://www.ontario.ca/plantatree)

**Get involved** in the development of government programs and policies to protect biodiversity and minimize the impacts of climate change.

**Reduce your ecological footprint** by car-pooling, recycling, and using less energy.



Photo: Sam Brinker/MNR

Ram's-head Lady's-slipper (*Cypripedium arietinum*)

## A Changing Climate Will Alter Ontario's Biodiversity

Climate change will greatly affect composition, structure, and function of ecosystems in Ontario. In some areas, new ecosystems will develop, altering the existing ecosystems now found both on land and in the water. It is estimated that about 10% of the world's known species will be at an increasingly higher risk of extinction for every 1°C rise in temperature.

Many species will adjust or adapt to changing conditions; others will not. Here are only a few examples of the ways that some species may be affected:

- Some species, such as moose, gray jay and polar bear, will

no longer be able to live as far south as the southern edge of their range warms

- Other species, such as the southern flying squirrel and the Carolina chickadee may be able to live further north
- Migratory birds may return earlier and stay longer into the fall
- Decreases in ice cover and changes to freeze-up and break-up times can affect the food supply for aquatic life and alter fish spawning.

## Adapting to Climate Change

One of the most important things that we can do to maintain a diversity of species is to conserve the habitat we have, and restore as much as we can. Increasing the linkages between habitats will make it easier for species to move and ecosystems to change in response to changing conditions.

We also need to change the way we manage natural resources to help reduce the risk of species extinctions and limit damage to ecosystem functions and services as the climate changes.



Photo: Lesley Hale/MNR

Osprey (*Pandion haliaetus*)



Bow Lake

Photo: Far North Branch/MNR

### Other Resources

[ontario.ca/mnr](http://ontario.ca/mnr)

### For More Information:

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