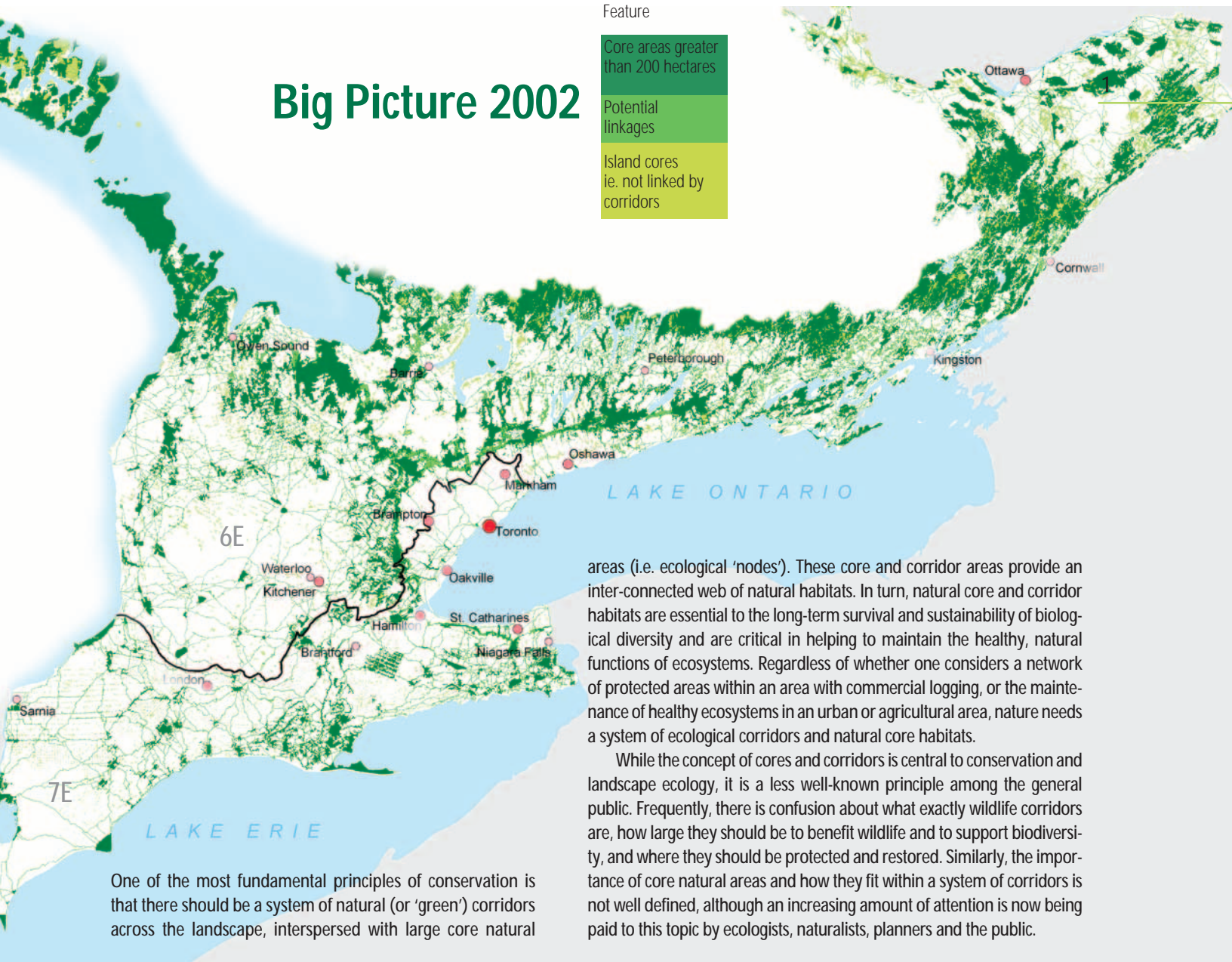




# Cores and Corridors – The Importance of a Green System in Southern Ontario

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## A question of scale...

The illustrations in this fact sheet show the concept of natural cores and corridors at different scales.

**The Big Picture 2002** map shows a network of cores and corridors across a very large area of central and southern Ontario, illustrating at a general and conceptual level where important natural corridors and cores are located (or might be located in future). Much of the core areas are within important natural areas, such as the Niagara Escarpment, the St. Williams' provincial crown lands in the Carolinian forest region, provincially-owned parks and protected areas, as well as within private land ownership.





# SOUTHERN ONTARIO WOODLANDS

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**Core natural areas** provide habitat to a wide diversity of plant and wildlife species (including microorganisms). They should be large enough to provide the ‘essentials’ of life for healthy and sustainable populations of wildlife species, including the provision of food, shelter and water. This may be either on a year-round or seasonal basis, depending on the species. Core habitats will vary in size and characteristics depending on location within the province, and based on their ecological characteristics. While older-growth forests, for example, would be tremendously important as natural core areas anywhere in Ontario, even younger, regenerating woodland or old-field habitat (land that is reverting back to trees after clearing) can be very important, particularly in areas where little natural habitat remains.

Natural cores can form a nucleus of habitat critical to the survival of species throughout the region, not just locally, and may provide a wildlife refuge for critical parts of the year. Natural core habitats should also reflect the diversity of habitats native to an area. In Ontario, much of our original landscape was forest and woodland, however, our native grasslands, wetlands and savannas should also be reflected in a system of core natural areas.

**Corridors** serve to connect separate core natural areas, and by connecting one natural area to another they increase the effective size of even smaller or fragmented core areas. Like core areas, corridors can vary in size and distribution, but in general wider corridors will be better able to support more diverse wildlife movements. While wildlife corridors are important for the movement of larger mammals and other species, they are also essential for the movement and maintenance of genetic diversity for virtually all species regardless of size or species. Even plants need corridors in order to survive – pollen and seeds and other genetic material are passed along corridors.

A narrow band of trees along a stream or river may provide some food and shelter for migrating songbirds, but would likely have more limited value for many other wildlife movements. Similarly, hedgerows can provide some shelter and cover and be valuable habitat locally, but they are nowhere near large enough to be a major natural corridor for large wildlife or long-distance migrants. While small and relatively narrow corridors will be important locally, larger corridors that are hundreds of metres to kilometres in width are necessary at the bioregional level. Sometimes, too, large-scale wildlife corridors cross over political boundaries, such as the Algonquin to Adirondacks (the so-called “A to A” corridor) between central Ontario and northern New York state, or the massive Yukon to Yellowstone (“Y to Y”) corridor concept.

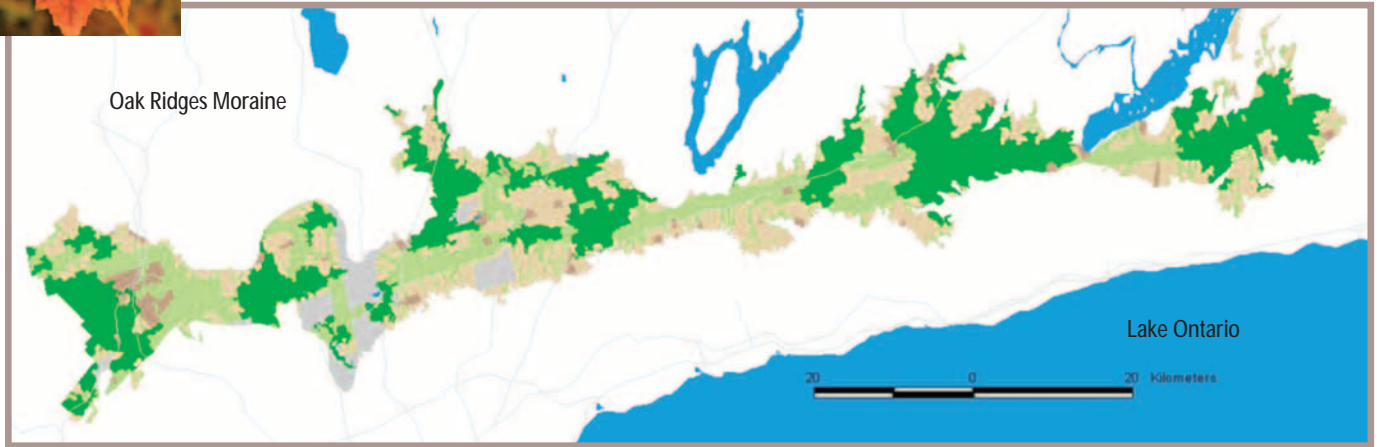
At the local level, a moist woodland corridor that connects a salamander’s core forest habitat to its wetland breeding grounds is critical to the population’s survival. The loss (or interruption) of this corridor could determine the survival of the salamander locally. At a much different scale, a corridor system of inter-connected forest and wetland habitats could allow for the long distance movement of a species as large as moose.

Human-constructed corridors, unfortunately, often work at cross-purposes to natural corridors. Roads and utility corridors, for example, frequently cross through natural corridors or cut through natural cores. This can lead not only to the loss of interior habitat and other fragmentation effects (see fact sheet *Forest Fragmentation*), but can decrease or curtail the natural ecological function of the corridor. While some species, such as moose or migrant birds, may be able to tolerate some breaks in natural corridors, many others are very negatively affected – including species as large as caribou and as small as salamanders and insects. While various measures have been attempted in some locations to mitigate the impact of roads or other breaks in corridors, their impact on wildlife is significant.

In addition to their value for wildlife, corridor and core natural areas are also tremendously important for a diversity of ecological functions. These areas serve as ecological buffers for streams, headwaters, and groundwater recharge areas. Whether woodland or wetland, cores and corridors can help to reduce runoff and erosion, and decrease pollution or contamination of groundwater. Wooded areas also serve as important areas for improving air quality. By taking carbon dioxide out of the atmosphere and storing it as carbon, and by contributing oxygen back to the atmosphere in the process of photosynthesis, forests act as a carbon *sink*, countering the effects of global warming.





The larger the area, the more value it will have for a diversity of functions. Large core areas, for example, are more likely to be able to support greater wildlife populations and be less affected by the influence of the “edge effect.” Larger and more inter-connected areas are also more likely to support naturally functioning ecosystems, including healthy predator-prey balances. Regardless of whether one considers endangered American ginseng in southern Ontario’s woodlands, the future for the threatened woodland caribou, or the status of all of our flora and fauna, a functioning system of core and corridor habitats is essential.

Natural core and corridor habitats are essential to the long term survival and sustainability of biological diversity and are critical in helping to maintain the healthy, natural functions of ecosystems.



**The Oak Ridges Moraine (ORM)** map shows an eco-regionally based system of cores and corridors. The moraine is a large (half-million acre) landform that is the headwaters for 65 streams and rivers in southern Ontario and contains a high percent woodland cover, given its location largely within the Greater Toronto Area. The Oak Ridges Moraine Conservation Plan (issued under the *Oak Ridges Moraine Conservation Act* in 2002) designates lands on the moraine into four different land-use zones, including a system of natural cores and corridors. The Oak Ridges Moraine functions as an ecological corridor in a number of ways, including as a major east-west corridor (regrettably punctuated by numerous roads), as well as helping to establish natural corridors along the watercourses that start on the moraine.

#### *Land Use Designations on the Oak Ridges Moraine*

-  *Natural Core areas* comprise 38 percent of the moraine, and contain the most significant natural features, including forests, wetlands, streams, wildlife habitat, kettle lakes and peatlands, and species-at-risk habitat.
-  *Natural Linkage areas* comprise 24 percent of the moraine, and are forested areas, wetlands, river valleys and other rural lands that connect natural core areas and provide a green network of corridors through which wildlife and plant materials can move.
-  *Countryside areas* comprise 30 percent of the moraine, and contain rural and other non-urban lands used primarily for agriculture and existing rural settlements.
-  *Settlement areas* comprise eight percent of the moraine, and contain lands previously approved for urban use in official plans.



CLIVE DOBSON

This “Towards Smart Communities” illustration shows what a local system of corridors and other natural areas might look like on the ground, within the context of an urban and agricultural landscape. Hedgerows and narrow wooded strips within the agricultural lands provide some value as small-scale, local corridors. The wider greenland corridor along the river is large enough to facilitate wildlife movements within the larger region, and may also play a role at a larger scale.



# SOUTHERN ONTARIO WOODLANDS

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## More on The Big Picture 2002...

The *Big Picture 2002* mapping project assembled and interpreted the best available, digitally mapped data on the biological diversity of southern Ontario. It identified high-value core natural areas and the most likely areas for linkages among them, and generated a map of a landscape-scale natural heritage system for southern Ontario.

The *Big Picture 2002* can serve as a model for natural heritage planning at finer scales, such as at the watersheds level, for municipalities etc. It assists in setting priorities for restoration and land securement, and encourages new approaches to conservation planning.

The *Big Picture 2002* represents at least 30 percent of each ecological district within the natural heritage system. It is achieved using a minimum core size of 200 hectares south of the Canadian Shield and 500 hectares on the Shield. The cores are connected by corridors of a minimum 200 metres in width. The map was produced by the Natural Heritage Information Centre, Ministry of Natural Resources, and the Nature Conservancy of Canada with input from the Federation of Ontario Naturalists, Carolinian Canada, Ducks Unlimited, Ontario Power Generation, and Parks Canada



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*Written by Gregor Beck*

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The Federation of Ontario Naturalists (FON) protects Ontario's nature through research, education, and conservation action. FON champions woodlands, wetlands and wildlife, and preserves essential habitat through its own system of nature reserves. FON is a charitable organization representing 25,000 members and supporters and 125 member groups across Ontario.

Fact sheets in this series include:

Cores and Corridors: The Importance of a Green System in Southern Ontario

Forest Fragmentation

Introducing Old Growth – The Ultimate Forest

10 Ways to Save Your Local Woods (and Water!)

Urban Forests: An Important Part of Our Natural Heritage

Making the Connection Between Woodlands and Water

*Woodlands At Risk* is a 32-page full colour booklet about the threats to southern Ontario's woodlands, available from FON.

If you wish to support FON or learn more about current conservation issues in Ontario visit:

[www.ontarionature.org](http://www.ontarionature.org)



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