

General tips for wildlife conservation...

Here are a few general suggestions to help minimize your impact on local wildlife populations in your area.

Control Your Pets! Dogs and cats often kill snakes, frogs, and even turtles on occasion. They also have a tremendous impact on other wildlife, including songbirds.

Keep a Lid On It! Prevent raccoons, skunks, and other predators from feeding on your garbage. Increased populations of these animals around human activity are a big problem, especially for turtles whose nests they raid.

Spread the Word! Tell your neighbours about the benefits of having wild reptiles and amphibians around, such as controlling numbers of rodents, insects, and slugs. Make sure they know that you like to see snakes and toads in your backyard; hopefully they will too!

Get involved with local conservation projects. Local groups, such as stewardship councils, conservation authorities, land trusts, naturalist clubs, fish and game clubs, etc. may be involved with amphibian monitoring, turtle crossings, and habitat restoration efforts. If they're not already, perhaps you can get them involved with a project!

Drive carefully! Watch for small wildlife, especially on rainy spring nights (when amphibians are migrating), during turtle nesting season (May and June), around wetlands, and in areas known to have populations of threatened species (such as the Rideau Lakes for Black Rat Snakes, the Highway 69 corridor for Massasaugas). Road mortality is a huge problem for many reptile species- especially turtles due to their slow reproductive rates.



A Quick Guide to

Helping Reptiles and Amphibians

Reptiles and amphibians face many challenges. Their conservation starts with you, here's how...



This guide was printed in partnership with:

This guide was created by Scisensational Ssnakes!! as part of the **Reptiles at Risk on the Road** Project. We hope that you find it helpful.



For more information about our activities, please visit www.reptilesatrisk.org or www.scisnake.com

Assistance for this project was provided by the Ontario Ministry of Natural Resources, and Environment Canada's Habitat Stewardship Program for Species at Risk.



Some important things to know, before you get started:

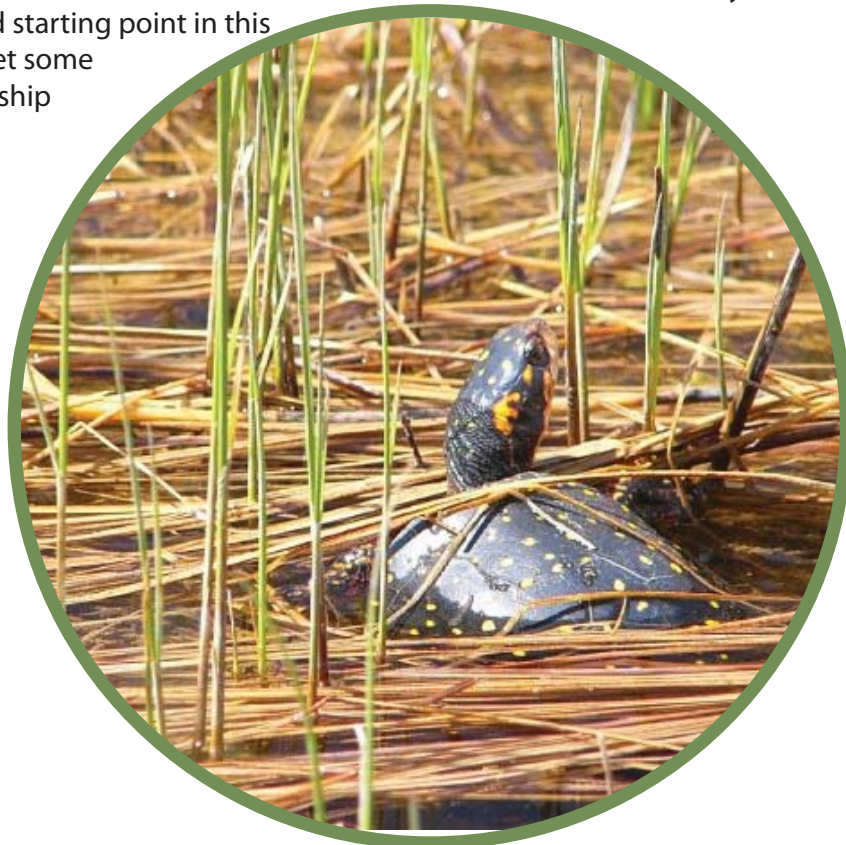
If you're interested in helping out with reptile and amphibian conservation, there are lots of things you can do on your own property to help these animals. In many cases, there are features missing from the landscape that are required for reptiles and amphibians to live there, and you can put some of them back. This guide has been created to provide some information to assist you.

Location, location, location! Many of these animals require specific habitats to thrive. Although you can make changes to your property to improve it for the wildlife, it is unlikely that you can attract wild turtles to a small backyard pond, or endangered lizards to a pile of rocks in an urban or suburban area.

Leave Them Be: Work towards improving habitat for the species you have in the area, but don't bring animals home from other places and let them go. This is against the law. It can cause serious problems for the animals you move, and for the animals that already live in the area. This includes even handling some animals. Because amphibians can absorb things through their skin, capturing them when you have sunscreen or bug spray on could hurt them.

You CAN Help! Most of the projects described in this guide are manageable for the average landowner. However, if you'd like to get professional advice, or perhaps need help to tackle a large project, there are some consultants and contractors out there who can assist you. An internet search may be a good starting point in this case; you might also be able to get some direction from your local stewardship council, or naturalist club.

Start Here: This guide is only a starting point. There is a lot of additional information out there if you look for it, and there is also a lot to learn. Don't be afraid to experiment with variations on these techniques, and please let us know if you find something that seems to work well!



If You Spot A...

Turtle Turtles may leave their wetlands at times, especially females in June/July when they search for nesting spots. Moving turtles off roadways can also be helpful! Just move them in the direction they were heading, off into the ditch on the other side of the road. For Snapping Turtles, make use of a stick or shovel to safely move them...they are scared on land and will snap at any "big scary monster" even if that monster is trying to move them off a dangerous road.

Snake Most people are surprised by snakes because they are very good at hiding. We often get very close to them before realizing they are there! Only one snake in Ontario is venomous (Massasauga Rattlesnake); however, respect and knowledge are two keys to living peacefully with all snakes. Check out our Quick Guide to Ontario's Snakes for help on snake identification in Ontario.

Lizard Ontario only has one species of lizard, the Five-lined Skink. These lizards usually hide most of the time, but if they are captured by a predator (or a person) they have one trick to get away. They drop their tail! This is normal, but can affect the lizard's ability to live through the winter. Try to avoid handling lizards.

Amphibian Amphibians include all the frogs and toads hopping around, and also salamanders (shiny smooth creatures that resemble lizards). Because all amphibians have a moist skin which they can breathe through, they are all quite sensitive. Sunscreen and bug spray can move from our hands to the amphibians skin. They can also be affected by the use of pesticides, herbicides, and road salts.

Report Your Sightings!

It can be great to see more wildlife on your property, especially reptiles and amphibians. Another way to help out these creatures besides enhancing your property in the ways suggested in this booklet is to report your sightings of reptiles and amphibians. Common and rare species, large or small, the places where reptiles and amphibians live are often poorly understood. This is usually because they love to hide. If you spot a snake, turtle, salamander, or frog using your yard (or even if you are out hiking or exploring other parts of Ontario), you can use a simple online form to report those sightings to the Ontario Herpetofaunal Atlas Program. This program aims to increase our knowledge about where reptiles and amphibians live, and depends heavily on citizen scientists like you!



www.ontarionature.org/protect/species/herpetofaunal_atlas.php



Aquatic Habitats: Water, water everywhere...

Loss of aquatic breeding habitats has eliminated some amphibian species from many places they used to live. This is especially true for some salamanders and small frogs that breed in vernal pools- temporary wetlands that form in the spring and are dry by mid-summer. Many people do not realize the importance of such 'puddles' for the wildlife of their neighbourhood!

Other than small ponds, aquatic habitats are very difficult to create. However, if you have a stream, wetland, or lakeshore on your property, you can manage it to help out the reptile and amphibian species in the area. Allow natural vegetation to grow around the shoreline. Try to create as wide a 'buffer' as possible between the water and any mown areas. This vegetated shoreline zone is the most important habitat for many species. Do not fill in or disturb vernal pools since these provide such important seasonal habitats for many species.



Wetlands are important!

This wetland provides important habitat for both reptiles and amphibians. Note the natural vegetation around the shoreline. Along many shorelines, concrete walls and other modifications have taken away this key habitat.

Space to Roam

Allow an area of your yard to grow long grass and other plants- preferably native Ontario species. Mow it once a year, late in the fall. This will prevent woody plants like shrubs and trees from gradually taking it over. Shrubs and trees can also be beneficial if the space allows for them, but remember that dense shade isn't very useful for most reptile species.

Lists of potential native plants can be found at many local garden centres if you ask for them. In most cases, you won't need to buy plants- if you are patient the area will revert to a fairly **natural state** within a couple of years. Think about trying to connect smaller pieces of habitat together so that the animals can move between them. Hedgerows can be very effective for this.



Plant it and they will come:

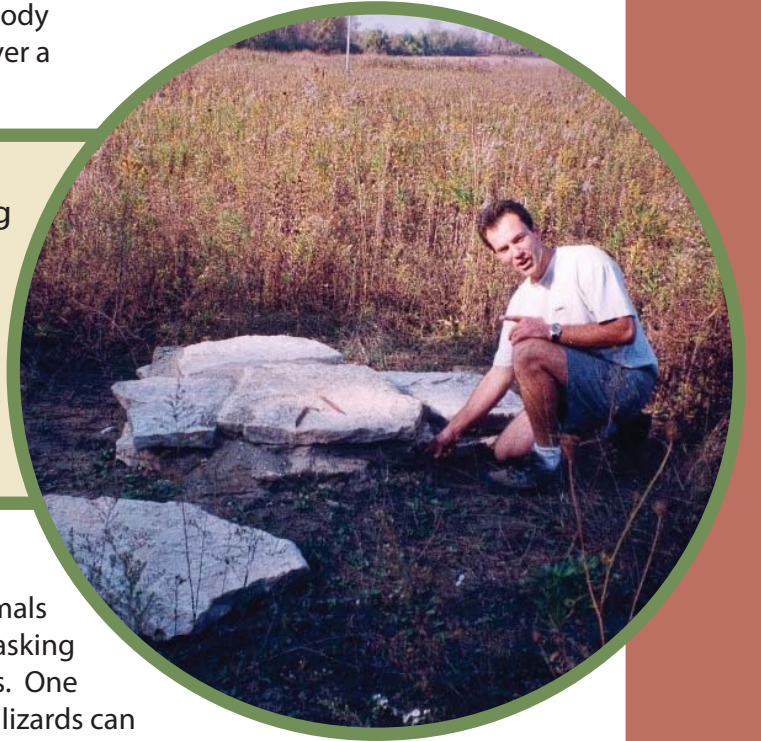
These volunteers are planting trees and shrubs to make a hedgerow in an old field being restored for reptile habitat. Such restoration projects are great, but you can accomplish quite a bit just in a small space in your backyard by planting native shrubs and letting the grass grow.

The Heat is On...

Reptiles and amphibians are cold-blooded, or **ectothermic**, animals. Their body temperature depends on the environment around them. Since all of their body functions are based on temperature, it is critical that they find spots that are appropriate. In the wild, some species are able to move from one place to another so that their body temperature fluctuates no more than a few degrees over a 24 hour period.

A 'Hot Rock' Basking Site:

Biologist Ben Porchuk shows off a basking site constructed with flat rocks mortared together in layers. Entrance holes allow access for snakes. Loose rock piles also work. Snakes at this site used these features within one year, and are still using them a decade later.



The easiest thermoregulation site you can create is a **basking site**. Any structure that will allow these animals to easily sit out in the sunlight can work, but a good basking site also provides easy access to shelter from predators. One of the best things is simply a pile of rocks! Snakes and lizards can climb up on top of the rocks to get warm, and move underneath to hide. Larger rocks can also work well if you can move them easily, but make sure to place them so that small animals can get underneath to hide. These rocks can retain heat through the night, so hiding underneath can help keep an animal warm enough all night long!



Logs or branches can also function as basking sites for snakes and lizards, though they don't hold heat as well as rocks, and they will eventually rot away. This can still be beneficial (See Nesting Site Section). Logs are also great basking sites for **aquatic turtles**. If you have a private pond that has no turtle basking sites, you might want to add a few logs around the shoreline for turtles to climb out on.

Getting a Little Sun!

This juvenile Map Turtle (*Graptemys geographica*) gets warm by coming out of the water onto partially submerged logs.

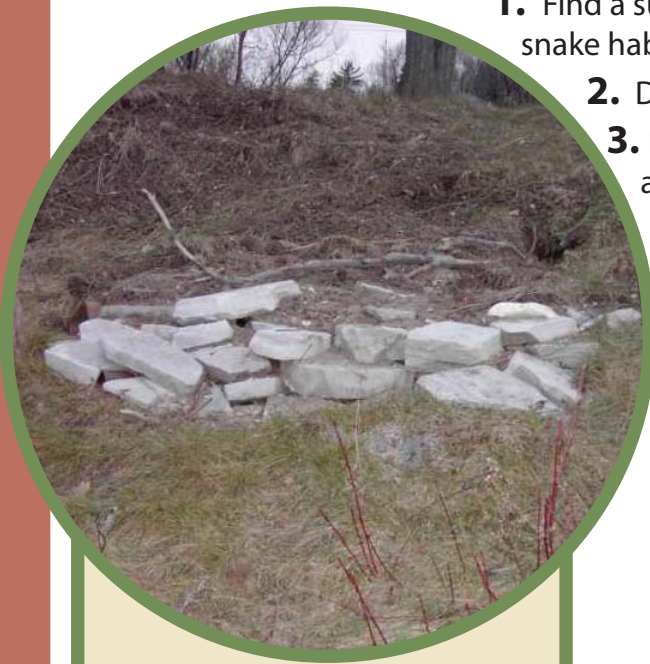


Hibernation sites (also called hibernacula) are **critically important** for reptiles and amphibians where cold winters mean they cannot be active year-round. Creating these sites can be difficult- the requirements of various animals are different. Turtles and some amphibians require water that does not freeze, and contains at least some dissolved oxygen. Most small backyard ponds with rubber or plastic liners do not provide suitable hibernation sites for these creatures. However, if the pond is deep enough (about 1.5 metres in most areas) it may be possible. Try to ensure that leaves and other vegetation are removed in the fall so that their decay over the winter does not use up all of the oxygen in the water under the ice. Aerating the pond is another way to go, but it is more costly and not always reasonable!

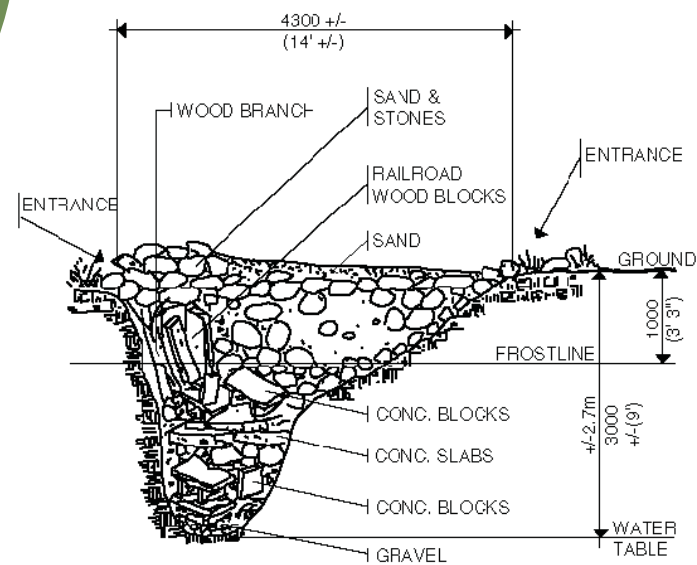
Some amphibians, such as grey treefrogs, hibernate in the **leaf litter** on the forest floor. Creating hibernation sites for these species is much easier- don't rake the leaves, or at least rake them into a pile and leave them for the animals! Try leaving an area of your property with natural vegetation that is mowed only once or twice a year, and leave any clippings or leaves that fall, so that animals can hide in them.

Snakes and lizards have to get below the frost line, so **creating a hibernation site** for them is quite an undertaking. Here are the basic steps, but since this does require fairly extensive excavation please check for phone lines/gas lines/etc. before you dig.

1. Find a suitable site - a southern facing slope is best, near snake habitat
2. Dig a hole (minimum 2m x 2m x 2m)
3. Fill hole with rocks/old bricks/concrete chunks or any other solid material that will leave lots of open space between the peices (think strong with gaps!)
4. Extend the pile above the level of the ground
5. Backfill the hole, but leave 3-4 openings for the snakes to access the spaces beneath the ground



An artificial hibernation site: Underneath the nice rocks, concrete rubble extends 2.5 metres down into the ground at this hibernation site constructed at Scales Nature Park in Orillia, Ontario.



Hibernacula creation developed by the Toronto Zoo
<http://www.torontozoo.com/adoptapond/snakehibernacula.asp>

Cover Sites: Gimme Shelter!

Staying away from predators is very important for reptiles and amphibians, so they tend to be fairly secretive animals. If you can create places for them to hide, you will help them out! **Cover sites** are one of the easiest things to create. On land rocks, logs, and piles of leaves can all work well. Old boards, plywood, pieces of tin roofing from an old barn, and just about anything else can work. Be creative- broken clay flowerpots work well for toads, for example. Using a lot of old junk might not work, since someone might come along later and clean it up!



Jack of All Trades

Many structures can provide important spaces for reptiles and amphibians. Rotting logs give animals space to hide, thermoregulate, and lay eggs! Because of the importance of these logs, remember to avoid collecting firewood in natural areas like parks or conservation areas. This experimental log was cut to make it rot even faster!



Turtles and other aquatic species can also benefit from hiding places- submerged logs and branches are probably the best thing you could add, but remember that permits may be required for this in many situations. Often, just making sure that the aquatic vegetation (AKA 'seaweed') is left alone to grow naturally is enough to create lots of hiding places for these animals.

Nesting Sites: Give eggs a break!

Most amphibians lay their eggs in ponds or wetlands. Creating suitable sites for some species is nearly impossible, but for others it is quite easy. Toads and grey treefrogs will lay eggs in very small ponds that can be easily created even in a backyard. Don't put fish in the pond if frog breeding is your goal, as most fish will eat tadpoles.

Many snakes, including Eastern Garter Snakes and Brown Snakes, have live babies, so they do not require nesting sites. They will use those wonderful basking sites to warm up the developing embryos inside them. Other snakes, such as Eastern Milkshakes, Eastern Fox Snakes, and Smooth Green Snakes lay eggs. Lizards also lay eggs. These eggs are not like bird eggs- the eggs can dry out easily. They can also get too wet, and drown. To keep their eggs damp, snakes will usually lay them inside **rotting logs** or other moist areas. You can create some places for lizards and snakes by making piles of rotting vegetation or wood. Rotting logs and compost heaps both attract snakes in Ontario. Turtles generally nest in sand or gravel. Landowners near water, or those who have turtles walking across their property in June might want to consider bringing in some sand/gravel mix and piling it in an areas with full exposure to the sun (facing south).



These volunteers are helping create a turtle nesting site. In some areas, **artificial nesting sites** are being used to reduce the numbers of turtles trying to cross Ontario's roads.

