



Alberta Conservation
Association

wildlife | fish | habitat

reptiles of Alberta





photo: Rory McAlduff
cover photo: Kyle J. Welsh



reptiles of Alberta

What is a reptile?

Reptiles evolved over 300 million years ago during the dinosaur age and have survived them by millions of years. Over 10,000 species of reptiles exist today! Snakes, turtles, and lizards are all reptiles. Reptiles are animals with backbones and are covered in scales. Most live on land and most lay eggs that have a leathery outer shell for protection. Unlike mammals and birds, reptiles cannot regulate their body temperature. Instead, reptiles warm themselves by basking in the sun, or indirectly from resting on warm surfaces, in warm water, or from the surrounding air. When too warm, they move to cooler places. An optimal body temperature allows reptiles to capture and digest their prey, escape predators, find mates, reproduce, and grow.

Alberta's reptile neighbours

Alberta is home to nine species of reptiles, including seven different species of snakes, a turtle, and a lizard. Some of Alberta's reptile species have a wide range in the province, while others live in a very limited area. All are at the northernmost edge of their North American ranges.

Most species are found in the grassland region that covers a wide area of southern Alberta that extends west to the Rocky Mountains and north to the southern edge of the parkland region in central Alberta. Wherever they occur in the province, reptiles can be found in a variety of habitats that provide adequate cover, food, water, and space for them.

Each species of reptile in Alberta is given a general status rank by the Government of Alberta. These status ranks are evaluated on an ongoing basis and indicate which species are *At Risk* or *May Be At Risk* of disappearing from Alberta as a result of human activities or natural events, and which species are *Sensitive* to these activities and events. Species that are abundant and widespread are considered *Secure*.

How can I help Alberta's reptiles?

Like many other wildlife species, Alberta's reptiles struggle to adapt to human impacts on the habitats and ecosystems in which they depend.

The destruction and exploitation of natural habitats is causing reptiles to become rare or to disappear from many areas. Chemicals and poisons introduced into their ecosystems harms them directly or indirectly by affecting their food supply. Development and urbanization not only contribute to an increase in road mortality, pollution, and loss of habitat, but also human-snake conflicts that often end unjustly with the demise of snakes.

The key to preserving Alberta's reptiles is to conserve the places where they live. Actively managing the health and function of ecosystems, preserving native habitats, and avoiding the use of pesticides and other harmful chemicals can result in wide-ranging benefits for reptiles, other wildlife, and people alike.

While travelling on Alberta roadways, be mindful of snakes that may be attracted to warm road surfaces or that may be crossing during their wanderings. Keep a careful lookout for "snake crossing" signs that warn motorists of the possible presence of snakes on roadways in key areas.

Perhaps one of the easiest things you can do to help Alberta's reptiles is sharing what you have learned in this brochure with others, and when it comes to snakes, being more tolerant.



mountain short-horned lizard



Fact File

Common name	Mountain Short-horned Lizard
Scientific name	<i>Phrynosoma hernandesi</i>
Family	Phrynosomatidae
Length	Up to 7 cm
Reproduction	Live-bearing
General Status	<i>At Risk</i>

Despite its name, the mountain short-horned lizard does not live in the mountains, but instead persists in scattered localities in the extreme southeast corner of the province. Here, these small lizards roam the slopes and rims of south-facing coulees and canyons where they feed on ants and other small insects. They use a sit-and-wait style of hunting and wait for prey to pass by within close reach. The small size of adult and young mountain short-horned lizards make them easy targets for any predator. In the face of danger, the mountain short-horned lizard hides in full view by remaining perfectly still and relying on its camouflage and small size to avoid being seen. During the winter, the mountain short-horned lizard shelters in shallow burrows that it digs itself in soft, loose soil. In some years, winter survival may depend on the amount of snow cover that offers an additional blanket of insulation.

western painted turtle

The western painted turtle—so called because of its brightly coloured shell, head, and limbs—naturally occurs in a handful of waterways that cut through the arid short grass prairie and badlands of southern Alberta. It has also been introduced to areas well outside of its natural known range, which is primarily the Milk River drainage. Western painted turtles prefer sun-drenched weedy ponds, lakes, and slow-flowing streams with soft muddy bottoms and partially submerged logs that can be used for basking. Turtle watchers can most easily observe these exceptionally wary creatures while they “sun-bathe” on sunny days. At particularly good basking sites, western painted turtles can be found stacked on top of each other. During the winter, the western painted turtle retreats to the murky depths of a body of water that does not freeze to the bottom. Here they hibernate buried in the muddy bottom, breathing through their skin.



Fact File

Common name	Western Painted Turtle
Scientific name	<i>Chrysemys picta</i>
Family	Emydidae
Length	Up to 25 cm
Reproduction	Egg-laying
General Status	<i>Sensitive</i>



photo: Gordon Court

Wild reptiles make poor pets

Snakes and other reptiles are fascinating creatures that can trigger a strong desire in some people to keep them in captivity. However, collecting reptiles from the wild can negatively impact populations by reducing their numbers. Wild reptiles make poor pets because they are often plagued with parasites and fail to settle down under captive conditions. Furthermore, all native reptiles are illegal to keep under the Alberta **Wildlife Act**. Instead, if you really want a reptile for a pet, consider a captive-bred reptile that is legal to keep in Alberta and available from a reputable pet store or responsible breeder. These common species are better adapted to captivity and often require less specialized care or housing.

Don't let it loose

Releasing an unwanted exotic pet reptile (or even fish), or moving a native species from one area to another, is both irresponsible and illegal under the Alberta **Wildlife Act**. Pets released in unfamiliar surroundings often perish and the ones that don't can seriously impact native species and other wildlife by spreading disease or parasites, disrupting gene pools, and causing competition for food and shelter. Finding a new home for your pet through friends, family, or a local reptile or aquarium club are better options and will help maintain the health of Alberta's wild species and the ecosystems that they depend on.

garter snakes

Alberta is home to three species of garter snakes. These small, slender snakes rank among the most beautiful and more common snakes in the province. Garter snakes occur throughout the province, and one species ranges into the far north. They can be found in a wide variety of habitats and are often encountered along the margins of wetlands, rivers, and other bodies of water. All garter snakes are harmless to people and when approached they quickly retreat to dense cover or water. If caught, however, they may try to bite and often smear their handler with foul-smelling feces and musk as they try to escape. Garter snakes will eat any creature they can catch and overpower, including insects, earthworms, leeches, slugs, amphibians, small fishes, and even small mammals.



Fact File

Common name	Wandering Garter Snake
Scientific name	<i>Thamnophis elegans</i>
Family	Colubridae
Length	Up to 100 cm
Reproduction	Live-bearing
General Status	<i>Sensitive</i>



wandering garter snake

photo: ACA



plains garter snake

photo: Krysia N. Tuttle

Fact File

Common name	Plains Garter Snake
Scientific name	<i>Thamnophis radix</i>
Family	Colubridae
Length	Up to 100 cm
Reproduction	Live-bearing
General Status	<i>Sensitive</i>





Winter survival

Alberta snakes survive the winter in places where they will not freeze. Each autumn, snakes in the province set off from their summer feeding grounds back to traditional winter dens called hibernacula. Crevices and other openings at the surface of hibernacula allow snakes to access underground spaces beneath the frost line where temperatures stay above freezing throughout the winter.

Natural hibernacula are typically situated on relatively rocky, south-facing slopes or in the burrows of animals or in subterranean cavities created by erosion. Snakes may also overwinter in old wells, rock piles, and cellars, or next to retaining walls, bridges, and building foundations, and in underground spaces around buried utilities and pipelines. As snakes enter a period of winter dormancy, they don't eat a thing for many months and live sparingly off the energy stored in body fat reserves. In time, the warmth of spring penetrates their winter retreats and lures them back to the surface.

Generations of snakes may overwinter individually or in great numbers at hibernacula, which may be occupied by a single species or multiple species and used for many years. Some species of snake mate at or near hibernacula in large numbers, improving breeding opportunities. If hibernacula are destroyed through development activities or vandalism, entire populations of snakes can be eliminated from areas resulting in the removal of an essential component of local ecosystems. Because of the vulnerability of snakes at hibernacula, these communal sites are protected from disturbance under Alberta's *Wildlife Act*.

Alberta Snake Hibernaculum Inventory

The Alberta Snake Hibernaculum Inventory is a citizen-science project that allows participants to learn about the reptiles found in their communities and report the locations of snake hibernacula and other reptile sightings, including dead-on-road occurrences. These data will lead to a better understanding of reptile distributions in the province and may contribute to reptile research and conservation initiatives.

To learn more about the Alberta Snake Hibernaculum Inventory visit: www.ab-conservation.com/hibernaculum or call 1-877-777-3764.

Fact File

Common name	Red-sided Garter Snake
Scientific name	<i>Thamnophis sirtalis</i>
Family	Colubridae
Length	Up to 100 cm
Reproduction	Live-bearing
General Status	<i>Sensitive</i>



red-sided garter snake

photo: ACA, Kris Kendell



plains hog-nosed snake

The shovel-like rostral scale on the tip of the plains hog-nosed snake's nose explains its name. The plains hog-nosed snake is restricted to the shortgrass prairie of southeastern Alberta. Its small size, secretive nature, and cryptic colouration allow it to disappear into the prairie landscape. The plains hog-nosed snake frequents areas with sandy soils near prairie sloughs. Here, it uses its snout that is well suited for digging, and acute sense of smell, to unearth toads—a favorite meal—from their underground burrows. When cornered, the normally docile plains hog-nosed snake puts on a great show of aggression in the form of hissing, flattening its neck to appear larger, raising its head, and striking with its mouth closed. This bluff is usually effective enough to drive most predators away. However, if a threat persists the plains hog-nosed snake may fake death by rolling over on its back, gapping its mouth open, and hanging out its tongue!



Fact File

Common name	Plains Hog-nosed Snake
Scientific name	<i>Heterodon nasicus</i>
Family	Colubridae
Length	Up to 75 cm
Reproduction	Egg-laying
General Status	<i>May be at Risk</i>



photo: Kenneth Gisi



eastern yellow-bellied racer

The eastern yellow-bellied racer is an elegant snake with a slender profile and long whip-like tail. As an adult, its colouration is uniform olive-brown or bluish with a showy yellowish belly. Juvenile eastern yellow-bellied racers have an overall appearance much different than adults and are boldly patterned with a series of grey, brown, or reddish blotches that fade and eventually disappear as the snake matures. Unlike other Alberta snakes that have scales with a single ridge along their length, the eastern yellow-bellied racer has smooth scales. Active almost exclusively during the day, the eastern yellow-bellied racer is a remarkably alert and agile snake. Its large eyes provide excellent vision, and its slender form allows it to move through its terrain with speed. These traits are put to good use to locate and overtake prey and escape predators. Despite its scientific name, the eastern yellow-bellied racer is not a constrictor. Instead, it uses jaw power to grasp its prey—insects, small mammals, birds, reptiles, and amphibians—which it then swallows.



Fact File

Common name	Eastern Yellow-bellied Racer
Scientific name	<i>Coluber constrictor</i>
Family	Colubridae
Length	Up to 180 cm
Reproduction	Egg-laying
General Status	<i>Sensitive</i>

photo: Kyle J. Welsh



prairie rattlesnake

The prairie rattlesnake is Alberta's only venomous reptile that is considered dangerous to people. However, their timid nature and desire to be left alone has meant that few people have been bitten by prairie rattlesnakes in Alberta. Nonetheless, respect and caution should always be used when in the vicinity of these snakes. At a quick glance, this rugged prairie snake is easily recognized by its distinctive rattle at the end of its tail, heart-shaped head, and vertical cat-like pupils; traits not found in other Alberta snakes. When alarmed, the rattlesnake rapidly vibrates its tail creating a distinct buzzing sound that is meant to warn larger animals and potential enemies of its presence. Rattlesnakes are famous for their ability to detect the location of warm-blooded prey with deadly accuracy, even in complete darkness. They accomplish this by using specialized heat-sensing organs located within two facial pits positioned between their eyes and nostrils. Prey is subdued by delivering venom through elongated hollow fangs.



Fact File

Common name	Prairie Rattlesnake
Scientific name	<i>Crotalus viridis</i>
Family	Viperidae
Length	Up to 140 cm
Reproduction	Live-bearing
General Status	<i>Sensitive</i>

Egg-laying or live-bearing?

Alberta reptiles reproduce in one of two ways. Some species lay leathery-shelled eggs that are deposited in carefully constructed nest chambers, loose soil, or abandoned mammal burrows. Here, the eggs are deserted and left to incubate in the soil by the heat of the sun or warmth from decomposing plant matter. Other species carry their developing embryos in membranous envelopes within their body and give birth to live young. The birth of live young takes place in a secluded place or in the open, and the independent young typically appear as scaled-down versions of the adults.

Both reproductive strategies have their advantages. Live-bearers are able to exploit habitats further north and that are too cold to allow successful incubation of eggs laid in the ground. In these northern areas, live-bearing females can move about habitats, actively basking and selecting warmer shelters that enhance embryonic development within their body. Egg-laying species benefit from a shorter gestation and experience a shorter period of reduced mobility and feeding.



photo: Gordon Court

bullsnake

The bullsnake is the largest species of snake in Alberta and the only one that kills its prey by constriction—meaning that they squeeze their prey in one or two of their powerful coils resulting in asphyxiation or cardiac arrest. The bullsnake's small head and enlarged wedge-shaped rostral scale on the tip of its nose suit it well for digging in loose soil and exploring tight animal burrows. Many ranchers and farmers are glad to see bullsnakes on their lands as they are incredibly efficient at controlling unwanted mice and other rodent populations. The bullsnake is also an accomplished climber. It is not uncommon to see these snakes exploring a cottonwood tree or scaling a cliff in search of birds and their eggs. Being relatively slow moving, bullsnakes rely on their camouflage to go unnoticed by coyotes, badgers, hawks, weasels, and other potential predators that share their habitats. If disturbed, they show much bravado and may hiss very loudly. Despite their sometimes menacing attitude, bullsnakes usually do not strike unless severely provoked.



Fact File

Common name	Bullsnake
Scientific name	<i>Pituophis catenifer</i>
Family	Colubridae
Length	Up to 200 cm
Reproduction	Egg-laying
General Status	<i>Sensitive</i>

photo: Gordon Court



photo: Joel Nicholson

Living with snakes

Snakes are naturally shy animals that prefer to go unnoticed and quickly move away from danger if given the chance. Like all wild animals, if provoked or cornered some snakes may bluff or even attempt to bite. For this reason, a healthy respect for snakes is needed, especially where venomous species are known to occur.

Sharing your property with snakes can have many benefits. For starters, snakes contribute greatly to the environment, consuming insects and small rodents that are often considered pests in urban and agricultural areas. The snakes themselves are prey for a variety of other wildlife species. Having snakes as neighbours provides a special opportunity to see these fascinating animals up close and can add an element of uniqueness on your property.

Having snakes on your property is also a good indication that your land use practices maintain the proper quality and amount of habitat needed for wildlife. As a steward, you can protect snakes and help preserve an important part of Alberta's natural heritage for future generations!



photo: Joel Nicholson

Why did the snake cross the road?

The seemingly simple question of why a snake crosses the road is not trivial at all. Despite not having any limbs, snakes can move through all kinds of terrain, vegetation, and water surprisingly well. In fact, many snakes make long seasonal movements in search of prey, mates, over-wintering dens, and egg-laying or birthing areas. Some of these wanderings can cover a straight-line distance of greater than 25 km from their overwintering den!

The overlap of these seasonal movements with the ever-expanding network of roads across much of our province makes snakes vulnerable to being run over by vehicles. Snakes that are active during the evening or at night may linger on warm road surfaces, seemingly oblivious to the danger of passing traffic and putting themselves at further risk. Sadly, the often negative perception of snakes by motorists means that some snakes killed on roads are no accident.



When Visiting Reptile Habitats

Stay on road and trail systems to keep sensitive plants and soil areas intact and to protect the integrity of habitats needed by reptiles.

View snake hibernacula from a distance so as not to compress soils and shift rocks underfoot that may result in the collapse of hidden openings needed by snakes to access underground spaces.

Limit visits to hibernacula and the places where reptiles gestate their young or lay their eggs—human disturbance at these sites can attract predators, disrupt reptile behaviour, and degrade habitat.

Avoid stepping on rocks and other potential cover objects that could shift underfoot and injure reptiles that may be sheltering underneath.

Leave rocks, logs, and other objects untouched—moving such objects can harm reptiles sheltering underneath, destroy delicate microhabitats, and decrease available retreats for reptiles from predators and unfavourable weather conditions.

Never remove a reptile from the habitat in which you found it.



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photo: ACA, Kelley Stark
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