HABITAT ACQUISITION TRUST

REPTILES

protection & stewardship

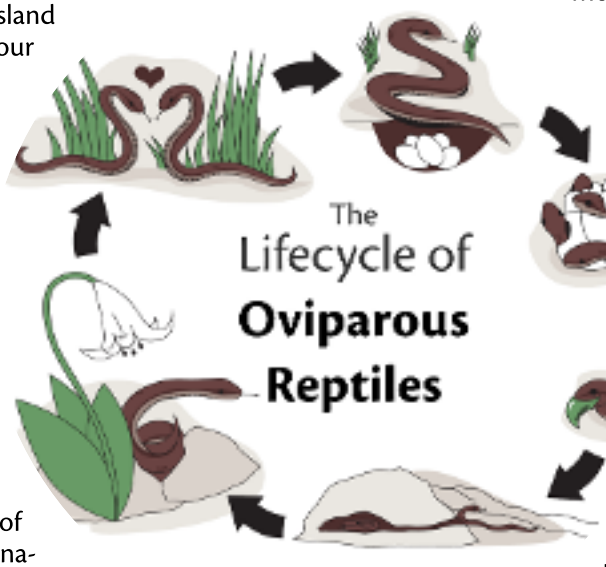
PB

Stewardship Series
Issue 8: Spring 2019

The Scaly Facts

1. Reptiles have long been unjustly feared and persecuted by humans. Fears that reptiles are vicious, venomous, dangerous or unpredictable have led humankind to dislike and destroy reptiles and their habitats. In actuality, reptiles are among some of the most interesting and beneficial animals in the world.

2. Who lives here? Vancouver Island is home to four species of snakes - none of which pose any danger to humans; two species of lizards (one native and one introduced), and two species of turtles (one native and one introduced). Reptiles play an important role in the food web as both predator and prey; they are a vital part of cycling nutrients through ecosystems. Additionally, as predators of nuisance animals, local reptiles can help control numbers of garden pests including non-native slugs and small rodents.



3. Can I get a side of banana (slug), please? Snakes and lizards are generally considered to be either carnivores or insectivores, and depending on the species, their size and age, may consume a variety of animals: from invertebrates (insects, slugs and spiders), to amphibians (frogs, newts, salamanders), to freshwater and intertidal fishes, to small mammals and even small birds. Turtles, in general, are considered omnivores and will eat a variety of aquatic animals and plants. As young, they consume primarily animal-based diets and move to more plant-based diets later in life depending on what is available to them.

4. Reptiles are animals with special adaptations like scaly skin, and strong toes with claws. Reptiles are *ectothermic* (commonly referred to as cold-blooded) animals, meaning they are unable to produce their own body heat, and therefore need external heat to regulate their metabolism, including body temperature, digest food or incubate their eggs. This is why you often see reptiles basking in the sun on rocks or logs on summer days. Since reptiles need warm conditions to digest their food and to reproduce, they are largely restricted to southern B.C.

A year in the life of reptiles

Reptiles do not hibernate like bears, and, instead undergo *brumation*. Different from hibernation, reptiles will leave the den in search of water intermittently throughout the overwintering period. To survive through a Canadian winter, native reptiles spend these cold months in *hibernacula* - underground wintering dens - in deep cracks and crevices where temperatures stay above freezing. As an aquatic reptile, the Western Painted turtle has a very different strategy, burying itself in the mud at the bottom of shallow ponds, where the water remains unfrozen. Lowering its body temperature preserves energy by reducing metabolic rate, but leaves it sluggish if disturbed. In spring, reptiles emerge and over the warmer months they mate, lay eggs, and eat enough food to build up stores for the next overwintering period. By providing areas where they can feed, bask, and reproduce, you can give the reptiles in your backyard a better chance at survival for many years to come.

Western Painted turtle hatchling found by a habitat steward in Metchosin

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Habitat Stewardship for reptiles is funded by people like you and:

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Our Local Reptiles

Sharp-tailed snake
Contia tenuis

Northwestern Gartersnake
Thamnophis ordinoides

Common Gartersnake
Thamnophis sirtalis

Terrestrial Gartersnake
Thamnophis elegans

Western Painted turtle
Chrysemys picta

Northern Alligator lizard
Elgaria coerulea

Introduced: Slider turtle
Trachemys scripta
(Red-eared species shown)

Introduced:
European Wall lizard
Podarcis muralis

*images not to scale

Homes for Reptiles

Most of the reptiles found in our region live around warm, rocky outcrops, along the edge of grassy or forested clearings, and nearby fallen logs and debris where they can bask and feed. Unfortunately, as a result of human activities, much of the original coastal Douglas-fir and Garry Oak ecosystems in southern B.C. have been destroyed, and is in need of protection, however the endangered Sharp-tailed snake and our 3 species of Gartersnakes can still be found in these forests and woodlands.

Urban development continues to be a major threat to what remains of these sensitive ecosystems. Fortunately, you can help support the conservation of local native reptiles. By preserving rocky, south-facing slopes from development and by leaving fallen logs and rock piles in place, or by adding these elements to your property, you'll not only improve your garden productivity but also contribute to the ongoing conservation of biodiversity in our native ecosystems. Make your backyard a better place for snakes and other wildlife by adopting reptile-friendly gardening practices today. [1]

Let's Create Reptile Habitat!

South-facing rock walls with no mortar can give reptiles a safe place to bask in warm weather

1. **Provide hiding places:** leave fallen logs, brush piles and rocks in cleared areas to provide cracks and crevices where reptiles can shelter.
2. **Provide warm sites:** sunny rocky slopes are preferred by many reptiles; *remove invasive species* like Scotch broom that shade the area; prevent erosion by preventing foot traffic upslope that may fill cracks and crevices with silt.
3. **Garden pesticide-free:** insecticides and herbicides can contaminate the food supply for reptiles. Use alternative methods like hand-picking, trapping and barriers to control pest populations. Encouraging reptiles into the garden is a fantastic way to control garden pests like non-native slugs.
4. **Tread gently:** when repairing old rock walls take care not to crush any animal that might be taking shelter there. And, before mowing, walk through the grass to give reptiles a chance to escape before you mow or "weed eat" the lawn and tall grass.
5. **Encourage and protect native habitats:** use native plants in gardens or leave your property in its natural state. Native plants require little maintenance because they are adapted locally.
6. **Enhance access to habitats:** reduce the distance between natural habitat patches for easy access to hiding and basking places.

Fact: All our reptiles on Vancouver Island are non-venomous and are not a danger to humans

This adult Sharp-tailed snake (on moss) was found during snake surveys in Metchosin in 2008

South-facing rocky outcrops like this one are favourable habitat for the Sharp-tailed snake

Wrapping up the Sharp-tailed snake Project

The Sharp-tailed snake (*Contia tenuis*) is Vancouver Island's rarest, tiniest and most mysterious snake. As underground dwellers and their small size (**measuring at most 30 cm in length and only about as thick as a pencil),** these snakes are very small and difficult to find. They are distributed as patches of sub- populations throughout the southernmost tip of Vancouver Island, on some Gulf Islands, and one location near Pemberton on mainland B.C. The aptly named Sharp-tailed snake has a sharply pointed and thorn like structure at the tip, different from our other local snakes. As part of our **Habitat Stewardship Program,** we initiated a number of projects over the last 15 years to find and protect Sharp-tailed snake populations and habitat.

Sharp-tailed snakes are Vancouver Island's smallest snake. Note their size compared to that of an oak leaf (above).

In 2005, HAT partnered with biologists Christian Engelstoft and Kristiina Ovaska, along with local volunteers, to investigate threats to the survival of Sharp-tailed snakes and locate remaining populations across south Vancouver Island and the southern Gulf Islands. HAT hosted presentations for private landowners outlining how the protection of Garry Oak and Douglas-fir forest ecosystems is vital for the survival of this species.

To assist with this research, **71 landowners** with potential snake habitat were involved in finding new populations or sites of the Sharp-tailed snake. **Over 247 Artificial Cover Objects (ACOs)** were installed on private properties to help find the snake. The landowners were asked to monitor the ACOs and as a result the HAT project **identified 24 new sites where the Sharp-tailed snakes were present, including in 8 parks.**

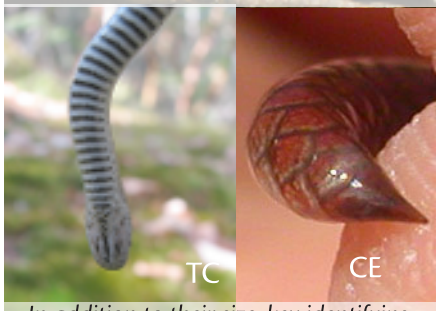
Sharp-tailed snake distribution in 2019.

HAT continues to work with landowners and parks staff to reduce threats to reptile populations through habitat stewardship, community outreach, backyard habitat certification, plantings, and more. HAT is currently wrapping up the Sharp-tailed snake project but if you come across a small reddish snake and manage to get a picture, send it to us and we will identify it for you! You can email your snake photos to hatmail@hat.bc.ca.

A group of volunteers on a Sharp-tailed snake survey on Mayne Island

Sub-adult Sharp-tailed snakes are smaller and brighter than their adult counterparts

An adult Sharp-tailed snake found at Camas Hill in 2007



In addition to their size, key identifying features of the STS include black and white belly scales and a sharply pointed tail-tip (enlarged to show detail)

To learn more about Sharp-tailed snakes and how you can help them in your own backyard, visit our website hat.bc.ca

Reptiles

Stewardship Series 8

If you find a native reptile, we'd love to hear from you!

Tag and share your reptile stories with us on social media or email pictures to hatmail@hat.bc.ca!

@habitatacqtrust

How do local reptiles reproduce?

On Vancouver Island, only a few species of reptile are **oviparous** – meaning they lay eggs. The Sharp-tailed snake, Western Painted turtle, non-native Slider turtle and the European Wall lizard are the only reptiles known to lay eggs here. Female oviparous reptiles lay their clutch of leathery-shelled eggs in a nest, usually underground, where the soil is moist to prevent dehydration and the temperature is high enough to incubate the eggs. All other reptile species locally (which include the 3 species of Gartersnakes and Northern Alligator lizard) are **ovoviviparous** - meaning females develop their fertilized eggs within their bodies and give birth to live young. This is advantageous in the moist, cooler climates in B.C. as mothers can bask in the sun and optimize conditions for their developing young when outside temperatures fluctuate. One disadvantage of this adaptation is that pregnant females are limited in their ability to move quickly to hunt or avoid predators. Never approach a nesting reptile, and keep pets at a distance to avoid disturbing the animal. If you come across a nesting Western Painted turtle, Sharp-tailed snake or Northern Alligator lizard, give it lots of space so it does not feel threatened.

From left to right: A female Western Painted turtle lays her eggs in a dugout nest of soft soil, sand or gravel. Western Painted turtle Eggs and hatchlings are not much bigger than a Loonie!

Image Credits: MA - Monique Anstee; KB - Katie Bell; PB - Paul Bratescu; TC-Todd Carnahan, CE - Christian Engelstoft; GH - Gavin Hanke; KG - Ken Groat; MM - Moralea Milne; CT - Cathy Tur; Oviparous reptile Lifecycle Illustration: drawing by Ashlea Veldhoen; Digitization and colouring by Star Graphic Design; all other photos as labelled, for public use, or by HAT.

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Information Credits: Engelstoft & Ovaska. 2003. Attracting Snakes into your Backyard.[1] Engelstoft & Ovaska. 2004. Habitat Restoration for the Endangered Sharp-tailed Snake. Engelstoft & Ovaska. 2015. Sharp-tailed Snake Stewardship Efforts from April 2005 to March 2015. B.C. Conservation Data Centre. 2019. BC Species and Ecosystems Explorer. B.C. Minist. of Environ. Victoria, B.C. Available: http://a100.gov.bc.ca/pub/eswp/ (accessed Feb 22, 2019). Thomson Rivers University BC Reptiles Website: bcreptiles.ca Gibbons et al. 2000. The Global Decline of Reptiles, Déjà Vu Amphibians: Reptile species are declining on a global scale. Six significant threats to reptile populations are habitat loss and degradation, introduced invasive species, environmental pollution, disease, unsustainable use, and global climate change. BioScience: 50(8): 653–666.mic.oup.com/bioscience/article/50/8/653/243214

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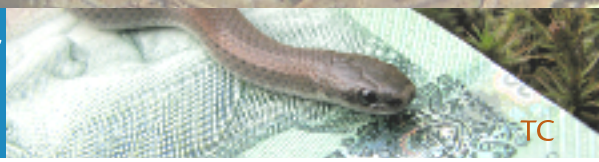
Habitat Acquisition Trust helps your community care for wildlife and their habitats. Your support will help protect habitat where reptiles and other wildlife can thrive, enable reptile habitat restoration as well as nature education.



Yes! I want to be there for reptiles - to help preserve the benefits they bring to us all. Here is my donation to HAT!

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E-mail:
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Enclosed is my ○ Monthly/ ○ One-time donation in the amount of $ _____

*Monthly donations help us the most!

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Exp Date: ____/____ (mm /yy) VISA MC AMEX

Signature _____

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○ Habitat Stewardship Program
○ Land Protection Program
○ Other:

○ Yes! I would like to be added as a HAT member (free with donation of $30 or more)
○ Keep my donation anonymous

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