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Four garter snake species call Wyoming home

I noticed a snake basking in the sun one mild afternoon in May. Flicking its orange-black tongue, it was less than a foot long with warm gray scales divided by rivers of cream.

I was unsure of the species, but guessed it was a garter snake, or garden snake as I sometimes called them in childhood. I later learned Wyoming is home to four of the 38 species of garter snakes living in North America. With a little research and help from the handy community science app, iNaturalist (www.inaturalist.org), I confirmed that yes, the snake I'd seen was a wandering garter snake.

Learning to identify garter snakes can lead to a better scientific understanding and compassionate respect for these under-appreciated neighbors.

Snakes alive!

Few people won't jump at a surprise encounter with a snake. Although sometimes startling, snakes are not aggressive and avoid contact with humans if given the choice in most circumstances. Close encounters are usually just as concerning for the snake as they are for the person. Hissing and aggressive behavior is the snake's attempt to avoid conflict; it would prefer slithering away to having to strike. While venomous snakes can be a concern in certain areas, finding snakes on your property is actually an indication of a thriving ecosystem, and garter

snakes can perform valuable ecological services on your property. We may not all come to love snakes, but we can appreciate the important jobs they do in maintaining robust ecosystems.

Thriving ecosystems are maintained by an intricate network of relationships of which predator-prey relationships are one of the most important. Garter snakes fit within this network in a unique way: they play the role of predator and prey. Garter snake diets can include invertebrates such as earthworms, leeches and slugs, small fish, amphibians, and mammals. Much of their diet—mice, grasshoppers, slugs, and insects—are often considered pests. Welcoming garter snakes

onto your property can provide a form of natural pest control and help ease the need for chemical pesticides or expensive pest exterminators.

But garter snakes are not top predators. Snakes provide a food source for larger mammals and birds like hawks, eagles, and herons. These predators in turn manage other populations of prey, further helping to maintain equilibrium. We are still discovering all the ways these relationships between predators and prey impact our homes, our agricultural systems, and our way of life.

Identifying Wyoming's garter snakes

All Wyoming garter snakes have stripes running lengthwise down their body, including one orange or pale yellow midline stripe about two to three scales wide. There

Fun fact
While no garter snake is venomous to humans, all four of Wyoming's garter snakes will excrete and smear a hideous-smelling secretion onto those who attempt to handle them.

are only two other species of snakes in Wyoming with these longitudinal stripes: the Black Hills red-bellied snake has dull stripes like a garter snake but is easily differentiated by its glowing-red belly, and the desert striped whipsnake has a dark midline stripe and is longer than most garter snakes at 4–5 feet. Once you have ruled out these two, you can be fairly certain you are looking at a garter snake and can then narrow it down even further.



Plains garter snake

Plains garter snake (*Thamnophis radix*)

Plains garter snakes range in length of 20–30 inches. They have bright orange or yellow stripes along the middle of their back and both sides and are the only garter snake in Wyoming with black bars on their upper jaw. Aply named, these snakes live throughout the Great Plains region of North America. In Wyoming, they are found in low prairie habitats below 6,500 feet, often near sloughs and riparian areas. They are active from late April into October, sometimes feeding at night during the hot summer months. This species is relatively docile and seldom bites, but they will make their displeasure known by thrashing and squirming if captured.

Wandering garter snake (*Thamnophis elegans vagrans*)

The wandering garter snake is the most common and widespread snake species in Wyoming. These snakes are typically 20–30 inches long. Their bodies are dull grey to olive-brown with faded pale yellow or white stripes along their sides and back. Their range extends north into Canada and as far south as Arizona, and they can be found in a variety of habitats from the low prairie to montane forests up to 10,000 feet in elevation. They are active whenever the sun is up from April to October and, like all of Wyoming's garter snakes, they

Creating a garter snake-friendly home

1. Consider leaving a section of lawn unmowed. This will not only give snakes a cool and protected place to stay but can also support pollinators and other beneficial creatures.
2. Keep your home rodent-proof, but do not use poison or glue traps. These can directly (becoming trapped) and indirectly (consuming poisoned prey) hurt snakes and other species like birds.
3. Avoid using bird netting or plastic sod netting. Both can trap and injure snakes.
4. Keep your yard tidy and free from woodpiles or other appealing places for snakes to hide. This will make it less likely to have a surprise encounter with a snake—a win for the both of you!
5. When you find a snake, leave it alone! Don't try to pick it up, relocate it, or move it with a tool. Most snakes will happily slither away from human activity.

Where in Wyoming?

Although garter snakes are common throughout Wyoming, we still know very little about each species' distribution. Detecting reptiles using standard survey methods can be hard, so researchers from the Wyoming Natural Diversity Database and the Biodiversity Institute are asking members of the community to record their observations. Any observation could improve our knowledge of where in Wyoming each of these four species of garter snake lives.

Here's how you can contribute to this community science project:

1. Find a garter snake!
2. Take a photo and write a description of the snake's location.
3. Use the information in this article to identify the kind of garter snake.
4. Email your photo, your identification, and the description of the snake's location to wyndd@uwyo.edu.



Wyoming Game and Fish Department

Wandering garter snake

enjoy shoreside activities and are most often found near water in the riparian areas along the edges of streams, wetlands, and floodplains. Like the plains garter snake, they rarely bite and will instead flee.



Gary P. Beauvais, director, Wyoming Natural Diversity Database

Valley garter snake

Valley garter snake (*Thamnophis sirtalis fitchi*)

The valley garter snake is a subspecies of the common garter snake. They have yellow, white, or cream stripes along their back and both sides with a black checkered pattern between middle and side stripes. They can be distinguished from the visually similar red-sided garter snake by a slightly darker background on the body and head and clean belly scales with no black spots, but these traits can blend between the two subspecies. They range 24–30 inches long. Rarely found far from permanent water, valley garter snakes are active during

the day from April through September in the foothills and mountains of western Wyoming. They will sometimes coil when threatened, curling into a defensive posture and striking when necessary.

Gary P. Beauvais, director, Wyoming Natural Diversity Database



Red-sided garter snake

Red-sided garter snake (*Thamnophis sirtalis parietalis*)

Like the valley garter snake, the red-sided garter snake is a subspecies of the common garter snake. Visually, these two are very similar with yellow, white, or cream stripes on their sides and back and a black-checked pattern between middle and side stripes. Unlike the valley garter snake, this species often has black spots along the edges of their belly scales. Most red-sided garter snakes are 24–30 inches long, but they can grow up to 48 inches. As the most northerly distributed reptile in North America, this species is adapted to cooler climates and is often the first to emerge in the spring. They become active in April and usually begin hibernating in late October. They are found at lower elevations in prairies ecosystems, usually east of the Continental Divide. When encountered, they generally attempt to flee but will sometimes coil and strike.

Remember, attempting to pick up or hold any snake causes the animal undue stress and should be avoided as much as possible. Respecting an animal's boundaries is an important aspect of learning to live with wildlife and while garter snakes pose no real threat to humans, they may still bite if threatened.

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Nell Smith is a master's student in creative writing and environmental and natural resources at the University of Wyoming, and we think we'll ask her, in addition to using iNaturalist, how she has come to know so much about garter snakes!