

Eastern Red-backed Salamander (*Plethodon cinereus*)

Family Plethodontidae

Subspecies: None currently recognized

***Updated 2025**



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Description/Identification: The Eastern Red-backed Salamander is a small, elongated, slender bodied salamander with 17 to 22 costal grooves along the body. These salamanders lack a basal constriction at their tail bases, and possess five toes on the hind feet, and four on the front. Average adult size, snout-to-tail length of Red-backed Salamanders averages about 2 to 4 ½ inches, or about 1.9 to 3.5 inches snout-to-vent length. The small, delicate limbs can be lighter or darker colored, similar to the rest of the ground color of the body, the head is relatively wide and broad, and the eyes being relatively large. Inside the mouth, Red-backed Salamanders have three different rows, or groups of ringlike teeth along both their upper and lower jaws that are perhaps best seen under an electron microscope. Red-backed Salamanders also have tiny, projectile tongues which they use to forage for food.

The dorsal ground color of these salamanders ranges from a dark gray or black or bluish-black, heavily flecked in white, with a wide, thickened orangish to reddish-orange mid-dorsal stripe running from about the back of the neck or shoulders, through the tail. Some populations, or individuals within populations, may also exhibit a “leadback” color phase, where a much darker rusty brown or reddish-brown or grayish-brown mid-dorsal stripe replaces the otherwise more brightly colored mid-dorsal stripe. The ventral surface, or underside is mottled with dark gray and light brown. Males and females appear similar, except during the breeding season, when males develop an enlarged gland at the apexes of their lower jaws. Red-backed Salamanders also do not have an aquatic larval stage; juveniles appear similar to, and are miniature replicas of the adults.

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Range and Distribution: Eastern Red-backed Salamanders range from southeastern Canada, including southeastern Ontario, Nova Scotia, and Quebec, south through the Upper Midwestern United States, all of the New England, or Northeastern U.S., and in the eastern U.S. to about South Carolina and Georgia. In Wisconsin, Red-backed Salamanders occur primarily in the northern half of the state, but also occur further south along the Lake Michigan counties in eastern Wisconsin to Fond du Lac and Sheboygan Counties in the east, and to Monroe and LaCrosse Counties in the west. Unverified reports also exist in the Baraboo Hills area of Sauk County.

Habitat: Eastern Red-backed Salamanders are found in, and are associated with northern forest habitats, such as northern mesic and northern boreal forests with dense canopies, and ample, moist forest floor leaf litter and debris. Red-backed Salamanders are a lungless salamander species, and do not require standing water in order to breed and reproduce, but require good quality habitat and high humidity for their oxygen exchange through their skin. Downed, rotting logs, fallen bark, rocks, leaf litter, and other moist, humid forest floor debris provide the optimal habitats for Red-backed Salamanders.



Ventral/Belly View. © Gary Nafais.

Feeding and Diet: Red-backed Salamanders are insectivorous, feeding on a wide variety of small insects and insect larvae, arachnids, worms, snails, slugs, and other small mollusks, and other tiny microinvertebrates living in and amongst the forest floor debris.

Natural History: Red-backed Salamanders are active in Wisconsin from April through October, but are secretive and are primarily nocturnal, or crepuscular. During the winter, they overwinter deep within rotting logs or other debris, within ant mounds, or underground. Although they are primarily terrestrial, and forage amongst the forest floor, Red-backed Salamander can also climb onto plants in search of food, on occasion. These salamanders will quickly scurry or retreat into cover debris when uncovered, and can also voluntarily push their tails against objects to detach them, long enough to distract any potential predators for the salamander to make their escape. A new tail then regenerates within a few weeks.

Red-backed Salamanders breed in the fall, where the males will rub their chin glands on the heads and nostrils of the females, while also depositing spermatophores. Egg-laying does not commence until the following late spring or early summer, however, during which time 6 to 14 spherical white eggs are laid in cavities underneath rocks, logs, or other clumps of debris. The females guard the eggs and nests until late summer, when they begin to hatch into fully formed salamanders (Red-backed Salamanders lack an

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aquatic larval stage). Due to the energy these salamanders require to lay eggs, egg-laying usually occurs biennially.

In the right, high quality environments, Red-backed Salamanders can reach very high levels of biomass, as much as 93% of the salamander biomass according to some research. Red-backed Salamanders are considered very important components of healthy forest communities and ecosystems, not only contributing to forest carbon and nutrient cycling, but serving as food for many small mammals, birds, and reptiles.

Many different species of birds, turtles, snakes, and carnivorous small mammals, such as shrews, weasels, and other mammals (such as skunks, opossums, raccoons, and foxes) will eat Red-backed Salamanders.

Conservation Status: In Wisconsin, Red-backed Salamanders are listed as “Common”, and can be present in very high densities or population masses in good, quality habitat. However, they are still regulated and protected along with all other of Wisconsin’s herptiles under N.R. 16. Eastern Red-backed Salamanders are currently not protected or regulated federally. Eastern Red-backed Salamanders are currently IUCN Red-List Least Concern (LC).