

Four-toed Salamander (*Hemidactylium scutatum*)

Family Plethodontidae

Subspecies: None currently recognized

****Updated 2025***



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Larval Stage. © Matthew Ignoffo.

Description/Identification: The Four-toed Salamander is a small, elongated, slender bodied salamander with about 13 to 14 costal grooves along the body. These salamanders range from about 2 to 4 inches in snout-to-tail length, or about 1.9 to 2.7 inches snout-to-vent length. Four-toed Salamanders also can be easily identified by their obvious, constricted or compressed tail-bases, and the snouts are rounded (or squared) and short, with two prominent nasolabial grooves. As their name implies, Four-toed Salamanders can also be distinguished from all other Wisconsin salamanders from their four toes on the hind feet, and five on the fore-feet. Larval Four-toed Salamanders are slender bodied, pale yellowish to yellowish-brown in color with fine darker dusky mottling, and thin, fragile bushy reddish external gills. They become adult salamanders in about 2 to 3 years. Inside the mouth, Four-toed 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, and enlarged premaxillary teeth in sexually mature males. Four-toed Salamanders also have tiny, projectile tongues which they use to forage for food.

The Four-toed Salamander's dorsal color can vary from a rich reddish or reddish-brown, to brown, transitioning to a dark bluish or bluish-gray color, particularly in juvenile salamanders with dusky bluish or whitish speckling. The ventral or undersurface of Four-toed Salamanders is white or porcelain in color with irregularly spaced dark spots or flecks. The small, slender limbs and dorsal surface color of the tails are often lighter than the rest of the body, and can range in color from an orangish or orangish-brown, reddish-orange, yellowish, or yellowish-brown with darker mottling or flecking. Males and females appear mostly similar, except during the breeding season when males develop more prominent nasolabial grooves. No subspecies are currently recognized.

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© WDNR. (Missing Door County peninsula)

Range and Distribution: Four-toed Salamanders have a somewhat scattered, wide distribution from southern Ontario, Nova Scotia, and Quebec, Canada, south through the Midwestern and Eastern United States to the Fall Line to the Southeastern U.S. Disjunct or isolated populations occur in many states in-between this range. In Wisconsin, Four-toed Salamanders can potentially be found throughout the state where there may be suitable and appropriate breeding habitat intact, but are scattered and disjunct.

Habitat: Due to their reproductive habitat requirements, Four-toed Salamanders are closely associated with clear and clean springs, seepages, spring creeks, and spring-fed bogs or wetlands in northern and southern mesic forests, forested sphagnum bogs, and spring-fed conifer swamps. Population densities are usually not high, although they may turn up in other types of habitats nearby as well such as pine plantations and powerline right-of-ways. These salamanders are very secretive, spending most of their time underneath, or within rocks, downed logs, fallen bark, sphagnum mats, or other ground debris.

Feeding and Diet: Four-toed Salamanders are insectivorous, feeding on tiny insects, insect larvae, worms, arachnids, crustaceans, mollusks such as snails, or other tiny microorganisms living and amongst the forest floor debris.

Natural History: Four-toed Salamanders are perhaps one of the most secretive of Wisconsin salamander species, either slipping quickly into the debris when uncovered, or remaining cryptic and motionless. These salamanders may also curl and raise their tails above their heads, or push their tails against objects to detach them as a means of defense while distracting any would-be predator. A new tail then regenerates within several weeks.



Ventral/Belly View. © Vermont Reptile and Amphibian Atlas.

Mating and reproduction is said to occur in the fall and spring, where the spermatophores are retained by the female until egg-laying in late April through mid-June. Typically, 15 to 25 eggs are laid underneath an overhanging sphagnum moss mats, although Four-toed Salamanders will also nest in wet sedge

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tussock wetlands or other overhanging, downed woody debris in the absence of such other habitats. The females guard the nest and eggs until late May or June, where the newly hatched larval salamanders will then drop down into the water until they complete transformation in about another 6 weeks. Communal nesting has been observed in some states, but not yet in Wisconsin.

Four-toed Salamanders will remain active in the year until November, where they will overwinter deep within rotting logs or other debris. The Four-toed Salamander's specialized breeding habitat requirements appear to be the primary limiting factor in their abundance and distribution.

Larval Four-toed Salamanders may be eaten and consumed by large aquatic invertebrates such as large crayfish or water bugs, fish, or other amphibians and/or predatory amphibian larvae. 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) may also eat Four-toed Salamanders.

Conservation Status: In Wisconsin, Four-toed Salamanders are listed as a "Special Concern" species. While these salamanders might not have any further conservation status at this time, they are perhaps the least common of Wisconsin's salamanders, and population densities in most Wisconsin populations are low. They are nevertheless still regulated and protected along with all other of Wisconsin's herptiles under N.R. 16. Four-toed Salamanders are currently not protected or regulated federally. Four-toed Salamanders are currently IUCN Red-List Least Concern (LC).