

Spotted Salamander (*Ambystoma maculatum*)

Family Ambystomatidae

Subspecies: None currently recognized

***Updated 2025**



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Description/Identification: The Spotted Salamander is a moderately to heavily built, large ambystomid salamander species ranging from about 5.5 to 9.0 inches snout-to-tail length, or about 2.75 to 3.93 inches in snout-to-vent length. The costal grooves along the body number between 11 and 13, and they have five (5) toes on both the front and hind feet. Males and females are similar in appearance, except during the breeding season when males develop swollen cloacal areas and females are slightly dimorphic (or are larger in size) than the males. Larval Spotted Salamanders are about ½ inch in size, and have a dark mottled brownish, to greenish-brown color with bushy external gills. Inside the mouth, Spotted Salamanders have 3 different rows or groups of very tiny, vomero-palatine teeth, much more like sandpaper, which are perhaps best observed and seen under an electron microscope. Spotted Salamanders have elongated, adhesive tongues which are quickly contracted by muscles and the hyoid bone inside their mouths during feeding.



Larval Form. © VA Herpetological Society.

Adult Spotted Salamanders have a dark brown, black, to dark grayish-black dorsal color, and the ventral or undersurface and sides are a light gray or tan. Two rows of linear, rounded, irregularly spaced yellow spots run down the dorsums of the body, with the first 2 to 4 on the back of the head or neck behind the eyes often being orange. Juvenile, newly metamorphosized Spotted Salamanders have an unmarked yellowish or tan ventral surface, and bright yellow to gold flecks on a black or dark brown dorsal color. Some adult Spotted Salamanders can have many spots, while others can have very few, or absent spots as adults. No subspecies are currently recognized. Albino, or amelanistic specimens have also been recorded from southeastern Wisconsin.

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Range and Distribution: Spotted Salamanders have a broad range and distribution, from Quebec, Ontario, and Nova Scotia in southern Canada, throughout the New England or Northeastern U.S., through much of the eastern U.S., and west and south to extreme eastern Texas, Kansas, and Oklahoma to the Gulf of Mexico, but are absent from Florida. In Wisconsin, Spotted Salamanders occur primarily in the northern third of the state north of the tension zone, and further south along the eastern tier of Lake Michigan counties in eastern Wisconsin.

Habitat: Spotted Salamanders are a northern forest and woodland associated species, preferring northern boreal forests, pine forests, and northern mesic forests. Kettle or pothole ponds, or other ephemeral wetlands amongst and near these primary habitats are the preferred habitats for Spotted Salamanders. In the early spring and fall, these salamanders can be found above-ground under or within rotting, downed logs, rocks, fallen bark, leaf litter, and other debris when the surfaces are still moist, but become very fossorial, spending most of their lives underground and are usually not seen again above-surface until the fall rains, or if they are incidentally excavated. Spotted Salamanders do not tolerate urbanization or intensive agriculture well, which degrade the quality of their habitats, as does intensive clear cutting and forest canopy opening.

Feeding and Diet: Both larval and adult Spotted Salamanders are primarily carnivorous, feeding on a variety of terrestrial or aquatic protozoans, small insects and insect larvae, worms, crustaceans, mollusks, and other arthropods or invertebrates living amongst their breeding ponds and/or forest floor debris and leaf litter. Other amphibian eggs or larvae may also be eaten.

Natural History: Spotted Salamanders begin to emerge in late March or April when the ice has begun to melt from their overwintering sites under or deep within rocks, logs, other debris, or from underground. Warm, nightly rains during the spring will often stimulate emergence and movement of Spotted Salamanders towards their breeding ponds, where they will follow noncelestial chemical cues, and utilize the same trails and breeding ponds each year. They will also emerge 1 to 3 days later than Blue spotted Salamanders.

Once they reach their breeding ponds, Spotted Salamanders may perform a mass nuptial orgy, where the males will deposit spermatophores on leaves and twigs at the bottoms of their ponds which are picked up and retained by the females, where fertilization then begins internally. Females can then lay

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anywhere from 120 to 150 eggs singly or in clusters attached to the submerged twigs and vegetation. An intriguing symbiotic relationship between the eggs and some forms of green algae may also take place, which provide the eggs with higher concentrations of oxygen allowing them to enhance their development. After about 60 days, the eggs hatch into larval salamanders, where they then fully develop by late summer or early fall. In some areas, however, the larvae may overwinter and transform the following year.



Ventral/Belly View. © Snakesandfrogs.com.

In Wisconsin, it may take Spotted Salamanders as long as 2 to 3 years to fully mature as adults. When threatened or handled, Spotted Salamanders may defend themselves by arching their bodies and/or tails, while secreting foul-tasting skin secretions or substances from glands at the bases of their tails, which may make them distasteful to some predators. They may also attempt to “head-butt” or bite in self-defense, although rarely. Larval and aquatic stages of Spotted 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 Spotted Salamanders.

Conservation Status: In Wisconsin, Spotted Salamanders are listed as “Common”, and can be common in the state in suitable habitat and range. They are highly fossorial for much of the year, however. They are still regulated and protected along with all other of Wisconsin’s herptiles under N.R. 16. Spotted Salamanders are currently not protected or regulated federally. Spotted Salamanders are currently IUCN Red-List Least Concern (LC).