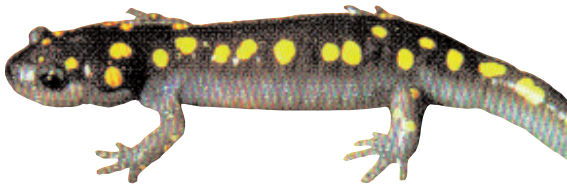
# Spotted Salamander

***Species:*** *maculatum*
***Genus:*** *Ambystoma*
***Family:*** Ambystomatiidae
***OOrder:*** Caudata
***Class:*** Amphibia
***Phylum:*** Chordata
***Kingdom:*** Animalia



## *Conditions for Customer Ownership (per USDA Permits)*

We hold permits allowing us to transport these organisms. To access permit conditions, click here.

***Never purchase living specimens without having a disposition strategy in place.***

Shipment of this organism is restricted in Ohio. This organism must be housed in an escape-proof habitat. In order to protect our environment, never release a live laboratory organism into the wild.

## *Primary Hazard Considerations*

- Always wash your hands before and after handling salamanders, for your protection and theirs. Chemicals and toxins can be absorbed through their skin and can poison your salamander. Spotted salamanders can secrete a sticky white substance when they feel threatened.

## *Availability*

- Spotted salamanders are wild-collected from Canada. They are available April through November.

## *How Will Animals Arrive and Immediate Requirements*

- Salamanders will arrive in a waxed cardboard box containing moist sphagnum moss. Open the container when it is received and place salamanders into a habitat. If you don't have a habitat set up yet, you can store the salamanders in the shipping container for 2-3 days, as long as you mist them daily with de-chlorinated water.
- Spotted salamanders can be black, dark brown, or dark grey. They have large, round yellow or orange spots running in two uneven rows along the sides of their body from head to tail. Your salamander will be 4-5 inches long.

## *Captive Care*

**Habitat:**

- Spotted salamanders do best in a woodland terrarium. A 10-20 gallon terrarium is sufficient for 1-3 salamanders. A ventilated lid is necessary to keep the salamanders from escaping. A substrate of top soil, mulch, or sphagnum moss can be used. Provide the salamanders with a deep layer of the mulch so they can burrow into it and create tunnels, and layer the moss on top. You can add some twigs and rocks to the habitat as well. Spotted salamanders are nocturnal underground animals that spend most of the day hiding, so be sure to provide ample hiding spots – cracked clay pots, empty coconut shells, or anything similar serves well for this purpose.
- The temperature should be kept fairly cool, about 55°F to 65°F. Remember to mist the salamanders daily and provide a large shallow water dish for bathing. Offer dechlorinated or spring water. You can dechlorinate water by leaving it out for 24-48 hours or by adding a dechlorinating agent to it.

**Care:**

- Spotted salamanders should be fed redworms. The worms can live in the soil until the salamanders are ready to eat. A vitamin supplement can be dusted onto the food to provide the salamanders with any essential minerals. You can also create a colony of terrestrial isopods in the habitat to help keep it clean and to provide a food source for the salamander. Check the water bowl daily to ensure that clean water is always available.

## Information

- Method of reproduction: Sexual. Spotted salamanders migrate to breeding ponds at night, during the first rain following the thaw of snow. Males produce spermatophores that the females take into their bodies to fertilize their eggs.
- Determining sex: Females are larger than males.

## Life Cycle

- **Egg:** Laid in masses that are attached to submerged objects; hatch in 4-7 weeks. Hatch time is dependent on water temperature and if the eggs are in a sunny or shady patch of water.
- **Larvae**: 12-13 mm, with only front legs and gills. Metamorphose in 2-4 months.
- **Juvenile**: 27-60 mm. Acquire spots about one week after metamorphosis. It can take 2-7 years to reach sexual maturity.
- **Adult:** 15-25 cm. If they survive to transformation, they can live up to 20 years in the wild.

## Wild Habitat

- Adult salamanders are mostly found in deciduous bottomland forests near rivers. They spend most of their time hiding in leaf litter, under fallen wood, or in tunnels underground.
- Spotted salamanders tend to remain in an area of 8-15 square meters of forest floor, and will react aggressively to other salamanders they find in their burrows or feeding areas.
- Predators of the spotted salamander are numerous. The eggs are preyed on by leeches, crayfish, newts, and fish. Larvae are preyed on by the same predators of eggs as well as birds, snakes, and other spotted salamanders. Adults are preyed on by larger animals, such as skunks, turtles, and snakes.

## Special Notes

- There is a particular species of unicellular green alga (*Oophila ambystomatis*) that grows on and in the jelly surrounding the salamander eggs. The alga provides extra oxygen to the developing embryos, and may help camouflage the egg mass as well.
- Most spotted salamanders (more than 90%) die before they transform and leave their pond, either because their pond dries up, or they are killed by predators or disease. If they do survive and make it out of the pond, they typically live about 20 years in the wild, though some have been reported as old as 30. Their chance of survival from one year to the next is much higher after they transform.

## Disposition

- We do not recommend releasing any laboratory animal into the wild. As a laboratory animal, it has not encountered or learned wild survival skills and is therefore likely to come to an inhumane end.
- Adoption is the preferred disposition for a vertebrate.
- If the animal cannot be adopted by a capable owner, it may be surrendered to your local humane society.
- If the animal must be euthanized, we recommend consulting the AVMA guidelines on euthanasia (American Veterinary Medical Association, http://www.avma.org/issues/animal_welfare/euthanasia.pdf). According to these guidelines, acceptable methods of euthanasia for an amphibian include exposure to CO2 at >60% or treatment with tricaine methane sulfonate (also known as TMS, MS-222 and Biocalm 947-2100). TMS is an anesthetizing agent that will cause fish and amphibian death due to central nervous system depression and hypoxia with overexposure. Wear personal protective equipment (gloves, safety glasses, lab coat) when handling this substance. The fish or amphibian is placed in a solution of 5 g per 5 gallons of water for 30 minutes or until all motion has ceased. To make sure the animal is dead, check for reflexive movement when the eye is touched. If movement occurs, replace the animal in the TMS solution for another 30 minutes.
- A deceased specimen should be disposed of as soon as possible. Consult your school's recommended procedures for disposal. In general, a dead vertebrate should be handled with gloves, and wrapped in an absorbent material (e.g., newspaper), wrapped again in an opaque plastic bag, then placed inside a opaque plastic bag that is sealed (tied tightly) before being placed in a general garbage container away from students.



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