

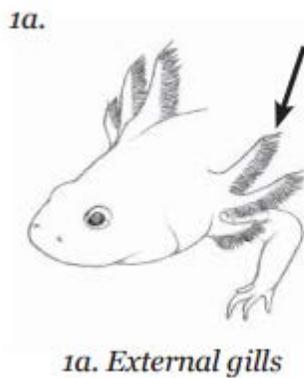
# Dichotomous Key to the Stream and Common Terrestrial and Aquatic Salamanders of Maryland

This key includes all eight species of Maryland **stream salamanders** (highlighted in blue), as well as several common non-stream salamander species that may be encountered in the vicinity of streams.

**1a.** External gills present  
**Aquatic larvae and common mudpuppy.**

**1b.** No external gills present  
Adults, other than common mudpuppy, and terrestrial larvae.

.....**Go to 2**



**2a.** Skin relatively rough and granular (sandpaper-like); aquatic adult has olive green to yellowish-brown dorsum with red spots or broken lines; belly light yellow with fine black spotting; terrestrial juvenile bright orange- red to dull red or orange; red spots may only be distinguishable from ground color by the dark line surrounding them.

**Red-Spotted Newt (*Notophthalmus viridescens viridescens*)**

Red-Spotted Newts are not stream salamanders. They occasionally turn up in streams and ponds.



Red-Spotted Newt (*Notophthalmus viridescens viridescens*)

**2b.** Skin smooth and slimy.

.....**Go to 3**

**3a.** No nasolabial grooves; stout body; rounded head and snout; conspicuous costal grooves; teeth in roof of mouth in a transverse row.

**Mole Salamanders (Ambystomatidae)**

Mole salamanders are not stream salamanders. They may be encountered near streams in the early spring when they make their way to ponds to breed. Species include Eastern Tiger Salamander (*Ambystoma tigrinum tigrinum*), Jefferson Salamander (*Ambystoma jeffersonianum*), Marbled Salamander (*Ambystoma opacum*), and Spotted Salamander (*Ambystoma maculatum*).



Eastern Tiger Salamander (*Ambystoma tigrinum tigrinum*)



Jefferson Salamander (*Ambystoma jeffersonianum*)



Marbled Salamander (*Ambystoma opacum*)

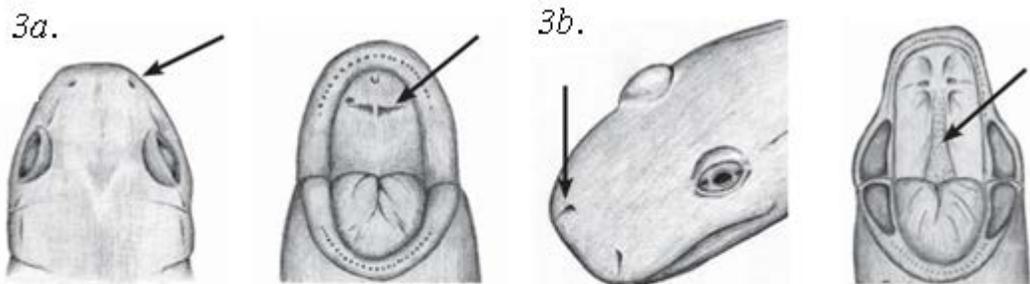


Spotted Salamander (*Ambystoma maculatum*)

**3b.** Nasolabial grooves present (although they may be difficult to see without magnification); costal grooves not conspicuous; dentition includes a curved, nearly transverse row and an elongated patch that extends posteriorly between the orbits; lungs absent.

**Lungless salamanders (Plethodontidae)**

.....Go to 4



No nasolabial groove; wide tooth patch

Nasolabial groove present; long tooth patch

**4a.** Rear limbs conspicuously larger than front limbs; pale diagonal line from eye to angle of jaw; costal grooves usually 14 (rarely 13).

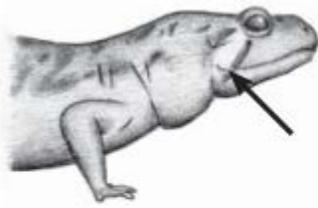
*Desmognathus spp*

.....**Go to 5**

**4b.** Rear limbs not conspicuously larger than front limbs; no pale diagonal line from eye to angle of jaw; number of costal grooves variable.

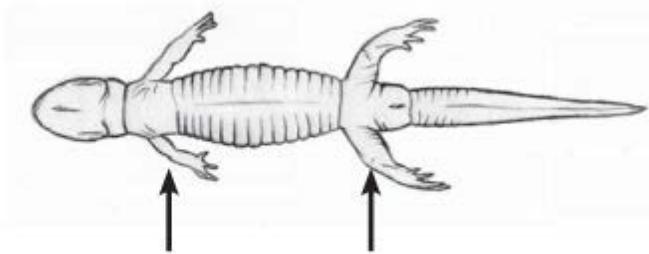
**Go to 7**

4a.



*Pale diagonal line  
from eye to angle of  
jaw*

4b.



*Rear limbs  
conspicuously larger  
than front limbs*

**5a.** Midpoint of tail rounded or oval in cross section; keel absent from tail; adults often less than 100 mm in total length (TL); most specimens have relatively straight dorsolateral stripes and often have a row of middorsal melanophore patches that are frequently chevron-shaped.

**Allegheny Mountain Dusky Salamander (*Desmognathus ochrophaeus*)**



Allegheny Mountain Dusky Salamander (*Desmognathus ochrophaeus*)

**5b.** Midpoint of tail at least somewhat triangular in cross section; keel present on posterior half of tail; adults often greater than 100 mm TL.

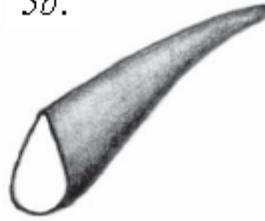
.....**Go to 6**

5a.



Midpoint of tail  
rounded or oval in  
cross-section

5b.



Midpoint of tail  
somewhat triangular  
in cross-section

**6a.** Digit tips with darkened friction pads and appearing grayish-black to black; belly whitish to light gray and uniformly colored; dorsum often with bold, dark, wormy marks or spots on a lighter ground color; tail rounded near base.

**Seal Salamander (*Desmognathus monticola*)**



Seal Salamander (*Desmognathus monticola*)

**6b.** Digit tips lacking friction pads and appearing white or light gray; venter cream-colored, with varying amounts of brown mottling; dorsum often conspicuously blotched or striped and if unblotched, then suffused with brown.

**Northern Dusky Salamander (*Desmognathus fuscus*)**



Northern Dusky Salamander (*Desmognathus fuscus*)

**7a.** Four toes on each hind foot; tail with a conspicuous constriction near the base; belly distinctly white with black spots.

**Four-Toed Salamander (*Hemidactylium scutatum*)**

The Four-Toed Salamander is not a stream salamander. It is occasionally found in moist areas near streams, especially in wetlands with sphagnum moss.



Four-Toed Salamander (*Hemidactylium scutatum*)

**7b.** Five toes on each hind foot; tail without a constriction near the base; belly not white with large black spots (although may be white and black mottled or with a salt and pepper pattern).

.....**Go to 8**

**8a.** Tail triangular in cross section (often only on posterior half); dorsal ground color often reddish, yellowish, or brownish; belly usually light colored.

.....**Go to 9**

**8b.** Tail rounded or oval in cross section along entire length; dorsal ground color dark gray to black (often overlain with dorsal stripe, blotches, light spotting, or flecking).

.....**Go to 13**

**9a.** Dorsal coloration yellowish or brown; body slender; costal grooves 13-16.

.....**Go to 10**

**9b.** Dorsal coloration red, salmon, or orangish with dark spots or faint reticulations (may be rusty red to reddish-brown in old animals); body stout; 16-19 costal grooves.

.....**Go to 11**

**10a.** Tail greater than 50% TL; dorsum bordered by mottled bands on sides and tail with herringbone pattern along sides.

**Long-tailed Salamander (*Eurycea longicauda longicauda*)**



Long-tailed Salamander (*Eurycea longicauda longicauda*)

**10b.** Tail less than 50% TL; dorsum with yellowish brown to yellowish orange stripe bordered by two solid, broad bands that extend from the eyes well onto the tail.

**Northern Two-lined Salamander (*Eurycea bislineata*)**



Northern Two-lined Salamander (*Eurycea bislineata*)

**11a.** Canthus rostralis, a light line bordered by gray or black extending from eye to nostril present (may be difficult to see); snout squarish; costal grooves 17-19.

**Northern Spring Salamander (*Gyrinophilus porphyriticus porphyriticus*)**

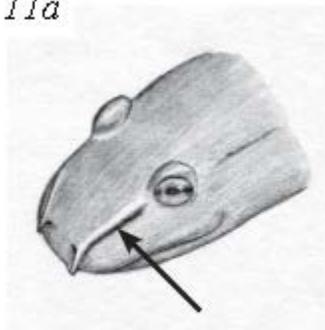


Northern Spring Salamander (*Gyrinophilus porphyriticus porphyriticus*)

**11b.** Canthus rostralis absent; snout rounded; costal grooves 16-17.

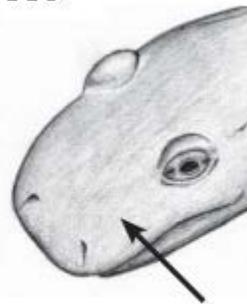
.....**Go to 12**

11a



*Canthus rostralis*  
present

11b



*Canthus rostralis*  
absent

**12a.** Eyes brown; coloration on sides and belly sharply contrasts; dorsum with widely scattered black spots; snout short compared to northern red salamander.

**Eastern Mud Salamander (*Pseudotriton montanus montanus*)**



Eastern Mud Salamander (*Pseudotriton montanus montanus*)

**12b.** Eyes gold or yellow; coloration on sides and belly intergrades; dorsum covered with numerous black spots; snout long compared to eastern mud salamander.

**Northern Red Salamander (*Pseudotriton ruber ruber*)**



Northern Red Salamander (*Pseudotriton ruber ruber*)

**13a.** Costal grooves typically 18-19; dorsum often unmarked or with a straight red, yellowish, or brownish stripe; belly mottled to produce a salt and pepper pattern; throat same color as belly.

**Eastern Red-backed Salamander (*Plethodon cinereus*)**

The Eastern Red-backed Salamander is not a stream salamander. It is the most common terrestrial salamander in Maryland. Although it lives and breeds entirely on land it may still be encountered under moist cover objects near streams.



Eastern Red-backed Salamander (*Plethodon cinereus*)

**13b.** Costal grooves typically 16-18; throat dark and similar in color to belly; dorsum black with conspicuous white spots or brassy flecking; chin rounded; costal grooves 16-17 (rarely 18).

**Northern Slimy Salamander (*Plethodon glutinosus*)**

The Northern Slimy Salamander is not a stream salamander. Although it lives and breeds entirely on land it may still be encountered under moist cover objects near streams.



Northern Slimy Salamander (*Plethodon glutinosus*)