

Larch Mountain Salamander (*Plethodon larselli*)



photo courtesy of John P. Clare

Species Description

The Larch Mountain salamander is a species of small, terrestrial salamander found on rocky slopes in Oregon and Washington. They belong to the family of lungless salamanders, the Plethodontidae. Larch Mountain salamanders are strikingly marked with a thick, uneven edged stripe running from the neck to the tail tip that is red, orange, or chestnut-brown in color. They are dark brown or black in ground color on their backs, with white and gold speckling on the sides. Most adults have pinkish abdomens, though the coloration of their underside can range from a white gray to bright red. Juvenile coloration differs from adults: the stripe on their back has even margins, and their underbelly is black with some red pigmentation. They are fully terrestrial; young hatch from eggs in their adult form. They have five toes on their hind feet, with a shortened outer toe. Growing to a maximum of two inches snout to vent, they are the smallest western salamander in the *Plethodon* genus.

They may look similar to other *Plethodon* species in Oregon, including Dunn's, western red-backed, Del Norte, and Siskiyou Mountains salamanders. Larch mountain salamanders have a restricted range, and geographic location as well as habitat are important features to consider when identifying them. Among closely related salamanders in Oregon, they are best identified by the shortened outer toe on the hind foot and their pinkish underside.

Range and Distribution

Larch mountain salamanders have a narrow range, and are found only in the Cascade Range of Washington and the Columbia River Gorge. In Oregon, they occur only in a small portion of the Columbia River Gorge in Multnomah and Hood River counties.

Habitat Characteristics

Larch Mountain salamanders need loose rocky debris (talus) with moist microclimates and accumulated organic debris. They do not require standing or flowing water to survive, instead relying on cool moist microhabitats within the talus. These features may be found on rocky slopes, in mature forests, younger forests in rocky soils with standing dead trees (snags) and downed logs, or even in debris-filled lava tubes. In Oregon, they mainly inhabit steep, moist talus in dense forests.

Diet and Foraging

Larch Mountain salamanders are invertivores, meaning they primarily eat invertebrates. They specialize on mites, and also consume a variety of other insects and arthropods.



● Approximate range of the Larch Mountain salamander, *Plethodon larselli*

Life History and Ecology

Larch Mountain salamanders are fully terrestrial amphibians, which means they do not require standing water to complete any part of their life cycle. Like other amphibians, they are *ectothermic*, meaning they rely on the environment to maintain their body temperature. As a lungless salamander, they “breathe” through their skin and mucous membranes in their mouths, and need to keep these surfaces moist to absorb the oxygen they need to survive. They spend much of the year underground, moving through the accumulated plant matter within their rocky habitat to stay moist, as they are extremely vulnerable to desiccation (or drying out). Their activity on the ground surface is typically nocturnal and concentrated in the cool, wet weather of spring and fall. Individual salamanders are not likely able to travel far overland on the surface.

Limited information is available regarding the breeding behavior of Larch Mountain salamanders and no nests have been documented. Breeding behavior hasn't been well observed in the wild. They breed on land during the spring and fall and likely lay an average of seven eggs in crevices in talus slopes. Like other closely related woodland salamanders, Larch Mountain salamanders may brood their eggs. Hatchlings likely spend their first few months under the talus, emerging when the fall rainy season begins. Larch Mountain salamanders do not undergo metamorphosis: hatchlings leave the eggs in their full terrestrial form. Males reach sexual maturity at three years old, and females at four years old. Females likely breed every other year, while males are likely to breed every year.

Predators of Larch Mountain salamanders include Pacific giant salamanders and garter snakes. When disturbed, they coil their bodies, then release and flip into the air to a new location, where they lie still and hide to avoid predation.



Fun Facts

- When disturbed they coil up in a way that exposes their brightly colored belly to mimic the appearance of millipedes (see picture, below). Millipedes have noxious secretions that are unpalatable to many predators so through mimicry the Larch Mountain salamanders may deter predators!
- Another behavioral adaptation to disturbance is to coil and uncoil rapidly, launching their bodies away from the disturbance. When they land they become immobile, which makes it hard for predators to relocate them.
- They spend most of the year underground, and may only be active on the surface a few weeks out of the year in moist conditions.
- Larch Mountain salamanders are endemic to the Cascade Range and Columbia River Gorge, meaning that wild individuals can be found nowhere else in the world!

Conservation

Very little is known about population trends for Larch Mountain salamanders. In 2008, there were only known to occur at fewer than 150 sites, most of which were in Washington. They are patchily distributed, but may be locally abundant in high quality habitat. They are habitat specialists, requiring talus slopes and cool moist microhabitats, which makes them vulnerable to the effects of habitat loss, degradation, and fragmentation. Small, isolated populations may be disproportionately impacted by land use changes. They are not well suited to dispersing to new habitats or recolonizing habitats they have been extirpated from. They are sensitive to contaminants including pesticide and fertilizers.

While out in Larch Mountain salamander habitat, you can help protect these animals by staying on established trails and camping in established campsites. These salamanders have small home ranges and do not move far, so they are vulnerable to disturbances to their microhabitat features like moving rocks, logs, and decaying woody debris. Amphibians are sensitive to chemicals that may be on your skin, including sunscreen and bug spray, so avoid handling amphibians including Oregon slender salamander when possible. Larch Mountain salamanders are especially sensitive to being handled, as they breathe through their skin.

Larch Mountain salamanders are an Oregon Conservation Strategy Species, and a Sensitive Species in Oregon. They are a Federal Species of Concern. For more information about the conservation status of Larch Mountain salamanders including special needs, limiting factors, data gaps, and conservation actions, refer to the Oregon Conservation Strategy.