

Clouded Salamander (*Aneides ferreus*)



Photo credit: Henk Wallays

Species Description

Clouded salamanders are slim, long-legged amphibians that are both terrestrial and arboreal; they live their lives in damp coastal mature forests, and are often found high above the ground in the forest canopy. They are members of the large family of plethodontid salamanders, which are characterized by reduced lungs and two grooves that extend from their nostrils to each side of the mouth.

Adult clouded salamanders have smooth, moist skin that is brown to gray in ground color with metallic patches of gray, silver, pale gold, or bronze. At maturity, they are 1.8 to 3.0 inches in length from snout to vent, and 3.0 to 5.1 inches in total length. They have long, squared-off toes and strong, prehensile tails (capable of grasping) adapted for climbing. Males have broader, more triangular heads than females. They have 16 costal grooves on their sides between the front and back legs. Juveniles are similar in appearance to adults, with an orange stripe that runs down the center of its back.

Similar species to clouded salamanders are the wandering salamander and the black salamander. Black salamanders have toes with rounded tips, whereas clouded salamanders have toes that are squared off. The clouded salamander and wandering salamander were separated into two species in 1998 based on genetic evidence, and are difficult to distinguish in the field. The range of these two species overlaps in a small portion of northwestern California. Outside of this area of overlap, geographic location is the best way to distinguish between the two species.

Range and Distribution

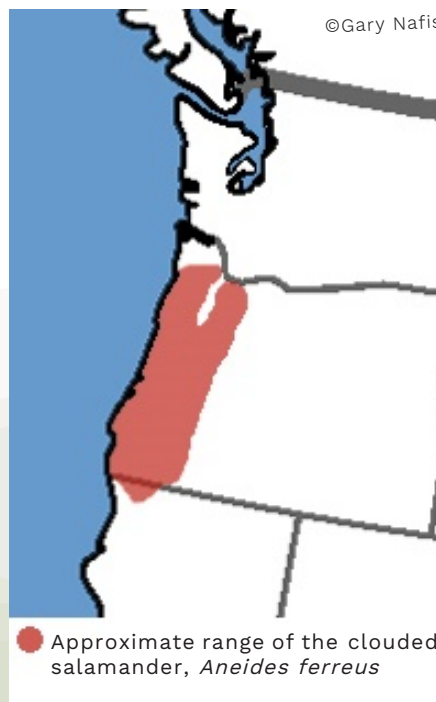
Clouded salamanders can be found in coastal mountains from the Coast Range of Northern California north to the Columbia River, at elevations ranging from sea level to 5,500 feet. In Oregon, they live in the Coast Range, Willamette Valley, Klamath Mountains, and West Cascades ecoregions.

Habitat Characteristics

This species is closely associated with damp, mature coastal forests of Douglas-fir, cedar, redwood, and alder. They are often found at the edges of the forest. They are more common in wet forests with fewer trees than in dry, dense forests.

Clouded salamanders will use fallen dead trees, rotten logs, loose bark on the ground, rocks and rocky crevices as shelter. The species is abundant in areas with an abundance of hiding places and insect prey, such as recently logged or burned areas that have a lot of stumps and woody debris and rocky slopes. They breed in decomposing logs or potentially in the forest canopy.

Clouded salamanders often co-occur with red tree voles, and can be found living in red tree vole nests. Red tree voles build nests high in the canopy of old growth forests. Tree vole nests are warm and damp, and often support robust populations of invertebrates that provide forage for arboreal amphibians.



Diet and Foraging

Adult clouded salamanders consume a variety of small invertebrates including primarily isopods, ants, earwigs and beetles, but also centipedes, millipedes, spiders and termites. Juveniles prey on smaller invertebrates such as ants, mites, flies, springtails, small beetles, sowbugs, and centipedes. Animals will forage by remaining motionless under bark or logs and waiting for prey to pass by.

Life History and Ecology

As members of the plethodontid family of lungless salamanders, clouded salamanders do not breathe through lungs, conducting respiration through their skin and tissues lining their mouth instead. This requires them to live in moist environments and to only move around in times of high humidity. They do not require standing water to complete any part of their life cycle. Like all salamander species, clouded salamanders are ectothermic, or “cold-blooded,” meaning they rely on the environment to maintain their body at the optimal temperature for metabolism.

Males are territorial and can be highly aggressive towards other males. They mark their territories with fecal matter. Many adult clouded salamanders have scars that are presumed to have come from fights with other clouded salamanders. Their home range size is not well described, but likely is small.

Clouded salamanders have clutches of 9 to 17 eggs that are laid in late June and July. Eggs are laid on moist surfaces such as decomposing logs. Arboreal nests aren't described, but nests may potentially be found in the forest canopy where individuals have home ranges. Adults of both sexes are thought to brood the eggs, but nests have also been found unattended.

Clouded salamander young emerge from their eggs in the same terrestrial form as adults in late August or September. They do not have a distinct immature and immature form, and do not metamorphose (transform). The lifespan of clouded salamanders is unknown.

Predators of clouded salamanders likely include birds, snakes and mammals. They defend themselves with camouflage, remaining motionless, or by making fast movements and then freezing.

Fun Facts

- They have prehensile tails, meaning that they can use their tails to grasp objects. This adaptation makes them expert climbers. These salamanders have been documented as high as 75 meters above the ground!
- Clouded salamanders can often be found in red tree vole (another Oregon Conservation Strategy Species) nests, where it is warm and moist. They may help out the voles by eating insects that live there.
- Clouded salamanders have a unique and elaborate courtship display called a tail-straddle walk, where the females follow closely behind the male. Clouded salamanders do this in a circle, which from above can look like a salamander bracelet!
- As one of the “lungless” plethodontid salamanders, clouded salamanders take in oxygen through their skin and the tissues lining their mouth.

Conservation

Clouded salamanders are reliant on mature forests with coarse woody debris on the forest floor. Protecting these forest types is important for the long-term conservation of the species. Habitat loss to wildfire, development, and various forest management practices is a key source of the decline of the species.

While in mature forested habitats that may harbor populations of clouded salamanders, you can help in the conservation of this species by staying on trail and not disturbing decaying logs and woody debris. Decaying logs are important nursery habitat for a variety of salamander species and other wildlife, so leaving these structures alone can make sure wildlife has the best chance to survive. As with all amphibians, it is important to avoid handling clouded salamanders whenever possible. Clouded salamanders have delicate skin that can be damaged when handled. Their skin is absorbent, and can pick up oils, lotions, or salts from your hands.

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