

CALIFORNIA SLENDER SALAMANDER

Batrachoseps attenuatus

ESCHSCHOLTZ

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Description: This species is immediately distinguished from all other salamanders in the region of this book by its **extreme elongation, short limbs and diminutive digits**, and by having only **four toes on the hind limb**. The tail is **much longer than the head plus body**. Adult body size is somewhat variable and can measure to about 55 mm SVL, yet most individuals are less than 45 mm SVL. There are usually **20 or 21 costal grooves**, counting one each in the axilla and groin, and the **legs fail to overlap, with 11–13 intercostal folds between adpressed limbs**. Sexually active males have somewhat swollen snouts and enlarged premaxillary teeth, but otherwise there is no sexual dimorphism. The ground color is dark gray tending to brown



or black, typically with a broad dorsal stripe that is light and bright, yellowish brown or reddish in color. This stripe is bordered by a black lateral stripe. The flanks are gray, heavily spotted with dirty white. The tail is blackish, often with gaps in the pigment so that the underlying fleshy color shows through, giving an impression of an infusion of yellow. The venter is light gray, finely speckled with white.

Variation: There is much individual variation in coloration, with the dorsal stripe ranging in color from the usual reddish brown to red, gray, pinkish gray, tan or dirty yellow. Some individuals, especially in the southern part of the range, either have an obscure stripe or lack one entirely. There is little variation in morphology other than that associated with size. No significant geographic variation has been detected in visible traits, but the species is genetically diverse throughout the range. This variation is currently under investigation.

Eggs: Eggs are relatively large; the white yolks average about 4 mm diameter. Clutch size is from 16–25 eggs, based on clutch sizes observed in the laboratory. In the field, communal clutches seem to be the rule, an exceptional situation for a plethodontid salamander. Females with complete tails lay more eggs than those regrowing tails that have been fully or partly lost. There is no free-living larval stage; hatchlings emerge as juvenile salamanders.

Similar Species: The only salamander in the region of this book that might be confused with the California Slender Salamander is the Oregon Slender Salamander, which occurs in the Cascade Range of central and northern Oregon and differs in being more robust, with a shorter tail and a belly with large, bright white spots on a dark gray to black background. However, their ranges do not overlap. All other salamander species have five toes on the hind foot and are more

Adults

San Mateo County,
California

WILLIAM LEONARD



Adult

San Mateo County,
California

WILLIAM LEONARD



Underside of an adult

Del Norte County,
California

WILLIAM LEONARD





Adult
Del Norte County,
California

ROBERT M. STORM



Adult
Curry County,
Oregon

ROBERT M. STORM



Adult
Del Norte County,
California

WILLIAM LEONARD

robust. South of the region included in this book, at the southern end of the species' range in Santa Cruz County, California, this species overlaps with the genetically distinct *Batrachoseps gavilanensis*, a recently described but distantly related form that is morphologically extremely similar, differing mainly in having somewhat larger limbs and in being a bit more attenuated.

Distribution: This species is widespread in northern California, from Santa Cruz, Santa Clara and San Benito Counties in the south through the Coast Range into southwestern Oregon, where it occurs in a narrow strip along the coast as far north as the south side of the Rogue River. From the area north of San Francisco Bay, the range becomes increasingly restricted toward the coast.

Life History: Nothing is known about the courtship behavior of this species. Females typically emerge from underground retreats fully gravid during early fall rains and deposit their eggs in October and November. The eggs are laid in a series connected by a jelly strand which often breaks as the eggs are moved in the chamber. The eggs are deposited in clusters and may or may not be attended by a female. Communal nests often have no adult in attendance. Eggs typically are deposited deep in soil and are rarely encountered. In the laboratory at 13°C, eggs take about 79 days to hatch into miniatures of adults, external gills having been resorbed almost completely before hatching. Females are thought to mature in about 3.5 years, and skeletal aging studies have shown that adults can be at least 8 years old.

Natural History: California Slender Salamanders are semifossorial, spending much of their time underground, and they are most commonly encountered under surface cover such as fallen limbs, logs, pieces of bark and stones. They can be

observed readily on moist nights in the spring and fall when they emerge from underground retreats to forage. They do not make their own burrows but rather use cavities produced by rotting roots and cracked soil, as well as burrows made by other animals. Roadside banks are especially good places to observe them while they are foraging. Predation intensity appears to be high, judging by the high frequency of tail loss. Tails are fully regenerated once lost. Sometimes animals are found that have regenerated their tails several different times, as can be seen by the abrupt transitions in size along the tail. California Slenders' primary defenses are remaining motionless or tightly coiling, usually with the head hidden beneath the coil. They may coil and uncoil rapidly and fling themselves about. If the full tail of a female is lost, she will usually forego reproduction that year in favor of regrowing the tail, which is a major fat deposition site. Small arthropods are the dominant prey of California Slender Salamanders. Prey includes springtails, soil mites and tiny centipedes. They capture prey with a remarkably long, very fast tongue.

Habitat: In general, California Slender Salamanders are found in wooded areas or in ecotones at the edges of forest and grassland. They can also be found in coastal scrubland and in chaparral, but in the southern parts of their range, they also occur in open grasslands, where they can be found under isolated trees. These salamanders persist in urban areas and are often encountered in gardens.

Remarks: This is a widespread and common species. In the central and southern portions of its range, it can reach very high densities. In the northern parts of its range in extreme northwestern California and Oregon, it is generally uncommon.