

California Wildlife Habitat Relationships System
California Department of Fish and Wildlife
California Interagency Wildlife Task Group

ARBOREAL SALAMANDER
Family: PLETHODONTIDAE
A022

Order: CAUDATA

Aneides lugubris
Class: AMPHIBIA

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DISTRIBUTION, ABUNDANCE, AND SEASONALITY

The arboreal salamander is found in the Coast Ranges from Humboldt Co. south to the Mexican border. In the Sierra, populations exist from El Dorado Co. south to Madera Co. Elevation range extends from sea level to 1520 m (5000 ft). This species is only found on the surface during moist periods, when it can be common. Occurs primarily in valley-foothill hardwood, valley-foothill hardwood-conifer, and mixed conifer habitats, but is also known from Douglas fir and redwood habitat types. May be found in chaparral in southern California.

SPECIFIC HABITAT REQUIREMENTS

Feeding: The principal food items of this salamander are arthropods, especially beetles, caterpillars, sow bugs, centipedes, and ants (Zweifel 1949). Miller (1944) noted a fungus in a stomach sample from this species, and Stebbins (1972) suggested fungi as a probable food item. Slender salamanders also taken as food (Stebbins 1951).

Cover: During moist periods, this salamander crawls beneath or inside surface objects such as tree bark, rotting logs, rocks, and woodrat nests. It also hides in tree cavities as high as 9.1 m (30 ft), and one individual was found in the nest of a red tree vole at least 16 m (60 ft) off the ground. During dry periods, this salamander retreats to moist natural or human-made refuges including rodent burrows, seepages, rock fissures, mine shafts, caves, spring boxes, water tanks, and wells.

Reproduction: Small clusters of eggs are laid in moist nesting cavities under surface objects, in fissures and crevices, or in tree cavities (Stebbins 1951).

Water: Moisture requirements are normally met by fall, winter, and spring rainfall. During dry periods, salamanders may congregate at moist refuges, especially wells, water tanks, and spring boxes. Ray (1958) concluded that *A. lugubris* showed a greater tolerance of desiccation than *Ensatina*, and less than *Batrachoseps*. These three groups are sometimes sympatric.

Pattern: Most abundant in areas with good surface moisture or permanent water.

SPECIES LIFE HISTORY

Activity Patterns: Except during very cold or dry periods, these salamanders are active nocturnally from October to May.

Seasonal Movements/Migration: Normally very little movement outside the home range, but individuals may travel to suitable moist refuges during dry periods

Home Range: Most individuals probably have home ranges of less than 60 m (195 ft) in the longest dimension.

Territory: Not known to defend resources, but adults (especially females) apparently attend egg clusters (Stebbins 1951). Adults may help keep the eggs moist, or protect them from predators.

Reproduction: Eggs are found mostly in July, August, and September, and newly hatched young appear during the fall or early winter. Females lay clusters of 12 to 18 eggs. Each egg is suspended by a short peduncle from some surface of the nest cavity, and the peduncles of several eggs twist together forming grape-like clusters. Eggs hatch from August to September (Stebbins 1951).

Niche: Probable predators include: California giant salamanders, red-legged frogs, bullfrogs, garter snakes, ringneck snakes, sharp-tailed snakes, birds, and nocturnal mammals such as shrews and raccoons. Competition for food resources may occur between various life stages of this species, *Ensatina* and *Batrachoseps* where they co-occur. Zweifel (1949) suggested a strong overlap in the diets of *Ensatina* and *A. lugubris*.

REFERENCES

- Arnold, S. J. 1972. The evolution of courtship behavior in salamanders. Ph. D. Thesis, Univ. Michigan, Ann Arbor. 581pp.
- Lynch, J. F., and D. B. Wake. 1974. *Aneides lugubris*. Cat. Am. Amphibians and Reptiles 159.
- Miller, L. H. 1944. Notes on the eggs and larvae of *Aneides lugubris*. Copeia 1944:224-230.
- Ray, C. 1958. Vital limits and rates of desiccation in salamanders. Ecology 39:75-83.
- Rosenthal, G. M. 1957. The role of moisture and temperature in the local distribution of the plethodontid salamander *Aneides lugubris*. Univ. Calif. Publ. Zool. 54:371-420.
- Stebbins, R. C. 1951. Amphibians of western North America. Univ. California Press, Berkeley. 538 pp.
- Stebbins, R. C. 1972. California amphibians and reptiles. Univ. California Press, Berkeley. 152 pp.
- Zweifel, R. G. 1949. Comparison of food habits of *Ensatina eschscholtzi* and *Aneides lugubris*. Copeia 1949:285-287.
- nson. 1974. Toxicity of the urodele amphibians *Taricha*, *Notophthalmus*, *Cynops* and *Paramesotriton* (Salamandridae). Copeia 1974:506-511.

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