

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

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SHASTA SALAMANDER

*Hydromantes shastae*

Family: PLETHODONTIDAE  
A024

Order: CAUDATA

Class: AMPHIBIA

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#### DISTRIBUTION, ABUNDANCE, AND SEASONALITY

The Shasta salamander is uncommon in limestone areas in the vicinity of Shasta Reservoir in Shasta Co. The distribution of this species is somewhat discontinuous, with numerous small, isolated populations occurring in limestone areas in valley-foothill hardwood-conifer, ponderosa pine and mixed conifer habitats. Elevation 330m (1100 ft) to 773m (2550 ft).

#### SPECIFIC HABITAT REQUIREMENTS

**Feeding:** No information on food habits, but Stebbins (1972) listed centipedes, spiders, termites, beetles, and adult and larval flies as food items of the related species *H. platycephalus*. Gorman and Camp (1953) noted that the feeding habits of the two species are similar in captivity.

**Cover:** During the period of surface activity, individuals seek cover under surface objects such as logs, rocks, limestone slabs, and limestone talus, usually in the vicinity of limestone fissures or caves. During dry periods individuals retreat to subterranean refugia within limestone fissures or caves.

**Reproduction:** Breeds and lays eggs in limestone caverns. Gorman (1956) found males in "apparently full breeding condition" on cavern walls. He found females near egg clusters, which were located in small tunnels in the mud that covered portions of the cavern walls. Papenfuss and Carufel (1977) have observed egg clusters on damp cavern walls but make no mention of the use of "tunnels".

**Water:** No information on water requirements but periods of surface activity are correlated with fall, winter, and spring rainfall. During the remainder of the year water requirements are probably met by seepages in limestone fissures and caverns.

**Pattern:** Primarily associated with limestone fissures and caverns in valley-foothill hardwood-conifer, ponderosa pine, and mixed conifer habitats.

#### SPECIES LIFE HISTORY

**Activity Patterns:** Individuals are active on the surface nocturnally during rainy periods of fall, winter, and spring. This species appears to be restricted to limestone fissures and caverns, or deep limestone talus, during the remainder of the year.

**Seasonal Movements/Migration:** None.

**Home Range:** Individuals are not known to have home ranges exceeding 100m (328 ft) in the longest dimension. Most individuals probably move much shorter distances.

**Territory:** Unknown, but females have been observed as they curled around egg clusters (Gorman 1956). Such females may defend egg clusters from certain predators.

**Reproduction:** Egg clusters of between 9 and 12 eggs are laid in late summer on damp cavern walls. Young salamanders are thought to hatch in late fall.

**Niche:** Because of their secretive behavior, individuals are probably rarely taken as food items by other species. Eggs may be protected by the female. The ringneck snake has been observed in limestone caverns inhabited by salamanders (Papenfuss and Carufel 1977) and is a possible predator. The same authors have found the black salamander (*Aneides flavipunctatus*) inside caverns during dry periods. Competition by these species for food and/or refugia may occasionally occur.

**Comments:** This highly restricted species consists of small, isolated, genetically distinct populations. Each population is unique and vulnerable because of highly restricted habitat requirements. Commercial demand for limestone may jeopardize existing populations. For a review of the status of known populations see Papenfuss and Carufel (1977).

## REFERENCES

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