

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

WESTERN TIGER SALAMANDER

Ambystoma mavortium

Family: AMBYSTOMATIDAE

Order: CAUDATA

Class: AMPHIBIA

A047

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DISTRIBUTION, ABUNDANCE, AND SEASONALITY

The Western tiger salamander has been introduced at several sites in California and has been known to hybridize with the California tiger salamander (*A. californiense*). In California, most populations occur at elevations of less than 305 m (1000 ft), but they have been recorded up to 1370 m (4500 ft).

SPECIFIC HABITAT REQUIREMENTS

Feeding: Postmetamorphic juveniles and adults appear to be "sit and wait" predators (Lindquist and Bachmann 1980) taking earthworms, snails, insects, fish, and even small mammals (Stebbins 1972). Aquatic larvae feed on littoral, benthic, and planktonic arthropods. Small larvae (less than 2 cm) eat almost exclusively zooplankton, while larger individuals consume zooplankton, amphipods, mollusks, and insect larvae (Dodson and Dodson 1971).

Cover: Adults spend most of the year in subterranean refugia, especially ground squirrel burrows and occasionally man-made structures. During breeding migrations individuals are sometimes found under surface objects such as rocks and logs. Postmetamorphic juveniles retreat to mammal burrows after spending a few hours or days in mud cracks near water, or tunnels constructed in soft soil. Aquatic larvae seek cover in turbid water, clumps of vegetation and other submerged debris.

Reproduction: Tiger salamanders breed and lay eggs primarily in vernal pools and other temporary ponds. They sometimes use permanent human-made ponds if predatory fishes are absent. Streams are rarely used for reproduction.

Water: Rainfall is important to the formation and maintenance of breeding ponds. Most surface migrations and other movements by adults are associated with sustained rainfall, especially at night. In some localities, dispersal of postmetamorphic juveniles from breeding ponds is not associated with rainfall. In such cases, desiccation can cause significant mortality. Apparently desiccating individuals aggregate to reduce water loss (Alvarado 1967). This species also conserves water by tolerating high blood urea concentrations (Romspert and McClanahan 1981).

Pattern: Prime habitat in California is annual grass, but seasonal ponds, or vernal pools are crucial to breeding. Permanent ponds or reservoirs sometimes used as well.

SPECIES LIFE HISTORY

Activity Patterns: Adults exist in subterranean refugia most of the year. Before and after breeding, they emerge at night during rains. During breeding, some diurnal activity occurs. In late spring or early summer, postmetamorphic juveniles disperse from breeding sites at night.

Seasonal Movements/Migration: In California, the first rains of November usually initiate adult migration to breeding ponds. They usually stay at the ponds a few days, but some individuals may

remain up to several weeks after breeding is completed. Larvae transform during late spring or early summer, usually by the first week of July in central California. They disperse from the breeding sites after spending a few hours or days near the pond margins.

Home Range: Few movements occur during most of the year. Migrations to and from breeding ponds may occasionally exceed 1000 m (3300 ft).

Territory: Not territorial.

Reproduction: Breeding and egg-laying normally occur from December through early February. Females lay numest of the year. Before and after breeding, they emerge at night during rains. During breeding, some diurnal activity occurs.

REFERENCES

- Alvarado, R. H. 1967. The significance of grouping on water conservation in *Ambystoma*. *Copeia* 1967: 667-668.
- Dodson, S. I., and V. E. Dodson. 1971. The diet of *Ambystoma tigrinum* larvae from western Colorado. *Copeia* 1971:614-624.
- Gehlbach, F. R. 1967. *Ambystoma tigrinum*. Cat. Am. Amphibian and Reptiles 52.1-52.4.
- Jennings, M. R., and M. P. Hayes. 1994. Amphibian and reptile species of special concern in California. Final Report to the California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, CA. 225 pp.
- Jones, T. R. 1989. The evolution of macrogeographic and microgeographic variation in the tiger salamander *Ambystoma tigrinum* (Green). Ph.D. Dissertation, Arizona State University, Tempe, Arizona.
- Lindquist, S. B., and M. D. Bachmann. 1980. Feeding behavior of the tiger salamander, *Ambystoma tigrinum*. *Herpetologica* 36:144-158.
- Long, C. 1964. The badger as a natural enemy of *Ambystoma tigrinum* and *Bufo boreas*. *Herpetologica* 20:144.
- Romspert, A. P., and L. L. McClanahan. 1981. Osmoregulation of the terrestrial salamander, *Ambystoma tigrinum*, in hypersaline media. *Copeia* 1981: 400-405.
- Stebbins, R. C. 1972. California amphibians and reptiles. Univ. California Press, Berkeley. 152 pp.
- Storer, T. I. 1925. A synopsis of the amphibia of California. Univ. Calif. Publ. Zool.27:1-342.

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