

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

WESTERN SPADEFOOT

Spea hammondi

Family: SCAPHIOPODIDAE
A028

Order: ANURA

Class: AMPHIBIA

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DISTRIBUTION, ABUNDANCE, AND SEASONALITY

The western spadefoot ranges throughout the Central Valley and adjacent foothills, and is usually quite common where it occurs. In the Coast Ranges it is found from Point Conception, Santa Barbara Co., south to the Mexican border. Elevations of occurrence extend from near sea level to 1363 m (4460 ft) in the southern Sierra foothills (Jennings and Hayes 1994). This species occurs primarily in grasslands, but occasional populations also occur in valley-foothill hardwood woodlands. Some populations persist for a few years in orchard or vineyard habitats.

SPECIFIC HABITAT REQUIREMENTS

Feeding: Adults take insects worms, and other invertebrates (Stebbins 1972). Adults of the very similar species *S. multiplicatus* were found to eat primarily butterfly and moth larvae, ants, termites and beetles (Whitaker et al. 1977, Dimmitt and Ruibal 1980). Tadpoles consume planktonic organisms and algae, but are also carnivorous (Bragg 1964) and consume dead aquatic larvae of amphibians, including their own species. *S. bombifrons* tadpoles capture and consume fairy shrimp (Bragg 1962).

Cover: Scaphiopus are rarely found on the surface. Most of the year is spent in underground burrows up to 0.9 m (36 in) deep (Stebbins 1972), which they construct themselves. Some individuals also use mammal burrows. Recently metamorphosed juveniles seek refuge in the immediate vicinities of breeding ponds for up to several days after transformation. They hide in drying mud cracks, under boards and other surface objects including decomposing cow dung (Weintraub 1980).

Reproduction: Breeding and egg laying occur almost exclusively in shallow, temporary pools formed by heavy winter rains. Egg masses are attached to plant material, or the upper surfaces of small submerged rocks (Stebbins 1951).

Water: Rainfall is important in the formation and maintenance of breeding ponds. Most surface movements by adults are associated with rains or high humidities at night. During dry periods, the moist soil inside burrows provides water for absorption through the skin (Ruibal et al. 1969, Shoemaker et al. 1969). Dispersal of postmetamorphic juveniles from breeding ponds often occurs without rainfall.

Pattern: Grasslands with shallow temporary pools are optimal habitats for the western spadefoot.

SPECIES LIFE HISTORY

Activity Patterns: They are active on the surface nocturnally during rains or periods of

high humidity.

Seasonal Movements/Migration: Adults remain in underground burrows during most of the year, but the first rains of fall usually initiate surface movements. Breeding activities normally conclude by the end of March. Tadpoles transform during late spring and disperse after spending a few hours or days near the pond margins.

Home Range: Few movements occur during most of the year, but they will travel up to several meters on rainy nights. Movements to and from breeding ponds are rarely extensive.

Territory: The western spadefoot is not territorial during most of the year, but aggressive encounters between calling males at a breeding site suggested a degree of territoriality (Whitford 1967).

Reproduction: Breeding and egg laying normally occur from late winter to the end of March. Chorusing males may be heard during this period, but agricultural irrigation may elicit vocalizations in any month. Females lay numerous small, irregular clusters containing 10 to 42 eggs. They may lay more than 500 eggs in one season (Stebbins 1951). Eggs hatch rapidly, normally within two weeks.

Niche: Tadpoles may compete for food or space with other amphibian larvae. Because of their secretive behavior during most of the year, adults probably avoid predators. Dense populations of tadpoles may be heavily preyed upon by wading birds, or certain species of mammals. Childs (1953) suggested raccoons as probable tadpole predators.

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