

Occurrence of a Western Spadefoot Toad in the burrow system of the Giant Kangaroo Rat, San Luis Obispo County, California

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The Western Spadefoot Toad (*Spea hammondi*) is a California species of special concern occurring within the grassland vernal pool systems and other habitats in California's Great Central Valley, adjacent valleys and mountain foothills, and along the lower half of the coastal mountain range, extending into Baja California (Jennings and Hayes 1994). The species is typically nocturnal with an invertebrate diet, consisting mainly of adult beetles, larval and adult moths, crickets, flies, ants, and earthworms (Morey and Guinn 1992).

The Western Spadefoot spends most of its time underground, usually in burrows it excavates by using hardened knobs on the hind feet. During heavy rains (October through May) the toad will break out of its burrow and find water pools in which to breed (Stebbins and McGinnis 2012). Little is known regarding suitable habitat and soil characteristics of burrow systems. Jennings and Hayes (1994) wrote: "...the features of suitable habitat remain poorly understood. It has often been assumed that *S. hammondi* requires loose soil for subterranean dormancy, but it has also been observed to occupy small mammal burrows (Stebbins 1951). Whether it uses the latter only as temporary refuges during its season of surface activity is unknown, but a better understanding of its pattern of utilization of subterranean refuges will allow refining of our current understanding of suitable habitat." Here we report use of a Giant Kangaroo Rat (*Dipodomys ingens*) burrow as a subterranean refuge.

While excavating the burrow of a Giant Kangaroo Rat on January 3, 2013, within the Carrizo Plain, San Luis Obispo County, CA, the lead author discovered a Western Spadefoot buried in a kangaroo rat tunnel system approximately 1.8 m (~6 ft) underground. The toad aroused quickly when disturbed. Stebbins and McGinnis (2012) report that the typical tunnel depth for the Western Spadefoot was 1 m (~3 ft). It is likely that the toad followed the tunnels constructed by the Giant Kangaroo Rat and buried itself within a tunnel terminus rather than excavating a separate tunnel. The



Western Spadefoot Toad (*Spea hammondi*) after release near another burrow on conservation land. Photo by R. Burton.

spadefoot was relocated to another Giant Kangaroo Rat burrow in a conservation area; which it readily entered. No other toads were found in the kangaroo rat tunnel system.

Literature Cited

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