

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

COUCH'S SPADEFOOT

Scaphiopus couchii

Family: SCAPHIOPODIDAE
A027

Order: ANURA

Class: AMPHIBIA

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DISTRIBUTION, ABUNDANCE, AND SEASONALITY

Couch's spadefoot is found in southeastern California along the Arizona border in Imperial, Riverside, and San Bernardino cos. In California, its elevational distribution is from about 210 m (690 ft) to about 340 m (1120 ft) (Jennings and Hayes 1994). This species frequents arid and semi-arid habitats of the southwest, occurring along desert washes, in desert riparian, palm oasis, desert succulent shrub, and desert scrub habitats. It is also found in cultivated cropland areas. Active during the spring and early summer (Stebbins 1954, Wasserman 1957, Mayhew 1965).

SPECIFIC HABITAT REQUIREMENTS

Feeding: In southeastern Arizona this species feeds primarily on termites, which are regarded as essential for its survival in the desert (Dimmitt and Ruibal 1980a). Other food items recorded are ants, spiders, moths, and beetles. This species apparently feeds exclusively on terrestrial substrates and is able to obtain enough food at one feeding to provide all of its energy reserves for the year (Dimmitt and Ruibal 1980b).

Cover: Requires friable soil for burrowing. Burrowing sites are often selected beneath desert plants to reduce exposure to lethal maximum temperatures during the hottest part of the summer (Dimmitt and Ruibal 1980a). Logs, and other debris, are also used as shelter from the heat.

Reproduction: Temporary pools and potholes with water lasting longer than 10-12 days are required as breeding sites. Runoff basins at the base of sand dunes are also sites of reproduction (Mayhew 1965). The water temperature of these potential breeding sites must be above 17° C (63° F) for normal embryonic development to occur (Hubbs and Armstrong 1961). Soil temperatures above 20° C (68° F) are also required to initiate breeding.

Water: Still, standing water is required for reproduction.

Pattern: Arid areas that have substrate suitable for burrowing, and are near temporarily available standing water, are prime habitat for this species.

SPECIES LIFE HISTORY

Activity Patterns: When active, this species is primarily nocturnal, spending the daylight hours in burrows 2-10 cm (.8-4 in) deep, or under logs or beneath vegetation. Adults are especially active during heavy rain showers when surface temperatures are above 15° C (59° F) (Arnold 1943, Mayhew 1965). The seasonal activity of this species is very restricted. Individuals remain in their burrows 20-90 cm (8-35 in) below the surface for 8-10 months of the year (Dimmitt and Ruibal 1980a).

Seasonal Movements/Migration: Individuals move a short distance from their winter refugia to breeding sites at the onset of spring rainfall. In Texas, adults were observed returning to the same

ponds to breed for at least 3 successive years (Jameson 1956). Newly metamorphosed individuals disperse up to 0.4 km (.25 mi) from breeding ponds to upland areas (Mayhew 1965).

Home Range: No data.

Territory: May not be territorial, except around mate. Low-frequency sound associated with heavy rainfall is a proximate cue used by males to initiate mating calls (Dimmitt and Ruibal 1980a). Males call singly or in groups of 2-8, and aggressively compete among themselves for access to mates (Blair 1947, Woodward 1982).

Reproduction: Individuals are opportunistic breeders, reproducing only during and immediately after the onset of warm rains, usually in the spring and summer (Jameson 1956, Mayhew 1965). The peak of reproduction occurs in July after heavy rainfalls (King 1932). Woodward (1982) found that mating only occurs on the first night following the formation of temporary ponds. Eggs (300-700) are deposited just below the surface of the water by the female and are attached in clumps to vegetation and other solid objects (Blair 1947, Stebbins 1954, Wasserman 1957). Eggs hatch in less than 8 hr and the larvae metamorphose in as few as 10 days after hatching, depending on the water temperature and other factors (Mayhew 1965, 1968).

Niche: Grackles have been observed eating the tadpoles of this species. Cannibalism and other forms of interference competition among tadpoles have also been reported (Bragg 1965, Mayhew 1968).

Comments: The specific epithets *couchii* and *couchi* are both used in the literature on this species. Other names used are: southern spadefoot, rain toad, Sonoran spadefoot, and Cape St. Lucas spadefoot.

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Life history accounts for species in the California Wildlife Habitat Relationships (CWHR) System were originally published in: Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. California Department of Fish and Game, Sacramento, California. Updates are noted in accounts that have been added or edited since original publication.