



Spadefoot Toads

BY TERRY B. JOHNSON, NONGAME BRANCH CHIEF
ILLUSTRATIONS BY ZACKERY ZDINAK

SCIENTIFIC NAME: Genus *Scaphiopus*. The Greek roots *scaph* and *pus* translate to “hollowed out” with the “foot,” which refers to the manner in which spadefoots use their hind feet to burrow into the earth. Arizona’s four spadefoot species are Couch’s (*S. couchii*), southern (*S. multiplicatus*), Great Basin (*S. intermontanus*), and plains (*S. bombifrons*).



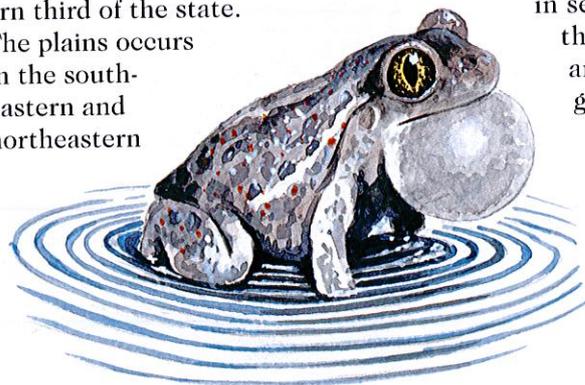
Southern spadefoot toad (*Scaphiopus multiplicatus*).

DESCRIPTION: Spadefoots range in length from 1.5-2.0 inches (all species) to 3.5 inches (Couch’s) from snout to vent. Females are larger than males. All spadefoots (Family Pelobatidae) lack the enlarged, paired parotoid (poison) glands that characterize true toads (Family Bufonidae). The four Arizona species vary in dorsal body color: Couch’s is greenish to greenish yellow with irregular darker markings; the southern is basically brown/gray, often with red or orange speckles; the Great Basin

is dusky gray/green with a definite gray or olive hourglass on the back; and the plains is mottled brown/green/purplish with orange to yellow-tipped tubercles. All four species are whitish below. Aside from the lack of parotoid glands, the single-spaded hind feet and catlike vertical pupils distinguish spadefoots from true toads (which have two spades and horizontal pupils). In addition, the plains has a large bump (boss) between its eyes, and the southern has the bouquet of roasted peanuts!

DISTRIBUTION: Together, the four spadefoots blanket Arizona, from generally below 5,500 feet (Couch’s) up to 8,000

(southern and plains) or even 9,000 feet elevation (Great Basin). Couch’s and southern spadefoots occupy the southern third of the state. The plains occurs in the southeastern and northeastern



Plains spadefoot toad (*Scaphiopus bombifrons*).

corners. The Great Basin occurs north of the Grand Canyon, on the Arizona Strip.

HABITAT: Arizona’s spadefoots are creatures of desert scrub (and swimming pools!) and shortgrass plains, but, as its name suggests, the plains is more typically a grassland dweller. True to their reputation as champion burrowers, spadefoots occur on friable—gravelly, crumbly—soils. They need only temporary rain pools for breeding, but also use more permanent (usually standing) waters such as stock tanks.

BIOLOGY: Described years ago by renowned herpetologist Arthur Bragg as “Gnomes of the Night,” spadefoots are as fascinating as any creature that has ever hopped across the earth. To weather the dry months from one summer’s rains to the next, they take refuge a foot below the surface

in self-built burrows, or those built by other animals, such as kangaroo rats, entombed within a layer of thickened shed skin.

Booming thunder triggers a massive breakout when summer rains inundate the parched earth, and hundreds upon

thousands of spadefoots leapfrog toward water. Once there, the males call relentlessly into the night, announcing their ardor and perhaps wonderment at the abundance of water in a dry land. The sound of their desert symphony resonates for miles.



Couch's spadefoot toad (*Scaphiopus couchii*).

In the breeding congress, males clamber around and over each other and fight for a firm grip on a female, any female. The grasp of love is called amplexus; the male holds the female around her relatively slim waist. In the heat of passion, and dead of night, males sometimes grasp each other, and wait to fertilize eggs that will never be laid. The shameless orgy lasts but a night or two. The egg masses persist just a day or so more before hatching.

The tadpoles run a frantic race for survival. They must mature, sprout legs, and hop ashore before the summer sun dries their birth pool. From egg to toadlet may take just 10 to 15 days. Often few, if any, finish the race. A tadpole-carcass-littered,

dried-up rain pool is a common sight in spadefoot country. Some tadpoles survive by eating their smaller, weaker kin. The cannibals grow faster on the protein-rich flesh than they would on vegetation and other nutrients found in the water.

Once ashore, young spadefoots behave just like older ones, but on a smaller scale. They eat invertebrates (teeny, tiny ones) and soon take refuge below ground. Re-emergence is almost a year away, so post-transformation gorging is crucial if the toadlets or adults are to survive.

STATUS: The spadefoots of Arizona are neither threatened nor endangered. All four species are locally common to abundant within most, if not all, of their historical range. Local losses, especially in urban

settings and agricultural areas, primarily due to habitat conversion and pesticide application, have not been sufficient yet to cause worry. None of the species is a candidate for federal listing as threatened or endangered, or a state species of special concern.

MANAGEMENT NEEDS: The needs of spadefoots are simple: earth to dig, invertebrates to eat, water in which to breed, and a contaminant-free environment. The few hobbyists who keep spadefoots or use them as food for other pets (e.g., some snakes) are adequately regulated by Arizona Game and Fish Commission Order 41, which limits the number that may be taken and possessed. Moreover, hobbyist take is insignificant when compared to the road-kills on a single rainy summer night on any paved road through spadefoot country. The populations of these four species must be enormous indeed for such slaughter to continue, year after year, seemingly without effect. 🦎



Great Basin spadefoot toad (*Scaphiopus intermontanus*).