ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Animal Abstract **Element Code:** AAABF02030
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CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Spea intermontana* (Cope) Wiens and Titus
COMMON NAME: Great Basin Spadefoot
SYNONYMS: *Scaphiopus intermontanus* (Cope, 1883)
FAMILY: Scaphiopodidae

AUTHOR, PLACE OF PUBLICATION: Wiens, J.J. and T.A. Titus, Herpetologica 47: 21-28. 1991. *Scaphiopus intermontanus* (Cope, 1883), Proc. Acad. Nat. Sci. Philadelphia, Vol. 35, p. 15.

TYPE LOCALITY: Unknown

TYPE SPECIMEN: Unknown

TAXONOMIC UNIQUENESS: This species is 1 of 5 spadefoots in North America and Arizona, but only 1 of 3 in the genus *Spea*, all of which occur in Arizona (Holycross et al. 2022). The other 2 spadefoots are in the genus *Scaphiopus*. Tanner (1989) and Wiens and Titus (1991) recognized *Spea* as distinct from *Scaphiopus*, within which it was previously regarded as a subgenus. Wiens and Titus (1991) found pronounced allozymic differences between small samples from populations of nominal *S. intermontana* in Colorado and Oregon and suggested the possibility that two different species may be involved; further research is needed.

DESCRIPTION: A small stout-bodied toad with short legs, and lengths generally from 3.8-6.4 cm (1.5-2.5 in). Overall coloration is gray to olive with light gray stripes (that set off a well-defined hourglass marking) and reddish tubercles on the back; whitish below. Their eyes are gold with vertical pupils. A dark brown spot is usually present on each upper eyelid. This toad has a glandular boss between the eyes, a short and upturned snout, and a dark, wedge-shaped spade-like structure on the bottom of each hind foot. The external eardrum is apparent. The inner three digits of the forelimbs are darkened in breeding males; the expanded vocal sac is slightly two-lobed. Tadpoles are dark brown to black above, gold below, with the eyes set in from the margin in the head. They grow up to 7 cm (2.75 in) long. (Brennan and Holycross 2006; CaliforniaHerps.com 2000-2006; Rorabaugh 2023).

AIDS TO IDENTIFICATION: The glandular boss of *Spea intermontana*, distinguishes it from the Mexican Spadefoot (*S. multiplicata*) which has no boss, and the Plains Spadefoot (*S. bombifrons*) which has a bony boss (Brennan and Holycross 2006). They resemble the

Western Spadefoot (*S. hammondii*) in structure and color. Unlike southern Arizona spadefoots, which breed exclusively during the summer monsoon season, *S. intermontana* in northern Arizona, emerges and begins breeding in the spring (probably April), and continues into at least late May. (Rorabaugh 2023).

ILLUSTRATIONS: Color photos and line drawing (Stebbins 2003: p. 204-205, pl. 12)
Color photo (*In* Brennan and Holycross 2006).
Color photos (Tom Brennan 2005, *in* Online field guide to the reptiles and amphibians of Arizona, https://live-reptilesofaz.pantheonsite.io/)
Color photos (Randy Babb and Jim Rorabaugh 2023, *in* Online field guide to the reptiles and amphibians of Arizona, https://live-reptilesofaz.pantheonsite.io/)
Color photos (*In* CaliforniaHerps.com, accessed 2006)

TOTAL RANGE: North America from southwestern Canada, south into eastern Washington and Oregon to southern Idaho, southwestern Wyoming, Northwestern Colorado, Utah, Nevada, eastern California and northwestern Arizona.

RANGE WITHIN ARIZONA: Northwest portion of state north and west of the Colorado River in Coconino and Mohave counties.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Like other spadefoots, *S. intermontana* uses its spades to burrow underground where it spends the winter and dry months. This toad is primarily nocturnal, although it has sometimes been observed foraging during the day. Emergence and surface activity is often, but not always, triggered by rainfall (Rorabaugh 2023). Individuals migrate up to several hundred meters between breeding pools and nonbreeding terrestrial habitats. When handled, it may smell like peanut butter. The skin secretions may irritate the nose and eyes. When active, their call is a loud, grating *waa-waa* or *gwaa-gwaa*. Predators include birds and probably fish.

REPRODUCTION: A colonial breeder, sporadically breeding from May-June, often after spring or summer rains. Eggs are laid in small packets of (10-)20-40 eggs and attached to floating sticks and underwater vegetation; fertilization is external. A single female may lay a total of about 300-500(-800) eggs. Under optimal conditions eggs probably hatch in about 2-3 days (Nussbaum et al. 1983 *in* NatureServe 2006). Larval period lasts a few to several weeks; Rorabaugh (2023) reports tadpoles' metamorphosis occurring in 4-6 weeks. The accelerated development of eggs and larvae are due to the temporary nature of its breeding pools and activity period, and is typical of spadefoots in general (CaliforniaHerps.com 2000-2006).

FOOD HABITS: Adults are invertivores, feeding upon insects, arachnids, and snails. Larvae probably eat algae organic debris, plants tissue, and sometimes invertebrates and amphibian larvae. (NatureServe 2006; Rorabaugh 2023). Typical of most frogs, the prey is located by vision, and then a large sticky tongue is used to catch the prey and bring it into the mouth to eat (CalifornaHerps.com 2000-2006).

HABITAT: Occupied habitats include mainly sagebrush flats, semi-desert shrublands, and pinyon-juniper woodland. They dig their own burrows in loose soil or they use those of small mammals. Breeding habitat includes temporary or permanent water, including rain pools, pools in intermittent streams, and flooded areas along streams. Eggs are attached to vegetation in water or place on the bottom of pools. In Arizona, they are found from Great Basin Desertscrub to Petran Montane Conifer Forest (Brennan and Holycross, 2006).

ELEVATION: In Arizona, found from 4,365 – 9,080 feet (1,330 – 2,768 m). CaliforniaHerps.com (2000-2006) reports elevations up to 9,200 feet (2,800 m). Found at elevations below 7,000 feet in western Colorado.

PLANT COMMUNITY: Great Basin Desertscrub and Petran Montane Conifer Forest.

POPULATION TRENDS: Throughout their range, the population is widespread and locally abundant. Range size and population levels are relatively stable. Population trends in Arizona are unknown.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None
STATE STATUS: None (AZGFD, AWCS 2022)
[1C (AGFD SWAP 2012)]
OTHER STATUS: LC (IUCN Red List Category 2021)

MANAGEMENT FACTORS:

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: Life history, habitat and distribution studies in Arizona.

LAND MANAGEMENT/OWNERSHIP: BLM – Arizona-Strip Field Office; USFS – Kaibab National Forest (North Kaibab Ranger District).

SOURCES OF FURTHER INFORMATION

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION:

The genus name *Spea* or *speos* is Greek for cave or cavern, while the species name *intermontana* is Latin (*inter* – between, *montis* – mountain, *anus* – belonging to) and refers to the Great Basin locality.

Revised: 2006-09-14 (SMS)
2022-12-19 (MBL)

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