

**ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM**

Animal Abstract

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CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Smilisca fodiens* (Boulenger)

COMMON NAME: Lowland Burrowing Treefrog, Northern Casque-headed Frog, Northern Burrowing Treefrog

SYNONYMS: *Hyla rudis*, *Pternohyla fodiens*

FAMILY: Anura: Hylidae

AUTHOR, PLACE OF PUBLICATION: Frost, D. R., R. W. McDiarmid, and J. R. Mendelson III. 2008. Anura: Frogs. IN B. I. Crother (ed.), Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, pp. 2-12 SSAR Herpetological Circular 37. (*Pternohyla fodiens* Boulenger. 1882. Ann. Mag. Nat. Hist. Ser. 5(10):326-328.)

TYPE LOCALITY: "Presidio, W. Mexico" (Sinaloa, Mexico)

TYPE SPECIMEN: Holotype, British Museum of Natural History 1947.2.24.26, collected by Alphonso Forrer (not seen by author).

TAXONOMIC UNIQUENESS: Species *fodiens* is the only species of the genus *Smilisca* found in North America, north of Mexico.

DESCRIPTION: A medium sized frog averaging 2.54-6.35 cm (1.0-2.5 in.) snout to vent. The skin of the head is partially co-ossified (very hard) and firmly attached. This factor, coupled with its specialized limbs has allowed it to adapt to a fossorial existence. There is a prominent ridge between the eye and nostril, and a fold of skin at the back of the head. The toes are slightly webbed, and the toe pads are small but distinct. A single large whitish tubercle is located on each hind foot. Juveniles are bright green (Sullivan et al. 1994), while adults are dark brown to light tan above with large dark brown blotches (sometimes longitudinal lines) outlined with pale yellow; plain white below. Sexually mature males have a dark throat patch, and a large slightly bi-lobed vocal sac (Enderson 2000).

AIDS TO IDENTIFICATION: Dorsum dark brown to light tan color with large brown blotches edged with pale yellow. Prominent fold of skin is present at back of head.

ILLUSTRATIONS: Color drawing (Stebbins 1985)
Color photo (Behler and King 1979, reprint 1992: Plate 186)
Color photos (Erik Enderson,
<http://www.arts.arizona.edu/herp/frog09.html>)
B&W line drawing (ASDM 2000,

http://www.desertmuseum.org/books/casqueheaded_frog.html)

Color photo of tadpole (Ronn Altig 1998, AmphibiaWeb)

Color photos (Chris Gruenwald 2002,

<http://www.sonoran-herpetology.com/>)

TOTAL RANGE: South-central Arizona south into western mainland Mexico, from Sonora to Michoacan.

RANGE WITHIN ARIZONA: San Simon Wash between Sells and Ajo, north to near Hickenan, Pima County. Also reported from Vekol Valley, Maricopa County.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: A terrestrial, burrowing, nocturnal frog that migrates between breeding and nonbreeding habitats. They are inactive for more than 10 months each year, only emerging to reproduce and forage, “following intense rainfall events during the summer ‘monsoon’ season” (Sullivan et al. 1994). If not for its explosive breeding behavior, this frog would rarely be observed. The males voice is an unmistakable loud honking metallic, duck-like quack. Vocalization may be heard from June through August to early September.

By day, *Smilisca fodiens* takes refuge in self-dug holes and rodent burrows in hard clay soils where humidity is high. “After burrowing underground, this species sheds several layers of its epidermis that form a virtual “cocoon” around the entire body and probably reduce dehydration in the dry season. In addition, this species uses its head to block the opening to its burrow. This reduces water loss from the frog’s body, and may protect it from some predators.” (ASDM 2000). This species is also an accomplished climber. For example, females have been found in trees as high as 5 feet.

REPRODUCTION: Breeds in temporary pools following summer rains from July-August. Oviparous (egg laying) species.

FOOD HABITS: Arthropods

HABITAT: Although tropical in origin, in Arizona this species is most often associated with xeric environments, where it lives in burrows in low open mesquite grasslands, usually associated with major washes and arroyos that help form the large mesquite bosques it seems to prefer. In Mexico, it is also found in tropical scrub forests.

ELEVATION: Near sea level to about 4,900 ft. (1,495 m). The range in Arizona is 1,930-2,480 ft (589-756 m) (AGFD, unpublished records accessed 2003).

PLANT COMMUNITY: Mesquite grasslands.

POPULATION TRENDS: Unknown

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None
STATE STATUS: WSC (AGFD, WSCA in prep)
 [State Candidate AGFD, TNW 1988]
OTHER STATUS: Bureau of Land Management Sensitive
 (USDI, BLM AZ 2008, 2010)
 None (USDA, FS Region 3, 1999)
 [Forest Service Sensitive USDA, FS Region
 3 1988]

MANAGEMENT FACTORS:

PROTECTIVE MEASURES TAKEN: Arizona fishing license required to take any
 amphibian.

SUGGESTED PROJECTS: Distribution, habitat, population, and life history studies.

LAND MANAGEMENT/OWNERSHIP: BIA – Tohono O’odham Reservation; BLM –
 Phoenix Field Office.

SOURCES OF FURTHER INFORMATION**REFERENCES:**

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ADDITIONAL INFORMATION:

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