

ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Invertebrate Abstract

Element Code: IMGASC9600

Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Sonorella tryoniana* Pilsbry and Ferriss, 1923

COMMON NAME: Sanford talussnail

SYNONYMS:

FAMILY: Helminthoglyptidae

AUTHOR, PLACE OF PUBLICATION: Pilsbry and Ferriss, 1923, Proc. Acad. Nat. Sci. Philadelphia 75: 47-104; Pls. 1-8.

TYPE LOCALITY: Bequaert & Miller (1973) report in their publication that this species is "Known only from T.L.: Sanford's, "on the bank of Sonoita Creek," near Sanford Butte, in S foothills of Santa Rita Mts, Santa Cruz Co.; elevation not given, but found there recently at 3,850 ft. The supposed *tryoniana* from Empire Mts, recorded in 1923, was described by Pilsbry (1939) as a distinct species, *S. imperatrix*."

TYPE SPECIMEN: Unknown

TAXONOMIC UNIQUENESS: Based on an unpublished revision by W.B. Miller (1968a, in Bequaert and Miller 1973), he recognized 68 valid species of *Sonorella* (with 19 subspecies), 57 of them in Arizona (three common with Sonora), 3 in New Mexico, 1 in trans-Pecos Texas (in common with New Mexico), 8 in Sonora (3 in common with Arizona), and 3 in Chihuahua. *Sonorella tryoniana* is 1 of 15 species in the *S. binneyi* Complex.

DESCRIPTION: Snails in the genus *Sonorella* have a "depressed globose, helicoids shell, 12 to 30 mm in diameter, umbilicate or perforate, with a wide, unobstructed mouth and a thin, barely expanded peristome, smoothish or slightly sculptured with growth-lines, occasionally with fine oblique or spiral granulation and short hairs (mainly on the early whorls), lightly colored, and normally with a dark peripheral band. Its most characteristic features are, however, in the genitalia, which lack a dart sac and mucus glands." (Bequaert and Miller, 1973). For species in the *S. binneyi* Complex: the usually short penis is more or less thick, with a bluntly rounded verge. The shell is relatively small and globose, occasionally depressed, with a smooth, silky-lustrous periostracum; usually with apical spirally descending threads. (Bequaert and Miller, 1973).

AIDS TO IDENTIFICATION: The most characteristic features of the genus *Sonorella* are, in the genitalia, which lack a dart sac and mucus glands (Bequaert and Miller 1972).

ILLUSTRATIONS:

TOTAL RANGE: Endemic to Arizona, along Sonoita Creek near Sanford Butte and in the Patagonia Mountains, Santa Cruz County. Reported collections (SBMNH 74776 [1965] & 77235 [1981]) from Baboquivari Mts, below Baboquivari Peak and in Thomas Canyon may be misidentified and need to be re-evaluated. These are probably *Sonorella vespertina*.

RANGE WITHIN ARIZONA: See “Total Range.”

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Terrestrial gastropods do not move much, usually only to find food or reproduce. Olfaction is the primary sensory behavior utilized to find and move toward a food item (on the scale of centimeters to meters). A moving terrestrial gastropod lays down water-laden mucus on which it moves, exposing its integument to a potentially drying atmosphere, and increasing its water losses through the pallial cavity because of the necessity for gas exchange. A roosting terrestrial gastropod deploys a variety of passive mechanisms for water conservation, including the direct protection of its wet surfaces from drying conditions, avoidance of temperature extremes, the creation of more favorable microclimates and decreases in gas exchange. (A. Cook, *in* Barker 2001).

REPRODUCTION:

FOOD HABITS: Probably omnivorous, feeding on plant material (including algae, mosses, lichens, and possibly roots, shoots, leaves, flowers, anthers, pollen, fruit, seeds and rotting wood), and microorganisms associated with live and decaying vegetation; followed to a lesser extent by fungi and soil. (Speiser, *in* Barker, 2001).

HABITAT: The talussnail is a rock snail usually found in taluses or “slides” of coarse broken rock, generally found in crevices one to several feet below the surface, sealed to stones by their mucus. (SDCP, 2005). In Santa Cruz County, they have been collected in rocks and in rockslides at foot of small cliff along old railroad. (SBMNH, accessed 2008).

ELEVATION: About 3,850 feet (1174 m) in Santa Cruz County. (Bequaert & Miller 1973).

PLANT COMMUNITY:

POPULATION TRENDS: Unknown.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None
STATE STATUS: 2 (AZGFD, AWCS 2022)

[1C (AGFD SWAP 2012)]

OTHER STATUS:

None

MANAGEMENT FACTORS: Threats include destruction or disturbance of talus slopes.**PROTECTIVE MEASURES TAKEN:****SUGGESTED PROJECTS:** Validity of the informal *Sonorella* “species-groups” (or “complexes”) has been brought into question by Naranjo-García (1988) and Roth (1996). Further research, including the use of molecular techniques, is needed to help clarify the relationships of these informal taxa. (Gilbertson and Radke 2005).**LAND MANAGEMENT/OWNERSHIP:** USFS – Coronado National Forest; Private.**SOURCES OF FURTHER INFORMATION****REFERENCES:**

- Arizona Game and Fish Department. 2012. Arizona's State Wildlife Action Plan 2012-2022. Phoenix, AZ.
- Arizona Game and Fish Department. 2022. Arizona Wildlife Conservation Strategy: 2022-2032. Arizona Game and Fish Department, Phoenix, Arizona. 378 pages.
- Bequaert, J.C., and W.B. Miller. 1973. The Mollusks of the Arid Southwest. The University of Arizona Press. Tucson, Arizona. Pp. 111, 118.
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- NatureServe. 2008. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.0. NatureServe, Arlington, Virginia. Available <https://explorer.natureserve.org/> (Accessed: April 23, 2008).
- Santa Barbara Museum of Natural History. 2008. SBMNH: Invertebrate Zoology Online Database Collection. <http://www.sbcollections.org/iz/recordview.php>. Accessed: 4/23/2008.
- The Academy of Natural Sciences. ANSP Malacology Search Details. Accessed: 23 April 2008. <http://clade.ansp.org/malacology/collections/index.php>.
- The Field Museum. 2007. Department of Zoology Invertebrates Collections. Accessed 4/23/2008. <http://emuweb.fieldmuseum.org/iz/MolluscDisplay.php>.

MAJOR KNOWLEDGEABLE INDIVIDUALS:**ADDITIONAL INFORMATION:**

The genus *Sonorella* occurs over most of Arizona (except a strip north of the Grand Canyon, an extensive northeast corner, and the small southwest *Eremarionta* area), the southwest corner

of New Mexico, trans-Pecos Texas, northeast Sonora, and the northwest corner of Chihuahua, Mexico. (Bequaert and Miller, 1973).

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