

ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Invertebrate Abstract

Element Code: IMGASC9140

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CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Sonorella caerulifluminis* Pilsbry and Ferriss, 1919

COMMON NAME: Blue talussnail

SYNONYMS:

FAMILY: Helminthoglyptidae

AUTHOR, PLACE OF PUBLICATION: H.A. Pilsbry and J.H. Ferriss, 1919, Proc. ANSP vol. 70, pp. 315-318, pl. 6, figs. 1-4, text figs. 11, 12.

TYPE LOCALITY: "United States, Arizona, Blue River, Greenlee County 6 miles above mouth of San Francisco River, West side of." (<http://clade.ansp.org/malacology/collections>). Originally given in error as "San Francisco Riv, 6 mi above its confluence with Blue River" (Bequaert and Miller 1973).

TYPE SPECIMEN: HT: ANSP 119048. Ferriss, J. and L. Daniels, 1914; station 18. Dry counts = 1+7, alc. 12. Paratype: AMNH 88137.

TAXONOMIC UNIQUENESS: Based on an unpublished revision by W.B. Miller (1968a, in Bequaert and Miller 1973), he recognized 68 valid species of *Sonorella* (with 19 subspecies), 57 of them in Arizona (three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 caerulifluminis* is 1 of 26 species in the *S. hachitana* 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. hachitana* Complex: the penis has a usually long, slender, narrowly pointed verge; and in extreme forms, the verge is thick and club-shaped. Shells are relatively large and capacious, 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: Along the San Francisco and Blue Rivers of Greenlee County, Arizona. They have also been reported from Grant County New Mexico.

RANGE WITHIN ARIZONA: Along the Blue and San Francisco Rivers in Greenlee County. Bequaert and Miller (1973), report also known elsewhere in Greenlee and Graham counties, however there are no recent museum records or literature to support this claim.

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: Found on talus slopes of canyons. 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).

ELEVATION: Based on historical collections and observations, elevation ranges from 3,700 - 4,600 feet (1128-1402 m).

PLANT COMMUNITY:

POPULATION TRENDS: Unknown.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None
STATE STATUS: 3 (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). Surveys are needed to determine if historic populations are still present and to look for additional locations.**LAND MANAGEMENT/OWNERSHIP:** BLM – Safford Field Office; USFS Apache-Sitgreaves 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. P. 111-112.
- [Http://www.co.pima.az.us/cmo/sdcp/sdcp2/fsheets/vuln/ts.html](http://www.co.pima.az.us/cmo/sdcp/sdcp2/fsheets/vuln/ts.html). Fact-sheet: Talusnail, *Sonorella*. Accessed: 11/23/2005.
- Integrated Taxonomic Information System (ITIS). Retrieved 2/28/2008 from ITIS, <http://www.itis.gov>.
- NatureServe. 2007. NatureServe Explorer: An online encyclopedia of life [web application]. Version 6.2. NatureServe, Arlington, Virginia. Available <https://explorer.natureserve.org/>. (Accessed: February 28, 2008).
- The Academy of Natural Sciences. ANSP Malacology Search Results. Accessed: February 28, 2008. <http://clade.ansp.org/malacology/collections>.
- The American Museum of Natural History. 2002-2005. IZ Type Specimens Database. http://research.amnh.org/invertzoo/types_db/details.php?specimen_id=10316.

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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