

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

Invertebrate Abstract

Element Code: IMGASC9210Data Sensitivity: No

**CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE**

**NAME:** *Sonorella danielsi* Pilsbry and Ferriss, 1910**COMMON NAME:** Bear Canyon talussnail**SYNONYMS:****FAMILY:** Helminthoglyptidae**AUTHOR, PLACE OF PUBLICATION:** Pilsbry and Ferriss, 1910, Proc. Acad. Nat. Sci. Philadelphia 61 (for 1909):494-516 (502); Pls. 19-22.**TYPE LOCALITY:** At head of Bear Canyon, Huachuca Mountains, Cochise County, Arizona, USA.**TYPE SPECIMEN:** HT: ANSP 94318 (according to the American Museum of Natural History 2002-2005).**TAXONOMIC UNIQUENESS:** Based on an unpublished revision by W.B. Miller (1968a, in Bequaert and Miller 1973), he recognized 68 valid species of *Sonorella* (with 19 subspecies), 57 of them in Arizona (three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 danielsi* is 1 of 23 species in the *S. granulatissima* 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. granulatissima* Complex: The verge of the penis is usually stout and truncate, reaching extremes of diminution in some species or gigantism in others. Snails in the complex have minutely granulose or wrinkly-granulose shells, with a readily peeling periostracum; mostly without 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 1973).**ILLUSTRATIONS:** Photograph of a shell (J. Sorensen, AGFD, 2016)

**TOTAL RANGE:** In the Huachuca Mountains of Arizona. They have been known to inhabit talus rock slides and outcrops in Bear, Ash, Cave, Copper, Miller, Montezuma, and Oversight canyons.

**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 favourable 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). Limestone rocks. Collected from rock talus below mine diggings in 1988 (SDMNH 77755).

**ELEVATION:** Reported in Bequaert and Miller (1973) from 6,000 to over 7,500 feet (1830-2285 m).

**PLANT COMMUNITY:** Unknown.

**POPULATION TRENDS:** Unknown. Numerous active land snails, including *Sonorella*, were seen by AGFD biologists during a hike along Bear Canyon trail up to Bear Spring, in late September 2016 during rainy weather. A voucher specimen of one of *Sonorella* snails was collected (pers. comm. J. Sorensen, AGFD, 2017).

**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:** The 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; NPS – Coronado National Memorial.

**SOURCES OF FURTHER INFORMATION****REFERENCES:**

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**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).

**Revised:** 2008-03-20 (SMS)  
2017-06-09 (VAP)  
2023-02-06 (MBL)

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Arizona Game and Fish Department. 20XX (= **year of last revision as indicated at end of abstract**). X...X (= **taxon of animal or plant**). Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ. X pp.