# Socorro Springsnail
## *(Pyrgulopsis neomexicana)*

## 5-Year Review:
## Summary and Evaluation

**U.S. Fish and Wildlife Service**
**New Mexico Ecological Services Field Office**
**Albuquerque, New Mexico**

# 5-YEAR REVIEW
# Socorro Springsnail *(Pyrgulopsis neomexicana)*

## 1.0 GENERAL INFORMATION

### 1.1 Listing History

**Species:** Socorro springsnail *(Pyrgulopsis neomexicana)*

**Date listed:** September 30, 1991

**FR citation(s):** 56 FR 49646

**Classification:** Endangered

**Critical habitat/4(d) rule/Experimental population designation/Similarity of appearance listing**: There have been no associated rulemakings since the species was originally listed in 1991.

### 1.2 Methodology used to complete the review:

In accordance with section 4(c) (2) of the Endangered Species Act of 1973, as amended (Act), the purpose of a 5-year review is to assess each threatened species and endangered species to determine whether its status has changed and it should be classified differently or removed from the Lists of Threatened and Endangered Wildlife and Plants. The U.S. Fish and Wildlife Service (Service) most recently evaluated the biology and status of the Socorro springsnail *(Pyrgulopsis neomexicana)* as part of a status review conducted in 2008. We examined whether new information was available and whether that information would alter or affect analyses and conclusions made in the previous status review. We solicited data for this current review from interested parties through a Federal Register notice announcing the review on July 26, 2019. We also contacted Daniel Trujillo with the New Mexico Department of Game and Fish to request any data or information we should consider in our review. Additionally, we searched the literature and information in our files. No new information exists for the species, and thus the 5-year review process consisted of reviewing previous listing and recovery documents including the final listing rule (Service 1991), the recovery plan (Service 1994), and the most recent 5-year review (Service 2008).

### 1.3 FR Notice citation announcing the species is under active review:

The Federal Register Notice: 84 FR 36113-36116, published July 20, 2019, announced the active review of the Socorro springsnail.

## 2.0 REVIEW ANALYSIS

### 2.1 Updated Information and Current Species Status

### 2.1.1 Biology and Habitat:

The species is endemic to one spring on privately held land. Biologists have not been able to conduct surveys since its listing in 1991. No new information is available for this species relative to the previous 5-year review (Trujillo *in litt* 2020; Service 2008).

### 2.1.2 Threats Analysis (threats, conservation measures, and regulatory mechanisms):

This threats analysis summarizes the threats identified in the original listing rule, recovery plan, and most recent 5-year review. The threats are cited and justified using current information pertaining to habitat shifts and environmental change. As required under section 4(a)(1) of the Act, a five-factor analysis was completed. The factor(s) that each threat satisfies is listed in parentheses; the five factors include: (A) the present or threatened destruction, modification, or curtailment of its habitat or range; (B) over-utilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; and (E) other natural or humanmade factors affecting its continued existence.

#### 2.1.2.1 Lack of Access to Torreon Spring:

The main and continuing challenge in protecting the Socorro springsnail is the lack of access to Torreon Spring. The Service does not have a functional partnership with the private landowner who owns the property in which the spring is located. The lack of access poses a threat since the Service does not know the current status and cannot monitor this species (Service 2008). The species' narrow, geographic range leaves it highly vulnerable to extinction and the Service has little ability to functionally protect the Socorro springsnail (Factor A, Factor D).

#### 2.1.2.2 Climate and Hydrologic Change:

The International Panel on Climate Change (IPCC) predicts warmer temperatures and unpredictable precipitation patterns due to anthropogenic climate change (Christensen et al. 2013). This will likely impact seasonal water temperature and water availability at Torreon Spring - the only place the Socorro springsnail is known to exist (Factor A, Factor E). Additionally, any alterations or changes to local hydrology may impact water flow and water availability in the spring (Service 1994) (Factor A, Factor E). If climatic and hydrologic changes are extreme, the Socorro springsnail may not be able to persist in its current habitat. Because the Socorro springsnail is dependent on water, the species cannot find a more suitable habitat as the climate changes (Service 2008).

#### 2.1.2.3 Other Threats:

The location of Torreon Spring and the lack of water on the landscape makes the introduction of exotic aquatic species unlikely. However, the arrival of non-native species could introduce increased threats to the springsnail population due

to predation or competition (Service 1994) (Factor C). Lastly, Since the Socorro springsnail is extremely rare, harvest via collection by biologists and collectors is a possible risk, but due to property access, we believe this is unlikely (Service 1994) (Factor B, Factor E).

### 2.2 Synthesis:

After reviewing the best available scientific information, we conclude that the Socorro springsnail (*Pyrgulopsis neomexicana*) remains an endangered species. This endemic species is extremely vulnerable to environmental changes and cannot relocate without intervention by conservationists. The Service has little ability to protect this species since it resides exclusively on private land, and the landowner currently does not express interest in partnering for its conservation. The evaluation of threats affecting the species under the factors in 4(a)(1) of the Act and analysis of the status of the species in our 2008 5-year review remains an accurate reflection of the species current status.

## 3.0 RESULTS

### 3.1 Recommended Classification:

**____ Downlist to Threatened**
**____ Uplist to Endangered**
**____ Delist** (*Indicate reasons for delisting per 50 CFR 424.11):*
____ *The species is extinct*
____ *The species does not meet the definition of an endangered species or a threatened species (i.e., is recovered, or new information on status and threats indicate species does not meet definitions)*
____ *The listed entity does not meet the statutory definition of a species.*
__X__ **No change is needed**

### 3.2 New Recovery Priority Number:

No change is needed.

**Brief Rationale:**

The 2008 5-year review defined the recovery priority number as 5C. The designation of 5C is still appropriate due to the level of vulnerability and types of threats the Socorro springsnail faces. There is low recovery potential considering the inability to protect the spring in which the species is located.

### 3.2 Listing and Reclassification Priority Number:

Not applicable.

## 4.0 RECOMMENDATIONS FOR FUTURE ACTIONS

Establishing a positive working relationship with the landowner who owns Torreon Spring is needed to carry out conservation actions for the Socorro springsnail. The lack of access to the spring renders the Service incapable of protecting this endemic species. If a relationship is established with the landowner, the Service and partners may:

1. Monitor the species to determine current status.
2. Select individuals from the Socorro springsnail population to establish a captive population in a refugium.
3. Negotiate long-term protections and conservation measures for Torreon Spring.

Additionally, the 1994 recovery plan is a joint plan for the Alamosa and Socorro springsnails. If/when more information is available for the Socorro springsnail, it would be appropriate to rewrite the recovery plan to reflect management and recovery challenges unique to this species (Service 2008).

## 5.0 REFERENCES


Christensen, J.H., K. Krishna Kumar, E. Aldrian, S.-I. An, I.F.A. Cavalcanti, M. de Castro, W. Dong, P. Goswami, A. Hall, J.K. Kanyanga, A. Kitoh, J. Kossin, N.-C. Lau, J. Renwick, D.B. Stephenson, S.-P. Xie and T. Zhou, 2013: Climate Phenomena and their Relevance for Future Regional Climate Change. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

U.S. Fish and Wildlife Service. 1991. Final Rule to list the Alamosa Springsnail and the Socorro Springsnail as endangered. Federal Register 56:49646-49649.

U.S. Fish and Wildlife Service. 1994. Socorro and Alamosa Springsnail Recovery Plan. New Mexico Ecological Services Field Office, Albuquerque, New Mexico, August1994.

U.S. Fish and Wildlife Service. 2008. Socorro Springsnail (*Pyrgulopsis neomexicana*) 5-Year Review: Summary and Evaluation. New Mexico Ecological Services Field Office, Albuquerque, New Mexico.

U.S. Fish and Wildlife Service. 2019. Endangered and Threatened Wildlife and Plants; Initiation of 5-Year Status Reviews of 36 Species in Arizona, New Mexico, Texas, Utah and Mexico. Federal Register 84: 36113-36116

*In Litteris*

Trujillo, Daniel. 2020. New Mexico Department of Game and Fish. Electronic mail correspondence to Clinton Smith of the U.S. Fish and Wildlife Service, December 3, 2019. Subject: Information on Socorro Springsnail?.

**U.S. FISH AND WILDLIFE SERVICE**
**5-YEAR REVIEW OF SOCORRO SPRINGSNAIL**
***(Pyrgulopsis neomexicana)***

**Current Classification**: Endangered

**Recommendation resulting from the 5-Year Review**:

____ Downlist to Threatened
____ Uplist to Endangered
____ Delist
__X__ No change needed

**FIELD OFFICE APPROVAL**:

**Shawn Sartorius, Fish and Wildlife Service, New Mexico Ecological Services Field Office**

Approve SHAWN SARTORIUS Digitally signed by SHAWN SARTORIUS Date: 2020.08.11 08:41:06 -06'00'