DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AB42

Endangered and Threatened Wildlife and Plants; Final Rule To List the Alamosa Springsnail and the Socorro Springsnail as Endangered

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) determines the Alamosa springsnail (*Tryonia alamosae*) and the Socorro springsnail (*Pyrgulopsis neomexicana*) to be endangered species, under the authority of the Endangered Species Act of 1973 (Act), as amended. These snails occur in thermal springs in Socorro County, central New Mexico. The Alamosa springsnail is found in a single complex of five thermal springs, and the Socorro springsnail is found in only one spring. Because of their dependence on continuous surface flows, these species are threatened by any change in conditions that would lessen the flow of water from the springs. Other potential threats include the introduction of non-native competing or predaceous organisms into the springs and loss of organic film or other natural elements from their habitat. This rule implements the protection and recovery provisions afforded by the Act for these snails. Critical habitat is not being designated.

EFFECTIVE DATE: October 30, 1991.

ADDRESSES: The complete file for this rule will be available for inspection, by appointment, during normal business hours at the Ecological Services Field Office, U.S. Fish and Wildlife Service, 3530 Pan American Highway NE., suite D, Albuquerque, New Mexico 87107.

FOR FURTHER INFORMATION CONTACT: Gerald Burton (see ADDRESSES) at (505) 883-7877 or FTS 474-7877.

SUPPLEMENTARY INFORMATION:

Background

Both *Tryonia alamosae* and *Pyrgulopsis neomexicana* are members of the family Hydrobiidae, which is separated from all but two other New Mexico families of gastropods (snails and allies) by the presence of gills (rather than a lung-like breathing device) and a lid-like structure (operculum) on the foot (New Mexico Department of Game and Fish (MMDGF) 1985).

The Socorro springsnail was described originally from warm springs in Socorro, New Mexico. The collector and date of the unique first sample are unknown (Taylor 1983). The specimens came from the C.M. Wheatley collection and are likely to have been collected in the 19th century (Taylor, San Francisco State University, *in litt.*, 1980). The species was formally described and named *Amnicola neomexicana* by Pilsbry in 1916. In 1982, Burch reclassified it as *Fontelicella neomexicana*. Hershler and Thomspon (1987) assigned members of the genus *Fontelicella*, including *F. neomexicana*, to *Pyrgulopsis*.

The Alamosa springsnail was discovered in 1979 by Taylor, and placed in the genus *Tryonia*. The species was described as *Tryonia alamosae* in 1987 (Taylor 1987).

Pyrgulopsis neomexicana has an elongate-ovate shell that is light tan in color, short-spired, and up to 2.5 millimeters (mm) (0.1 inch) in length (NMDGF 1985). Females attain a larger size than males. The penis has a long glandular strip on the terminal lobe, a long penial gland, and three shorter dorsal glandular strips (Taylor 1987). The body and head are dark gray to black. The internal callus is reddish brown to amber, and the operculum is pale. Tentacles range from black or dark gray at the base to pale gray at the tips (Taylor 1987).

Tryonia alamosae is a relatively small and broadly conical species with females larger than males by a factor of almost 50 percent (NMDGF 1985, Taylor 1987). Length of shells range up to 3.0 mm (0.1 inch). The conical shell has up to 5½, regularly convex whorls that are separated by well-impressed sutures (NMDGF 1985). The penis bears a single, broadly conical glandular papilla on the distal left side. The body varies from opaque black to gray. The thin shell is translucent and permits observation of some internal structures except where coated by alone or rendered opaque by wear. The operculum is thin, ovate, and transparent. Tentacles are lightly dusted with melanin (Taylor 1987).

Both snails are totally aquatic, gilled species that occur in slow-velocity water near spring sources in their thermal habitat (NMDGF 1985). Both species occur on stones and among aquatic plants. *Pyrgulopsis neomexicana* is also found in the uppermost layer of an organic muck substrate. *Tryonia alamosae* and *P. neomexicana* are herbivorous, and browse on algae and other items in the organic film of their habitat. *Pyrgulopsis neomexicana* is oviparous, and probably lays its eggs in spring and summer. *Tryonia alamosae* is ovoviviparous, and contains a series of embryos in various stages of development. Because *T. alamosae* lives in a thermally constant environment, reproduction is probably not seasonal, and population size very likely remains relatively stable (NMDGF 1985).

Tryonia alamosae is endemic to central New Mexico. The species is known only from a thermal spring complex in Socorro County. The spring complex consists of five individual springheads that flow together. The Alamosa springsnail is fairly abundant in the springs from which it is known (NMDGF 1985), although there are no estimates of population size. In the largest thermal spring, which is about 2x3 meters (6x10 feet) across and 0.3–0.6 meters (1–2 feet) deep, Taylor (1987) found *T. alamosae* to be abundant in minor rivulets out of the main channel in the canyon where the springs arise. There was a mat of watercress and filamentous green algae over water 1–2 inches (2.5–5 cm) deep, flowing over fine gravel and sand among angular rhyolitic cobbles and boulders. Snails were found in slow current on gravel as well as among vegetation. Associated molluscs were *Lymnaea parva* and *Physa mexicana*. The highest temperature of any of the immediate sources was 27 °C.

Several of the other group of smaller thermal springs that contain *T. alamosae* have been dug out and impounded in the past. Taylor (1987) found that *T. alamosae* was abundant in the slower current of the source area on rhyolitic pebbles and cobbles with organic film. *Physa mexicana* was also abundant, but usually in swifter current. The outflow of the springs forms a brook 0.6–1.0 meters (2–4 feet) wide, in which *Physa mexicana* is common, but *T. alamosae* becomes more scarce and then absent as one leaves the source area and current increases. The highest measured temperature was 28 °C.

The original specimen of *P. neomexicana* reportedly came from one of the thermal springs near Socorro, New Mexico. The species is now extinct at the type locality, but the date and cause of the extinction are uncertain (Taylor 1987). The species has been reported from other springs in Socorro County (Landye 1981), although there is some disagreement on whether or not the species occurred there (Taylor 1987).

Currently, *P. neomexicana* is known from only one spring in Socorro County, where it was found in 1979. The principal spring source has been impounded, which reduced the flowing-water habitat to almost nothing. One tiny spring source remained, with an improved source pool less than 1 m^2 in area with a temperature of 17 °C.

Pyrgulopsis neomexicana was abundant on rootlets in this pool, but was not found in the ditches and ponds irrigating the area. Other molluscs found in the vicinity were *Physa mexicana, Lymnaea modicella,* and *Pisidium casertanum.* In 1981, the colony was found to occupy not only the source but also the outflow tributary about 2.5 meters (8 feet) long to an irrigation ditch. No snails were in the irrigation flow. Total population of *P. neomexicana* was estimated at 5,000 individuals.

The Socorro springsnail, then known as the Socorro snail (*Amnicola neomexicana*), was proposed as an endangered species on April 28, 1976 (41 FR 17742). The basis for the proposal was a report by Landye (1973), that listed the species as presumably extinct because of capping of springs to supply the city of Socorro, New Mexico, with water. That proposal was withdrawn on December 10, 1979 (44 FR 70796), under a provision of the 1978 amendments to the Endangered Species Act of 1973, which required withdrawal of all pending proposals if they were not finalized within two years of the proposal.

In the May 22, 1984, Review of Invertebrate Wildlife for Listing as Endangered or Threatened Species (49 FR 21664), both the Socorro springsnail (*Fontelicella* (= *Amnicola*) *neomexicana*) and the Alamosa springsnail (*Tryonia* sp.) were included as Category 1 species. Category 1 comprises taxa for which the Service currently has substantial information on hand to support the biological appropriateness of proposing to list as endangered or threatened. In the January 6, 1989, Animal Notice of Review (54 FR 554), both the Socorro springsnail (*Pyrgulopsis neomexicana*, then called *'Fontelicella' neomexicana*) and Alamosa springsnail (*Tryonia alamosae*) were retained in Category 1.

A petition from the New Mexico Department of Game and Fish was received by the Service on November 22, 1985. It requested that 11 taxa of New Mexico molluscs be added to the List of Endangered and Threatened Wildlife, including *T. alamosae* and *P. neomexicana*. The Service made a 90-day finding that the petition presented substantial information that the requested action may be warranted, and announced the finding in the **Federal Register** on August 20, 1986 (51 FR 29671). The 12-month finding for this petition was published on July 1, 1987 (52 FR 24485), and stated that the action requested by the petitioner was warranted, but precluded by work on other species having higher priority for listing. On October 4, 1988 (53 FR 38969), and April 25, 1990 (55 FR 17475), a Notice of Findings on petitions was published. The required one-year finding on the action to list *T. alamosae* and *P. neomexicana* continued to be warranted, but precluded by work on species with higher priority for listing. A proposed rule to determine endangered status for Alamosa and Socorro springsnails was published in the **Federal Register** on September 18, 1990 (55 FR 38343).

Summary of Comments and Recommendations

In the September 18, 1990 proposed rule and associated notifications, all interested parties were requested to submit factual reports or information that might contribute to the development of a final rule. Appropriate State agencies, county governments, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. Newspaper notices were published in the Albuquerque Journal on October 19, 1990, the Tribune on October 19, 1990, and the Defensor Chieftain on October 22, 1990, which invited general public comment. One comment supporting the listing of both snails was received.

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that Alamosa and Socorro springsnails should be classified as an endangered species. Procedures found at section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act were followed. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to the Socorro springsnail (*Pyrgulopsis neomexicana*) and Alamosa springsnail (*Tryonia alamosae*) are as follows:

A. The Present or Threatened Destruction, Modification, or Curtailment of its Habitat or Range

The limited range of these species makes them extremely vulnerable to loss or alteration of their specialized habitat. *Pyrgulopsis neomexicana* is limited to a single pool less than 1 m^2 in area, and an outflow ditch about 2.5 meters (8 feet) long. *Tryonia alamosae* is found in several springs, the largest of which is 2×3 meters (6×10 feet) across and 0.3–0.6 meters (1–2 feet) deep. The species also is found in four smaller springs and an outflow that is 0.6–1.0 meters (2–4 feet) wide. Any conditions that would lessen the flow of water from the springs would threaten the species, which are dependent upon continuous surface flows.

Under the present system of use in the spring complex that contains *T. alamosae*, water is allowed to flow from the springs through a canyon and then diverted for irrigation use. The snail populations are secure under this system of use. However, should changes occur to this system, and as a result the flow from the springs diminish, or stopped, the snails would suffer. These springs are the water supply for agriculture and villages downstream near Monticello, New Mexico. Possible future development of the springs to maximize water supply is a potential threat.

The springs that contain *P. neomexicana* have been impounded, eliminating the critical flowing-water habitat of the principal sources. One free-running spring remains, with an improved source pool less than one meter in diameter and an outflow stream less than 2.5 meters (8 feet) long that includes the only known population of this species, with about 5,000 individuals (Taylor 1983). Loss of flow caused by pumping and pollution of the spring are additional threats to this habitat.

The springs in which *T. alamosae* occurs are used by people for bathing. Channel modifications to make pools have destroyed snail habitat and caused erosion.

Cattle grazing and roiling of the water by cattle may have a negative impact on *P. neomexicana*. Grazing of the area in which *T. alamosae* occurs does not appear to harm the habitat of the snail.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Because of their rarity, *T. alamosae* and *P. neomexicana* are of interest to biologists and collectors. Therefore, collection of the animals is a minor but present threat.

C. Disease or Predation

The introduction of non-native competing or predaceous organisms (including fishes) into the springs is a potential threat to *T. alamosae*.

D. The Inadequacy of Existing Regulatory Mechanisms

Both *T. alamosae* and *P. neomexicana* are protected by the State Wildlife Conservation Act, Sec. 17–2–41. Under

State law, there are prohibitions against destruction of the snails and excessive collecting, but the ability to protect habitat is limited. Listing these species under the Act would provide additional protection and encourage active management through the "Available Conservation Measures" discussed below.

E. Other Natural or Manmade Factors Affecting its Continued Existence

Vandalism to the springs, both intentional and inadvertent, is a threat to these two species. Loss of the organic film or other natural elements in the springs that support *T. alamosae* and *P. neomexicana* would have detrimental effects on both species. Both species are restricted to such small habitats that they are extremely vulnerable to extinction from any of the factors discussed above.

The Service as carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining to make this rule final. Based on this evaluation, the preferred action is to list *Pyrgulopsis neomexicana* and *Tryonia alamosae* as endangered without critical habitat. Threatened status would not be appropriate for these species because they both are extremely restricted in distribution and are vulnerable to the threats described above. The present situation of both species is precarious. Even minor improvement of one tiny spring could wipe out one of the species entirely. Critical habitat is not being proposed for the reasons discussed below.

Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that, to the maximum extent prudent and determinable, that the Secretary designate critical habitat at the time a species is determined to be endangered or threatened. The Service finds that designation of critical habitat is not presently prudent for these species. Survival of the Socorro springsnail and the Alamosa springsnail is completely dependent upon the protection of the springs and the outflows that the species now occupy. Vandalism to the springs could extirpate the species. Collection for scientific purposes is a potential threat to these species. Publication of critical habitat descriptions and maps would increase the vulnerability of both species to collection and vandalism without significantly increasing protection. No benefit from critical habitat designation has been identified that outweighs the threat of vandalism and collection. All involved parties and principal landowners have been notified of the location and importance of protecting these species' habitats. The landowners have no objections to the listing of these species. Both species are located primarily on private lands where Federal involvement in land-use activities does not generally occur. Additional protection resulting from critical habitat designation is achieved through the section 7 Consultation Process. Since section 7 would not apply to the majority of land-use activities occurring within critical habitat, its designation would not appreciably benefit the species.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required of Federal agencies and the prohibitions against taking and harm are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service. The Service has not identified any ongoing or proposed projects with Federal involvement that could affect these species.

The Act and implementing regulations found at 50 CFR 17.21 set forth a series of general prohibitions and exceptions that apply to all endangered wildlife. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to take (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, or collect; or to attempt any of these), import or export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any listed species. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving endangered wildlife species under certain circumstances. Regulations governing permits are at 50 CFR 17.22 and 17.23. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, and/or for incidental take in connection with otherwise lawful activities.

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

References Cited

Hershler, R. and F.G. Thompson. 1987. North American Hydrobiidae (Gastropoda: Rissoacea): Redescription and systematic relationships of *Tyronia* Stimpson, 1865 and *Pyrgulopsis* Call and Pilsbry, 1886. The Nautilus 101(1): 25–32.

Landye, J.J. 1973. Status of the inland aquatic and semi-aquatic mollusks of the American southwest. U.S. Department of Interior, Bureau of Sport Fisheries and Wildlife (now U.S. Fish and Wildlife Service), Washington, DC.

Landye, J.J. 1981. Current status of endangered, threatened and/or rare mollusks of New Mexico and Arizona. U.S. Fish and Wildlife Service, Albuquerque, NM.

New Mexico Department of Game and Fish. 1985. Handbook of species endangered in New Mexico. Santa Fe, NM.

Pilsbry, H.A. 1916. New species of *Amnicola* from New Mexico and Utah. The Nautilus 29: 111–112.

Taylor, D.W. 1987. Fresh water mollusks from New Mexico and vicinity. New Mexico Bureau of Mines and Mineral Resources. Socorro, NM. Bulletin 116.

Taylor, D.W. 1983. Report to the state of New Mexico on a status investigation of molluscs in New Mexico. New Mexico Department of Game and Fish, Santa Fe, NM.

Author

The primary author of this final rule is Sonja Jahrsdoerfer, U.S. Fish and Wildlife Service, 222 South Houston, suite A, Tulsa, Oklahoma 74127 (918/581-7458 or FTS 745-7458).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, and Transportation.

Regulation promulgation.

PART 17—[AMENDED]

Accordingly, part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, is amended as set forth below:

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361-1407; 16 U.S.C. 1531-1544; 16 U.S.C. 4201-4245; Pub. L. 99-625, 100 Stat. 3500; unless otherwise noted.

2. Amend § 17.11(h) by adding the following, in alphabetical order under "Snails," to the list of Endangered and Threatened Wildlife:

§ 17.11 Endangered and threatened wildlife.

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(h) * * *

Species		Historic range	Vertebate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
*	*	*	*	*	*		
SNAILS							
*	*	*	*	*	*		
Springsnail, Alamosa	*Tryonia alamosae*	U.S.A. (NM)	NA	E	442	NA	NA
Springsnail, Socorro	*Pyrqulopsis neomexicana*	U.S.A. (NM)	NA	E	442	NA	NA
*	*	*	*	*	*		

Dated: September 23, 1991.

Bruce Blanchard,

Director, Fish and Wildlife Service.

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