



Endangered Invertebrates Questions and Answers

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Roswell springsnail ° Koster's tryonia ° Pecos assiminea ° Noel's amphipod

Q. Where do these snails and amphipod live?

A. The three snails, Roswell springsnail, Koster's tryonia snail and Pecos assiminea, and the freshwater shrimp, Noel's amphipod, occur in Chaves County, Texas. The Pecos assiminea also occurs in Pecos and Reeves counties, Texas. They can be found within the seeps, springs and sinkholes at Bitter Lake National Wildlife Refuge in southeastern New Mexico. The Pecos assiminea snail also occurs at The Nature Conservancy's Diamond Y Draw and East Sandia Spring in West Texas.

Q: Why are these snails and amphipod important?

A: These invertebrates evolved exclusively in isolated gypsum springs, seeps, and associated wetlands. They are important indicators of the status of ground water. The ability for these snails to survive is directly related to the health, quality and quantity of the same ground water human populations depend on. These species form part of our unique cultural and scientific heritage as they are found nowhere else in the world.

Q: Why do these snails/amphipod need to be protected?

These three snails and one amphipod have an exceedingly limited distribution, low mobility, and fragmented habitat. Just one event in a location could wipe out these species in that locale. They are imperiled by introduced species, surface and ground water contamination, oil and gas extraction activities within the supporting aquifer and watershed, local and regional groundwater depletion, severe drought and direct loss of their habitat (e.g., through burning or removing marsh vegetation, flooding habitat).

Q. What do these snails look like?

A. The Roswell springsnail, Koster's tryonia, and Pecos assiminea are all aquatic, gilled species. These snails are minute, ranging in size from the largest Koster's tyronia snail (4.5mm in length), Roswell springsnail (3.0mm length), and the smallest of the three Pecos assiminea (1.9mm length). Noel's amphipod is brown-green in color with elongated, kidney-shaped eyes and flanked with red bands along the thoracic and abdominal segments, often with a red dorsal stripe. Males are slightly larger than females, and the species ranges from 8.5-14.8 mm.

Q. What is the current status of these species?

- A. They are being listed as endangered.
- Q. Have these species suffered declines?
- A. Roswell springsnails formerly occurred in several other springs in the Roswell area, but these habitats have dried up apparently due to ground water pumping. The Roswell springsnail historically occurred on private land at North Spring, but could not be found during surveys in 2004. Pleistocene fossils of the Roswell springsnail are known from Berrendo Creek and the Pecos River in Chaves County. No populations are currently known from these areas. Koster's springsnail formerly occurred in several other springs in the Roswell area, but these habitats have since dried up due to groundwater pumping or no longer contain the species. Pleistocene fossils of Koster's springsnail are known from North Spring River and South Spring Creek in Chaves County. The species has not been found in recent times along the western boundary of Unit 3 in the refuge. Koster's springsnail has recently been extirpated at North Spring east of Roswell. Historically, it was thought that Pecos assiminea occurred sporadically throughout the Bolsón de Cuatro Ciénegas, Coahuila, Mexico. Investigations are currently underway to determine whether the animals found in the vicinity of Coahuila, Mexico are Pecos assiminea. Noel's amphipod was extirpated from Lander Springbrook between 1951 and 1960, and the North Spring population was lost between 1978 and 1988. The extirpations were attributed to regional ground water depletions and habitat alterations (spring channelization) respectively.
- Q. How many snails and amphipods are needed for the Fish and Wildlife Service to consider these species recovered?
- A. Recovery criteria will be developed through the Recovery Planning process that will follow their listing as endangered.
- Q. What is the difference between an "endangered" species and a "threatened" species, and why are these snails being proposed as endangered?
- A. An "endangered" species is one that is in danger of extinction whereas a "threatened" species is one likely to become endangered. We are listing these species as endangered because these species are in danger of becoming extinct throughout all or a significant portion of their range(s). A decision to take no action would constitute failure to properly classify this species pursuant to the Endangered Species Act and would exclude these species of snails from protection provided by the Endangered Species Act. Threatened status would not accurately reflect the population status, restricted distribution, vulnerability and imminent threats to these species.
- Q. Why are they being listed as endangered now?
- A. We have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by these species and determined these species are vulnerable to extinction throughout all or a significant portion of their ranges.
- Q. Is critical habitat being proposed?
- A. We are designating only two critical habitat units for the Pecos assiminea in Texas. The designation includes one complex at Diamond Y Spring, associated springs, and a segment

of their drainages, and East Sandia Spring. We have determined that the Bitter Lake National Wildlife Refuge is not in need of special management, or it is already managed by law for the benefit of listed species, and so does not meet the definition of critical habitat under the ESA.

The refuge has completed a Comprehensive Conservation Plan (CCP) that provides a long-term management for these species. The BLNWR was established as a refuge and breeding ground for migratory birds and other wildlife and management emphasis on the Refuge is placed on the protection and enhancement of habitat for endangered species, including these four invertebrate species. Therefore, the Service has a statutory mandate to manage the refuge for the conservation of listed species, and the CCP provides a detailed plan of how it will do so. The refuge accordingly does not meet the definition of critical habitat under section 3(5)(A) of the Act because management plans already in place provide for the conservation of the four invertebrates, and no special management or protection will be required.

Q. How will the endangered snails affect surrounding private property owners?

A. We do not believe surrounding landowners will be affected by the listing of these species. However, listing the species requires us to review any actions that may affect them for lands and activities under Federal jurisdiction, State plans developed pursuant to section 6 of the Act, scientific investigations of efforts to enhance the propagation or survival of the animal pursuant to section 10(a)(1)(A) of the Act, and habitat conservation plans prepared for non-Federal lands and activities pursuant to section 10(a)(1)(B) of the Act. Oil and gas companies that exercise their mineral rights under BLNWR would still be subject to consultation because of the species endangered status.