



WILDLIFE NOTES

Springsnails of New Mexico

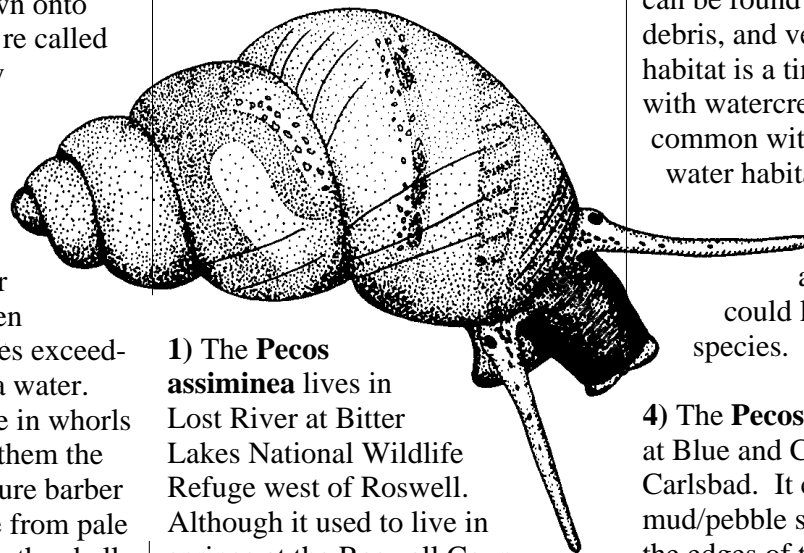
Nine out of 10 endangered springsnails that live in New Mexico are endemic to this state — that is, they only live here and nowhere else.

DESCRIPTION

Springsnails are tiny creatures no bigger than the beads sewn onto Indian moccasins. They're called springsnails because they live in warm or cold springs, not because they're found in springtime. Springsnails live in flowing and pooled water or near seeps that are often high in salinity, sometimes exceeding the salt content of sea water. Their conical shells curve in whorls (average is four), giving them the appearance of fat, miniature barber poles. Shell colors range from pale pink to tan or gray; inside the shell, their soft, moist bodies are typically charcoal-colored. Springsnails are soft-bodied animals (mollusks) which include snails, slugs, and limpets. Springsnails have three principal soft body parts: a foot, coelomate visceral mass (body cavity), and mantle. They move about by means of their foot, a strong muscle with a flat ventral surface. The anterior (front) portion of the foot contains antennae with eyes, a raspy 'tongue' used as a scraper, reproductive organs, and digestive glands. In some species, the foot is modified

to assist with respiration. Respiration takes place by means of gills or lungs, since some springsnails possess primitive lungs.

NEW MEXICO ENDEMIC SPRINGSNAILS



1) The **Pecos assiminea** lives in Lost River at Bitter Lakes National Wildlife Refuge west of Roswell. Although it used to live in springs at the Roswell Country Club, that population died out as a result of habitat loss and destruction of vegetation. To preserve this springsnail, steps must be taken to maintain vegetative cover in which the snail lives along the stream's margin.

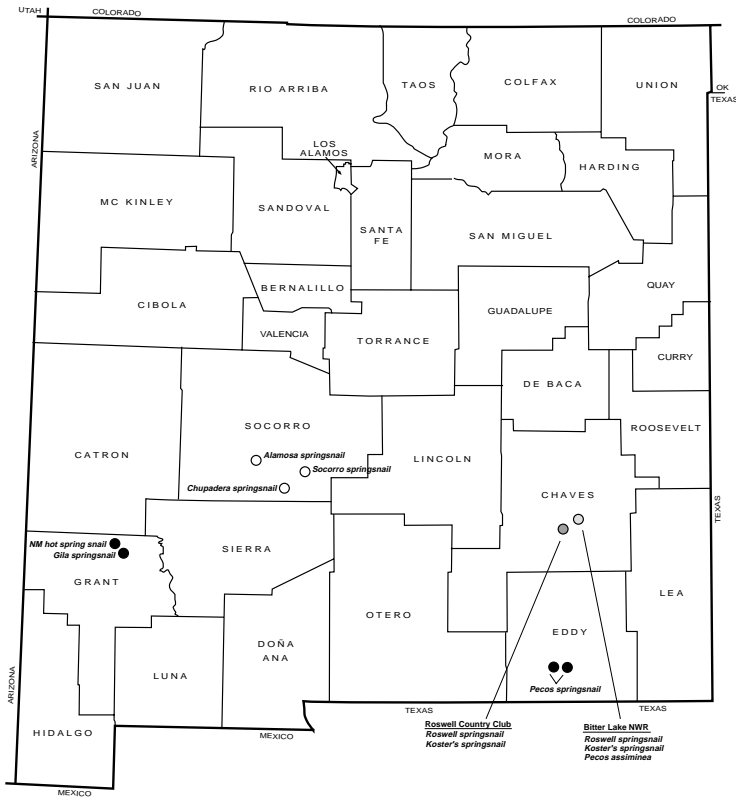
2) The **Socorro springsnail** is considered the most endangered of all animals in New Mexico. This tiny springsnail inhabits shallow habitats of Torreon Springs, 15 miles south of Socorro. These snails are herbivorous, browsing on algae and other items in the organic

film of their shallow habitat, which is the size of two skateboards placed end-to-end. The females lay their eggs in spring and summer.

3) **Endemic to** southwestern New Mexico, the **Gila springsnail** is limited to a series of springs along the Gila River in Grant County. It can be found among the mud, debris, and vegetation. Typical habitat is a tiny rivulet growing with watercress. This species is common within its cool spring-water habitat; however, its range is very limited and habitat loss or alteration in the area could lead to demise of the species.

4) The **Pecos springsnail** only lives at Blue and Castle springs near Carlsbad. It can be found in the mud/pebble substrate, mainly along the edges of the water. A major threat to this snail is water diversion, drought, and underground pumping in the area which may deplete its aquatic habitat. It is also vulnerable to pollution from oil and gas exploration and production, poor range management, and disturbed surface soils.

5) The **Roswell springsnail** lives in springs at both the Roswell Country Club and nearby Bitter Lakes National Wildlife Refuge. This snail is an aquatic, gilled species, most commonly seen on limestone rubble in swift water.



Densities of this species are related to current velocity, since the numbers of snails has been found to diminish as the current slows. Prior to extensive groundwater pumping, the Roswell pyrg was common in other area springs.

6) The New Mexico hot springsnail is an aquatic, gilled species living in thermal springs. It clings to steep or vertical rock covered with thin sheets of water. At present, this species is restricted to only two hot springs along the Gila River in the Gila Wilderness.

7) The Chupadera springsnail lives only at Willow Spring at the south end of the Chupadera Mountains in Socorro County. It prefers to live on firm surfaces covered with organic film, such as stones, dead wood, and vegetation. It typically occurs at the spring source.

8) The Alamosa springsnail lives only at Ojo Caliente and Warm Spring at the head of the Alamosa River in Socorro County. It's a

totally aquatic species that prefers slow velocity water near spring sources under thermal conditions. It is most abundant on stones, gravel and vegetation. Because it lives in a thermally constant environment, this snail probably carries out reproduction year-round.

9) Like the Roswell pyrg, Koster's springsnail lives only in a spring at the Roswell Country Club and Sago Springs at Bitter Lake National Wildlife Refuge. This species is reported to have occurred historically in several other springs in the Roswell area, but these habitats have dried up due to groundwater pumping.

WHY PRESERVE SPRINGSNAILS

Why should we worry about the fate of snails no bigger than tiny glass beads? The reasons are many: (1) They are valuable, not only for their intrinsic selves, but because they are very 'old' species that have evolved over eons of

time. (2) They're important for biomedical research. By protecting and studying New Mexico's endemic springsnail population, scientists may find answers to questions about disease that ultimately affect humans, livestock, and wildlife. Snails serve as hosts of protozoans that cause diseases, such as shistosomiasis. By studying and managing snail populations, we're beginning to control the disease. By studying the slime of slugs (another member of the springsnail group), scientists now understand how polymer chemistry works, how human skin forms, and how wounds heal. Slug slime coagulates and sticks to skin. Knowing how such stickiness works chemically has allowed scientists to improve surgical implants that are not rejected by the human body. (3) Springsnails serve as living indicators of ecosystem health. (4) They function as vital components in energy transfer and balance in ecosystems. Since they're at the base of the food chain, they perform a vital role in food webs. (5) They represent biotic and genetic diversity. Loss of biodiversity over time equals loss of ecosystem stability — like losing a library that contains answers to questions we've not yet learned to ask.

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