

Wildlife Diversity Notebook: Flat-spired Three-toothed Land Snail

Common Name: Flat-spired three-toothed land snail

Scientific Name:
Triodopsis platysayoides

Federal Status: The U.S. Fish and Wildlife Service lists this species as federally threatened.

West Virginia Status: This snail is known from a very restricted area of the Cheat River Gorge in Monongalia and Preston counties. There are 107 known localities for the species. The known range of the species is approximately 10,300 acres. Little information is available on the population trends of the animal, but most populations appear to be stable at this time.

Description: The shell of adult flat-spired three-toothed land snails average a little less than one inch diameter. The spire, or the dorsal surface of the shell, is quite flat and not cone-shaped as in most snails. The shell is brown in color, and the body of the animal is dark gray. The “three-toothed” portion of this animal’s name is rather misleading, this snail has only one tooth located inside the opening of the shell (other closely related species do have three “teeth”). This tooth is actually a thickening in the wall of the shell that is thought to help the snail defend itself against predators, such as snail-eating beetles, that try to enter the snail’s shell to attack the animal. When these snails mature, a white lip is formed around the edge of the aperture, and the snail’s shell stops growing.

Habitat: This snail is usually associated with outcroppings of sandstone known as the Upper Connoquenessing Sandstone. Areas where this snail occurs are usually wooded and dominated by sandstone cliffs or areas of large sandstone boulders. The snails are often found in cracks and crevices in the rocks or in small cave-like structures. At two sites, the snail is associated with caves in the limestone layer beneath the sandstone.

Range: This snail is known only from the Cheat Gorge area of West Virginia.



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Life History: Little is known of the life history of this animal, but some information has been obtained from a captive colony. Small clusters of eggs are laid in the spring and summer. The eggs are usually buried in the soil or leaf litter. The young snails grow quite rapidly, and those that hatch early in the season can mature (produce a lip) around the aperture of the shell) during their first summer; the other snails mature the following year.

Diet: The diet of this snail consists of a variety of organic materials including fungi, flower blossoms, leaves, and even scat of the Allegheny woodrat. Leaves of birch trees may provide calcium in their usually calcium-poor habitats. This snail, like others, will also feed on the empty snail shells to obtain calcium for building their own shells.



Threats and Prospects: Because this snail has a very restricted range, local catastrophes, such as forest fires, could impact a large segment of the population. At the site with the highest density of these snails, recreational activities have caused some problems. In addition, to the direct crushing of some snails, the foot traffic can destroy the leaf litter in which the snails live. Fences have been constructed at Coopers Rock State Forest as a means to reroute foot traffic away from the areas where the snail occurs. Another potential threat is the possible development of the rim of Cheat River Gorge for housing developments and recreation facilities. Any activities, such as forest fires or timbering, which alter environmental conditions (temperature, humidity, moisture of the soil, etc.) could be detrimental to populations of this rare snail. In addition, road building on steep slopes in the Gorge can lead to erosion that can impact the snails’ habitat down-slope by filling in crevices in the rock features (outcrops and talus) where this snail lives.

Sandstone boulders in wooded areas provide good habitat for this threatened species.

Photo by Craig Stihler