

***Oreohelix* land snails of Heart Mountain Ranch and Tensleep Preserve, Wyoming**

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Mountain snails (*Oreohelix* sp.) are generally considered rare. In fact, *Oreohelix peripherica wasatchensis* is a candidate species in Utah under the Endangered Species Act, and several species of *Oreohelix* are considered critically imperiled by NatureServe. In Wyoming, *Oreohelix pygmaea* is an endemic species (only found in Wyoming) that lives in the Bighorn Mountains. Another species being watched in Wyoming and South Dakota is *Oreohelix strigosa cooperi* (referred to as *Oreohelix cooperi* by some), which is only found in the Black Hills and was petitioned for listing under the Endangered Species Act in 2006, but not listed.

Oreohelix are relatively large land snails, but little is known about this genus. As their common names suggests, mountain snails live in mountainous regions of western North America. These land snails are active during wet, cool months of the year (i.e., early summer). *Oreohelix* carry their young internally until they are born at ~2.5 whorls. Mountain snails are one of the more obvious land snail genera, because of their large shell size (10-20 mm diameter). Despite their size, little is known about this group. For example, the length of their life span is unknown. Also, the genus is in need of taxonomic revision.

To discover what species of *Oreohelix* live at The Nature Conservancy Properties of Heart Mountain Ranch and Tensleep Preserve, we collected snails in June 2010. Volunteers hiked up Heart Mountain to the forested area and collected *Oreohelix* on 19 June 2010. At Tensleep Preserve, volunteers hiked to Canyon Creek, Billy Creek, and Tractor Bend to collect *Oreohelix*. Snails were drown in water and preserved in 80% ethanol. Soft parts of snails were dissected and examined under a dissecting microscope for identification. Pilsbry (1939) and Chak (2007) were used to identify snails.

Table 1. Characteristics of *Oreohelix* land snails collected from Heart Mountain Ranch and Tensleep Preserve.

	Heart Mountain	Canyon Ck	Billy Ck	Tractor Bend
Shell diameter (mm)	17.8	17.0	15.5	14.8
Shell height (mm)	12.3	10.7	10.5	10.8
Umbilicus (mm)	3.1	3.1	2.3	2.3
Whorls	5.75-6	5.5	5	5.75
Height/width ratio	0.69	0.63	0.68	0.73
Penis length (mm)	10	9.8	8.9	12
Ribbed penis ratio	.55	0.63	0.54	0.42
Number of penis ribs	5	4 or 6	5 or 6	4
Number of shell bands	2	2	2	2
Identification	<i>O. subrudis</i>	<i>O. subrudis</i>	<i>O. subrudis</i>	<i>O. subrudis</i>

Land snails at both Heart Mountain Ranch and Tensleep Preserve were *Oreohelix subrudis*. Based on museum records, *O. subrudis* appears to live in the mountains throughout Wyoming. *O. subrudis* is described as have a shell diameter of 14-21 mm, shell height of ~11 mm, and most individuals having 2 bands on the shell (Pilsbry 1939). Penile characteristics are used to differentiate many species of *Oreohelix*. Penile characteristics for *O. subrudis* are described as the ribbed portion generally being longer than the papillose section (penis ribbed ratio of 0.41-0.73), a swollen median section (Figure 1), and 4 or 6 internal ribs (Pilsbry 1939). The individuals dissected from Heart Mountain Ranch and Tensleep Preserve matched these descriptions (Table 1). In general, most individuals collected had 2 bands on the shell, and only a few had no bands (Figure 2). The height, diameter, and ratios match those described for *O. subrudis*.



Figure 1. Photos of penises from *Oreohelix subrudis*.



Figure 2. Photos of *Oreohelix subrudis* from Heart Mountain Ranch and Tensleep Preserves.

Literature Cited

- Chak, S. 2007. Phylogenetic relationships and population differentiation of *Oreohelix* landsnails in Wyoming and adjacent South Dakota. Thesis. University of Wyoming, Laramie, WY.
- Pilsbry, H. A. 1939. Land Mollusca of North America: North of Mexico, Academy of Natural Science Monograph 3 edition. George W. Carpenter Fund for the Encouragement of Original Scientific Research, Philadelphia, PA.