Cooper's Rocky Mountainsnail - Oreohelix strigosa cooperi

Abundance: Unknown

Status: NSS4 (Bc) NatureServe: G2G3 S1

Population Status: Cooper's Rocky Mountainsnail was monitored in 1991, 1992, 1999 (Frest and Johannes 2002) and 2010 (Tronstad and Andersen 2011). These studies suggest that the snails are persisting; live individuals were found at all but one location.

Limiting Factor: Unknown

Comment: NSSU to NSS4 (Bc)

Introduction

Cooper's Rocky Mountainsnail, (Oreohelix strigosa cooperi or Oreohelix cooperi), are land snails in the order Stylommatophora. Mountainsnails have depressed, heliciform shells with an umbilicus and 4 to 6 whorls (Pilsbry 1939). Shell diameter is up to 22 mm (0.9 in) and shell height can be up to 17 mm (0.7 in). Cooper's Rocky Mountainsnails are located Wyoming and South Dakota and as fossil in Iowa and Illinois (Pilsbry 1939; NatureServe 2016). Other states listed are Kansas (NatureServe 2016) and Alberta (Pilsbry 1939) but these populations likely need to be evaluated further. Cooper's Rocky Mountainsnail are listed as critically imperiled in Wyoming and imperiled in South Dakota, and vulnerable across their range (NatureServe 2016). Mountain snails eat leaf litter, detritus and microorganisms growing on surfaces, such as rocks, logs or soil (Speiser 2001, Anderson 2005). Little is known about the life history of mountain snails, including how long these snails live and how often they reproduce. Mountain snails are live bearers, meaning they raise their young within their shell until the young reach about 2.5 whorls (Anderson et al. 2007). Cooper's Rocky Mountainsnails are active during spring and early summer during wet, cool conditions but may be active in the fall or winter depending on conditions (Anderson 2005; Tronstad, personal observation). Cooper's Rocky Mountainsnails are located in the Black Hills and Bear Lodge Mountains of Wyoming.

Habitat

Cooper's Rocky Mountainsnails live in areas with canopy cover and leaf or needle litter. Mountain snails are generally found in moist, cool areas such as north facing slopes or near streams (Anderson 2005; Tronstad and Andersen 2011).

Problems

- The taxonomy of Oreohelix is questionable and is in need of revision.

Conservation Actions

- Concerns over the effects of habitat disturbance, such as logging, forest thinning, fire and grazing in association with the limited dispersal ability of land snails (Anderson 2005).

Monitoring/Research

Tronstad and Andersen (2011) monitored Cooper's Rocky Mountainsnails in the Black Hills and Bear Lodge Mountains and predicted suitable habitat using predictive distribution models. They found the mountainsnails at all but one of the previously visited sites. Models predicted the best habitat was in the northwest area of the Black Hills. Anderson (2007) investigated movement and growth of Cooper's Rocky Mountainsnails in the Black Hills. Snails moved up to 7.2 m in a two week span and shell diameter increased by about 0.1 mm during June.

Recent Developments

Frest and Johannes (2002) suggested that Oreohelix strigosa cooperi be split into three distinct species based on morphology. They split O. s. cooperi in the Black Hills into two species based on shell size. The third proposed species was the Oreohelix in the Bear Lodge Mountains. Molecular and morphological work on Oreohelix sp. in the Black Hills and Bear Lodge Mountains of Wyoming and South Dakota came to two conclusion using different techniques (Weaver et al. 2006; Chak 2007). Chak (2007) found that Oreohelix in the Bear Lodge Mountains were different than those in the Black Hills, whereas Weaver's et al. (2006) evidence suggested that Oreohelix in the Bear Lodge Mountains and the Black Hills were the same species. Anderson et al. (2007) discovered that temperature strongly correlated with shell size for Oreohelix in the Black Hills suggesting that the difference in shell size were not attributed to different species. Anderson (2010) investigated Oreohelix in the Bighorn Mountains and suggested that Oreohelix pygmaea and Oreohelix strigosa cooperi are the same species because of little genetic difference.

References

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Cooper's Rocky Mountain Mountainsnail (*Oreohelix strigosa cooperi*)

SOURCE: Digital maps of ranges for Wyoming Species of Greatest Conservation Need: February 2016. Wyoming Game and Fish Department. Note that brown indicates the current known range of the species.