

## Project Highlight – SD State Wildlife Grant

**Project Type**                      Research

**Title**    A proposal to examine endemism and population relationships of the Black Hills *Oreohelix* snails

**In a nutshell**                      Dr. Tamara Anderson, Adjunct Curator at University of Colorado Museum, concluded that *Oreohelix* snails in the Black Hills are all one species and are most similar to a population found in the Big Horn Mountains of Wyoming.

### **Relevant Species of Greatest Conservation Need**

- Cooper's rocky mountainsnail (*Oreohelix strigosa cooperi*)

**Relevant Habitats**    forested rocky slopes of the Black Hills

**Cooperators**                      University of Colorado Museum (Dr. Tamara K. Anderson)

**Purpose**                      To determine if *Oreohelix* in the Black Hills represent an endemic group, unique from other *Oreohelix* in the region and to determine if the *Oreohelix* in the Black Hills consist of one or more than one biological entities as defined by genetics, morphology, anatomy and/or environmental conditions

**Timeframe**    July 2004 – February 2006

### **Summary or Important Findings**

- *Oreohelix* snails found in Black Hills consist of one group genetically
- *Oreohelix cooperi* cannot be distinguished from *Oreohelix* specimens at one site in Montana and are similar to specimens from one site in the Bighorn Mountains, but are distinct from other *Oreohelix* in Wyoming and Montana

**Best contact person**                      Eileen Dowd Stukel, SDGFP

### **More Information**

Anderson, T., R. Guralnick, and K. Weaver. 2006. Endemism and population relationships of the Black Hills *Oreohelix* snails – Final Report.

### Scientific publications resulting from this project:

Anderson, T. K., K. F. Weaver, and R. P. Guralnick. 2007. Variation in adult shell morphology and life-history traits in the land snail *Oreohelix cooperi* in relation to biotic and abiotic factors. *Journal of Molluscan Studies* 73: 129-137.

Weaver, K., T. K. Anderson, and R. P. Guralnick. 2006. Combining phylogenetic and ecological niche modeling approaches to determine distribution and historical biogeography of the Black Hills Mountain Snails (Oreohelicidae). *Diversity and Distributions* 12:756-766.

- Anderson, T. K and C. Schmidt. 2007. Population dynamics of a land snail species of conservation concern in the Black Hills. *Intermountain Journal of Sciences* 13:13-31.
- Anderson, T. K. 2004. Field Guide to Black Hills Land Snails. Natural History Inventory Publication No. 22. University of Colorado Museum.
- Anderson, T. K. 2004. A Review of the U.S. distribution of *Melanoides tuberculatus* (Muller, 1774), an exotic freshwater snail. *Ellipsar* 6(2): 15-18.