

## Project Summary

### Rocky Mountains Cooperative Ecosystem Studies Unit

**Project Title:** Survey of Two Extremely Rare Terrestrial Snails at Mount Rushmore National Memorial

**Discipline:** Natural Resources  
**Type of Project:** Technical Assistance/Research  
**Funding Agency:** National Park Service  
**Other Partners/Cooperators:** University of Wyoming  
**Effective Dates:** 6/28/2010 - 12/31/2012  
**Funding Amount:** \$14,672

**Investigators and Agency Representative:**

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**Project Abstract:** Despite the vital role land snails play in ecosystems, very little is known about them. In the Black Hills, only a few general works have been conducted on snails. Of the roughly 40 species present in the Hills, the South Dakota Department of Game, Fish & Parks has listed 4 of these taxa as species of greatest conservation concern. Because of the undisturbed forest and schist soils at Mount Rushmore National Memorial (MORU), 2 of these species of concern (*Vertigo paradoxa* and *V. arthuri*) probably occur at MORU. The other two species are tied to calcareous soils and are less likely to occur. However, no snail surveys have been conducted at MORU. We propose a survey to determine the occurrence of *Vertigo* spp. as well as other snails throughout MORU. Because of the absence of major disturbance for >150 yrs and the abundance of important habitat elements such as large logs, old-growth patches could be important in maintaining the snail biodiversity of MORU and the surrounding landscape. Like most of the Hills, MORU has experienced more than a century of fire suppression with resulting increases in hazardous fuels. Catastrophic fire is now a real threat to MORU's forest especially with the encroachment of mountain pine beetle (*Dendroctonus ponderosae*) infestation into the Memorial. The effect of the 2010 hazard fuel thinning on snail communities (possibly including certain species of concern) is unknown. To assist park staff with their management decision-making process this project will also examine the response of the snail communities to fuel treatments at MORU.

**Outcomes with Completion Dates:**

Progress Report due December 31, 2011  
Final Report due December 31, 2012

**Keywords:** terrestrial snails, survey, Mount Rushmore National Memorial, University of Wyoming