

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: The current distribution of the Jackson Lake spring snail and interactions with the invasive New Zealand mud snail

Discipline: Natural

Type of Project: Research

Funding Agency: National Park Service

Other Partners/Cooperators: Washington State University

Effective Dates: 6/1/2005 - 9/30/2006

Funding Amount: \$10,000

Investigators and Agency Representative:

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Project Abstract:

In Grand Teton NP, the Jackson Lake spring snail (*Pyrgulopsis robusta*) may be facing extinction and has been petitioned for endangered species listing by the USFWS (Susan O'Ney, GTNP, personal communication). The Jackson Lake spring snail is a narrowly endemic prosobranch snail that occupies a spring stream within the Greater Yellowstone Ecosystem (GYE). However, the presence of the New Zealand mud snail (*Potamopyrgus antipodarum*), an invader in western U.S. rivers, may be threatening the survival of this population. The mud snail first appeared in Yellowstone National Park in 1994 (Madison River) and has now spread over 50 river miles within the GYE. In one stream (Polecat Creek) the Jackson Lake spring snail has decreased in yearly samples since the mud snail appeared (Dan Gustafson, Montana State University, personal communication) but remains abundant in a tributary of this stream. Some evidence exists that the invasive mud snail is a superior competitor to the endemic spring snail in this tributary. Therefore, this project will determine factors that control the distributions of both of these species.

Investigations into these species will contribute to watershed management in the Snake Headwater Basin. Knowledge regarding the range and expansion potential of the exotic New Zealand mudsnail could have implications throughout the lower Snake River sub-basins and into the larger Columbia River basin as well, and will benefit at least two Rocky Mountain Cluster Parks (Grand Teton and Yellowstone). Invertebrate interactions could have far-reaching effects on food availability for cutthroat trout.

The main objective of this proposal is to explore factors that may control the current distribution of the Jackson Lake spring snail. In addition to biotic and abiotic habitat characteristics, the presence of the invasive New Zealand mud snail will be examined as a limiting factor for Jackson Lake spring snail densities. This work will not only provide necessary information about the status of the Jackson Lake spring snail, but could also provide crucial preliminary data for future projects involving both the spring snail and the mud snail.

Outcomes with Completion Dates:

The results of this project will be delivered in a final report by May 1, 2006

Keywords: Jackson Lake spring snail, New Zealand mud snail, Jackson Lake, species distribution, Grand Teton National Park, Washington State University, invasive species

For Administrative Use Only:

Date Annual Report Received:

Date Final Report Received:

Publications, etc. on file: