

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Biology of Rocky Mountain Capshell in Lost Lake, Glacier National Park
Type of Project: Research
Funding Agency: National Park Service, Glacier National Park
Effective Dates: July 20, 2001 - December 31, 2004
Funding Amount: \$45,000
Investigators and Agency Representative: UNIVERSITY CONTACT: Bonnie Ellis, FLBS, Univ of Montana, 406-982-3301, bellis@selway.umt.edu NPS CONTACT: Leo Marnell, Glacier NP, 406-888-7995, leo_marnell@nps.gov
Project Abstract: The Rocky Mountain capshell (<i>Acroloxus coloradensis</i>) (Henderson) was discovered in Lost Lake in Glacier National Park (GNP) during the mid-1960's. The capshell is a tiny freshwater snail, a Pleistocene relic whose modern distribution is curiously disjunct. The Lost Lake population is one of about a dozen that has persisted in North America and is thought to be the only location in the United States where <i>Acroloxus</i> is relatively abundant. The capshell is currently listed as a "Species of Special Concern" by the U. S. Department of the Interior and by the state of Montana. Almost nothing is known about the biology, life history, and habitat requirements of this rare mollusk. The size and viability of the Lost Lake population are unknown. Objectives of the investigation are to: 1) describe the physical-chemical environment in Lost Lake and the biotic communities associated with the capshell population, 2) document habitat use, movements, and the spatial and depth distributions of capshells in Lost Lake, 4) determine whether human recreational activities at Lost Lake and the presence of introduced brook trout pose significant threats to the capshell population, 5) recommend management actions that should be considered by the NPS to ensure the continued survival of this rare mollusk in Lost Lake, and 6) disseminate findings and information gained from the investigation to other scientists and resource administrators; interpret the biology of the capshell through appropriate educational, media, and Internet forums. New tasks and funding were added in FY02, including 1)Conduct limited biochemical genetic analysis (i.e., nuclear and possibly mitochondrial DNA examination) of the <i>Acroloxus</i> population in Lost Lake. 2)Expand water quality tests to include estimation of production during the peak biomass period using the oxygen light/dark bottle technique, examination of benthic algal biomass throughout late summer and early fall, and the analysis of sulfate and alkalinity at both depths throughout the 2002 sampling period.
Outcomes with completion dates: An Investigator's Annual Report will be posted on the NPS science web site at the end of each year and an annual report summarizing work completed in 2001 will be provided by February 15, 2002. A final report summarizing findings from the investigation will be due March 30, 2004.
Keywords: Glacier National Park, Rocky Mountain capshell, <i>Acroloxus coloradensis</i> , Lost Lake
<u>For Administrative use only:</u> <i>Date Annual Report Received:</i>

Date Final Report Received:

Publications, etc. on file: