

Project Summary
Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Biology of Rocky Mountain Capshell in Lost Lake, Glacier NP-Part 2
Type of Project: Research
Funding Agency: National Park Service, Glacier National Park
Effective Dates: March 20, 2002 - December 30, 2004
Funding Amount: \$10,000
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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 population is one of about a dozen known to have survived in North America; most are in southern Canada. Lost Lake is one of the few locations where <i>Acroloxus</i> is abundant. Work carried out in 2001 revealed densities from 58 to 206 capshells per square meter at different locations in the lake. Almost nothing is known about the life history and habitat requirements of this rare mollusk. The GNP Resources Management Plan documents the need for research to gain knowledge about the capshell population in Lost Lake to guide present and future management of this unique population. Research is needed to assess the status and viability of the population and to obtain basic life history information. The information will be useful to park managers and scientists in both the U. S. and Canada. Lost Lake affords a unique opportunity for life history studies and documentation of habitat requirements for this unique species. The original proposal for this project contained 8 objectives contingent on full funding for a 3-year project. A request for matching funds from the Glacier Fund in 2001 was unsuccessful, hence the goals for this work were cut back to 5 objectives and a 2-year investigation. These mostly entailed descriptive studies of the lake (i.e., physical, chemical, and biological limnology) and documentation of the spatial distribution and abundance of <i>Acroloxus</i> in the lake. Key goals identified in the original proposal dealing with genetics analyses and live-containment experiments in the laboratory were deferred pending the availability of additional funding.
Objectives: This request for \$10,000 of supplemental support will allow the following two (2) objectives to be partially reinstated: 1)Conduct limited biochemical genetic analysis (i.e., nuclear and possibly mitochondrial DNA examination) of the <i>Acroloxus</i> population in Lost Lake. Establish a baseline of genetic attributes for this population and compare these with the genetic characteristics of at least one other <i>Acroloxus</i> population. 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: <i>Final Report</i> upon completion of the work, by January 15, 2004 and the Final Project end date is December 30, 2004.
Keywords: Glacier National Park, Rocky Mountain capshell, <i>Acroloxus coloradensis</i> , Lost Lake
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