

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Collaborative support of the National Atmospheric Deposition site in Rocky Mountain NP, and investigation of Nitrogen deposition into Loch Vale

Discipline: Natural Resources

Type of Project: Technical Assistance

Funding Agency: National Park Service

Other Partners/Cooperators: Colorado State University

Effective Dates: 4/1/2007 - 4/30/2009

Funding Amount: \$26,069

Investigators and Agency Representative:

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Project Abstract:

Atmospheric nitrogen deposition has been affecting sensitive park resources at high elevations at Rocky Mountain NP, Colorado (ROMO). Continued research and monitoring are needed in the Loch Vale watershed of ROMO to determine current levels and trends of nitrogen deposition, and the biological and biogeochemical consequences from nitrogen.

This scope of work proposes a cooperative program that includes work by CSU investigators in sample and data collection of rain and snow samples, including some assistance with routine maintenance of monitoring equipment at the National Atmospheric Deposition Program site at Rocky Mountain NP. Integration of all field and laboratory work will facilitate operations and insure continued high quality data. This agreement will allow CSU to enter Rocky Mountain National Park weekly to collect precipitation samples and related watershed data, maintain technical aspects of Loch Vale wet deposition site (C098) and provide an annual report explaining the operational status of C098, evaluation and interpretation of data collected and recommended solutions to problems that may arise associated with C098.

Water samples will be collected for chemical and biological analysis weekly at Loch Vale outlet through the year, and monthly during summer at the inlet and outlet of Sky Pond, Andrews Creek, and the inlet to The Loch. Samples are analyzed for major ions, pH, conductivity, alkalinity, DOC, TOC, DON, TON, total phosphate, silica, and temperature. Monthly samples are collected for algal abundance and taxonomy at The Loch outlet. Laboratory analyses are conducted at the CSU Natural Resource Ecology Laboratory and USFS Biogeochemistry Laboratory, both in Fort Collins. A quality assurance analysis of water quality data collected 2003-2007 will be conducted as part of this project, and results summarized in a USGS Open-File report. After quality assurance, data are stored in the Loch Vale watershed database at Colorado State University.

Outcomes with Completion Dates:

- Interim reports due June 30, 2008
- Final report due by October 31, 2008.
- One page quarterly updates to ROMO key official
- An oral presentation will be provided to the ROMO staff and the public during ROMO "science days".

Keywords: nitrogen, atmospheric deposition, National Atmospheric Deposition Program, Rocky Mountain National Park, Loch Vale, Colorado State University

For Administrative Use Only:

Date Annual Report Received:
Date Final Report Received:
Publications, etc. on file: