Project Summary
Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Continuation of Investigation of Nitrogen Deposition into Loch Vale, Rocky Mountain National Park

Discipline: Natural
Type of Project: Research/Technical Assistance
Funding Agency: National Park Service
Cooperators: Colorado State University
Student Involvement: yes
Effective Dates: 7/1/2015 – 12/31/2018
Funding Amount: $ 10,000

Investigators and Agency Representatives:
NPS ATR: Paul McLaughlin, Ecologist, National Park Service, Rocky Mountain National Park, 1000 Highway 36, Estes Park, CO 80517; 970-586-1282; Paul_mclaughlin@nps.gov

Investigators: Stephanie Kampf, Associate Professor, Watershed Science, Department of Ecosystem Science and Sustainability, Warner College of Natural Resources, Colorado State University, Fort Collins, CO 80523-1476; (970) 491-1931; Stephanie.kampf@colostate.edu

Project Abstract: Atmospheric nitrogen deposition has increased significantly in several western National Parks, which are protected under the Clean Air Act Amendments of 1977 as Class 1 areas. The National Park Service, the United States Environmental Protection Agency, and Colorado Department of Public Health and Environment have entered into an agreement to address the issue of nitrogen deposition and its effects in Rocky Mountain National Park. The Nitrogen Deposition Reduction Plan established by the State of Colorado stipulates that wet deposition measured at the Loch Vale site in Rocky Mountain National Park be used to determine the effectiveness of emissions controls. One objective of this agreement states that Rocky Mountain National Park will continue to research, investigate, and report current levels of nitrogen deposition. It is imperative that additional investigation into atmospheric nitrogen deposition and its effects is conducted through 2018.

The objectives of this proposal are to 1) collect precipitation samples and analyze for concentrations of nitrate and ammonium, 2) collect airborne ammonia samples to analyze for concentrations of gaseous ammonia, 3) collect and analyze lake and stream water samples at various locations within the Loch Vale watershed 4) contribute to an archive for historical data, and 5) report the results of analyses to Rocky Mountain National Park and the RM-CESU.

Outcomes with Completion Dates:
Final report of the project, due July 31, 2018

Keywords: nitrogen deposition, monitor, Loch Vale, Rocky Mountain National Park, Colorado State University