

## **Project Summary**

### **Rocky Mountains Cooperative Ecosystem Studies Unit**

**Project Title:** Sources of Mercury Deposition to Mesa Verde National Park, Colorado

**Discipline:** Natural  
**Type of Project:** Technical Assistance  
**Funding Agency:** National Park Service  
**Other Partners/Cooperators:** University of Colorado at Boulder  
**Effective Dates:** 9/30/2008-March 1, 2010  
**Funding Amount:** \$25,000 [\$15,560 added in FY 09]

**Investigators and Agency Representative:**

NPS Contact: George L. San Miguel, Natural Resource Manager, Mesa Verde National Park, PO Box 8, Mesa Verde CO 81330, 970-529-5069, george\_san\_miguel@nps.gov

Investigator: Koren Nydick, Research Associate, University of Colorado at Boulder Mountain Studies Institute, Fort Lewis College, Durango, Colorado 81301-3999; 970.247.7071; mountainstudies3@ekiva.net

**Project Abstract:** This project would allow Mesa Verde National Park to develop an understanding of mercury sources in wet deposition at the Park, and would provide better information for commenting on new proposed coal-fired power plants in the Four Corners region. The project proposes a summary of existing data to investigate sources of mercury in precipitation at Mesa Verde National Park. Simple regression analyses and correlations will be done comparing mercury to existing major-ion data, and principal component analysis will be conducted if there are any significant correlations in the data. Trend analyses will be done on time-series data to indicate whether the mercury and other constituents in precipitation are increasing or decreasing over time and the trends will be compared with the timing of implementation of pollution-control technologies at existing sources (power plants and smelters).

Existing data will be downloaded from the NADP and MDN sites, which are public domain data sites. Data will be analyzed using statistical packages within the S-Plus and Microsoft Excel computer programs. Back trajectory analyses will be conducted using the HYSPLIT model, and the sources of constituents in precipitation at Mesa Verde will be described.

The data and report resulting from this study will provide detailed information related to the sources of atmospheric mercury deposited by precipitation events within Mesa Verde National Park.

**Outcomes with Completion Dates:**

- Project Start Date - September 30, 2008
- Progress Report (Mid-Year) - September 30, 2009
- Annual Report - December 14, 2009
- Investigator's Annual Report (IAR) - January 15, 2010
- Database and Maps Provided to Park Management - March 1, 2010
- Final Report - March 1, 2010

**Keywords:** Mercury, wet deposition, air pollution, Mesa Verde National Park, University of Colorado at Boulder