

## Project Summary

### Rocky Mountains Cooperative Ecosystem Studies Unit

<b>Project Title:</b> Developing Screening Procedures and Sampling Protocols for assessment of deposition-sensitive surface waters in the Rocky Mountains
<b>Type of Project:</b> Research <b>Discipline:</b> Natural
<b>Funding Agency:</b> National Park Service
<b>Other Partners/Cooperators:</b> USGS-WRD
<b>Effective Dates:</b> August 15, 2003 - May 30, 2007
<b>Funding Amount:</b> \$62,000
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<b>Project Abstract:</b> The proposed research will develop screening procedures and sampling protocols for the assessment of surface waters sensitive to atmospheric deposition in the Rocky Mountains, including Yellowstone National Park (YELL), Grand Teton National Park (GRTE), Glacier National Park (GLAC), Rocky Mountain National Park (ROMO), and Great Sand Dunes National Monument and Preserve (GRSA). Using GIS and multiple logistic regression a model will be developed that relates known surface water concentrations to basin physical characteristics and loading from atmospheric deposition, to identify the aquatic ecosystems most likely to be at risk to pollution from atmospheric deposition. The results of the analysis will then be validated through surface water sampling at sites in YELL, GRTE, GLAC, ROMO and GRSA. Screening procedures developed for this project are based on terrain and landscape information available to all participating parks. Because the screening procedure is based on available data, this is a pilot project that may be applicable to other National Parks with potentially sensitive surface waters.
<b>Outcomes with completion dates:</b> <ol style="list-style-type: none"><li>1. August 15, 2003: Implementation Plan for two-year project is received and sent out for peer review. Consultation with principal contact in each park.</li><li>2. November 25, 2003: Peer review comments incorporated into final project plan.</li><li>3. May 2004: Phone conference with NPS personnel to discuss results of the landscape model and selection of lakes for sampling during summer 2004.</li><li>4. Summer 2004: samples collected, analysis done during fall 2004.</li><li>5. September 30, 2004: Administrative report for Phase 1; begin refinement of screening model using additional data.</li><li>6. Summer 2005: complete collection of field samples; water chemistry analysis completed by fall</li><li>7. October 1, 2005: Annual report due</li><li>8. December 30, 2005: Draft final report on screening procedures for surface waters of the Rocky Mountains and sampling protocols for assessment of deposition-sensitive waters.</li><li>9. May 30, 2007: Final draft completed; database delivered; peer-reviewed journal publications submitted.</li></ol>
<b>Keywords:</b> Screening Procedures, Sampling Protocols, deposition-sensitive surface waters, Rocky Mountains, air quality, lake chemistry, Yellowstone NP,

Glacier NP, Grand Teton NP, Great Sand Dune NM&P, Glacier NP

**For Administrative use only:**

*Date Annual Report Received:*

*Date Final Report Received:*

*Publications, etc. on file:*