

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: The effects of recent watershed deglaciation, climate change, and microbial processes on nitrate loading and ecological response in high alpine aquatic systems

Discipline: Natural
Type of Project: Research
Funding Agency: National Park Service
Other Partners/Cooperators: University of Montana
Effective Dates: 6/1/2005- 12/31/2009
Funding Amount: \$44,724

Investigators and Agency Representative:

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Researcher: Jennifer Corbin, College of Forestry and Conservation, The University of Montana, Missoula, MT 59812, 406-243-5507, jennifer.corbin@umontana.edu

Project Abstract: The principal investigator and graduate student will collaborate with the Grand Teton National Park and other researchers to accomplish the following [as part of a larger Ph.D. thesis project, receiving funding from a number of different sources]:

- (1) Install a water purification system at the UW-NPS Research Station
- (2) Collect, process, and analyze water chemistry samples
- (3) Prepare a report that describes how nutrients (nitrogen and phosphorus) are released into high alpine surface waters.
- (4) Complete installation of a climate station at a high elevation site. Once the UM researchers have collected data needed for their final project report, the climate station will be transferred to the NPS-GRTE for their use.
- (5) collect and analyze snow chemistry, deposition, soil and plant samples
- (6) use the collected data to model the physical effects that result from glacial erosion and snowmelt runoff
- (7) Prepare a report that describes the management implications of modeled changes in chemistry and water flow on downstream ecosystems, including riparian vegetation, aquatic biota and water quality

Outcomes with Completion Dates:

Installation of water purification system at AMK Ranch -June, 2006
Collection of water samples - Summer, 2006
Preliminary report for analysis of water samples- December 31, 2006
Collection of water, soil, and deposition samples- May-Sept. '07, May-Sept. '08
Collection of snow samples- March '07, March '08
Preliminary report for analysis of water samples- May '09
Copy of J. Corbin's dissertation- July '09

Keywords: climate, atmospheric deposition, nitrogen, glacial mass, watersheds, alpine ecosystems, water quality, Grand Teton NP, University of Montana

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