

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Technical Support for Trail Restoration and Maintenance

Discipline: Interdisciplinary
Type of Project: Technical assistance
Funding Agency: National Park Service
Other Partners/Cooperators: Montana State University
Effective Dates: September 15, 2008 - March 1, 2010
Funding Amount: \$15,363

Investigators and Agency Representative:

NPS Contact: Jeff Troutman, National Park Service, Chief, Resource Management, 2282 S. West Resource Blvd., Moab, Utah 84532; Phone: 435-719-2130 Email: jeff_troutman@nps.gov

Investigator: Dr. David W. Roberts, Montana State University, Department of Ecology Bozeman, MT 59717-3460, 406 994-4548, droberts@montana.edu

Researcher: Henry Shovic, PhD, Montana State University, Department of Ecology, hshovic@bridgeband.com

Project Abstract:

Scope: The present tasks and products are designed to be a pilot project to support a larger effort to increase road and trail sustainability in these National Parks, responding to growing visitor use, increasing resource damage, and climate change.

Because this is a pilot project, data collection is limited to available GIS data, other spatial data, and field review as specified below. Specifications or tasks may, however, be modified to fit emerging needs as they are identified. To assure project objectives continue to be relevant, the cooperator will coordinate closely with National Park Service (NPS) personnel, especially with Trails and Roads, GIS, and Resource Management.

Objective One: To provide a synthesis of current trail maintenance methods and a perspective on the sustainability program in Arches and Canyonlands National Parks.

- Task A: Research and synthesize technical documents and methods of trail restoration used in arid landscapes, including literature used in the BLM, USFS, and NPS; and field review with trails and roads specialists. This includes both general soil conservation and erosion control recommendations for trails and roads, and specific methods used in Arches and Canyonlands National Parks.

Objective Two: Re-route projects - alternative development analysis and support.

- Task A: Provide site-specific project services, including analysis and display of vegetation, landscape, and soils information in map form and development of reroute alternatives using landscape data, visitor use information, local NPS management and specialist input. This can include 3-D scientific visualization, watershed analysis, quantitative analysis of potential soil and vegetation impacts, and field review and documentation.

Two project sites are included:

- o Salt Creek Re-route - Canyonlands N. P.
- o Maze District "Fault-line" Trail - Canyonlands N. P.
- o Fort Bottom Ruin Social Trail Problem - Canyonlands N. P.

Objective Three: to help inventory and prioritize potential trouble areas, as well as support decision making on use management, as well as to provide factual support for trail condition classification for one National Park (selected by NPS).

- Task A: Synthesize and spatially present available soil survey and landscape data (including elevation, vegetation, slope, and available condition inventories).

- Task B: Develop and implement a way of spatially showing potential trouble areas in on a Park-wide basis for management. This spatial analysis will use geology, soils surveys, landscape data, interviews with resource specialists, and site visits.
- Task C: Increase the factual database of effects and conditions on the ground, including representative field observations and expert opinion of resource specialists.

Products: Products include reports, maps, spatial data, site reviews with specialists, and presentations for management. For the defined scope of this pilot project, the following are anticipated.

- Up to 10 different maps at 36 in by 48 in and 8.5 x 11 size suitable for presentation (provided in hard-copy, Adobe Acrobat (pdf), and images for Powerpoint (jpg) at appropriate resolution).
- 3 documents in WORD format presenting results under each objective.
- 1 presentation of results for on-site managers.
- Remote briefings as requested.
- Two field excursions of 3 days each (GPS data collection and QA/QC field verification, and final presentations of project results).
- Spatial and analysis data provided via FTP or DVD, including collected and synthesized base data, metadata, and all GIS analysis projects. All new spatial data will meet all NPS spatial data standards.

Outcomes with Completion Dates:

Due Date for Final Report and/or Other Products: October 30, 2009

Keywords: Trail Restoration and Maintenance, Arches and Canyonlands National Parks, Montana State University