

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Monitoring water quality and quantity in Bighorn Canyon NRA: Seeps, springs and river and stream locations; continuation of project begun by Denine Schmitz

Type of Project: Technical Assistance
Discipline: Natural
Funding Agency: National Park Service
Other Partners/Cooperators: Montana State University
Effective Dates: 2/1/2008 - 12/31/2009
Funding Amount: \$28,837

Investigators and Agency Representative:

NPS Contact: Cathie Jean, Greater Yellowstone Network, I & M Program, P.O. Box 173492, Room 232D, AJM Johnson Hall, Montana State University, Bozeman, MT 59717, Phone; 406-994-7530, Fax:406-994-4160, Cathie_Jean@nps.gov

Investigator: Holly Sessoms, MSU Extension Water Quality, 601 Leon Johnson Hall, Montana State University, Bozeman, MT 59717, (406)994-6589, hsessoms@montana.edu

Project Abstract:

Desert seeps and springs in Bighorn Canyon National Recreation Area (BICA) are given a high priority for long-term monitoring in the Greater Yellowstone Network's (GRYN) Vital Signs Monitoring Program. The primary purpose of this agreement is to implement and update as needed the draft monitoring protocol for seeps and springs in BICA. This project will include field sampling, sample collection, data analysis and quality assurance of data. The cooperators will update and revise the Seep & Spring Monitoring Protocol and the Spring Inventory Report to NPS Natural Resource Technical Report (NRTR) standards. The primary activity is to update and revise previous products, namely the Spring Inventory (data summary) report (dated July 5, 2007) to NPS Natural Resource Technical Report (NRTR) standards and the Seep & Spring Monitoring Protocol ('Development of a spring ecosystem monitoring protocol...' dated 2/19/2007)NRTR standards. Known updates to the spring inventory report include adding springs that were inventoried after the earlier inventory report was complete and adding these new springs (including name and Station ID) to the GIS Spring shape file. Known updates to the Monitoring Protocol include adding the sample design chapter and editing the document to move extraneous text from the narrative into appendices and or Standard Operating procedures. Water quality monitoring at seep sites will include water chemistry, core parameters and discharge. The primary activity is obtain measurements of water chemistry, core parameters and discharge at five spring and seep stations and at eight river and stream locations, all in Bighorn Canyon NRA.

Outcomes with Completion Dates: Due by December 31, 2009

1. Spring Inventory Report and Monitoring Protocol revised for publication as Natural Resource Technical Report
2. Field data collection of Water Quality and discharge measurements at Bighorn Canyon NRA
3. Database records in NPSTORET
4. Verification and validations reports
5. Annual reports, including the administrative report and the spring ecosystem monitoring annual report.

Keywords: monitoring protocols, Vital Signs Monitoring Plan, Bighorn Canyon NRA, seeps, springs, water quality, Montana State University, Greater Yellowstone I&M Network