

## **Project Summary**

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

**Project Title:** Implementation of water resources monitoring at Bighorn Canyon NRA

**Discipline:** Natural  
**Type of Project:** Technical Assistance  
**Funding Agency:** National Park Service  
**Other Partners/Cooperators:** Montana State University  
**Effective Dates:** 7/15/2011 - 3/31/2013  
**Funding Amount:** \$27,138

**Investigators and Agency Representative:**

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**Project Abstract:** **Greater Yellowstone Network** (GRYN) parks began monitoring water resources at fixed monitoring sites as part of the vital-signs monitoring program. The objective for monitoring is to determine the status and long-term trends in water chemistry (major ions and nutrients), conductivity, dissolved oxygen, pH, water temperature and discharge in perennial rivers and streams at fixed stations in all GRYN parks and spring flow at Bighorn Canyon. Water chemistry is critical for interpreting the biotic condition and ecological processes of aquatic resources. Chemical stressors can result in impaired functioning or loss of a sensitive species and a change in community structure. Water chemistry also affects the bioavailability of contaminants and the metabolism of aquatic species. Monitoring spring flows of select springs are important for understanding water availability to support biological resources.

The goal of this project is to complete the following at Bighorn Canyon: 1) Establishing spring monitoring wells at select springs and 2) completing annual water quality monitoring which includes macroinvertebrate sampling in the fall.

**Outcomes with Completion Dates:** March 31, 2011

**Keywords:** spring monitoring, water quality monitoring, Vital Signs Monitoring Program, Bighorn Canyon NR, Montana State University, Greater Yellowstone Network