

RM-CESU PROJECT FINAL REPORT, October 2008

Cooperative Agreement H1200040001

Task Agreement J2120070104

Project number MSU-116 and MSU 131

Project Title: Monitoring Water Quality & Quantity: Seeps, springs and river stream locations

Park/Unit: Greater Yellowstone I&M Network

Funding Sources: Greater Yellowstone Network, Inventory and Monitoring Program

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Project Description: The purpose of this project is for the GRYN and MSU PI to work collaboratively towards a scientific reliable and defensible water quality monitoring program at Bighorn Canyon NRA.

Project Results:

- Quarterly monitoring of water quality took place at 2 state listed 303(d) streams segments and at 6 other permanent stations in the south district. Results from 2006 were summarized in the GRYN annual water quality monitoring report providing resource managers critical information needed to interpret the physical and biotic condition of aquatic resources so action can be taken to protect and maintain clean water.
- Discharge and water chemistry monitoring took place at 4 springs (Hillsboro, Layout, North Davis and Headgate) quarterly; the spring monitoring pilot project is finished and implementation of the sample design begins in FY08.
- Baseline inventory was completed on 5 springs to conclude the baseline inventory project of 27 springs. The CESU cooperators completed a data summary for the

spring inventory project in which water chemistry was used to determine residence time. The inventory discovered that most springs are less than 30 years and thus spring discharge would likely respond to recent drought conditions.

Publications and other deliverables

Schmitz, D. 2008. Data summary for monitoring of springs in Bighorn Canyon National Recreation Area: 2007 Data. Land Resources & Environmental Sciences, Montana State University, Bozeman, MT 59717. Final report submitted to the Greater Yellowstone Network. May 7, 2008.

Schmitz, D. 2008. Data summary for monitoring of water quality in Bighorn Canyon National Recreation Area: 2007 Data. Land Resources & Environmental Sciences, Montana State University, Bozeman, MT 59717. Final report submitted to the Greater Yellowstone Network. May 30, 2008.

Schmitz, D. 2008. Bighorn Canyon National Recreation Area Water Quality Data Validation Report for Regulatory Rivers, Non-regulatory streams and springs. Data Collected January 2007-December 2007. Land Resources & Environmental Sciences, Montana State University, Bozeman, MT 59717. Final report submitted to the Greater Yellowstone Network. March 20, 2008.

Schmitz, D. 2008. Water Quality monitoring at Bighorn Canyon National Recreation Area - Regulatory Rivers, Non-regulatory streams and springs – 2007 Data Verification Report. Land Resources & Environmental Sciences, Montana State University, Bozeman, MT 59717. Final report submitted to the Greater Yellowstone Network. March 19, 2008.

Denine also prepared the content for the Greater Yellowstone Science Center Seeps & Springs Resource pages. See the GYSLC website at:
<http://www.greateryellowstonescience.org/topics/physical/water/seepsandsprings>.