

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Evaluating Monitoring Protocols for Macroinvertebrates in the River Systems of the Northern Great Plains

Discipline: Natural Resources
Type of Project: Research
Funding Agency: National Park Service
Other Partners/Cooperators: University of Wyoming
Effective Dates: 9/30/2009 - 9/30/2012
Funding Amount: \$35,545

Investigators and Agency Representative:

NPS Contact: Marcia H. Wilson, PhD., Northern Great Plains I&M Network, National Park Service, 231 East Saint Joseph Street, Rapid City, SD 57701, Tel: 605-341-2803, Fax: 605-341-7192, marcia_wilson@nps.gov

Investigator: Lusha Tronstad, PhD.; Wyoming Natural Diversity Database; University of Wyoming; Laramie, Wyoming 82070-3381; (307) 766-3115; tronstad@uwyo.edu

Project Abstract: Field work at Agate Fossil Beds will occur from spring to early fall over the 2010 field season. In 2011, field work will be conducted at the Belle Fourche River (DETO) and at the Laramie River (FOLA). The resulting work will be used to establish a rigorous monitoring criteria for Northern Great Plains I&M Network.

This study will gather basic data on macroinvertebrates, and a standard suite of water quality parameters at three sites along the Niobrara River, the Laramie River, and the Belle Fourche River inside the respective parks. At AGFO, two trips are planned: one to deploy 5 Hester-Dendy samplers at all 3 sites and the second to retrieve the samplers and collect 5 benthic samples at each of the 3 sites. At DETO and FOLA 5 benthic samples will be collected at each of 3 sites. The invertebrates will be identified to the lowest practical taxonomic level (typically genus). The Final Report will include a comparison of the invertebrates and bioassessment metrics calculated using each sampling method as well as recommendations for a robust sampling protocol.

Outcomes with Completion Dates:

List of Products: FY10 - field sampling the Niobrara River for invertebrates and water quality, plus analysis. A Preliminary Field Report for the AGFO work is due December 31, 2010.

FY11 - field sampling the Laramie River and Belle Fourche River for invertebrates and water quality, plus analysis.

A Final Report will be submitted upon completion of the study. The Final Report will compare water quality and invertebrate metrics among 3 sampling sites along the Niobrara River, the Laramie River, and the Belle Fourche River and recommend a rigorous, statistically defensible sampling protocol for river systems throughout the Northern Great Plains Network. Final Report due by March 31, 2012.

Keywords: Macroinvertebrates, monitory protocols, Niobrara River, Laramie River, Belle Fourche River Northern Great Plains I&M Network , Wyoming Natural Diversity Database/University of Wyoming