

## **Project Summary**

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

**Project Title:** Experimental determination of the role of Fe on the growth of *Didymosphenia geminata* in the Kootenai River, Montana, downstream from Libby Dam Aquatic Algal Community

**Type of Project:** Research

**Project Discipline:** Natural Resources

**Funding Agency:** US Army Core of Engineers

**Other Partners/Cooperators:** Colorado State University

**Effective Dates:** 9/27/2010 - 1/31/2015

**Funding Amount:** \$39,275 [FY13: 14,279; FY10: \$24,966]

**Investigators and Agency Representative:**

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**Investigator:** Sarah Spaulding, INSTARR, University of Colorado, 1560 30<sup>th</sup> Street, Boulder, CO 80309; 303 -492-6388; sarah.spaulding@colorado.edu

**Project Abstract:** This project is planned to determine the role of Fe<sup>2+</sup> and Fe<sup>3+</sup> as a factor in the availability of phosphorus to support high cell division rates (high growth rates, producing large amounts of biomass of the diatom *Didymosphenia geminata* (didmo). Experimental treatments will be completed in a in-situ floating mesocosm containing 16 replicated troughs, located directly downstream of Libby Dam. Treatments will allow experimental testing of the factors that influence adsorption of Fe to *D. geminate* stalks. Results from the study will supplement the large-scale analysis currently being performed by the US ACoE, MT Fish, Wildlife and parks and the Kootenai Tribe of Idaho to identify influential factors affecting the biological health of the Kootenai River. The nuisance aquatic stalked diatom *D. geminate* has been documented to alter the composition, abundance and size classes of the native fauna in the Kootenai River. By determining the factors that support large blooms, we expect to be able to develop recommendations for management strategies to reduce the large amount *D. geminate* biomass downstream from Libby Dam. Results from this study are expected to inform future scientific decisions regarding management of *D. geminate*, dam operations, and downstream nutrient enriched practices in the Kootenai River Basin.

**Outcomes with completion dates:** January 31, 2013

**Keywords:** Fe, *Didymosphenia geminata*, diatoms Kootenai River, Montana, Libby Dam, US Army Core of Engineers, University of Idaho