Project Summary
Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Mechanisms of Metal Uptake and Transfer in Stream and Riparian Food Webs

Discipline: Natural
Type of Project: Research
Funding Agency: USGS
Other Partners/Cooperators: Colorado State University
Effective Dates: 9/1/2011 – 8/31/2013
Funding Amount: $169,985

Investigators and Agency Representative:
USGS Contact: David Walters, US Geological Survey, 2150 Centre Ave., Bldg. C, Fort Collins, CO 80526; 907-226-9484

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Project Abstract: The objective of this project is to determine the mechanism(s) of uptake of metals by aquatic and riparian biota. This project will examine aspects of bioavailability, bioaccumulation, and transfer of metals within stream and riparian food webs. Light-stable isotope applications will be measured to identify important pathways of metal exposure and linkages within aquatic food webs and between aquatic and terrestrial food webs. Quantitative approaches that characterize metal flux and metabolic processes which may be important to metal toxicity will be developed. For example, cellular distributions of metals vary according to organism and ambient concentrations and may provide further insight into how cellular processes operating at the organism level affect the mass and isotopic composition of metals transferred through food webs.

Outcomes with completions dates: August 31, 2013

Keywords: metal uptake, food webs, streams, riparian, USGS, Colorado State University