

Project Summary
Rocky Mountains Cooperative Ecosystem Studies Unit

Task Agreement #: G20AC00120

Project Title: Biological Soil Crust Inoculum Survival and Growth under Field Conditions

Discipline: Natural

Type of Project: Research

Funding Agency: United States Geological Survey

Other Partners/Cooperators: University of Colorado

Student Participation: No

Effective Dates: 04/15/2020 to 04/14/2021

Funding Amount: \$50,000.00

Investigators and Agency Representative:

Agency Contact: Jayne Belnap; Southwest biological Science Center; Canyonlands Research Station; 2290 SW Resource Blvd, Moab, UT 84532; Phone: 801-550-0550; Email: jayne_belnap@usgs.gov

Investigator: Nicole Barger; Department of Ecology and Evolutionary Biology; Campus Box 334, University of Colorado, Boulder, CO 80309-0334; Phone: 303-492-8239; Email: nichole.barger@colorado.edu

Project Abstract:

Project goals: The goal of this research is to take a closer look at the community structure by using metabolic markers of biological soil crust communities. The overarching aim is to characterize the short-term survival of the biocrust microbial community members after inoculation while simultaneously tracking chemical functional metrics that indicate community health (e.g. photosynthetic activity and soil-sugar production).

Project objectives: This work has two primary objectives. (1) Assess the impact of increased water availability and reduced UV stress on cultivated biocrust inoculum just a few months after the restoration of a degraded site. (2) Closely monitor relationships between traditional metrics of biocrust health and metabolic indicators of community compositional changes during restoration of a degraded site.