

Date: September 05, 2018

Project # (to be assigned by EMC):

Principal Investigator(s): Dr. Chris Surfleet (Cal Poly, SLO)

Collaborator(s): Bethany Johnson, Collins Pine Company

Critical Question Theme and Rules or regulations being tested: 14 CCR Section 933.4

Project Title: Alternative Meadow Restoration.

1. Summary of Project [In not more than 500 words, provide a Problem Statement, describe Methods and Monitoring Location(s).]

The project relates to the EMC Strategic Plan, Theme 1: WLPZ Riparian Function. Specifically, it addresses the critical question of whether 14 CCR § 933.4 is effective in maintaining and restoring meadow and wet area habitat, functions, while maintaining water quality.

The goal is to quantify the hydrologic, vegetation, and water quality response before and after meadow restoration on meadows in the Sierra Nevada and Cascade mountains. The monitoring will be guided by the following hypotheses:

a. Removal of encroached *Pinus contorta* from meadows and WLPZ will increase soil moisture and groundwater levels conducive to meadow habitat.

b. Stream channel erosion and stream temperatures will not increase above water quality standards within or downstream of a restoration site with WLPZ removed.

We propose a 3 year study that uses a before after control intervention (BACI) approach for 3 restored meadow pairs. We propose to use soil moisture, groundwater, and climate monitoring from two pairs of meadows currently being studied and add one new meadow for the monitoring. Streamflow, stream temperature, and stream channel erosion will additionally be evaluated pre- and post- restoration at the Rock Creek meadow. Meadow vegetation composition will be evaluated post-restoration and compared to native meadow plant communities.

2. Estimate of Requested Funds:

- <\$10,000
- \$10,000 - \$50,000
- \$50,000-\$100,000
- \$100,000-\$150,000
- >\$150,000

3. Project Duration (years, months): 3 years
