

Project Summary
Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Develop Phase 3 Restoration Plan for Halstead Meadow, Sequoia National Park, CA

Discipline: Natural

Type of Project: Technical Assistance/Research

Funding Agency: National Park Service

Other Partners/Cooperators: Colorado State University

Student Participation: Yes, graduate student

Effective Dates: 06/01/2016 - 05/31/2019

Funding Amount: \$40,289.57

Investigators and Agency Representative:

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Project Abstract: The first two phases of Halstead Meadow restoration have been completed, filling the main erosion gully above and below the General's highway, replacing the road fill with a bridge, and vegetating the area. One final set of actions is required to stabilize and restore the areas just above phase 1 and below the phase 2 restoration projects. These actions will restore the very upper meadow where Halstead creek exits a steep gradient valley and transitions from stream to sheet flow system. In addition, below phase 2, Halstead Creek has deeply eroded into valley sediments and restoration of this reach will help to stabilize the Phase 2 restoration and bridge that occurs between Phase 1 and 2.

Investigators from CSU and NPS staff will collaborate to accomplish the following specific objectives.

1. Complete a topographic survey of the area below Phase II. These data will be used to determine the volume of sediment needed to fill the eroded Halstead Creek gully in this area, and allow the development of restoration design options for the NPS. The survey will include the picnic area facilities (e.g. edge of pavement at road, existing trails/dirt road down to picnic area, location of "disturbed" footprint, trees larger than 12" diameter at breast height, vault toilet, major boulders, fire pits, etc.) to allow a redesign of the picnic area. The survey data will be provided to NPS during the summer of 2016 for use in CAD to design the improvements.
2. Use the topographic data, and lessons learned from the design and implementation of Phase I and II restoration in Halstead Meadow, to develop three preliminary design alternatives, with draft grading plans and volume estimates. Each alternative would have narrative, maps, and valley long and cross sections.
3. Design of small check dams and fills needed in the area above Phase 1.
4. Review and participate in writing the Environmental Assessment for implementation of the restoration projects outlined here.
5. Provide a final report for the work completed.
6. Complete a wetland delineation report for the restoration project.

An additional task needed for the completion of the Phase 3 work is an engineer's evaluation of the existing concrete check dam at the bottom of the Phase 2 area. SEKI will request assistance from an NPS engineer to complete this task.

Keywords: Restoration, Halstead Meadow, Sequoia National Park, Colorado State University