

Appendix B-8

**LAKE TAHOE RESTORATION PROJECTS
ESTIMATED DIRECT COSTS & KEY MILESTONE DATES**

Project Name: Cold Creek/High Meadow Ecosystem Restoration **Agency:** USFS - LTBMU
Prepared by: Barak Shemai **Phone:** 530.543.2622 **EIP #:** 400

Identify estimated costs of eligible reimbursement expenses:

1. Planning, Environmental Assessment and Research Costs (specialist surveys, reports, monitoring, data collection, analysis, NEPA, etc.)	\$	<u>105,000</u>	<u>27</u>	%
2. Direct Labor (Payroll) to Perform the Project	\$	<u>102,700</u>	<u>26</u>	%
3. Project Equipment (tools, software, specialized equipment, etc.)	\$	<u>13,000</u>	<u>3</u>	%
4. Travel (including per diem where official travel status required to carry out project, such as serve as COR, experts to review reports, etc.)	\$	<u>7,000</u>	<u>2</u>	%
5. Official Vehicle Use (pro rata cost for use of Official Vehicles when required to carry out project)	\$	<u>10,000</u>	<u>3</u>	%
6. Cost of Contracts, Grants and/or Agreements to Perform the Project	\$	<u>95,000</u>	<u>24</u>	%
7. Other Direct Costs (direct labor for agency personnel to do project procurements; COR; PI; personnel assigned as NEPA lead; personnel assigned to review contracted surveys, designs/drawings, reports, etc.; project manager and/or project supervisor; and contracted costs for project manager and/or project supervisor if contracted separately, public awareness and environmental education)	\$	<u>25,000</u>	<u>6</u>	%
8. Indirect Costs	\$	<u>35,000</u>	<u>9</u>	%
TOTAL*:	\$	<u>392,700</u>	<u>100</u>	%

Estimated Key Milestone Dates:

Milestones/Deliverables:	Date:
Ecosystem Assessment complete	December 2005
Ecosystem Restoration Plan complete	December 2006
NEPA for High Meadows complete	March 2007
Construction Plans and Specifications for High Meadows complete	December 2007
High Meadows Project Construction begin	July 2008
High Meadows Project Construction complete	October 2009
Final Completion Date: (including monitoring)	2018

APPENDIX I

LAKE TAHOE CAPITAL PROJECT PROPOSAL

Project Name: Cold
Creek/High Meadow
Ecosystem Restoration
Project

Capital Focus Area: Watershed
**Restoration and Habitat
Improvement**

EIP #: 400

Lead Agency: USFS

Contact: Barak Shemai

Threshold: WQ, SC, V, F, W,
SR, R

Phone Number: 530 543 2622

Threshold Standard: WQ 1-6,
SC2, V 1&4, F2-4, W1, SR3, R1

Email Address: bshemai@fs.fed.us

Is this a multi-year

Total Project Cost: \$4,200,500

Project?

Funding Request in this Round: \$392,700

(If "Yes", describe in the
Detailed Project Description
below number of years or phases
and which year the requested
funding will cover)

yes

Project Summary (maximum 200 words):

The LTBMU will conduct a comprehensive Ecosystem Assessment and Restoration Plan for the Cold Creek watershed, with special attention to High Meadows (the Project Focus Area). As part of the assessment the LTBMU will determine past, present, and desired ecosystem conditions and develop conceptual restoration solutions. Upon completion of the Ecosystem Assessment, the LTBMU will conduct the NEPA planning process, develop an Ecosystem Restoration Plan, that includes 100% construction plans and specifications for the Project Focus Area, and implement selected projects to restore natural physical and biological processes that sustain healthy ecosystem function in the Cold Creek watershed.

Detailed Project Description:

Over the past 150 years the Cold Creek watershed has been affected by management activities such as timber harvest, livestock grazing, road construction, water diversions, and urban development. These activities have contributed to the degradation of ecosystem function. The High Meadows portion of the Cold Creek watershed was acquired by the LTBMU in 2003. The acquired parcel is characterized by alpine streams and meadows degraded by many years of livestock grazing. The Cold Creek stream channel through High Meadows has suffered incision and disconnection from its floodplain, straightening, loss of riparian vegetation, and general degradation of ecosystem productivity. In response, the following schedule will be followed to achieve the goals and objective listed below. This project began in 2004 with an Ecosystem Assessment and is expected to continue through 2009. This round of funding (7) will cover the completion of the restoration plan and construction specifications.

- 2004-2005: Ecosystem Assessment Report & Preliminary Restoration Plan
- 2005-2006: Initiate and complete NEPA process (EA) for project focus area

- **2006-2007: Complete Restoration Plan including construction specifications**
- 2008: Begin implementation in accordance with above findings (EAR, EA, Restoration Plan)
- 2008-2009: Complete restoration implementation (on-the-ground construction)

Describe the goals and objectives of the project:

The goal of the project is to identify and understand the natural physical and biological processes under which the Cold Creek watershed evolved, identify the impacts that have impaired ecosystem function, and restore those processes and functions.

The objectives are to:

- complete the Ecosystem Assessment by December 2005
- complete the NEPA planning process for the Project Focus Area by December 2006
- complete an Ecosystem Restoration Plan by December 2006
- complete construction plans and specifications for the Project Focus Area by April 2007
- obtain regulatory permits and retain contractual services from a qualified construction firm by summer 2007
- implement a restoration project in the Project Focus Area beginning in August 2008 and ending in October 2009.

Describe the anticipated project accomplishments:

The Cold Creek/High Meadow Ecosystem Restoration Project will:

- restore four hundred acres of historic forest/meadow/Stream Environment Zone plant and animal community complexes in the watershed
- restore 4-5 miles of Stream Environment Zone
- re-introduce Lahontan cutthroat trout to the watershed
- reduce streambank erosion and improve stream water quality
- reconnect the stream channel to its floodplain, raising the water table, improving flood attenuation, and increasing soil moisture retention.

Describe the “readiness” of this project to move forward (Environmental documentation, etc.):

The LTBMU is operating under an existing contract with Swanson Hydrology and Geomorphology (SH&G) to complete a comprehensive Ecosystem Assessment and Restoration Plan. The Ecosystem Assessment will provide a thorough understanding of historic ecosystem function and its current state of impairment. The LTBMU can use this knowledge to proceed with the NEPA planning process from a solid foundation of scientific data.

The LTBMU will initiate a contract with Dr. Michael L. Morrison, a recognized expert in the field of Wildlife Restoration. Dr. Morrison will develop a Wildlife Restoration Plan in coordination with Watershed Restoration Planning. For the past year Dr. Morrison has conducted surveys for vertebrate and invertebrate species (including small and mid-sized mammals, birds, bats, butterflies, and reptiles and amphibians) in other project areas and at reference points around the Lake Tahoe Basin. His work will provide an empirical assessment of wildlife conditions in the Cold Creek watershed and become a key component to the Ecosystem Restoration, Monitoring and Adaptive Management Plans.

Describe partnerships for this project. (Include documentation):

The LTBMU will work closely with El Dorado County Department of Transportation, City of South Lake Tahoe, South Tahoe Public Utilities District, the California Department of Fish and Game, the California Tahoe Conservancy, Sierra Pacific Power Company, the Lahontan Regional Water Quality Control Board, and the Tahoe Regional Planning Agency. These partners will be represented on the Technical Advisory Committee, will assist in development of project designs, and will review all planning and design documentation.

Describe the project monitoring that will implemented as part of this project including:

- (1) The questions the monitoring program is designed to answer (This is a preliminary list to be refined and expanded once a proposed action has been finalized.)**

What is the current ecological condition of the meadow in the Lake Tahoe basin according to the Wexelmann protocol?

What are the existing hydrological, geomorphic, and biological conditions of stream segments/floodplains targeted for restoration?

To what degree have restoration efforts been successful in improving terrestrial wildlife habitat and populations?

To what degree have restoration efforts been successful in restoring floodplain connectivity, stabilizing stream banks, and sediment transport regimes?

To what degree have channel restoration efforts been successful in improving fish habitat?

(2) The monitoring approach

An adaptive management monitoring approach will be used to monitor implementation and effectiveness of this project. This monitoring will involve data collection before, during and after the project. Existing contracts with SH&G and Dr. Michael Morrison include development of a monitoring plan that will track project effectiveness relative to trends of target physical and biological processes. The results of this continuous long-term monitoring will trigger project maintenance actions when predetermined goals are not met. Some of the key ecological parameters that will be monitored are:

- dynamic stability of fluvial geomorphic processes under a full range of discharges (stream channel dimension, pattern, and profile, stream channel and floodplain connectivity, etc.)
- expansion and self-perpetuation of riparian plant communities
- species composition, number and diversity of benthic macroinvertebrates, small and mid-sized mammals, birds, bats, butterflies, reptiles, and amphibians
- survival and reproduction of species of special concern such as Lahontan cutthroat trout

Implementation monitoring will focus on the use of BMPs during construction and determining if the project was constructed according to design.

(3) Whether this project monitoring fits in to a larger monitoring or research program?

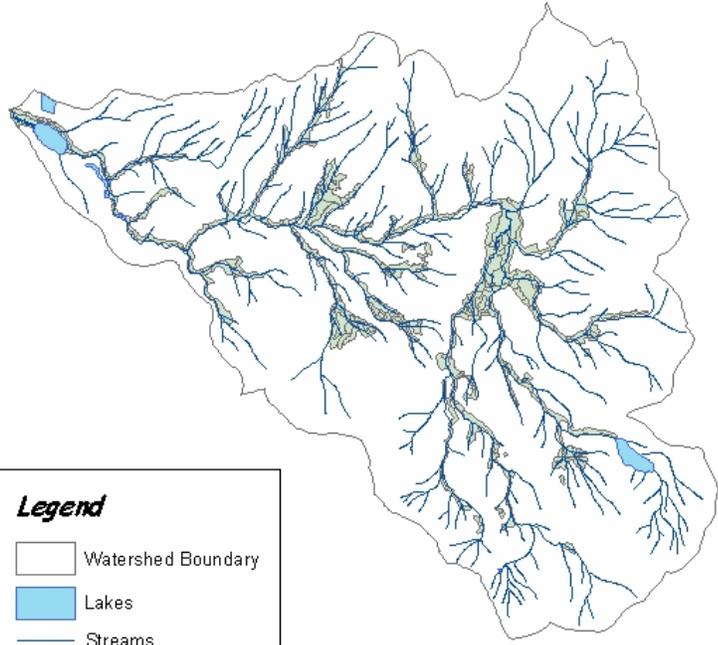
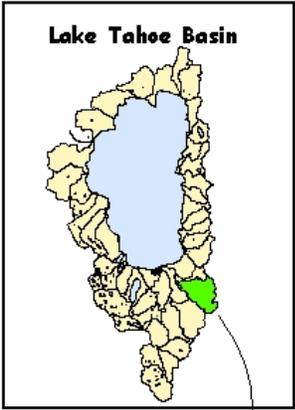
This project monitoring is part of the LTBMU Adaptive Management Programs effort to monitoring aquatic, riparian and meadow restoration. The overriding purpose of this program is to determine the success of restoration project in order to improve upon future projects.

Describe how the project results will be communicated and made-available to the public.

The information created from this project will be disseminated to three audiences: 1) the general public, 2) other resource agencies, and 3) the broader scientific community. The audiences will be informed respectively through the USFS website, public/interagency meetings, and peer-reviewed publication.

Include an 8 ½ X 11 map depicting the project.

Cold Creek Watershed



Legend

- Watershed Boundary
- Lakes
- Streams
- Riparian Areas

