Project Summary

This grant will involve planning and environmental review for meadow restoration work within Cody Meadow. Cody Meadow was identified as a restoration priority based on issues identified in Forest Service assessments performed for range NEPA for the Cody Meadow Allotment in 2004 & 2005, the ongoing existence of which were verified by a field visit in 2012.

The project outcome will be a NEPA document and decision including measures needed to achieve desired conditions within Cody Meadow. Deliverables include specialist reports, proposed action, NEPA document, decision document, and engineering survey & design.

Environmental Setting

Cody Meadow (T10N, R17E, Sec 6 & 7) is 32 miles east of Placerville and is located on the Placerville Ranger District of the Eldorado National Forest, entirely on Forest Service Lands under federal jurisdiction. The meadow consists of 123 acres of mapped meadows contained in a long narrow valley situated within the Headwaters of the South Fork American River watershed (#180201290101). The setting consists of Mehrten formation volcanic bedrock with some intrusions of granitic bedrock. The soils within the meadow are mostly fine sandy and silty Aquepts (wet weakly soils) and Umbrepts (dry weakly developed soils) with small areas of Histosolls (organic soils). Cody Meadow contains a segment of Cody Creek, which drains into Strawberry Creek, and then into the South Fork of the American River (~ 3.2 miles downstream). According to the fourth edition of the Water Quality Control Plan (Basin Plan) for the Central Valley Region, beneficial uses for the American River include: municipal and domestic supply; irrigation; stock watering; hydropower; contact and other non-contact recreation; warm and cold freshwater habitat; cold water spawning, and wildlife habitat.

Cody Meadow is located within the Cody Meadow Unit (3,496 acres of NFS land) of the Cody Meadow Allotment (33,179 acres NFS and 30,495 acres private land) and is designated as a Key Area. Key Areas are identified for units where the timing, pattern and intensity of livestock use can be monitored and considered to be representative of the use occurring across the unit. The Cody Meadow Unit is grazed annually from approximately August 1 to August 15 by 350 head of cattle.

Roads both parallel and bisect Cody Meadow, however, most of these roads are non-system roads that are not designated for public use on the Forest's Motor Vehicle Use Map (MVUM). The range permittee has used one non-system road to access a sheep herder's cabin in the past, and might use this road to drive to the meadow periodically, but none of the roads are an essential part of range management as most work is accomplished on horseback. One Forest Service system road bisecting part of the meadow is used by hunters and jeepers (even though not on the MVUM) although this route is not designated for public motor vehicle use. There is a non-motorized trail in the upper portion of the meadow. Past logging, including clearcutting, has occurred in the vicinity of the project.

The meadow supports a population of rainbow trout (Oncorhynchus mykiss), an Eldorado National Forest management indicator species. Cody Creek and Strawberry Creek are nurseries for the young fish that are caught as adults downstream by numerous fishermen accessing the South Fork American River off the busy Hwy 50 corridor. Sierra Nevada yellow-legged frogs (Rana sierrae), a Forest Service sensitive species and Candidate for listing, have been documented in the meadow in the past (in 2004 & 2005). Two fens (peat-forming wetlands that receive nutrients from sources other than precipitation) have also been documented within Cody Meadow.

The project will be designed to be consistent with the Eldorado National Forest Land and Resource Management Plan and the Sierra Nevada Forest Plan Amendment.

Project Description

Meadow restoration work, including planning and implementation of projects, is an emphasis of the Eldorado National Forest's watershed program. Meadow restoration was identified as an intended accomplishment in the Regional Forester's Leadership Intent and is a component of the National Strategic Plan for watershed restoration. The goal of this project is to conduct planning activities needed to undertake a meadow restoration project that will improve hydrologic function, water quality, and habitat within Cody Meadow. The Cody Meadow Restoration Project will also support the long-term ecological value and economic viability of the Cody Meadow Allotment and the health of the Headwaters South Fork American River Watershed.

NEPA for the Allotment Management Plan for the Cody Meadow Allotment was completed in September 2007. The purpose of the Proposed Action was to permit livestock grazing on the Cody Meadow Allotment while implementing the management actions that are necessary to achieve healthy ecological conditions. Past monitoring and new inventories were used to identify areas where changes in management were needed to comply with the Eldorado National Forest Land and Resource Management Plan, as amended by the Sierra Nevada Forest Plan Amendment in 2004.

Two Proper Functioning Condition (PFC) Assessments were completed for Cody Meadow as part of range NEPA.[1] One assessment was completed in 2004 and the other in 2005. The 2004 assessment found the meadow to be Non-functional, while the 2005 assessment found the meadow to be Functional-at Risk. The improvement in Cody Meadow between September 2004 and October 2005 was most likely the result of the absence of cattle grazing in summer and fall of 2005, combined with a wetter than usual spring resulting in greater near-surface moisture. Conditions in both years, however, were described as poor.

[1] The PFC assessment provides a consistent approach for assessing the physical functioning of riparian-wetland areas through consideration of hydrology, vegetation, and soil/landform attributes. The PFC assessment synthesizes information that is foundational to determining the overall health of a riparian-wetland area.

The following are observations regarding the condition of Cody Meadow from the 2005 assessment:

- Erosional features – headcuts, rills, channels, and denuded areas – exist throughout the meadow. Partial revegetation of many of these features has occurred, while others continue to actively erode. Until all of these erosional features are stabilized and no longer eroding, Cody Meadow as a whole should at best be considered as at the lower end of Functioning-at Risk.

- The channel of Cody Creek in the northern part of the meadow is fairly wide, and past bank shearing by livestock at a number of locations is evident. Portions of the stream banks lack woody riparian vegetation and, as a result, appear unstable. It appears that the water table in portions of the meadow adjacent to Cody Creek – at least in late summer and early fall – has declined since an unknown historic time.

- Two roads are eroding sediment directly into the meadow. The east-west trending Forest Service system road bisects one arm of the meadow. The other road is a non-system road that is located immediately adjacent to the northern part of the meadow. The road that bisects the meadow and its culvert, have changed the grade of the stream channel and may be the cause of a large headcut above the road. The culvert is damaged at both the inlet and the outlet, which appears to restrict the passage of surface water through it, and the road itself affects the movement of surface and sub-surface water to the lower portion of the meadow.

- Additional roads and trails adjacent to the meadow and crossing tributary channels may also contribute increased amounts of run-off and sediment to the meadow.

Aquatic habitat has been altered in Cody Meadow by the following:

- Erosional features throughout the meadow have altered the surface and sub-surface flow of water. This has likely resulted in the discontinuous flow of Cody Creek in late summer and early fall, which in turn reduces the amount of suitable habitat for frogs and fish.

- The road which bisects the meadow poses a barrier to fish passage during dry periods and exposes amphibians to crushing by vehicles from late spring to late fall.

Following the NEPA decision for the Cody Meadow Allotment Management Plan in 2007, a grazing permit was issued in 2008. Grazing Permits are issued for a 10 year period, with NEPA generally reviewed prior to the expiration date or if there is a change in condition. The new Allotment Management Plan should help to ensure that management actions occur with respect to grazing that are necessary to achieve healthy ecological conditions within Cody Meadow, but will not rectify many of the problems identified during the Proper Functioning Condition Assessments. A field visit in October 2012 verified the ongoing existence of the issues described in the PFCs, as

well as noting conifer encroachment within the meadow, although additional revegetation of some erosional features has occurred.

Using the Sierra Nevada Conservancy grant, the Forest Service will utilize an interdisciplinary team to identify appropriate restoration actions to achieve desired conditions in Cody Meadow, develop an implementation schedule, and conduct appropriate environmental review for the actions to be conducted. According to the Sierra Nevada Forest Plan Amendment Record of Decision of 2004, meadows in desired condition generally have species composition and structural diversity of plant and animal communities that provide desired habitat conditions and ecological functions; ecological status of vegetation that is late seral with a diversity of age classes of hardwood shrubs present and regeneration occurring; and are hydrologically functional with sites of accelerated erosion stabilized or recovering and vegetation roots occurring throughout the soil profile.

The Eldorado National Forest has assembled an interdisciplinary team (IDT) to complete the project, which includes the following specialists: archaeologist, botanist, civil engineer, fisheries biologist, cartographer, hydrologist, rangeland specialist, soil scientist, and wildlife biologist. Addressing road-related issues (through removal, replacement, and/or improvement), and stabilizing eroded areas (e.g. headcuts, rills, channels, and denuded areas), will likely be important components in reducing erosion and restoring hydrologic connectivity within the meadow. Preventing further erosion will reduce sediment delivery to Cody Creek, Strawberry Creek, and ultimately the South Fork American River, and will help prevent non-attainment of beneficial uses. To ensure that water quality is protected during project implementation, the Forest Service will utilize Best Management Practices from the Region 5 Forest Service Handbook 2509.22 (Soil and Water Conservation, Chapter 10, Water Quality Handbook) in developing the proposed action to be analyzed.

Improving the ecological condition of Cody Meadow also offers benefits from a range perspective. The ecological condition of Cody Meadow, in conjunction with livestock management, plays a significant role in the season of use and numbers allowed to graze in the Cody Meadow Unit. Even a small reduction in the season of use in the unit can adversely affect the economic viability of the grazing operation. Due to the existing ecological condition of Cody Meadow, the allowable herbaceous forage utilization standard is 30%, lower than it would be if the conditions and seral status in the meadow improved.[2] Improved meadow health and seral status would also improve the ability of the stream banks and special aquatic features to withstand livestock impacts and reduce the likelihood that grazing would exceed allowable standards for stream bank disturbance.

Existing baseline monitoring data, together with additional survey data to be collected as part of project planning, will be utilized to measure effectiveness of future restoration activities as appropriate. In addition to Proper Functioning Condition assessments, the

[2] In accordance with SNFPA Standard and Guidline #20, meadows in early seral status will have a reduced standard of 30%, whereas meadows in late seral status will have a standard of 40%.

Forest has conducted Stream Condition Inventories (SCI) in Cody Meadow.[3] The USFS Region 5 Long Term Range Monitoring Program has established two long term range condition monitoring plots in Cody Meadow. The new Allotment Management Plan for the Cody Meadow Allotment includes monitoring of key and critical areas with adaptive management actions required if specified thresholds are exceeded. Monitoring elements required for Cody Meadow, include: herbaceous forage utilization, woody riparian shrub utilization & aspen utilization, photopoint monitoring of rills and gullies, evaluation of livestock disturbance to springs or fens, and ecological status and trend.

Workplan and Schedule

Left-hand analysis will include public involvement and consideration of existing and desired conditions. Surveys will be completed as needed for archaeology, botany, engineering, fisheries, hydrology, soils, and wildlife resources. A list of potential actions to fill the gaps between existing and desired conditions will then be developed. Once left-hand analysis has been completed, a proposed action will be described and the interdisciplinary team will proceed through NEPA according to the work schedule below. Engineering survey and design work will also be completed for needed work (i.e. road work) to move the project closer to implementation.

WORK SCHEDULE*

DELIVERABLES	COMPLETION DATE
Work begins (survey work begins when snow allows)	4/30/13
Survey/inventory, proposed action/purpose & need (concurrent), project initiation letter	7/31/13
Public involvement plan & scoping	8/31/13
Issues & alternatives, specialist reports written (final, except where consultation is required)	9/30/13
Progress report	10/31/13
Consultation completed, all specialist reports finalized	12/31/13
NEPA document written	1/31/14
Engineering survey & design	2/28/14
Comment period	3/2/14
Decision document written, project completed	3/31/14
Final Report	4/30/14

*Resources needed: IDT, vehicle costs/mileage, administrative costs.

[3] SCI provides standard protocols to collect baseline and trend stream data using objective, measureable protocols. The SCI protocols can be used to compare stream condition over time with a reasonable level of statistical confidence (generally the ability to detect a 20% change with an 80% level of confidence).

Restrictions, Technical/Environmental Documents and Agreements Narrative
N/A – This proposal is for a Category 2 project.

Organizational Capacity:
The Forest has planned and implemented numerous meadow and other restoration projects over the past 25-30 years, using both active and passive techniques. Projects have included addressing road and trail related issues, restoring hydrologic function, stabilizing eroded areas, removing encroaching conifers, planting native vegetation, and utilizing adaptive management.

The Eldorado National Forest has assembled an experienced interdisciplinary team (IDT) to complete the project, which includes the following specialists: archaeologist, botanist, civil engineer, fisheries biologist, cartographer, hydrologist, rangeland specialist, soil scientist, and wildlife biologist. Specialists on the team have pursued opportunities to acquire new skills in restoration of aquatic features and habitat, and have a network of Forest Service and other professionals to consult with if needed. The experience of the rangeland specialist will be useful in working with the allotment permittee during the completion of this project.

The Forest has also successfully utilized volunteers to complete Forest projects. Trout Unlimited has a standing Memorandum of Understanding with the Eldorado National Forest and has actively partnered with the Forest on many projects in the past.

Cooperation and Community Support
Letters of support are included in this grant from the following sources:
- Central Valley Regional Water Quality Control Board
- Trout Unlimited Eldorado
- Natural Resources Conservation Service, Placerville Field Office

The Eldorado Chapter of Trout Unlimited has also expressed an interest in being active volunteers in this project, assisting with riparian planting and other areas of need.

Additionally, scoping is performed for all Forest Service proposals and analysis of scoping comments received will be used to identify issues. Dependent upon interest, the Eldorado National Forest webpage, informational discussions, and field trips may be used to further engage the public.

Long-Term Management and Sustainability
To fund future implementation of the project, the Forest Service would take advantage of both internal and external funding opportunities.

The Forest typically has a small amount of Watershed Improvement Program funding available each year to advance projects that protect, maintain, improve or restore water or soil resources. Treatments may be focused on soil productivity, quality and quantity of surface or ground water resources; or timing of water flows per FSM 2520. Land treatments, structures and other non-structural measures (when not required to mitigate

another project) may be implemented. As funding is generally limited, the Forest generally attempts to leverage funds received.

Internal competitive opportunities to fund decommissioning and fixing of roads and trails in environmentally sensitive areas have been available in years past on an annual basis through the Legacy Roads and Trails (CMLG) program. Although funds are limited, the Forest has successfully competed for these funds multiple times. CMLG program priorities for recent years that may be relevant to the Cody Meadow project, include: (1) road decommissioning where inaction can lead to water quality issues in stream and water bodies which support threatened, endangered and sensitive (TES) species and community water systems; (2) decommissioning unnecessary and/or undesired system and unauthorized roads or trails; (3) removing or replacing stream crossing structures that are a barrier to aquatic organism passage; (4) road and trail repair and maintenance and associated activities in environmentally sensitive areas; and (5) implementation of Best management Practices to reduce sedimentation.

The Forest has also successfully collaborated with partners to fund meadow restoration planning and implementation through grants made available by the National Fish and Wildlife Foundation and the Sierra Nevada Conservancy, among others. Grants allow the Forest to accomplish significantly more restoration projects than internal funding can accommodate.

Once funding is secured, the Forest has permanent resource specialists, engineers, and construction and maintenance crews, among others, that it may call upon to see the project through implementation. The Forest has also been fortunate enough to receive in kind contributions from partners, such as Trout Unlimited (who have volunteered their assistance with this project).

Performance Measures

The following performance measures that all grantees are asked to consider are applicable to the proposed project: Number of People Reached; Dollar Value of Resources Leveraged; Number & Type of Jobs Created; and Number and Value of New, Improved or Preserved Economic Activities.

The following performance measure is also applicable to the proposed project: Percent of Pre-project and Planning Efforts Resulting in Project Implementation.

Budget Narrative

The Forest plans to utilize permanent Forest Service staff to complete the pre-project planning activities described in this proposal, which avoids the high cost of contracting work out. Work performed for range NEPA, Proper Functioning Condition Assessments, Stream Condition Inventories, establishment of long term range monitoring plots, and AMP monitoring represent a Forest Service in-kind contribution to this project. In-kind support from Trout Unlimited will help to defray some project costs when the project is implemented.