

**LANDOWNER AGREEMENT**  
**RED CLOVER/McREYNOLDS CREEK RESTORATION PROJECT**  
**April 25, 2006**

**Project Goals:**

The Red Clover/McReynolds Creek Project is located primarily on private lands owned by the Goodwin Family. The goal of this project is to reduce the erosion of the meadow, improve fish and wildlife habitat, restore the aesthetics of a stable riparian area while maintaining its multiple-use values. The project goals match the mission of the Feather River Coordinated Resource Management (CRM) group from whom the landowner requested assistance in the Fall, 2002. These goals are also consistent with those of the Proposition 13 CALFED Watershed Program that is funding project construction through a contract with Plumas Corporation. The above referenced entities have been engaged in a collaborative partnership to achieve these shared visions. This agreement that outlines the roles, responsibilities and limitations of the partners, will remain in effect for a period of ten (10) years, through September 30, 2016.

**Problem Statement:**

The partners, through a three-year process of data collection and analysis, have determined that the primary channel characteristic impacting the goals stated above is the disconnection of the channel from its historic functional floodplain. This channel/floodplain disconnection is pervasive throughout the upper Feather River watershed meadows and valleys. The disconnection results from entrenchment of the channel into its alluvial foundation. This entrenchment phenomenon in the watershed has frequently been associated with practices and watershed impacts dating back over 100 years.

Restoration efforts on Red Clover Creek, both within the project area and without, have been ongoing for more than 20 years with positive initial responses in vegetation and habitat recovery. However, without the flood relief function of a floodplain, frequent moderate to major floods (1986, '93, '95, '97) and attendant sediment loads have repeatedly curtailed this recovery, with the notable exception of the Red Clover Creek Demonstration Project (RCCDP). The existing deeply entrenched channel functions as a 'drain' that de-waters much of the meadow. This has induced a vegetative conversion from perennial moist meadow grasses and forbs to less desirable dry site annuals, forbs and sagebrush. Ongoing monitoring of other CRM meadow projects indicates the potential for functional meadow floodplains to attenuate floods and increase summer baseflows through shallow groundwater storage.

**Project Concept:**

The three-year process of data collection, analysis and development of conceptual alternatives by the partners through the CRM Technical Advisory Committee (TAC) process has led to a decision to implement the following Design Alternative.

The selected design alternative will entail abandoning the existing entrenched, disturbed channel. Streamflow will be returned to existing remnant channels on top of the meadow, which will also re-connect the channel to its naturally evolved floodplain. This will be accomplished by filling the existing gully back to its original grade via the pond-and-plug method. This is expected to raise the shallow groundwater table and re-invigorate the meadow vegetation.

The project also entails installation of livestock management infrastructure. This infrastructure consists of approximately 42,000 linear feet of new or replacement fencing and spring development in two (2) locations (see attached map). Several of the ponds created as part of the project implementation will be sited and designed to provide off-channel water sources as well.



## **Project Requirements:**

The sustainability of all natural restoration projects require certain key activities to provide for the long-term sustainability of the partners' shared vision. This requires the identification of the roles and responsibilities of the partners in the **monitoring, maintenance** and **management** of the project as well as potential funding resources beyond the current contract period. It also requires, to the extent feasible at this time, identification of important thresholds for triggering maintenance and management decisions in the long-term.

**Monitoring:** Project monitoring has three objectives: 1) to document the success/failure of the project in meeting project goals; 2) to identify potential or actual need for post-project maintenance intervention; 3) to provide information to the PNF and landowner(s) in developing short- and long-term management decisions. Thorough project monitoring requires collaborative effort in both quantitative data collection and qualitative observation.

<b>Monitoring Components:</b>	Fish- size, <i>number, species</i> Wildlife- <i>species, number</i> Hydrology- <i>streamflow, water temperature</i> , groundwater Vegetation- <i>community change, percent cover, forage productivity</i> Channel- <i>X-section</i> , profile Photo- <i>change over time</i>
<b>Monitors by Component:</b>	Fish (Ca. Dept. of Water Resources) Wildlife (Ca. Dept of Water Resources) Hydrology (Plumas Corp) Vegetation (Plumas Corp/landowner) Channel (Plumas Corp) Photo (Plumas Corp)
<b>Monitoring Intervals:</b>	Fish- two years baseline/ biennially 4-10 years Wildlife- baseline/annually 2-5 years Hydrology- baseline/monthly 2-5 years Vegetation- baseline/annually 2-10 years Channel- baseline/1 year/after flood for up to 10 years Photo- baseline/annually 2-10 years

The monitoring components ***bold italicized*** above would, in total, provide information to document monitoring objective #1- project success/failure. The channel and vegetation components would identify needs for objective #2- maintenance. Channel, vegetation and aesthetic components would provide the FRCRM and landowner information for objective #3- management. All direct data collection activities would be augmented by qualitative observations from casual visits, flood monitoring and TAC evaluation.

## **Project Maintenance:**

Ideally, a natural restoration project should have minimal need for ongoing maintenance. However, as a 'disturbed' site, a restoration project will require several years to recover and develop the resistance necessary to absorb the impacts of infrequent, but high stress, events such as major floods (>10 year) or severe drought. Alluvial channels such as Red Clover Creek and McReynolds Creek are expected to adjust laterally. The quantitative and qualitative monitoring will be focused on detecting the potential for vertical adjustment of the channel (particularly entrenchment) as well as anomalies in the channel bed deposition



patterns. Typically, the project TAC will remain in place and active for many years after a project has been completed. This provides for long-term evaluation of monitoring data/observations, maintenance recommendations and support for land management decisions. Maintenance of the project will become the landowners' responsibility with, if necessary, attempts at further grant support through the auspices of the Feather River CRM.

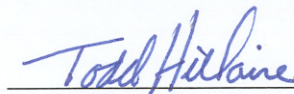
**Project Land Management:**

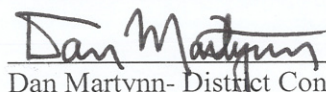
The responsibility for managing the lands encompassing this project ultimately falls on the landowner(s), the Goodwin Family with support from the project TAC and the USDA- Natural Resources Conservation Service (NRCS). A binding contract between the landowner(s) and NRCS explicitly details livestock management activities within the project area. The above referenced agreement, though summarized below, is hereby incorporated in its entirety into this agreement. A short-term management strategy for the project, along with the monitoring plan and thresholds for recovery and subsequent management are described below.

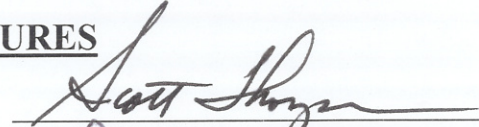
The project area and adjacent uplands, currently comprising two (2) fenced pastures will be further fenced as part of the project work to total five (4) pastures. Additionally, off-channel livestock water supplies will be provided via spring development or project-related ponds. The restored riparian area will be enclosed in permanent fencing to allow separate management of the primary meadow/floodplain/channel area. This enclosure will have grazing excluded for 3 years with annual monitoring, until monitoring indicates that the vegetation has recovered to the extent it will be resistant to significant floodflow stress. Significant floodflow stress will result when floodplain flow depths exceed 1.5' and a velocity of 2 feet/second in this project area. After 3 years the decision to re-introduce livestock into enclosure will be assessed on a yearly basis by landowner(s), NRCS and CRM staff based on the results of the ongoing monitoring program.

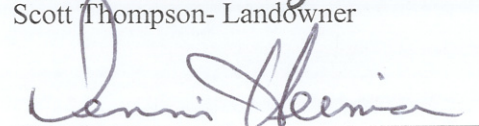
**APPROVAL SIGNATURES**

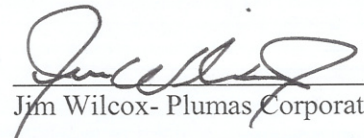
  
George Goodwin- Landowner

  
Todd Hillaire- Ca. Dept. of Water Resources

  
Dan Martynn- District Conservationist  
USDA- Natural Resource Conservation Service

  
Scott Thompson- Landowner

  
Dennis Heiman- Cent. Valley RWQCB

  
Jim Wilcox- Plumas Corporation



# RED CLOVER CREEK/MCREYNOLDS CREEK RESTORATION PROJECT

SCALE 1:24,000  
DESIGN AND FENCE PLAN VIEW

