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## **Environmental Assessment**

# **Perazzo Meadows Watershed Restoration and Grazing Allotment Management Project**

## **Tahoe National Forest Sierraville Ranger District**



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# Perazzo Meadows Watershed Restoration and Grazing Allotment Management Project

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# ENVIRONMENTAL ASSESSMENT

## Perazzo Meadows Watershed Restoration Project and Grazing Allotment Management Project

USDA Forest Service – Tahoe National Forest – Sierraville Ranger District

### CHAPTER I

#### 1.1 Introduction

The Forest Service (Sierraville Ranger District of the Tahoe National Forest) is proposing to implement watershed restoration activities within the Little Truckee River watershed in and around Perazzo Meadows. At the same time, the Forest Service is proposing to re-authorize grazing on the Perazzo Meadows Grazing Allotment. Management of the allotment would be guided by the *Willow Flycatcher Meadow Management Strategy* and would be designed to facilitate the proposed watershed restoration activities.

Federal actions, such as watershed restoration activities, re-authorization of grazing, and allotment management on national forest lands, must be analyzed to determine potential environmental consequences (*National Environmental Policy Act of 1969, NEPA; Rescission Act of 1995 (P.L. 104-19)*). This EA summarizes and discloses the analysis of environmental effects of the proposed action and alternatives. Additional documentation, including more detailed analyses of natural resources in the project area, is found in the project planning record located at the Sierraville Ranger District office in Sierraville, California.

The Forest Service is the Lead Agency under NEPA for both the watershed restoration and the grazing allotment management projects. The watershed restoration project is also a discretionary State action subject to the *California Environmental Quality Act (CEQA)*. The Lahontan Regional Water Quality Control Board, through a Memorandum of Understanding review process with the Forest Service, is the designated Lead Agency for CEQA.

#### 1.2 Project Area Description

The proposed project is located in Sierra County, California in the south central portion of the Sierraville Ranger District, approximately 5 miles west of Highway 89 and south of Fibreboard Road. Perazzo Meadows consists of a series of wet meadow complexes fed by the Little Truckee River, Perazzo Canyon Creek and Cold Stream located along the east slope of the Sierra Nevada mountain range.

## **Historical land use modifications to the project area**

The Perazzo Meadows Restoration Project area was intensely used and modified during the gold rush and immigration of the late 1800s and early 1900s. Adjacent to the project area is the historical Henness Pass Road, which was used extensively by both stages and freighters, and, “For one period of time the use of the road was so great that it became necessary to regulate traffic with freight wagons running during the daylight hours and stages traveling at night,” Byrd 1992 pg. 12). A stage stop for this major transportation route is located near the project area. Henness Pass Road is still a functional county road today. It is postulated that significant changes to Little Truckee River channel form and function within Perazzo Meadows began during this time period with road use, road building across the top of the alluvial fan surface, and nearby resource extraction such as logging (the Hobart Estates Co. had an intensive logging operation east of the project area). Ranching and dairying were major industries, and two historical summer dairies, one dating to the late 1890s and one post-1900, are located along the meadow edges in the project area. During this time, it is thought that cattle and sheep ranchers actively modified the portion of the historic channel that runs through the upper meadow in an attempt to dry out the wet meadow and make it more accessible to grazing in the summer months, as is suggested by 1939 aerial photographs (Swanson 2008).

The Perazzo Meadows Geomorphic Assessment (Swanson 2008; incorporated by reference and available upon request at the Sierraville Ranger District) identified additional historical influences that contributed to the existing channel geomorphic conditions:

- Alluvial fan function became limited between 1939 and 1952 due to channel incision, which was related to road building across the fan, logging and/or grazing between 1939 and 1952. These trends also increased sediment transport.
- Large rain on snow events occurred in February 1963 and December 1964 resulting in decreased stream and meadow function.
- Access to the historic floodplain appears limited and large unvegetated bars are visible by 1983.
- More recently, bridge construction and construction of a low water crossing for vehicles has caused the flow of the Little Truckee River to be concentrated on the fan and has exacerbated degradation of the fan function, resulting in more stream bed load being deposited out into the meadow.

Today, floodplain access from Perazzo Canyon Creek and the Little Truckee River occurs every 5 to 10 years during peak flows. A proper functioning channel would allow floodplain access annually or every other year in this system. The result of these historical land uses has been headward erosion of nick points that is now limiting fan function through incision. The Perazzo Meadows Geomorphic Assessment (Table 1 specifically) and Forest Service stream surveys taken during the 2000-2007 field seasons determined that the major waterflows within the Perazzo Meadows project area have degraded components, with many of the stream banks highly unstable, and most of the reaches with a much higher width to depth ratio than is natural or desirable for hydrologic systems of this type (see the Perazzo Meadows Geomorphic Assessment, the Aquatics BE and Watershed Effects Report for more details).

## **Current grazing management and willow flycatcher management strategy**

The Perazzo Meadows Allotment is a high elevation (approximately 6,500 to 6,600 feet)

meadow allotment with the main meadow providing the primary forage base for the livestock. It is known that grazing has occurred in the Perazzo Meadows Grazing Allotment since as early as 1870, and it has been grazed by cattle under one family's beef production operation since 1912. The allotment boundary extends to the main ridgelines, approximately 2,000 feet above the meadow, and encompasses a total of 4,733 acres (Appendix A, Map 6). Today, the Perazzo Meadows Grazing Allotment completely overlaps the Perazzo Meadows Watershed Restoration Project area (refer to maps in Appendix A). The livestock stocking rate has continually decreased through the years and is currently at about one-fifth the stocking rate that was recorded in the early 1900s. The large meadow system encompassing Perazzo Canyon Creek and the upper Little Truckee River provides the vast majority of the capable rangeland. Current management of the allotment is guided by the Willow Flycatcher Meadow Management Strategy (hereby referred to as MMS; available as an attachment to the Perazzo Range Report, which is incorporated by reference and available upon request at the Sierraville Ranger District).

Perazzo Meadows was first identified as an occupied willow flycatcher site in 1982. Following the 2004 Sierra Nevada Framework Plan Amendment Standard and Guidelines #57 and #58, a site-specific meadow management strategy was developed that focuses on protecting the nest sites and associated habitat during the breeding season, as well as the long-term sustainability of suitable habitat at breeding sites. Separated units and intensively managed grazing practices on the allotment were developed to protect willow flycatchers and their habitat with input from the Willow Flycatcher Working Group, the Permittee, District Biologist, and Range Conservationist. The MMS has been implemented since 2004 in the Perazzo allotment. Since 1997, a willow flycatcher demography study has been monitoring and evaluating the population in Perazzo Meadows, in addition to other sites throughout the central and northern Sierras. Long-term effectiveness monitoring of the strategy indicates that the rangeland resource conditions continue to improve. Long-Term Monitoring plots show that the rangeland conditions have been trending steadily upward, and photographic monitoring indicates upward trends throughout the Perazzo Meadows Allotment. Current rangeland management under the MMS is contributing to the upward trend, particularly with consideration of the observations from implementation monitoring (see the Range Report for more information).

### **1.3 Purpose and Need**

The purpose of the Perazzo Meadows Watershed Restoration and Grazing Allotment Management Projects is to move existing conditions in Perazzo Meadow toward desired conditions described in the *Tahoe National Forest Land and Resource Management Plan* (LRMP, 1990), as amended by the *Herger-Feinstein Quincy Library Group Forest Recovery Act* (HFQLG) *Record of Decision* (1999), and the *Sierra Nevada Forest Plan Amendment* (SNFPA) *Record of Decision* (2004). This section describes why the Forest Service is proposing to conduct watershed restoration activities in six separately identified sites within Perazzo Meadows, re-authorize grazing on the Perazzo Meadows Allotment, and take specific actions to manage grazing on the Allotment.

- 1) The Forest Service needs to re-establish proper floodplain function within Perazzo Meadow.** Historical channel modifications and existing roads have negatively affected floodplain function. Historically the main channel of the Little Truckee River was diverted, resulting in erosion and degradation of the meadow. The Perazzo Meadows Geomorphic Assessment (2008) found that the flow is currently accessing the floodplain every 5 to 10 years during peak flows, when it should be doing so annually or every other year. Throughout the system, the inability of the water to properly access the floodplain has resulted in continued stress on the channel banks and channel erosion, leading to higher sediment transport levels. At Site #4, an old road crossing in the middle meadow area constricts the flow of the Little Truckee River on its floodplain.

Actions to correct these existing problems would meet Forest Plan Riparian Management Objective (RMO) to “Maintain or restore instream flows to support desired riparian and aquatic habitats, the stability and effective function of stream channels, and the ability to route flood discharges,” (HFQLG ROD, pg. 8 and FEIS, Appendix L, pg. L-4). Proposed Actions at Sites 1, 3, 4 and 6 are designed to respond to this need for action.

- 2) The Forest Service needs to re-establish alluvial fan function at the bridge and low water crossing.** At Site #2 of the project area, the alluvial fan of the Little Truckee River located from the bridge to the meadow has been degraded from bridge construction and a low water crossing. These have resulted in more stream bed load being deposited in the meadow.

Actions to correct these existing problems would meet the Forest Plan RMO to “Maintain or restore instream flows to support desired riparian and aquatic habitats, the stability and effective function of stream channels, and the ability to route flood discharges,” (HFQLG ROD, pg. 8 and FEIS, Appendix L, pg. L-4). Proposed Actions at Site 2 are designed to respond to this need for action.

- 3) The Forest Service needs to restore a more natural erosion/deposition regime and increase the potential for ground water storage both long-term and short-term.** Four small intermittent streams and some perennial springs flow from the upper watershed onto the small terraced meadow area (referred to as “The Terrace”) at Site 5. The streams were historically diverted from their natural paths, causing disruption of the natural flow regime and degradation of the meadow. The Henness Pass Road also runs through the meadow, and a ditch along the road has intercepted the flow from The Terrace. The flow crosses under the road in an unnatural location which cuts through the terrace above the Little Truckee River floodplain. Excessive erosion continues to occur in this area. Throughout the project area, the main stream channels of Perazzo Canyon Creek and the Little Truckee River were historically down-cut, widened, shallowed, and straightened and now have excessive lateral movement. The seasonal water table has lowered throughout the meadow system due to this down-cutting of the water flows. The natural timing and variability of the water table within the meadow system have been altered affecting natural riparian vegetation communities.

Actions to correct these existing problems would meet Forest Plan RMOs to “Maintain or restore the stream channel integrity, channel processes, and sediment regime under which the riparian and aquatic ecosystems developed. Elements of the sediment regime include the timing, volume, and character of sediment input and transport,” and “Maintain or restore the natural timing and variability of the water table elevation in meadows and wetlands.”(HFQLG ROD, pg. 8 and FEIS, Appendix L, pg. L-4). Proposed Actions at Sites 1 through 6 but particularly Site 5 are designed to respond to this need for action.

- 4) **The Forest Service needs to improve water quality for on-site and downstream beneficial uses.** Because of the degraded floodplain and alluvial fan function, as well as the altered erosion/desposition regime, excessive erosion from the main channels and adjacent areas contributes excessive amounts of sediment to the system, both on-site and downstream (as documented by the Perazzo Meadows Geomorphic Assessment (2008) and Forest Service stream surveys (Perazzo Aquatic BE 2008).

Actions to correct these existing problems would meet the Forest Plan RMO to “Maintain or restore water quality to a degree that provides for stable and productive riparian and aquatic ecosystems. Water quality parameters that apply to these ecosystems include timing and character of temperature, sediment, and nutrients,” (HFQLG ROD, pg. 8 and FEIS, Appendix L, pg. L-4). They would also meet the Riparian Conservation Objective (RCO), “#1: Ensure that identified beneficial uses for the water body are adequately protected,”(2004 SNFPA ROD pg. 33). Sites 1 through 7 of the Proposed Action are designed to respond to this need for action.

- 5) **The Forest Service needs to create conditions which will allow for appropriate morphological characteristics and vegetative stabilization of the channel of Perazzo Canyon Creek and the Little Truckee River.** The Forest Service stream survey found that streambank stability is low and Geomorphic Assessment (2008) and the Forest Service Stream Survey found that the bankfull channel through Perazzo Meadows is much wider and shallower than what would be expected regionally. The main channels exhibit excessive lateral movement, and do not have sufficient morphological characteristics or vegetative cover to prevent excessive erosion and to provide for appropriate stream channel stability.

Actions to correct these existing problems would meet the Forest Plan RMO to “Maintain or restore riparian vegetation to help achieve rates of surface erosion, bank erosion, and channel migration characteristics of those under which the desired communities developed,” (HFQLG ROD, pg. 8 and FEIS, Appendix L, pg. L-4). The Proposed Action Sites 1 through 7 and subsequent re-vegetation and monitoring are designed to respond to this need for action.

- 6) **The Forest Service needs to improve riparian ecosystem conditions and promote sustainable, diverse, and healthy plant and associated wildlife communities.** The quality and health of the riparian ecosystem throughout the meadow system have been negatively affected by down-cut channels, a lowered water table, excessive erosion within the channels, and decreased deposition of sediment and nutrients on the floodplain. The resulting widened



and shallow channel has degraded habitat quality for most aquatic species due to increased water temperature, increased sediment and decreased pool formation. In addition, there are low woody debris counts in many areas. Because of this condition, the habitat quality for the Forest Service sensitive aquatic species such as the mountain yellow-legged frog is degraded. Perazzo Meadows was identified as a potential area for the re-introduction of the Lahontan cutthroat trout; currently, the potential habitat quality for this species is decreased due to the excessive lateral movement that removes riparian vegetation (which provides important cover, and stream temperature modulation). In addition, riparian-dependent sensitive plant species have been negatively impacted by the historically lowered water tables and the changed hydrological conditions.

Actions to correct these existing problems would meet the Forest Plan RMOs to “Maintain or restore riparian vegetation to provide an amount and distribution of large woody debris characteristic of natural aquatic and riparian ecosystems”; “Maintain or restore habitat to support populations of well-distributed native and desired non-native plant, vertebrate, and invertebrate populations that contribute to the viability of riparian plant communities;” “Maintain or restore riparian vegetation to provide adequate summer and winter thermal regulation within the riparian and aquatic zones;” “Maintain and restore riparian and aquatic habitats necessary to foster the unique genetic fish stocks that evolved within that specific geo-climatic ecoregion,” (HFQLG ROD, pg. 8 and FEIS, Appendix L, pg. L-4). Sites 1 through 6, and particularly the riffle development of Sites 1, 2, 3 and 6 of the Proposed Action are designed to respond to this need for action.

- 7) **The Forest Service needs to increase the forage for both wildlife and livestock.** The vegetative community in portions of the meadow system is not as productive as it could be compared to what would naturally occur, due to down-cut channels causing a lowered water table, excessive erosion and deposition within the channels, and decreased deposition of sediment and nutrients on the floodplain.

Actions to correct these existing problems would meet the Forest Plan RMOs to “Maintain or restore the diversity and productivity of native and desired non-native plant communities in the riparian zone,” (HFQLG ROD, pg. 8 and FEIS, Appendix L, pg. L-4). The LRMP indicates that the production of forage should be maintained or enhanced (TNF1990 LRMP Pg. V-9). Sites 1 through 7, of the Proposed Action are designed to respond to this need for action.

- 8) **The Forest Service needs to take action to re-authorize grazing in the Perazzo Meadow Allotment.** The Tahoe LRMP identifies livestock grazing as an appropriate use of the areas included in the Perazzo Meadow Allotment, and a rangeland capability and suitability analysis has shown that cattle grazing remains a viable action on this allotment.

Where consistent with other multiple use goals and objectives, congressional intent is to allow grazing on suitable lands (*Multiple Use and Sustained Yield Act of 1960, Wilderness Act of 1964, Forest and Rangeland Renewable Resources Planning Act of 1974, Federal*

*Land Management and Policy Act of 1976, National Forest Management Act of 1976*). Where consistent with the goals, objectives, standards and guidelines of the LRMP and its amendments, Forest Service policy is to make forage from lands suitable for grazing available to qualified livestock operators (*FSM 2202.1, FSM 2203.1, 36CFR 222.2 (c)*). The LRMP identifies livestock grazing as an appropriate use of the area included within the Perazzo Meadows Allotment and a rangeland capability and suitability analysis has shown that cattle grazing remains a viable action on this allotment. Achievement of resource objectives, through adherence to the Standards and Guidelines of the LRMP, as amended by the SNFPA, provide the over-riding principle for management of the grazing allotment. The LRMP states that the range resources should be evaluated, utilized, improved, and protected as needed. Monitoring of resource conditions which have the potential to be affected by grazing has shown that range conditions continue to improve. Grazing programs on National Forest System lands must be economical and sustainable while meeting standards and guidelines designed to protect natural resources. Based on monitoring, rangeland conditions have been continually improving in the recent past.

The Forest Service needs to take action to manage grazing in the Perazzo Meadow Allotment to protect willow flycatcher sites. Potential impacts from grazing activities on the proposed watershed restoration activities will be mitigated to allow for appropriate recovery of the watershed restoration sites. Because Perazzo Meadows is being proposed for watershed restoration activities, management of grazing on the Allotment will be designed to facilitate restoration of desired watershed conditions, including periods of rest to allow for re-vegetation of disturbed areas, use of salting locations to concentrate cattle use away from sensitive locations such as restoration areas, use of off-site water (i.e. spring development/installation of watering trough), fencing, or adjustment of the timing or intensity of grazing operations. Vegetative stabilization of the proposed restoration sites would occur more rapidly without additional disturbances, including grazing. The implementation and effectiveness monitoring of the Proposed Action are designed to respond to this need for action.

- 9) Because Perrazo Meadow ranks among the Sierra Nevada's critical willow flycatcher sites, providing a source population of this species, the *Perazzo Willow Flycatcher Meadow Management Strategy* (MMS) has been implemented over the past 5 years, beginning in the 2004 grazing season. Since 1997, a willow flycatcher demography study has been monitoring and evaluating the population in Perazzo Meadows, in addition to other sites throughout the central and northern Sierras. Examining and comparing the data from the demography study and the grazing use records over time, the implementation of the meadow management strategy has been effective in protecting nest sites and associated habitat, and will provide for long-term sustainability of suitable habitat as it relates to the potential impacts from grazing.

In recent years, the term grazing permit and annual operating instructions for the Allotment have been updated to incorporate this Strategy. There is a need to ensure that the Strategy is

adopted as the long-term strategy for managing grazing on this allotment. Implementation and effectiveness monitoring, and the Resource Protection Measures and Best Management Practices of the Proposed Action are designed to respond to this need for action.

### 1.3 Proposed Action

**Who:** The Forest Service, Tahoe National Forest, Sierraville Ranger District

**Where:** The proposed project is located in Sierra County in the south central portion of the Sierraville Ranger District, approximately 5 miles west of Hwy 89 and south of Fibreboard Road. Project maps are located in Appendix A.

Proposed restoration sites are located in:

- Township 19N, Range 14E Sections 25, 26 and 27
- Township 19N, Range 15E Sections 15, 16, and 17

The Perazzo Meadows Grazing Allotment is located in:

- Township 18N Range 14E Sections 1, 2, 3, and 4
- Township 19N Range 14E Sections 23, 24, 25, 26, 27, 33, 34, 35, and 36
- Township 19N Range 15E Sections 17 and 20

At this current time, lands within T19N R15E Section 16 SW1/4 and Section 17 SE1/4 are not current National Forest lands. These private lands are likely to be acquired by the Truckee Donner Land Trust and in turn potentially deeded to the National Forest.

**What:** Implement watershed restoration activities within the Little Truckee River watershed in and around the Perazzo Meadows area (Map 1 in Appendix A) and update the Perazzo Meadows Grazing Allotment Management Plan. As detailed in Table 1.1 and in text below, proposed restoration activities include using the “plug and pond<sup>1</sup>” technique to relocate stream flow to historic remnant channels while closing off existing degraded channels, installing rock grade structures to maintain meadow elevation where flow exits meadows, installing rock riffles in an incised channel on the alluvial fan, reconnecting a historic overflow channel, removing an abandoned road from the floodplain, installing culverts and low water crossings to improve flow for stream crossings at road intersections, and re-vegetation of disturbed areas. Details regarding the “plug and pond” technique and how it would be implemented in this project are described in the EA Appendix B, “Plug and Pond Technique and Implementation.” Project design features and applicable Best Management Practices (BMPs) that would integral to the Proposed Action

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<sup>1</sup> Owing to the presence of somewhat continuous floodplain channels, the U.S. Forest Service is proposing a meadow restoration approach for the upper meadow using a technique referred to in short hand as the “plug and pond” method. This method consists of identifying crossover points between the existing channel and the historic channel, excavating the existing channel in the vicinity of the crossover point, and plugging the channel downstream with the excavated material. The ponds provide the material to create the plug, avoiding import of material to the site, and the plugs backwater the pond, thereby forcing flow into the historic channel. Some excavation of the historic channel may be required due to the formation of natural levees at the inlets. The approach is a cost effective way of rapidly aggrading the existing channel and can be used effectively in areas where continuous floodplain channels are still evident. See Appendix B for more details.

are detailed in Appendix C. The Re-vegetation Plan that would be implemented immediately after all restoration work is detailed in Appendix F. The maps referenced below are available in Appendix A. The Proposed Action would be implemented after all necessary permits and exemptions are obtained. A Diversion Plan and De-watering plan would be prepared as required.

**Table 1.1. Summary of proposed watershed restoration activities (all areas or quantities are approximate)**

Perazzo Meadow location (see corresponding map for details)	Plugs installed (acres)	Plugged channel length (feet)	New channel into which new flow diverted	Ponds created (acres)	Wetland restored or enhanced (acres)	Riparian areas temporarily disturbed (acres)	Streambed or remnant channel restored or enhanced (feet)	Creation of flood plain (acres)	Other actions
Site 1 (Map 2)	3.8	9,280	15,041	14.0	130	1.4	-	-	Construction of rock grade structures
Site 2 (Map 2)	-	-	-	-	22.2	-	5,263	-	Remove low water crossing, reconnect historic overflow channel
Site 3 (Map 3)	2.5	12,566	10,207	14.6	155	2.0	41,566	-	Construction of rock grade structures
Site 4 (Map 3)	-	-	-	-	-	-	-	0.3	Remove old road fill
Site 5 (Map 4)	0.3	1,681	2,918	-	33	0.4	11,721	-	Repair headcut, install culverts
Site 6 (Map 5)	0.7	4,226	4,652	4.8	38	0.8	4,145	-	Installation of culverts or low water crossings, construction of rock grade structures
<b>Total</b>	<b>7.3</b>	<b>27,753</b>	<b>32,818</b>	<b>33.4</b>	<b>378</b>	<b>4.6</b>	<b>62,695</b>	<b>0.3</b>	<b>-</b>

**Site #1: Upper Perazzo Meadow located in the uppermost meadow area where Perazzo Canyon Creek and the Little Truckee River enter the meadow system (Map 2).**

The main channel has downcut and widened and is actively eroding, decreasing proper meadow floodplain function. The meadow in site #1 is approximately 1.1 miles in length, with the main channel approximately 1.6 miles long through site #1. Most

tributaries to the main creeks are head cutting into the surrounding floodplain area. The aquatic and riparian habitat has been degraded. At this site the proposal is to:

- 1) Move the flow out of the existing degraded channel into a stable remnant channel closer to the meadow and floodplain surface. The existing channel would be obliterated using plug and pond techniques, thus causing flow to be directed into the remnant channel which is 1.2 miles longer than the current channel. Material for approximately 20 plugs would be excavated from the channel area, and these borrow sites would become ponds, thus creating a series of plugs and ponds.
- 2) Construct rock grade control structures where the Little Truckee River leaves the uppermost meadow along an approximate length of 0.07 miles. The structures would be placed in steps and would function similar to riffles to dissipate energy and allow pool formation and fish passage. The grade control structures will aid in maintaining channel elevation in the meadow above this point.

**Site #2: Alluvial fan of the Little Truckee River from the bridge down to the meadow (Map 2).**

Past activities including bridge construction and construction of a low water crossing for vehicles has caused the flow to be concentrated on the fan and resulted in degradation of the fan function and resulting in more stream bed load being deposited out into the meadow. The bridge was expanded in 1997 to its current configuration with an increased span. At this site the proposal is to:

- 3) Remove the low water crossing and construct approximately 4 rock riffles<sup>2</sup> perpendicular to the waterflow along approximately 0.3 miles of the existing channel area to allow the water to spread out more readily on the fan.
- 4) Reconnect the historic overflow channel at the bridge. Adjust the roadbed as necessary in the bridge area to allow for flow in this flood channel.

**Site #3: The main channel in the middle meadow area of the Perazzo Meadow system (Map 3).**

The main channel has downcut and widened and is actively eroding in some places. The aquatic habitat has been degraded. There are numerous sections of remnant channel available for stream flows. The meadow through site #3 is approximately 1.5 miles in length. At this site the proposal is to:

- 5) Increase floodplain access through site #3 using “plug and pond” techniques to move the flow out of the existing degraded channel into sections of remnant channels which will more readily provide floodplain access. Material excavated from the channel the adjacent meadow area, as well as the road fill, is proposed for removal from site #4 would be used for approximately 27 plugs in site #3. The

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<sup>2</sup> Rock riffles in the alluvial fan would use material from the fan. Rock riffles at sites #3 and #6 would use rocks from a local quarry not exceeding 2 feet in diameter.

borrow sites along the current channel would become ponds. Flood flows would have the potential to occur in up to 7 miles of remnant channels during high flows exceeding a 3 year flood event.

- 6) Construct rock riffles at the lower end of site #3 where the meadow narrows along approximately 0.2 miles of the existing channel area. The riffles would be placed in steps and would dissipate energy and allow pool formation and fish passage. The grade control structures will aid in maintaining channel elevation in the meadow above this point.

**Site #4: The old road crossing in the middle meadow area of the Perazzo Meadow system (Map 3).**

The old road bed is constricting the flow of the Little Truckee River on its floodplain. At this site the proposal is to:

- 7) Remove the road fill across the meadow (approximately 0.18 miles) and use it for plug construction as described under site #3.

**Site #5: The terrace above and to the south of the middle meadow area of the Perazzo Meadow system (Map 4).**

Historical channel modifications of four small intermittent streams and some perennial springs as well as the location of the Henness Pass Road disrupt of the natural flow regime and degrade the meadow. At this site the proposal is to:

- 8) Plug the existing unnatural channels to reconnect the flow back into the natural channels, repair a headcut along one of the channels, and install culverts where the reconnected streams cross the road to restore a more natural flow regime. The road bed would likely need to be raised in two locations to allow for appropriate drainage through the area.

**Site #6: The main channel in the lower meadow area of the Perazzo Meadow system (Map 5).**

The main channel has downcut and widened and is actively eroding in some places. The meadow through site #6 is approximately 0.6 miles in length. There are sections of remnant channel. At this site the proposal is to:

- 9) Increase floodplain access through site #6 using plug and pond techniques to move the flow out of the existing degraded channel into sections of remnant channels which will more readily provide floodplain access. Plug and pond techniques would be used along approximately 0.8 miles of existing channel. Material excavated from the channel and adjacent meadow area would be used for the plugs. The borrow sites along the current channel would become ponds. Flood flows would have the potential to occur in up to 1 mile of remnant channels in site #6 during high flows exceeding a 3 year flood event.

- 10) Construct rock riffles at the lower end of site #6 where the meadow narrows along approximately 0.05 miles of the existing channel area. The riffles would be placed in steps and would dissipate energy and allow pool formation and fish passage. The grade control structures will aid in maintaining channel elevation in the meadow above this point.
- 11) Improve the drainage through the road area by installing culverts or rocked low water crossings.

**Site #7: The Perazzo Meadows Grazing Allotment (Maps 6 and 7).**

The grazing allotment encompasses Sites 1-5 which are planned for watershed restoration activities. The *Tahoe National Forest LRMP* (1990) identifies livestock grazing as an appropriate use of the area included within the Perazzo Meadows allotment and a rangeland capability and suitability analysis has shown that cattle grazing remains a viable action on this allotment. Meadow vegetation provides the primary forage base for livestock in the allotment. Current grazing operations occur with a modified rest-rotation schedule using five pastures which are separated by fencing and topography. Approximately 9.6 miles of barbed wire fence is located on National Forest within the allotment, and another 0.4 miles is on private land. The proposal is as follows:

- 12) Re-authorize livestock grazing on the Perazzo Meadows Allotment (Map 6) with an updated Allotment Management Plan (AMP), and reissue a 10-year Term Grazing Permit and Annual Operating Instructions (AOIs). Changes to existing grazing operations would complement the watershed restoration activities, continue to support upward-trending riparian vegetation conditions, and provide for long-term improvement of wildlife and fish habitat. The changes include providing a period of rest for restoration areas and permanently relocating the fence separating Units B and C. Other proposed activities relate to modification of existing fences and cattleguards (Map 7).
  - a) Livestock grazing would be authorized on the Perazzo Meadows Allotment consistent with the standards and guidelines of the LRMP, as amended by the *Sierra Nevada Forest Plan Amendment Final Environmental Impact Statement Record of Decision* (SNFPA, 2004), to meet LRMP objectives.
  - b) An Allotment Management Plan (AMP), Grazing Permit, and Annual Operating Instructions (AOI) would be developed. The Table 1.2 displays the level of use that is currently permitted and is expected to continue to meet the standards and guidelines and provide for improving rangeland conditions:

**Table 1.2. Current and proposed level of use of the Perazzo Meadows Allotment**

LIVESTOCK			PERIOD OF USE	
NUMBER	KIND	CLASS	FROM	TO
60	Cattle	Cow/Calf Pairs	7/1	8/15
150	Cattle	Cow/Calf Pairs	8/16	10/10

The current and proposed future level of use equates to a total of 367 head-months. Permitted use would occur with an “On/Off” 10-year Term Grazing Permit, with 97% “On” National Forest, and 3% “Off” (private land within the allotment), based on the most recent range capability analysis. The current Term Grazing Permit indicates that 72% of use within the allotment occurs on National Forest; however, this has changed to 97% due to land acquisition within the past several years. Annual authorization of grazing would occur with the AOI and through payment of grazing fees.

- c) Achievement of LRMP objectives, through adherence to standards and guidelines as outlined in 12(a), would provide the over-riding principle for management of the allotment. The AMP would prescribe a modified rest-rotation grazing strategy as has been employed in recent years. This rest-rotation strategy has proved successful in meeting the standards and guidelines and improving rangeland conditions. The original rest-rotation grazing strategy was developed in 2001 and has been refined in the *Perazzo Meadows Willow Flycatcher Meadow Management Strategy* (MMS). The MMS would remain an integral part of grazing allotment management as specified in the standards and guidelines set forth in the LRMP, as amended by the SNFPA. The following are general guidelines for management of the five units within the allotment. Units A and C would be used in the early part of the season (7/1 to 8/15) by a total of 60 cow/calf pair divided amongst the units, and then generally either Unit B or Unit D/E would receive later season use (8/16 to 10/10). Once the watershed restoration areas have stabilized, Unit B and Unit D/E would generally be rested every other year. Units D and E would be managed as one unit under this proposal as has occurred in recent years. Units A and/or C could be used for later season use also but this is not expected to be common. The drift fence separating Units B and C would be permanently relocated approximately ½ mile to the west to allow for more refined livestock distribution to complement the watershed restoration activities.
- d) Areas which undergo watershed restoration activities would be rested for two to five years or as needed to allow for re-vegetation of disturbed areas, to allow stabilization of areas that could lead to meadow function degradation, and to allow for long term success of the restoration work. Cattle grazing could resume when the vegetation is successfully re-established (as defined in the Re-vegetation Plan in Appendix F) and the topsoil is stabilized. Generally, the desired condition for the resumption of grazing is no more than 10% bare soil in a given meadow acre. Temporary fencing of isolated areas may be used where necessary. Following a period of rest, if necessary, particular areas could undergo a period of lighter use in order to allow sufficient stabilization of the system.
- e) Salting locations would be approved and used to concentrate use by cattle away from particular areas such as watershed restoration areas, sensitive aquatic features such as springs and fens, and willow flycatcher habitat as appropriate. If salting locations did not prove to be successful in effectively altering the use levels according to that which is desired, off-site water (i.e. spring



development/installation of watering trough), fencing, or adjustment of the grazing operations would be considered to meet resource objectives.

- f) Table 1.3 displays the proposed adjustments to range structural improvements in the Perazzo Meadows Allotment. 5.6 miles of fencing would be removed, 1 mile of fencing would be constructed, 1 cattleguard would be relocated, and 1 cattleguard would be removed (Map 7). These changes would minimize the long-term cost of maintenance while providing for the necessary control of livestock distribution to meet grazing standards and guidelines:

**Table 1.3. Proposed adjustments to range structural improvements in the Perazzo Meadows Allotment**

Type/Asset #	Location	Description
Fence #7979	Separates Units D and E	Remove (0.42 miles). This would result in one pasture instead of two that have been managed as one.
Fence #7037	Separates Units B and C	Relocate the fence (currently it is 0.71 miles; new fence would be 0.85 miles). The fence would be relocated closer to Site #1 in Unit B, decreasing the amount of meadow-like area in Unit B by approximately 115 acres, resulting in a corresponding increase in Unit C.
Fence #7010 on south side of Henness Pass Road	Along the northern boundary of Unit B	Remove (1.15 miles). This section of fence has not been necessary in recent years.
Fence #7010 on south side of Henness Pass Road	East of Unit C between the short drift fence and the private land	Remove (0.14 miles). This section of fence has not been necessary in recent years.
Fence #7010 on north side of Henness Pass Road	Along the southern boundary of Units D and E	Remove fence (1.57 miles) except for short “wings” adjacent to corral. This fence would not be necessary with the relocation of a cattleguard onto the Henness Pass Road at the boundary between Units A and D.
Fence #7010 along Fibreboard Road	Along the northern boundary of Units A and D	Remove sections of this fence amounting to 1.42 miles. Topography makes portions of this fence unnecessary. In Unit A only 0.3 miles are necessary; only about 100 feet of this fence in Unit D may be necessary.
Fence #7033	Northeastern corner of Unit A, partly on private land	Relocate 0.18 miles of this fence where it crosses the Little Truckee River to approximately 200 feet upstream of its current location. This is to alleviate drift problems from Unit A into Unit D and to remove fence from a riparian area between Fibreboard Road and the Little Truckee River.
Drift fence in Unit C	Near the boundary between Units A and D	Extend approximately 0.03 miles to the south. This is to alleviate drift problems from Unit C into Unit B.
Cattleguard	Unit D and E boundary near the Fibreboard Road	Remove. This cattleguard is located in an area which is no longer a road.

Cattleguard	South of the bridge along the 07-30 Road	Relocate to the Henness Pass Road where fence #7033 between Units A and D meets the road. This is to prevent drift from Unit D into Unit B.
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g) Table 1.4 displays the rangeland structural improvements (5.4 miles of fencing, 4 cattleguards, and 1 corral) that would be maintained.

**Table 1.4 Rangeland structural improvements proposed to be maintained in the Perazzo Meadows Allotment**

Type/Asset #	Location	Description
Fence #7010	Southern boundary of Unit A along Henness Pass Road	0.87 miles
Drift fence	West side of Unit A	0.06 miles attached to Cattleguard #7976
Drift fence	Northeast side of Unit A	0.3 miles of fence, attached to Cattleguard #7977
Fence #7033	Between Units A and D	0.38 miles
Drift fence	Eastern boundary fence, east side of Unit E	Eastern boundary of allotment. A total of 1.5 miles attached to cattleguard #7978 and extending to north across meadow and along Fibreboard Road.
Fence #7010	Northern boundary of Unit C along Henness Pass Road	Includes the short section of drift fence on east side of Unit C near the private land. 1.3 miles total.
Drift fence	Unit C across from fence #7033	Located at the Unit A and D boundary. 0.14 miles
Fence #7037	Between Units B and C	This would be the relocated fence. 0.85 miles
Cattleguard #7976	Western side of Unit A	On 07-30 Road at the Henness Pass Road intersection.
Cattleguard #7977	Northeastern side of Unit A	Attached to drift fence on north side of Unit A
Cattleguard	Between Units A and D	This would be the relocated cattleguard. Attached to fence #7033 on Henness Pass Road.
Cattleguard #7978	Southeastern side of Unit E on Henness Pass Road	This cattleguard may not be necessary for management of the allotment, but would be left in the allotment management plan.
Corral	Along Henness Pass Road in Unit D	This corral provides for loading and unloading of livestock.

## **1.4 Proposed Action Monitoring**

The purpose of monitoring is to ensure that the management requirements and mitigation measures will be properly implemented and to document that the project has the desired outcomes.

### *Reporting Structure and Procedure*

The U.S. Forest Service Project Manager will be the primary contact for the Forest Service and be responsible for making sure the management requirements and mitigations are implemented and the monitoring is done. The Project Manager will complete a daily log documenting activities on site, including the following:

- On-the-ground weather conditions
- Status of implementation schedule
- Implementation of mitigation measures
- Detailed reports of any environmentally-related construction site incidents.

Two types of monitoring, implementation monitoring and project effectiveness monitoring, would be conducted. Implementation monitoring would be used to document the proper implementation of mitigation measures. Project effectiveness monitoring will be used to measure the effectiveness in meeting the project objectives and mitigation measures, i.e., improving bank stability, keeping sediment out of the creek and meeting re-vegetation objectives.

### **Implementation Monitoring**

A qualified USFS hydrologist and/or soil scientist on the project team will conduct implementation monitoring for the restoration activities during and after project construction, assuring that applicable mitigation measures are implemented. Documentation of implementation monitoring observations and resulting actions would be a part of the daily activity log.

Implementation monitoring will consist of observations and documentation of the implementation of mitigation measures (BMPs) employed for protection of soils, stream environment zones, and water quality. These measures include the following:

- Timing of activities
- Mulching of disturbed areas
- Control of concentrated runoff onto and from work sites to reduce erosion
- Timely erosion control measures
- Avoiding disturbance to existing vegetation in and around the project areas
- Staging of materials and equipment within the project area
- Controlling discharges of hazardous substances from refueling
- Sediment control in streamside management zones

Implementation monitoring will consist of observations and documentation of the implementation of mitigation measures (BMPs) employed for protection of vegetation and wildlife. These measures include the following:

- Minimize effects on vegetation community.
- Protection of special status plant species.
- Washing equipment to control spreading weeds.
- Protection of special-status wildlife species.

Implementation monitoring will consist of observations and documentation of the implementation of mitigation measures (BMPs) employed for protection of heritage resources. These measures include the following:

- Flag and avoid known sites.
- Monitor for heritage sites during excavation.

Implementation monitoring consists of observations and documentation of the implementation of the authorization of grazing consistent with this decision, including the standards and guidelines and BMPs for range management. This would include the following:

- Continue issuing Annual Operating Instructions and implementing the *Perazzo Meadows Willow Flycatcher Meadow Management Strategy* as necessary to direct annual grazing operations in achieving AMP objectives.
- Monitor the vegetation and soil condition of the watershed restoration areas to allow for re-vegetation of disturbed areas, to allow stabilization of areas that could lead to meadow function degradation, and to allow for long term success of the restoration work.
- Continue conducting range readiness and utilization monitoring using the regional range analysis and planning guide in established key areas on the grazing allotment.

### **Effectiveness Monitoring**

Effectiveness monitoring would be conducted to assess whether the long-term objectives of the watershed restoration activities and the allotment management plan are being attained and provide information to guide land management decisions. Monitoring as discussed below will occur throughout the first 5 years after implementation.

#### *Watershed restoration effectiveness monitoring*

Effectiveness monitoring for the restoration activities would be conducted to assess the success of project implementation in meeting performance measures and the success of the mitigation measures and management requirements to control off site soil movement. The results of effectiveness monitoring would be used to determine whether additional actions to facilitate stabilization of project areas would need to occur, such as increased re-vegetation efforts, additional stabilization of project areas, or alteration of grazing management practices. Success would be determined by achieving and maintaining stability of disturbed soils and bank stability while allowing for adjustments of the channel morphology, and would generally equate to bank cover consisting of natural channel components such as boulders, cobbles, gravels, woody debris, and vegetation adequate to achieve combined cover of 75% in restoration areas for stability. Restoration project effectiveness monitoring will include the following elements:

- Establishment of photo points for pre-project and post-project comparison would monitor vegetation change and establishment success, as well as assess stream bank stability. They

would also assess the effectiveness of BMPs to control soil movement. Photo points would provide visual documentation of existing conditions, post-project conditions, and assessment of success or failure of bank stabilization and re-vegetation efforts. If concerns such as excessive water sediment are noted, efforts will be made to track and identify the source. Concerns originating from this project would be managed appropriately.

- Stream channel cross section measurements have been established and would be measured after project implementation to provide documentation of changed conditions. A certain amount of channel adjustment will be expected as the hydrologic environment equilibrates. Continued measurements of cross sections in the future will provide documentation of post-project channel adjustments for comparison to those expected.

#### *Range management monitoring*

- Continue using the R5 Range Long Term Monitoring Project (Weixelman) to assess long-term rangeland trend.
- In willow flycatcher sites receiving late-season grazing, monitor utilization annually using regional range analysis and planning guide. Monitor willow flycatcher habitat every 3 years using established criteria (the “Monitoring Protocol for SNFPA S&G 59”). If habitat conditions are not supporting the willow flycatcher or trend downward, modify or suspend grazing.
- The need for a PFC assessment will be evaluated every 3-5 years and completed as needed by an interdisciplinary team. If trend is declining and grazing is shown to contribute to the declining trend, management practices such as a change in grazing distribution, frequency, or level of use, development of off-site water, or altering salting practices will be considered to achieve the desired conditions.
- Continue using photographic monitoring to assess long term trend in resource conditions.
- Monitor the long term vegetation and soil condition of the watershed restoration areas and adjust grazing practices as necessary to allow for re-vegetation of disturbed areas, to allow stabilization of areas that could lead to meadow function degradation, and to provide for long term success of the restoration work.

## **1.5 Resource Protection Measures**

All of the proposed treatments would follow the Standards and Guidelines from the Tahoe National Forest Land and Resource Management Plan (LRMP) (1990), as amended by the GHQLG FEIS Record of Decision (ROD) (1999), the HFQLG FSEIS ROD (2003) and the SNFPA FSEIS ROD (2004) that are applicable to project area.

Appendix C presents the Best Management Practices (BMPs) that would be used for all Perazzo Meadows action alternatives to protect water quality and beneficial uses and meet the requirements of the Water Quality Control Plan for the Lahontan Region (Lahontan Basin Plan). The appendix also includes the following resource protection measures that would be incorporated to avoid or minimize potential adverse effects on watershed resources, vegetation, wildlife, and heritage resources, are intended to protect the environment, and would be implemented as part of the project.

## **Resource protection measures applicable to watershed restoration activities:**

- 1) **Water Quality:** Obtain necessary permits from the Lahontan Regional Water Quality Control Board, the U.S. Army Corps of Engineers, and the California Department of Fish and Game. Implement all requirements as stated in the permits.
- 2) **Water Quality:** Timing of operations - Operate equipment within stream protection zones and riparian areas late in the season when stream flows are at a minimum and soil conditions are dry. All disturbed areas would be stabilized by appropriate soil stabilization measures by October 15th of each year.
- 3) **Water Quality:** Achieve Goal of Zero Discharge – If flow is present during construction implement the following mitigations: a) Convey flow around work site in a stable manner. b) Install coffer dam to trap sediment and turbid water. c) Dispose of sediment in a stable location. d) Remove turbid water by pumping and sprinkling in a manner to allow infiltration into the soil.
- 4) **Water Quality:** Control of Operations - Stop operations during periods of inclement weather and implement temporary erosion control measures as needed until the site is dry enough to resume work and there is no potential for off site sediment transport.
- 5) **Water Quality:** Control Fueling Sites – Equipment will not be refueled within stream zones. Specify fueling and fuel storage areas in a safe location. Require emergency spill plan.
- 6) **Water Quality/Soil Erosion:** Design plugs to withstand expected flows from the watershed, reinforcing them with rock, large woody debris, and sedge and meadow grass sod mats as necessary to control erosion and facilitate re-vegetation.
- 7) **Water Quality/Soil Erosion:** Design and implement Best Management Practices (BMPs) to control erosion while excavating and placing soil in the restoration sites.
- 8) **Water Quality/Soil Erosion/Botany:** Treatment of Bare Soil Areas - Re-vegetate disturbed areas by transplanting vegetation removed during implementation or by seeding with native species. Mulch bare areas as needed to prevent erosion. Native mulch such as pine needles and duff are preferred. If non-native mulch is used it will be certified weed free and approved by a botanist.
- 9) **Water Quality:** Temporary Erosion Control Measures – On incomplete projects that have potential for erosion and transport to surface water temporary stabilization measures such as perimeter fencing with silt fence or mulching of exposed areas will be implemented.
- 10) **Water Quality/Soil Erosion:** Minimize Disturbance – Disturbance will be minimized to the greatest extent possible. Use planned disturbance sites as access routes where possible. Keep tight control of equipment operations. Plan access routes carefully.
- 11) **Water Quality/Soil Quality/Botany:** Loss of Topsoil – Save topsoil during any excavation and replace topsoil on constructed plugs or other desired locations in a stable location where it cannot be eroded into the stream system.
- 12) **Water Quality/Soil Erosion:** Control of concentrated runoff – Contour all work sites to allow for natural sheet flow and infiltration into the soil. Do not concentrate flow. Mulch and re-vegetate all bare soil. Break up compacted soil areas.

- 13) **Water Quality/Soil Erosion:** Rehabilitate all access routes used to accomplish restoration work, i.e. loosen compacted soils, drain the area appropriately, install proper drainage structures as needed, apply mulch to bare soil, and reseed or replant with native vegetation as necessary.
- 14) **Aquatic Function:** Utilize riffle/pool systems during grade control structure construction that would maintain fish passage.
- 15) **Heritage Resources:** Following standard management requirements, monitoring for heritage sites would occur during excavation. Known archaeological sites would be flagged and avoided. Restoration activities would be halted if a site is found in an area during excavation to avoid further disturbance. The District Archaeologist would be notified, and would take the necessary steps to document the site before activities may potentially resume, e.g. excavating, cataloging.
- 16) **Heritage Resources:** Locate Plugs and Ponds and equipment access routes to avoid direct impacts to known heritage resources.
- 17) **Wildlife:** Implement a limited operating period for great gray owls from March 1<sup>st</sup> to August 15<sup>th</sup> if birds are present at time of operations.
- 18) **Wildlife:** Implement a limited operating period for willow flycatcher from June 1<sup>st</sup> to August 15<sup>th</sup> if birds are present in the vicinity of restoration areas.
- 19) **Wildlife:** In known willow flycatcher nesting habitat, minimize disturbance to mature willows.
- 20) **Wildlife/Botany:** Notify the responsible Biologist if any threatened, endangered, or sensitive species are detected during operations. Flag and avoid noted plant species during project activities.
- 21) **Botany:** Use native species when re-vegetating areas that have been disturbed.
- 22) **Noxious Weeds:** Wash equipment before coming onto National Forest lands and before moving to another location when equipment is operating in locations of known noxious weeds.
- 23) **Noxious Weeds:** Utilize weed free mulch for erosion control or mulch from adjacent areas.
- 24) **Noxious Weeds:** Survey all project areas for noxious weeds, especially areas of ground disturbance, for two years after project completion. Control weeds if found.
- 25) **Soil/Water Quality/Aquatics/Wildlife/Heritage Resources/Botany:** Monitor project activities regularly in order to identify and correct any problems immediately, as described in the proposed action.
- 26) **Aquatics:** In areas of active water flow restoration work, a Forest Service aquatics biologist, in cooperation with the California Department of Fish and Game, will implement appropriate measures to prevent impacts to native fish.
- 27) **Wildlife:** Implement a limited operating period from April 1st to August 1st to protect greater sandhill crane reproduction. This LOP may be modified by the District Wildlife Biologist if surveys determine nesting will not be affected within ¼ mile of the proposed activities.

**Protection measures applicable to grazing:** The LRMP (2004) Standards and Guides included here are incorporated into the Term Grazing Permit and to the Annual Operating Instructions for the Perazzo Meadows Allotment, and are requirements to the permittee. Implementation Monitoring is used to assess execution of these requirements; corrective measures are taken for failure to comply with these instructions. See RPMs 35 and 36 below regarding monitoring requirements.

**28) Range/Soil/Water Quality/Aquatics/Wildlife /Botany:** Apply Standards and Guidelines set forth in the 1990 Tahoe National Forest LRMP, as amended by the Sierra Nevada Forest Plan Amendment FSEIS Record of Decision of 2004, to achieve LRMP objectives.

**29) Range/Wildlife/Botany:** Prohibit salting within the meadow edge. LRMP S&G #30, page V-31.

**30) Range/Wildlife:** In occupied Willow Flycatcher habitat allow only late-season grazing and/or compliance with the willow flycatcher meadow management strategy; monitor utilization and willow flycatcher habitat condition. For more explanation refer to SNFPA S&G #57-59.

**31) Range/Soil/Water Quality/Aquatics:** Prevent disturbance to streambanks and natural lake and pond shorelines caused by grazing and other resource activities from exceeding 20 percent of stream reach or 20 percent of natural lake and pond shorelines. For more explanation refer to SNFPA S&G #103.

**32) Fen Ecosystems:** Prohibit or mitigate ground-disturbing activities that could adversely affect hydrologic processes that maintain water flow, water quality, or water temperature critical to sustaining fen ecosystems and plant species that depend on these ecosystems. For more explanation refer to SNFPA S&G #118.

**33) Range/Soil/Water Quality:** For meadows in early seral status limit livestock utilization of grass and grass-like plants to 30 percent (or minimum 6-inch stubble height); for meadows in late seral status limit livestock utilization of grass and grass-like plants to 40 percent (or minimum 4-inch stubble height). If meadow ecological status is determined to be moving in a downward trend, modify or suspend grazing. Under intensive grazing systems (such as restoration and deferred rotation) where meadows are receiving a period of rest, utilization levels can be higher than the levels described above if the meadow is maintained in late seral status and meadow-associated species are not being impacted. Degraded meadows (such as those in early seral status with greater than 10 percent of the meadow area in bare soil and active erosion) require total rest from grazing until they have recovered and have moved to mid- or late-seral status. SNFPA S&G #120.

**34) Range/Wildlife/Botany:** Limit browsing to no more than 20 percent of the annual leader growth of mature riparian shrubs and no more than 20 percent of individual seedlings. Remove livestock from any area of an allotment when browsing indicates a change in livestock preference from grazing herbaceous vegetation to browsing woody riparian vegetation. SNFPA S&G #121.

**35) Range/Water Quality:** Apply BMPs for range management as specified in Water Quality Management for Forest System Lands in California, Best Management Practices (2000).



**36) Implementation Monitoring:** Conduct implementation monitoring to ensure the parameters of the decision are being implemented as described. Implementation monitoring would include ensuring that the Standards and guidelines are met using the appropriate methods, such as those outlined in Utilization Studies and Residual Measurements (Interagency Technical Reference 1734-3, U.S. Department of the interior, Bureau of Land Management, 1996). More details regarding this monitoring are in Section 1.4.

**37) Effectiveness Monitoring:** Conduct effectiveness monitoring to ensure that the resource conditions are maintained or are moving toward the desired conditions as outlined in the LRMP, as amended. Effectiveness monitoring would be correlated with utilization data. Appropriate monitoring methods would be used, such as those outlined in Sampling Vegetation Attributes ((Interagency Technical Reference 1734-3, U.S. Department of the interior, Bureau of Land Management, 1996). More details regarding this monitoring are in Section 1.4.

## 1.6 Decision to be Made

The decision to be made is whether to implement Perazzo Meadows watershed restoration and re-authorize the grazing allotment as proposed in one of the action alternatives, or to take no action at this time. The decision is anticipated in the fall of 2008 and implementation beginning in the summer of 2009.

## 1.7 Public Involvement/Scoping

The proposal for this project was developed through public meetings and interdisciplinary input. Public meetings were coordinated by the Truckee River Watershed Council and the Forest Service between August 2004 and October 2007. A Public Notice was published in the newspaper of record, *The Mountain Messenger*, published on January 31, 2008. A public scoping letter with the proposed action, purpose and need, and maps was mailed to 54 potentially interested and/or affected individuals and agencies on February 5, 2008. These included adjacent landowners, people who attended public meetings, researchers, and other land management and regulatory agencies. The documents were re-sent to one individual, and remitted to two additional individuals on February 14 and February 27, following a request to receive them. As a result of public scoping, a total of eight individuals commented. The public scoping comments as well as the Sierraville Ranger District responses to those comments are included in Appendix D of the EA. The project was published in the Tahoe National Forest's quarterly *Schedule of Proposed Actions* (SOPA) starting in April 2008.

## 1.8 Issues

Comments received during project scoping were used to identify the issues and consider additional alternatives included in this Environmental Assessment. Typically, public scoping comments include many non-issue comments and questions, as well as comments which raise

significant and non-significant issues. An issue is a clear point of dispute with the Proposed Action that is based on some anticipated effect. The Interdisciplinary Team reviewed individual comments and classified them into one of the following four categories:

- **Significant Issue** – A clear point of dispute with the Proposed Action that is based on some anticipated effect, and is not “non-significant” as defined below.
- **Non-Significant Issue** – A clear point of dispute with the Proposed Action that is based on some anticipated effect, but falls under one of the following:
  1. Outside the scope of the Proposed Action
  2. Already decided by law, regulation, Forest Plan, or other higher level decision
  3. Irrelevant to the decision to be made
  4. Conjectural and not supported by scientific or factual evidence.
- **Suggested Alternatives** – Comments which clearly propose an alternative
- **Non-Issues** – Comments which do not pose any clear dispute with the Proposed Action, or are merely questions.

There were no significant issues identified as a result of scoping. Public scoping responses included numerous comments, questions, concerns, and issues that were determined to be non-significant, as defined above.

## CHAPTER II

### 2.1 Alternatives

This chapter describes the alternatives that were selected for detailed analysis. This includes three alternatives: Alternative 1 (Proposed Action), Alternative 2 (No Action), and Alternative 3 (Current Management). No significant issues were brought forward during public scoping that would be used to develop additional alternatives. The BMPs and Standard Management Requirements detailed in Appendix C are applicable to all action alternatives (Alternative 1 and Alternative 3).

#### Alternative 1 – Proposed Action

This alternative is the Proposed Action, as presented in Chapter I of this EA.

#### Alternative 2 - No Action

This alternative does not implement any of actions proposed. This alternative would implement no grazing and no watershed restoration activities. Grazing would not be authorized in the Perazzo Meadows Allotment. This alternative complies with 40 CFR 1502.14(d), which requires that a no-action alternative be included in the analysis. “No action” is synonymous with “no grazing” and means that livestock grazing would not be authorized within the project area (FSH 2209.13 Chapter 90).

#### Alternative 3 – Current Management

This alternative would not implement the watershed restoration activities but would continue grazing on the Perazzo Meadows Allotment as currently practiced. Any additional management guidelines or monitoring requirements as presented in the Proposed Action would not be implemented.

Grazing in the Perazzo Meadows Allotment would continue to occur with adherence to LRMP standards and guidelines (as amended) as the over-riding principal for management of the allotment. Management is currently largely based on the Perazzo Meadows Willow Flycatcher Meadow Management Strategy (MMS). Typical permitted use of the allotment would not exceed 367 head-months per year and would be constrained between July 1 and October 10 of each year. The MMS outlines strategic use of the five pastures in a rest-rotation cycle to minimize the potential for adverse impacts to nesting willow flycatchers and their habitat. The MMS is reviewed by an interdisciplinary team, including the permittee, rangeland management specialist, wildlife biologist, and the line officer prior to issuance of the Annual Operating Instructions at the beginning of each grazing season.

Current permitted use is 60 cow/calf pair from July 1 to Aug 15, and (60) + 90 cow/calf pair from Aug 16 to Oct 10 (Table 4). The lesser number of livestock permitted prior to 8/16 corresponds to the approximate end of the willow flycatcher nesting season, as indicated in the SNFPA ROD (2004). The Willow Flycatcher MMS has been implemented and is reviewed each year prior to issuance of the Annual Operating Instructions (AOI).

**Table 2.1 Current level of use of the Perazzo Meadows Allotment**

LIVESTOCK			PERIOD OF USE	
NUMBER	KIND	CLASS	FROM	TO
60	Cattle	Cow/Calf Pairs	7/1	8/15
150	Cattle	Cow/Calf Pairs	8/16	10/10

## 2.2 Comparison of Alternatives

The following chart compares the major differences in the alternatives as they relate to the purposes and needs described in Chapter I. Information provided in the table is summarized from analysis prepared in support of this EA (*Watershed Effects Report, Biological Evaluation, Aquatic Resources Biological Evaluation, Sensitive Plant Biological Evaluation, Management Indicator Species Report, Weed Risk Assessment, and Rangeland Management Report*).

**Table 2.2. Comparison of alternatives for the Perazzo Meadows Watershed Restoration Project and Grazing Allotment Management Plan Update**

Attribute Compared	Alternative 1 (Proposed Action)	Alternative 2 (No Action)	Alternative 3 (Current Management)
Watershed Restoration	Yes	No	No
Authorization of Grazing	Re-authorize with updated AMP	No	Continue as currently implemented
<b>Site 1: Upper Perazzo Meadow</b> <ul style="list-style-type: none"> <li>• Main channel erosion</li> <li>• Tributary condition</li> <li>• Aquatic and riparian condition</li> </ul>	Use plug and pond techniques to direct flow out of the current degraded channel into a stable remnant channel closer to the meadow surface. This would improve hydrological function of the floodplain, reduce headcutting in tributaries, and improve aquatic and riparian condition. Construction of rock grade structures at bottom of meadow would aid in maintaining channel elevation in the meadow.  Plugs would encompass approximately 3.8 acres, and ponds 14.0 acres; 9280 feet of	Flow remains in the degraded channel and out of the historic remnant channel. Active erosion in the main channel would continue, tributaries would continue to exhibit headcutting, aquatic and riparian condition would remain degraded. Water quality would continue to be adversely affected.	Same as Alternative 2.

	<p>channel would be plugged, diverting flow into 15,041 feet of existing remnant channel.</p> <p>130 acres of wetland would be restored or enhanced.</p> <p>1.4 acres of riparian area would be temporarily disturbed.</p>		
<p><b>Site 2: Alluvial fan</b></p> <ul style="list-style-type: none"> <li>• <b>Concentration of flow through the alluvial fan</b></li> <li>• <b>Historic overflow channel and potential degradation of the road</b></li> </ul>	<p>Remove the low water crossing through the alluvial fan. Construct rock riffles to allow flow to spread out more readily on the fan. Reconnect the historic overflow channel which would be accessed by flow only in extremely high flow events that would currently degrade the road and bridge area.</p> <p>22.2 acres of riparian or wetland area would be restored or enhanced.</p> <p>5263 feet of streambed would be restored or enhanced.</p>	<p>Flow would remain constricted through the alluvial fan, causing excess stream bed load to be deposited out into the meadow. The road would remain susceptible to degradation in extremely high flows which would come around the bridge.</p>	<p>Same as Alternative 2.</p>
<p><b>Site 3: Middle Perazzo Meadow</b></p> <ul style="list-style-type: none"> <li>• <b>Main channel erosion</b></li> <li>• <b>Aquatic and riparian condition</b></li> </ul>	<p>Use plug and pond techniques to direct flow out of the current degraded channel into sections of stable remnant channel closer to the meadow surface. This would improve hydrological function of the floodplain and improve aquatic and riparian condition. Construction of rock grade structures at bottom of meadow would aid in maintaining channel elevation in the meadow.</p> <p>Plugs would encompass approximately 2.5 acres, and ponds 14.6 acres; 12,566 feet of channel would be plugged, diverting flow into 10,207 feet of existing remnant channel and enhancing the use of 41,566 feet of remnant channel.</p> <p>155 acres of wetland would be restored or enhanced.</p>	<p>Flow remains in the degraded channel and out of the historic remnant channel. Active erosion in the main channel would continue, and aquatic and riparian condition would remain degraded. Water quality would continue to be adversely affected.</p>	<p>Same as Alternative 2.</p>

	2.0 acres of riparian area would be temporarily disturbed.		
<b>Site 4: Old roadbed in middle meadow</b> <ul style="list-style-type: none"> <li>• Constriction of flow</li> </ul>	Remove the old road fill to improve floodplain function.  0.3 acres of floodplain would be created.	Constriction of flow through this area would continue, reducing stream energy dissipation by the floodplain.	Same as Alternative 2.
<b>Site 5: The terrace</b> <ul style="list-style-type: none"> <li>• Natural flow regime in several small channels</li> <li>• Degradation of the meadow</li> <li>• Ditch along road</li> </ul>	Plug the existing unnatural channels to reconnect flow into the natural channels. Repair a headcut along one of the channels. Install culverts to restore a more natural flow regime. Raise the roadbed to allow for appropriate drainage through the area.  Plugs would encompass approximately 0.3 acres; 1681 feet of channel would be plugged, diverting flow into 2918 feet of existing remnant and enhancing or restoring 11,721 feet of remnant channel.  33 acres of wetland or riparian area would be enhanced.  0.4 acres of riparian area would be temporarily disturbed.	Flow would remain in historical diversion channels, and would continue to be captured by the ditch and discharged in an unnatural location which cuts through the terrace above the Little Truckee River floodplain.	Same as Alternative 2.
<b>Site 6: Lower Perazzo Meadow</b> <ul style="list-style-type: none"> <li>• Main channel erosion</li> <li>• Aquatic and riparian condition</li> <li>• Drainage through road area</li> </ul>	Use plug and pond techniques to direct flow out of the current degraded channel into sections of stable remnant channel closer to the meadow surface. This would improve hydrological function of the floodplain and improve aquatic and riparian condition. Construction of rock grade structures at bottom of meadow would aid in maintaining channel elevation in the meadow. Improve drainage through the road area by installing culverts or rocked low water crossings.  Plugs would encompass approximately 0.7 acres, and	Flow remains in the degraded channel and out of the historic remnant channel. Active erosion in the main channel would continue, and aquatic and riparian condition would remain degraded. Water quality would continue to be adversely affected.	Same as Alternative 2.

	<p>ponds 4.8 acres; 4226 feet of channel would be plugged, diverting flow into 4652 feet of existing remnant channel and enhancing use of 4145 feet of remnant channel.</p> <p>38 acres of wetland would be enhanced.</p> <p>0.8 acres of riparian area would be temporarily disturbed.</p>		
<b>Site 7: Livestock grazing allotment</b>	Livestock grazing would be authorized in a manner which would complement the restoration activities and with adherence to LRMP standards and guidelines, as amended by the SNFPA 2004.	Livestock grazing would not be authorized.	Livestock grazing would continue as authorized with adherence to LRMP standards and guidelines, as amended by the SNFPA 2004. The AMP would not be updated.
<b>Implementation Monitoring</b>	Implementation monitoring would occur to ensure mitigation measures are being employed as required. These include measures for protection of soils, the stream environment, water quality, protection of the vegetation community and wildlife, heritage resources, and grazing standards and guidelines.	No implementation monitoring would occur.	Implementation monitoring would occur to ensure adherence to grazing standards and guidelines.
<b>Effectiveness Monitoring</b>	Effectiveness monitoring would occur to assess the success of the project. Results of effectiveness monitoring would be used to determine whether additional actions would be necessary, such as increased re-vegetation, additional stabilization of project areas, or alteration of grazing practices. Effectiveness monitoring would include photo points, stream channel cross section measurements, long-term rangeland trend, willow flycatcher habitat condition, stream proper functioning condition, and long-term condition of the watershed restoration areas in relation to grazing.	No effectiveness monitoring would occur.	Effectiveness monitoring would occur to assess the long-term rangeland conditions. Results of effectiveness monitoring would be used to determine whether alteration of grazing practices would occur. Effectiveness monitoring would include photo points, long-term rangeland trend, and willow flycatcher habitat condition.

<b>Number of Head-Months (Cow/Calf Pair) Permitted per Year</b>	367	0	367
<b>Range improvements</b>	Several modifications to existing range improvements would occur. These would include removal of unnecessary fences, moving a cattleguard, and moving a pasture boundary fence to enhance management of the watershed restoration areas.	No changes to existing range improvements would occur.	Existing range improvements would continue to support adherence to grazing standards and guidelines.
<b>Capable and suitable area used by livestock (approximate acres)</b>	855	0	855



## CHAPTER III

### 3.1 Environmental Consequences

This chapter discloses the potential consequences or impacts of the alternatives described in Chapter II.

#### 3.1.1 Effects relative to significant issues

No significant issues were identified. Comments and questions received during the scoping period, and responses, are summarized in Appendix D.

#### 3.1.2 Effects relative to Finding of No Significant Impact (FONSI) elements

In 1978, the Council on Environmental Quality published regulations for implementing NEPA. These regulations (40 CFR Parts 1500-1508) included a definition of “significantly” as used in NEPA. The eleven elements of this definition are critical to reducing paperwork through use of a finding of no significant impact (FONSI) when an action would not have a significant effect on the human environment, and is therefore exempt from requirements to prepare an environmental impact statement (EIS). Significance as used in NEPA requires considerations of context and the ten elements of intensity as follows.

- (a) Context: Significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, affected interests, and the locality. Significance varies with setting. In the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.**

The context of the action alternatives is limited locally to the Perazzo Meadows area including the upper Little Truckee River watershed on Tahoe National Forest as shown on the project maps (Appendix A), the immediate downstream environment, and the Perazzo Meadows grazing allotment. The Proposed Action would implement watershed restoration activities along much of the degraded main channel and some adjacent areas, with complementary changes to the grazing operations. Alternative 2 would not continue implementing grazing nor would it implement watershed restoration activities. Alternative 3 would continue grazing as currently practiced in the Perazzo Meadows Allotment without the proposed watershed restoration activities or changes in grazing management.

The context of the proposed watershed restoration activities is best viewed in relation to the historical conditions. As discussed in Section 1.2, up to the early 1900s the area was an active transportation thoroughfare and stage coach stop, supported major cattle and dairy operations, and was subject to a notable logging operation. It is postulated that these

historical impacts resulted in the geomorphic conditions observed today at the Perazzo Meadows.

The Proposed Action has been developed to restore more natural hydrological conditions as described in the Purpose and Need for Action while maintaining grazing in the system, and with all necessary resource protection measures and in compliance with all laws and regulations. In this overall context, the Proposed Action would begin restoring the original geomorphology to the area, and would move the resource base toward the desired conditions of the 2004 LRMP. These actions would not be significant.

Putting the Perazzo Meadows grazing allotment in context, the TNF has 37 allotments encompassing approximately 589,000 acres. The Perazzo Meadows Allotment encompasses approximately 4,700 acres, representing less than one percent of the NFS land in the TNF allotment land base. The capable rangeland in the allotment amounts to approximately 855 acres. The allotment is grazed approximately 3.5 months of the year in an average year, depending on the condition of the range resources. Thus, in terms of the affected area in relation to grazing on TNF, the Proposed Action and Alternative 3 affects a small portion of the allotment land base and over a short timeframe. To put the allotment in historical and cultural context, the Perazzo Meadows area has been grazed by various cattle operations since the late 1800s, prior to the establishment of the National Forest System. Dairies were located in the upper meadow area in the early 1900s. The current grazing permittee's family has grazed livestock in the meadow system since 1912. Permitted stocking levels are one-fifth what they were in the early 1900s, and are currently less than half what they were in 1993. Neither the Proposed Action nor Alternative 3 would change the current permitted stocking level. The permittee is able to operate within the design features of the Proposed Action and understands that modifications to grazing operations will complement the watershed restoration activities being proposed, and will help to improve the rangeland conditions in the long-term.

Within the context as described, the Proposed Action would result in short-term disturbance followed by short- and long-term benefits. In the context of seasonality and duration of activities, analysis prepared in support of the EA (*Watershed Report, Biological Evaluation, Aquatic Resources Biological Evaluation, Sensitive Plant Biological Evaluation, Management Indicator Species Report, Weed Risk Assessment, Heritage Resource Report, and Rangeland Management Report*) hereby incorporated by reference and available upon request), indicate that neither the Proposed Action nor Alternative 3 would pose significant effects, either long or short term, cumulative, local, regional or societal.

**(b) Intensity: Refers to the severity of impact. The following 9 elements are considered in evaluating intensity:**

**(1) Beneficial and Adverse Impacts**

This restoration project and is designed to be an improvement over existing conditions. The project design features, including LRMP standards and guidelines, BMPs, and project-specific resource protection measures would minimize or avoid adverse impacts. Alternative 2 (No Action) and Alternative 3 (Current Management) would prolong the existing adverse

effects due to hydrological dysfunction. Alternatives 1 and 3 would maintain grazing in Perazzo Meadows according to applicable LRMP standards and guidelines, as amended, to meet desired resource conditions. Alternative 1 would incorporate additional grazing measures to complement the watershed restoration activities.

The project design features would minimize or avoid adverse impacts of either of the action alternatives. Effects determinations are summarized in supporting analysis and in the remaining sections of this chapter. All analyses prepared in support of this document considered both beneficial and adverse effects, but all effects determinations were made on the basis of only adverse effects. Potential adverse impacts due to the alternatives discussed in this chapter are summarized as follows:

### **Biological Resources**

Biological determinations for wildlife, aquatic resources, MIS and plants are discussed in FONSI elements #6, #7 and #10. There would be no significant adverse effects expected from any of the alternatives.

### **Hazards and Hazardous Materials**

During construction, equipment may have the potential to release hazardous substances, such as oil and diesel, or may contaminate exposed soil. However, precautionary mitigation measures such as WQ-12, WQ-14, WQ15 and WQ-16 in Appendix C would decrease and mitigate this risk.

### **Cultural and Heritage Resources**

The project area has been inventoried for heritage resources. Archaeological resources would be protected by project-specific resource protection measures (which are currently in place to minimize impacts from grazing). Monitoring for heritage sites would occur during excavation. Known archaeological sites would be flagged and avoided. Restoration activities would be halted if a site is found in an area during excavation to avoid further disturbance. See additional discussion in FONSI elements #3 and #8.

### **Air Quality**

The project area is within the Truckee Air Basin & Northern Sierra Air Quality Management District. Air quality impacts associated with the proposed project would be limited to those which typically occur during construction. The proposed project may result in temporary increases in dust and exhaust odor due to equipment use while implementing watershed restoration activities. Following BMPs and Standard Management Requirements (Appendix C), inactive soil stockpiles would be watered or covered during windy conditions, and the generation of fugitive dust would be controlled. Once construction is complete, disturbed areas will be re-vegetated to ensure soil stabilization (Appendix F). Compliance with the BMPs and specific permit conditions will ensure compliance with Northern Sierra Air Quality Management District regulations.

### **Soils, Water Quality and Hydrology**

#### 1. Proposed Action Effectiveness

The Perazzo Meadows Geomorphic Assessment (2008) provides recommendations to the Forest Service regarding concerns for the actions being considered under the plug and pond watershed restoration approach (Swanson pg. 50-52). The Proposed Action was planned based on these recommendations (the specific planning based on these concerns is detailed in the Watershed Effects Report). Below is a summary of the concerns brought forward and the actions developed:

*Downstream control:* There is a concern that a downstream grade break would re-initiate headcutting. Grade stabilizing structures were proposed to support long term stability of the meadow restoration, and rock riffle features were proposed to re-establish function of the Little Truckee River alluvial fan, by forcing the water to spread back onto the fan surface and causing deposition of the bed load.

*Plug stability on Perazzo Fan:* Resource Protection Measure 6 was incorporated into the Proposed Action (Section 1.5 of the EA and Appendix C). This measure requires additional measures to be implemented to reinforce the plug located on the Perazzo Canyon Creek alluvial fan by reinforcing with rock or large woody debris, as necessary.

*Road Crossings on Fan Surfaces:* Proposed Actions at site #4 were developed to reconnect flood flows and to provide for decreased road water interception.

*Continuity of Reactivated Channels and Flushing of Reactivated Channels:* Concerns were raised that reactivated channels would force water out of bank too frequently, or would generate a large flush of fine sediment when they are re-activated. While it is expected that channel adjustment would occur, the existing system already utilizes these channels during snowmelt runoff and during flood flows. Low flow conditions (including a late-season soil moisture deficit) would be present during construction activities. Re-established floodplain functions (reduced velocities, spread flow energy, sediment collection and increased infiltration) would be utilized during construction activities to minimize sediment downstream. Proposed sediment control measures and best management practices would aid in minimizing and controlling potential effects.

## 2. Sediment

Under the Proposed Action, there would be potential for a short-term increase in sediment transport in the hydrologic system and temporary loss of vegetation during the restoration process with the construction of the plugs and ponds, the construction of rock grade structures and the removal of old road fill. Much of this work would occur within and adjacent to the 100-year floodplain. There is also a potential for additional sediment to be delivered to the Perazzo Canyon Creek and Little Truckee River. Impacts and mitigations regarding work within the floodplain are discussed below. The potential for adverse effects related to sediment would be minimized by resource protection measures integrated into the Proposed Action and BMPs that include minimization of ground disturbance, stabilization of construction spoils, runoff control measures, and stabilization of streambanks (see Appendix C). In addition, all restoration activities would follow permit requirements as designated by the State and Lahontan Regional Water Quality Control Board and the U.S. Army Corps of Engineers. Short-term impacts (as described above) from restoration activities would affect

the same areas currently affected by down-cutting and excessive lateral movement in the main channels and unnatural channels which resulted from historic diversion of flows. The effects of excessive erosion observed in these channels are the baseline effects under Alternatives 2 and 3 (as discussed in Section 1.2 of this EA, “Project Area Description.”

There could be longer-term potential for increased sediment release from watershed restoration areas in high flow events within one to five years of the restoration project activities. This potential would be minimized by implementation of temporary and long term erosion control measures (Appendix C) and by re-vegetation. As described in Appendix F, re-vegetation actions would occur immediately after Proposed Action implementation. Stabilized vegetation in the project area (including remnant channels utilized by diverted flows) is expected within one to five years following restoration actions. Following the restoration actions, high flow energy would be dissipated and would have improved access to the floodplain, reducing the possibility of a high flow-triggered sediment release which currently occurs under Alternatives 2 or 3. In the long-term there would be less unstable soil available for transport, and when soil becomes mobile it would be more likely to be trapped in ponds or deposited across the floodplain.

### 3. Work Within the 100-Year Floodplain

The watershed restoration activities would occur in the 100-year floodplains of the target watershed. See Appendix B for technical details. Construction activities would generally occur in dry streambeds, or in wetted sections of the channel that had already been closed off by the top plug. At project sites where water is present at the time of construction and activities cannot be delayed until flow has ceased, such as at the uppermost plug, flow would be conveyed around the construction site and discharged into a stable location. A coffer dam would be constructed to contain flows. Diverted flows would be discharged onto a rocky substrate or clean gravel bags such that no sediments would be disturbed. Equipment would be staged outside of the floodplain areas. No major disturbance would occur outside the proposed construction areas. Potential direct and indirect adverse effects of the restoration work are described above in the “sediment” section. Appendix E: “Compliance with Riparian Objectives” provides a detailed discussion of how the project’s Resource Protection Measures, Standard Management Requirements, Best Management Practices and Standard and Guidelines would protect riparian areas and floodplains. They act by:

- Requiring the achievement of particular standards (such as zero-discharge during channel excavation, the prevention of soil contamination or hazardous substance discharge, the requirement of monitoring to assess the implementation and effectiveness of the actions)
- Restricting the timing, intensity, or placement of activities to prevent undue effects (such as restricting the timing of the restoration actions by month and weather conditions), designating routes and work sites, restricting places for re-fueling, designating places for and management of stockpiles).
- Imposing additional protective measures to prevent wind or water erosion (such as mulching, tarps, re-vegetation, temporary protection structures)
- Requiring follow-up activities after actions are complete (such as breaking up compacted soil, re-vegetation, and immediate remediation of areas affected by

hazardous substances. This also includes implementation and effectiveness monitoring to assess the restoration action and potentially identify corrective or needed actions).

#### 4. Water quality impacts from grazing and range management

Potential impacts to water quality from grazing under the Proposed Action and Alternative 3 include direct inputs of fecal coliform bacteria and nutrients, sediment delivery resulting from direct disturbance and loss of vegetation, and indirect influence on water temperature, and changing local drainage patterns. The risk for these potential effects would be minimized by implementing BMPs and LRMP Standards and Guidelines (1990), as amended by the 2004 SNFPA. Annual adjustments to grazing permits can be made through the Annual Operating Instructions as found necessary through monitoring to achieve long-term resource objectives. Details regarding BMPs, SMRs and required monitoring that would minimize adverse effects from livestock are detailed in the Range Report. These act by:

- Requiring the achievement of particular standards (such as assigning restrictive effects quantities to streambank disturbance, riparian vegetation affected, grazed forage stubble height, and the requirement of monitoring to assess the implementation and effectiveness of the grazing management strategies).
- Restricting the timing, intensity, or placement of activities to prevent undue effects (such as restricting the placement of saltblocks or livestock management structures).
- Imposing additional protective measures to minimize potential effects from grazing (such as the Willow Flycatcher MMS).
- If it is found that the grazing permittee does not comply with the Standards and Guidelines, BMPs, SMRs and RPMs that are in their Term Grazing Permit and Annual Operating Instructions for the Perazzo Meadows Allotment, corrective measures would be taken.

Meadow restoration under the Proposed Action would aid in minimizing upstream inputs from grazing by stabilizing the banks, enhancing the function of the floodplain, and by aiding in riparian filtration. In addition, the period of rest from grazing to restoration areas, as well as salting location and other means of control of livestock distribution under the Proposed Action would further support enhanced management of the restoration areas and provide optimal re-vegetation conditions for long-term success of the restoration work.

#### **(2) The degree to which the alternatives affect public health or safety.**

Implementation of any of the alternatives would not significantly affect public health or safety. Forest Service contract requirements and OSHA regulations designed to provide for worker and public safety would be applied during implementation of the project. Consideration of all alternatives indicates that none of them would pose adverse effects on public health and safety. A concern was identified during public scoping regarding the possibility of a person falling into one of ponds created by the plug/pond technique; however, the ponds would be sloped to minimize the chance of this event occurring and an individual could easily get out if this event occurred.

**(3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.**

Unique characteristics of the project area would be maintained or improved under any of the alternatives with application of LRMP standards and guidelines, BMPs, and project-specific resource protection measures. There are no park lands, prime farmlands, wild and scenic rivers, or specifically designated ecologically critical areas within the project area. Unique characteristics which do exist within Perazzo Meadows would be affected as follows:

**Historical/Cultural Resources**

The project area has been inventoried for heritage resources. The district archeologist determined that the action alternatives would not significantly affect cultural or historic resources. Archaeological resources would be protected by project-specific resource protection measures. Monitoring for heritage sites would occur during excavation. Known archaeological sites would be flagged and avoided. Restoration activities would be halted if a site is found in an area during excavation to avoid further disturbance. The District Archaeologist would be notified, and would take the necessary steps to document the site before activities may potentially resume, e.g. excavating, cataloging. Plugs, ponds, and equipment access routes would be located to avoid direct impacts to known heritage resources. Any project related activities planned within the allotment boundaries that may cause animals to congregate in groups (such as salt licks, on/off loading sites, etc.) would be placed in locations away from heritage sites, and all activities would adhere to the provisions of the National Historic Preservation Act (NHPA), any implementing programmatic agreements (PAs), and the Tahoe National Forest Grazing-Heritage Resource Management Strategy.

**Wetlands**

The proposed project would improve the wetland characteristics of the ecosystem by improving channel and meadow hydrology and reconnecting floodplain access in Perazzo Meadows. LRMP standards and guidelines, BMPs, and project specific resource protection measures would be implemented under either of the action alternatives to promote maintenance or improvement of wetland characteristics within the project area. Any necessary permits for construction in wetlands would be attained prior to watershed restoration work (i.e. Section 401 permit issued by LRWQCB, Section 404 permit issued by the Army Corps of Engineers, California General Construction Permit). All work would be in compliance with the requirements as stated in the permits.

**(4) The degree to which the effects on the human environment are likely to be highly controversial.**

The effects of this project on the quality of the human environment are not likely to be highly controversial. The purpose of the project is to restore watershed conditions, to re-authorize grazing on an existing allotment, and to manage livestock grazing to ensure healthy rangeland conditions and to complement the watershed restoration activities. Effects from

grazing are generally known and understood. While some people have disagreed with livestock grazing on public lands in general, no evidence has been identified showing that the environmental effects of these activities within the project area have been wrongly predicted. The project has been subject to extensive analysis and planning, which has resulted in a focused proposal and a range of alternatives for consideration. Adoption of either of the action alternatives (Alternatives 1 and 3) would require implementation of the BMPs, mitigation measures, and standard management requirements described in Chapter I of this document. Additionally, there were no significant issues identified during public scoping.

**(5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.**

The action alternatives are not new to the area or Tahoe National Forest. Similar watershed restoration projects have been completed and have attained the expected and desired results. At the Carman Valley and Merrill-Davies Watershed Restoration Projects, the plug and pond techniques have been implemented with successful results, as the floodplain access has been re-established, the sediment downstream has been alleviated, and the stream channels have been stabilized (see the Project Record for additional information). Vegetation changes are favorable as captured by photopoint monitoring. In addition, these efforts have provided a means for developing a refined proposal for this project. Grazing has historically been, and continues to be, routinely implemented on a regular basis by the Tahoe National Forest. Grazing practices have evolved through time and currently occur under standards and guidelines for the mitigation of potential impacts. The results or effects of the proposed watershed restoration activities and grazing operations on the human environment are predictable and known, based on similar past practices. Based on the observations above, The standard management requirements, mitigation measures, and best management practices included in each of the action alternatives (Alternatives 1 and 3) would also reduce and minimize any impacts or risks that might have otherwise been uncertain, unique, or unknown without such measures.

**(6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.**

Implementing the watershed restoration activities and re-authorizing and managing grazing as proposed under either of the action alternatives would not establish a precedent for future actions, nor would it represent a decision in principle about a future consideration for other similar projects. Any future decision to take an action on the same or adjacent areas would be analyzed separately and on its own merits to determine a course of action. Future projects would require additional site-specific analysis and separate decisions in compliance with NEPA.

**(7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.**

A cumulative effect is the consequence on the environment that results from the incremental effect of the action when added to the effects of other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes the other actions and regardless of land ownership on which the actions occur (40 CFR 1508.7). In cumulative effects analyses, current resource conditions are used to represent the composite



of past actions and natural events that have taken place within the project area. This environmental analysis does not attempt to quantify the effects of past human actions by adding up all prior actions on an action by action basis. There are several reasons for not taking this approach. First, a catalog and analysis of all past actions would be impractical to compile and unduly costly to obtain. Current conditions have been impacted by innumerable actions over the last century (and beyond), and trying to isolate the individual actions that continue to have residual impacts would be nearly impossible. Second, providing the details of past actions on an individual basis would not be useful to predict the cumulative effects of the proposed action or alternatives. In fact, focusing on individual actions would be less accurate than looking at existing conditions, because there is limited information on the environmental impacts of individual past actions, and one can not reasonably identify each and every action over the last century that has contributed to current conditions. Additionally, focusing on the impacts of past human actions may overlook the important residual effects of past natural events, which may contribute to cumulative effects, just as much as the human actions. By looking at current conditions, we are sure to capture all the residual effects of past human and natural events, regardless of which particular action or event contributed those effects. Finally, the Council on Environmental Quality issued an interpretive memorandum on June 24, 2005 regarding analysis of past actions, which states, “agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions.” For these reasons, the analysis of past actions in this document is based on current environmental conditions.

The cumulative effects presented in this EA are summarized from the Biological Evaluation/Biological Assessments for wildlife, aquatic resources, plants, the Management Indicator Species Report, the Rangeland Management Specialist Report, and the Watershed Effects Report, which are incorporated by reference, and summarized herein. All of these analyses conclude that no significant cumulative effects would result from the any of the alternatives.

The Proposed Action was designed to minimize the potential for site-specific adverse cumulative effects on sensitive resources. The Proposed Action would protect heritage resources, plants, wildlife, aquatic species, riparian resources, upland habitats, rangeland resources, cultural, and watershed and soils resources to the extent that any residual effects would not be cumulatively significant.

**Past, present and reasonably foreseeable future actions within resource analysis areas:**

As discussed in Section 1.2, up to the early 1900s the area was an active transportation thoroughfare and stage coach stop, supported major cattle and dairy operations, and was subject to historical logging. It is postulated that these historical impacts resulted in the geomorphic conditions observed today at the Perazzo Meadows.

*Timber management and roads:* Forest Service projects planned adjacent to the proposed Perazzo Meadow restoration and grazing management plan cumulative effects analysis area include the following:

- The Phoenix Project is planned to implement approximately 235 acres of mechanical thinning, hand thinning, group selection and aspen restoration adjacent to the upper Perazzo Meadows area as soon as summer 2009. For a full description of these activities please refer to the Phoenix Revised FEIS available at the Sierraville Ranger District office.
- The Montez Project analyzed a plan to implement approximately 165 acres of mechanical thinning, hand thinning, group selection and aspen restoration adjacent to the upper Perazzo Meadows area. The project was appealed and the Sierraville District Ranger withdrew the decision. For a full description of the project activities please refer to the Montez Project Record available at the Sierraville Ranger District office. The decision to proceed with the project with revisions and/or modifications is under review, and the Montez is currently on hold.
- The Sierraville Ranger District is currently designing two vegetation management projects near the Perazzo Project area: the Dingo Project and the Outback Project. These projects tentatively include aspen restoration, forest health prescriptions and watershed restoration work. At this time, the Proposed Actions are not adequately planned for these projects to allow resource-specific effects analysis; hence, they are not included in the analyses of cumulative effects.
- SPI has two Timber Harvest Plans (THPs) in place within the wildlife, and aquatic resources analysis area: the Scraps THP, and the Lodge THP. In the Scraps THP, which is currently under analysis, approximately 250 acres would be treated on land adjacent to the Perazzo Meadows project. Timber would be removed near watercourses, reducing future woody debris recruitment. The Lodge THP, which has been approved, is located upstream and southwest of the project and could also reduce future woody debris recruitment. Guidelines set forth in the State Forest Practices Act should mitigate concerns for erosion potential directly related to harvest activities.
- *Recreation:* Current recreational use in the Perazzo project area is high. There are many developed recreational sites and/or campgrounds, over 200 miles of designated trails near the Perazzo project area, and countless user-defined campsites and routes in the area. Recreation is particularly pertinent at the Little Truckee Summit off-highway vehicle (OHV)/over-snow vehicle (OSV) staging area at the junction of State Route 89. The staging area is a hub for dispersed OHV use and a major hub for OSV use and cross-country skiing during the winter. There are no groomed OSV routes within Perazzo Meadows, but two groomed routes are on roads adjacent to and within the Perazzo Meadows complex, and snowmobile activity occurs during the snow covered months within Perazzo Meadows. This activity has not been identified as a causal factor of the degraded meadow and hydrologic condition.

Recreation is anticipated to increase as the population base in the surrounding areas rapidly expands. This will continue to increase effects to resources that are sensitive to human disturbance. However, there is an ongoing effort to establish designated OHV routes is occurring on the Tahoe National Forest, which will reduce road densities in the watershed, and should contribute to the improvement of stream channel conditions over time.

## **Cumulative effects to soil and water resources**

The method typically used to assess disturbed areas within a watershed is to use the Region 5, Equivalent Roaded Area (ERA) methodology. While the ERA method was designed to assess risk from land disturbance due to roads and timber management practices, it was not designed to address grazing, historical long-term functional changes of the landscape, or restoration. Because of this, rather than using the ERA method, this assessment considers the potential for changes in the stream and meadow geomorphic capability to handle perturbations. The following information provides a rationale for the approach used to assess cumulative effects.

Threshold of Concern (TOC) measurements are an index that can be used to determine the risk of disturbance. TOC is an indicator of the amount of disturbance a watershed may theoretically withstand before the disturbance changes water delivery characteristics. The TOC is determined by estimating the natural sensitivity of the watershed using inherent characteristics such as soils, drainage density, and elevation and is further modified to incorporate stream health ratings. As shown in Appendix 1 of the Watershed Effects Report, width to depth ratio, entrenchment, and bank stability (stream health indicators) can change the TOC value. As the TOC rating goes down, the system can handle more disturbance before leading to a cumulative effect. Therefore, changes in the stream health indicators would similarly change the ability of the system to respond to perturbation. Changing stream health values can lead to a change of the TOC of +1 and -3 points.

However, since the adjustment in TOC methodology averages survey information, it minimizes the actual accountable improvements that could result within the response reach of the Perazzo Meadow stream system. The ability of the stream to handle disturbance is increased with improved stream health, and the Proposed Action is designed to improve the stream health indicators discussed above. The following information was used to provide information regarding changes in stream health that were used to assess the cumulative effects for the alternatives:

Forest Service stream surveys taken during the 2000-2007 field seasons (using the USFS Region 6 Hanken-Reeves methodology) are used to provide information regarding existing reach instability and entrenchment (Tables 1 and 2 of the Watershed Effects Report).

Perazzo Meadows Geomorphic Assessment data (Swanson 2008 Table 1; included in Appendix 2 of the Watershed Report) provided existing and post-restoration predicted width to depth ratios for Sites along the Little Truckee River and Perazzo Canyon Creek.

The general analysis area for this cumulative effects analysis is set to the Perazzo Project area. The cumulative effects analysis area is bounded in this manner because the proposed alternative would modify the hydrologic function of the Perazzo meadow and the processes that affect water inflow to and delivery from this meadow. The temporal bounds of this cumulative effects analysis are set to the past events that lead to the current condition of the project area, as well as the future function of this meadow/stream system.

Proposed Action: It is expected that after project implementation the TOC would improve due to an improved stream health and channel stability rating. There would be a decrease

from the existing ERA/TOC ratio and thus there would result in a reduced risk associated with upland disturbance as identified under the ERA methodology. With the focus of ensuring that implemented BMPs and other Project Requirements keep soil in place, off-site sediment movement in the short and longer term (up to 5 years after implementation) impacts would be controlled and meet water quality requirements, and recommendations actions regarding sediment release by the Swanson Geomorphology report would also be implemented (see FONSI Element #1, Water Quality and Hydrology, Restoration Action Effectiveness).

Alternative 2: Existing, future and proposed actions would result in no changes to the TOC and thus would not result in a reduced risk associated with upland disturbance as identified under the ERA methodology, until after several years into the future due to improved stream health.

Alternative 3: With constant adjustments in lateral movement from the confined flows (up to the 10 year return interval) combined with alluvial fan material transport and grazing, it would require a longer time and additional limitations on grazing operations to recover the system compared to the Proposed Action or Alternative 2. Existing, future and proposed actions would be unlikely to result in a change to the TOC, and thus there would be no change in risk associated with existing and Alternative 3 actions.

### **Cumulative effects to aquatic species**

The cumulative effects analysis in the Aquatic Resources Biological Evaluation/Biological Assessment (BE/BA) evaluated the riparian and aquatic conditions within the Perazzo Canyon, Coldstream and a portion of the Little Truckee watersheds for the mountain yellow-legged frogs and Lahontan cutthroat trout within a time frame of the years 1850 – 2018. This analysis area is chosen since it encompasses the meadow habitat associated with this project, and activities upland that may have an affect on meadow areas. This time frame is chosen because the affects from early settlement that impacted the stream course are still evident today, and it is expected that improvements from the restoration activities will be evident and measurable through the year 2018. The BE/BA determined that mountain yellow-legged frogs and Lahontan cutthroat trout are the only Forest Service sensitive species that may be affected by the Perazzo Meadows project.

As discussed in the cumulative effects introduction, past activities have had negative impacts to aquatic ecosystems within the analysis area watersheds. In the future, the Scraps and Lodge THPs on nearby private land could remove timber near watercourses, which could reduce future woody debris recruitment and affect aquatic organisms.

Proposed Action: With consideration of the past, present and future activities within the analysis areas of the mountain yellow-legged frog and LCT habitat, the BE/BA determined that the Proposed Action has cumulatively positive effects. While the BE/BA determined that there could be short-term direct adverse effects due to disturbance during restoration, and indirect adverse effects to stream channels or meadow habitat due to grazing, the risk of such effects is low due to grazing management requirements, monitoring, the required implementation of RMOs and RHCA protection measures (see Appendix E: Compliance with Riparian Objectives). There would be an overall improvement to the quality of the

meadow habitat, with a gain in pool habitat, which would provide more suitable breeding habitat for the frogs, and habitat improvement for LCTs with improved stream temperatures, stream: riffle ratio and sediment.

Alternatives 2 and 3: There would be no cumulative benefits (as described for the Proposed Action) to the mountain yellow-legged frog and LCT habitat under these alternatives, and it is predicted that the stream course and meadow system would continue to degrade. The lack of grazing in alternative 2 could reduce the potential cumulative effects that are due to livestock proximity to the watercourses, while Alternative 3 would have similar potential adverse effects from grazing as the Proposed Action.

Cumulative effects to wildlife species and their habitat (including Management Indicator Species)

A Biological Evaluation/Biological Assessment (BE/BA) for terrestrial wildlife species was prepared for this project and is incorporated by reference. The following Forest Service sensitive species or their habitat were considered present in the cumulative effects analysis area and were analyzed for cumulative effects: bald eagle, California spotted owl, great gray owl, northern goshawk, willow flycatcher, greater sandhill crane, marten, Sierra Nevada red fox, California wolverine, pallid bat, Townsend's big-eared bat and western red bat. The Perazzo Meadow system is considered as the wildlife spatial analysis area for cumulative effects. The Wildlife BE/BA determined that there would be no direct or indirect effects, and therefore no cumulative effects from any of the alternatives to the California spotted owl, northern goshawk or marten. It determined that there would be no direct effects to the pallid bat, Townsend's big-eared bat, or western bat and indirect effects are expected to be negligible for each species for each alternative. Therefore, there would be no cumulative effects to any of these bat species.

Bald eagle: As bald eagle nesting areas were protected under the Endangered Species Act and current management of the area is consistent with the ESA management, there are no known or expected cumulative effects to nesting area. Recreation is controlled in the area and these activities are not expected to add cumulatively to bald eagle nesting or foraging behavior. Therefore, Alternatives 1, 2, and 3 of the Perazzo Meadows Watershed Restoration Project and Grazing Allotment Management Plan Update would not cumulatively adversely affect the bald eagle or bald eagle habitat.

Great gray owl: The great gray owl effects analysis area includes the entire Perazzo Meadows complex, including approximately 500 feet into forested stands (encompassing approximately 12,040 acres). Great gray owls use two habitat types in the project analysis area: the meadow system for foraging and the forest for nesting. One proposed private timber harvest plan may affect nesting habitat adjacent to Perazzo Meadows, the Scraps THP, in which approximately 250 acres of forested stands are proposed for selection harvest, sanitation/salvage harvest, and group selection by Sierra Pacific Industries (SPI). The proposed THP actions may reduce the number of larger trees preferred as nesting structures by great gray owls, based on past SPI THP implementations and review of the proposed actions. An approved THP may be released if surveys do not detect great gray owls during the next two seasons (pers. com. Kevin Roberts, SPI biologist). Cumulative effects from this

private timber harvest may reduce nesting habitat quality of approximately 250 acres adjacent to the Perazzo Meadows. The thinning from below prescriptions on USFS lands of approximately 400 acres (the Phoenix and Montez Projects) are expected to have long term beneficial effects to great gray owl nesting habitat by restoring a healthy tree density within older age-class stands. It is anticipated that the Perazzo Meadows restoration actions would have beneficial indirect effects to great gray owl foraging habitat on approximately 376 acres. Cumulatively, the project is anticipated to improve habitat quality for the great gray owl in the analysis area.

Willow flycatcher: The willow flycatcher analysis area encompasses approximately 13,500 acres of meadow habitat and is bounded temporally by the state of the land the date the Forest Service acquired the land (approximately 50 years ago) to the approximate date the allotment plan would be evaluated and verified for re-authorization in 10 years. The past degradation of the stream condition (as summarized in Sections 1.2 – 1.4 of the EA) has led to a decline in the meadow conditions over time. Stream and meadow degradation has had a large effect on the potential natural vegetation condition expected within the Perazzo Meadows system (by lowering the water table and by changing the natural utilization of the floodplain), leading to impaired habitat conditions for willow flycatchers. In 2004, a Willow Flycatcher Meadow Management Strategy (MMS) was developed in accordance with the 2004 SNFPA ROD Standard and Guideline #58 to minimize the potential for adverse impacts to nesting willow flycatchers and their habitat. MMS guides the Proposed Action and minimizes potential impacts to breeding willow flycatchers from cattle grazing.

The adjacent Phoenix and Montez forest health improvement projects are designed to address poor forest health on approximately 400 acres in the upper Perazzo Meadows area. They would help reverse the dry conditions the meadow system currently exhibits by restoring the historical conditions of lower density, older average age stands (which uptake less water than the overstocked conditions currently present). There would be cumulatively beneficial impacts to the willow flycatcher under the Proposed Action.

Under Alternatives 2 and 3, the meadow habitat required by the willow flycatcher would remain unchanged, while adjacent forest health projects would contribute to some improvement in water availability for the willow vegetation.

Greater sandhill crane: The Perazzo project area is currently not suitable sandhill crane nesting habitat. Therefore, Alternatives 2 and 3 would have no direct, indirect or cumulative effects on this species. It is anticipated that the Proposed Action would create suitable nesting areas in the foreseeable future, and thus may have long-term beneficial indirect effects to sandhill crane by creating these suitable nesting habitat. It is estimated that nearby recreational use (specifically OHV use) has the potential to affect greater sandhill cranes in the foreseeable future (as the area becomes more suitable for nesting). However, with the Tahoe National Forest Route Designation and OHV restrictions there would be no negative cumulative effects to sandhill crane habitat expected in the future due to spatial and temporal OHV use restrictions.

Red fox and California wolverine: The Wildlife BE/BA determined that these forest carnivores might utilize Perazzo Meadows area for foraging of prey, but it is unlikely they

use it consistently or for any length of time. The Proposed Action would have a long term beneficial indirect effect to forest carnivore prey by restoring a healthier meadow system which would increase meadow habitat conditions for prey. Cumulatively, this increased prey availability could be complemented by the nearby Montez and Phoenix projects, which would increase forest health, and not measurably alter the current levels of large logs, large snags, and forested environment over the landscape in the long-term. The adjacent Scraps THP project would not likely change prey habitat. Alternative 2 would have a more negative trend in prey habitat as the meadow system would continue to decline because the restoration activities would not reverse the hydrologic decline, but grazing would not occur. Alternative 3 is expected to have the same general indirect effects as Alternative 2 because restoration activities would not occur, but a structured grazing management strategy would occur that is designed to have minimal impacts to forest carnivore habitat.

Management Indicator Species: The MIS Report (incorporated by reference) analyzed the cumulative effects of the alternatives on three habitat – indicator species of the Perazzo project area: riverine and lacustrine habitat (aquatic macroinvertebrates), riparian habitat (yellow warbler), wet meadow habitat (pacific tree frog). Cumulative effects at the bioregional scale are tracked via the SNF MIS Bioregional monitoring, and detailed in the SNF Bioregional MIS Report (USDA Forest Service 2008).

The report determined that the existing, degraded conditions of these habitats, in conjunction with the nearby Forest Service projects and adjacent THP would be cumulatively improved at the project-level by easing the erosion that is occurring along the stream banks which is contributing to a loss of all of the MIS habitats. The Proposed Action would raise the water table, which would reverse the spread of undesired xeric vegetation and enable the natural hydric and riparian vegetation, thus positively affecting the MIS. The Rangeland Management Report found that current grazing practices have improved the range condition on the 855 acres of suitable and capable lands within the Perazzo Meadows Allotment, and the grazing practices in Proposed Action and Alternative 3 are not expected to cumulatively affect the willow-dominated riparian habitat because of the strict MMS guidelines and monitoring requirements. Under Alternatives 2 and 3, none of these vegetation conditions would change and therefore no MIS Species would be affected.

### **Cumulative effects to sensitive plant species and fen habitat**

A Biological Evaluation for Sensitive Plants was prepared for this project and is incorporated by reference. The general analysis area for the cumulative effects analysis is set as the Truckee and Sierraville Ranger Districts that occupies the east side of the Sierra Crest within the confines of the Tahoe National forest boundary. The timeframe for the cumulative effects analysis ranges from when the problems began (late 1800s) through 2018 when the proposed Perazzo Allotment Management Plan would expire. The cumulative effects analysis area is bounded in this manner because the Perazzo Allotment is contained within this ecological subsection contained within the boundaries of these ranger districts.

Cumulative effects to sensitive plant species can be addressed according to “habitat group” because several of the Tahoe Forest sensitive plant species occur in similar habitats. The riparian habitat group is the only group that is potentially cumulatively affected within the

Perazzo analysis area, and it includes fens and fen margins, meadow dependent species, floodplains and stream channels. Species in this group include lichens, moonworts (*Botrychium* sp.) and mosses. There are no occurrences of this habitat group within the Perazzo analysis area, so there would be no cumulative effects from any of the actions to this habitat group.

Fens occur within the analysis area, along the base of the northern extent of Mount Lola and a concentration of fens in the raised meadow in the southeastern portion of section 26 of T19N, R14E. Past actions may have impaired these fens, and today they have indentations around the circumferences indicating that the fens were once larger with a deeper level of saturated organic matter. Some apparent damage (indicated by hoof prints) appears to be related to disturbance from livestock or large ungulates.

Proposed Action: The Proposed Action has potential for cumulatively positive effects to the fens. Under the MMS, strict utilization and monitoring requirements would continue to decrease the risk of livestock disturbance to the fens. FONSI element #10 Aiii provides more details regarding the mitigations preventing livestock effects to fens. Presently there are upward trends for meadow conditions under livestock utilization. The watershed restoration activities could positively influence the hydrology affecting the fens by restoring the high level of the water table.

Alternatives 2 and 3: With alternative 2 there may have positive effects to the fens with the removal of cattle but there would not be positive effects from watershed restoration. Alternative 3 would not have benefits of the watershed restoration and the presence of the livestock would continue.

**(8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, or may cause loss or destruction of significant scientific, cultural, or historical resources.**

The Perazzo project area has been inventoried for heritage resources. The file number for the heritage resource reports are TNF02161/R2007051700064 and TNF02161/R2008051700026. The inventory documents the presence of prehistoric and historic archaeological sites and isolated features. There is no potential for effects to known heritage resources by implementation of any of the alternatives. See FONSI element #3 for additional details. The alternatives would not adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places.

**(9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.**

Biological Assessments (BAs) were completed that include analyses of potential effects to federally listed (endangered and threatened) and candidate species. These reports determined that there would be no effects from any of the alternatives to any federally listed or proposed species. There is no designated critical habitat in the Tahoe National Forest.



*Endangered Species:* There are no federally endangered species or their habitat known to occur within the Perazzo project area.

*Threatened Species:* The BAs considered the effects of the alternatives on the federally threatened species elderberry longhorn beetle, California red-legged frog and the Lahontan cutthroat trout (LCT). There is no habitat for the elderberry longhorn beetle in the Tahoe National Forest, and the analysis area is outside the current and/or historic range of the California red-legged frog; thus these species would not be affected by any of the action alternatives for the Perazzo Meadows Project.

The analysis area is not currently occupied by LCT, although LCT habitats were considered for effects since the Perazzo Meadows was identified in the 1995 Recovery Plan for LCT as a potential area for the re-introduction of LCT. The activities associated with the proposed Perazzo Meadow watershed restoration and the reauthorization of the grazing permit have the potential to affect future LCT reintroduction habitat. The Aquatics BE/BA determined that future LCT reintroduction habitat qualities would be improved with the Proposed Action, although there could be indirect effects from grazing to stream channels/meadow habitat from the Proposed Action but the risk of such effects is low. The Perazzo Management Plan update Proposed Action has been designed to meet riparian management objectives and to reduce the risk of adverse changes to aquatic habitat attributes to minimal non-significant levels. The BE/BA determined that Alternative 3 would have effects similar to the Proposed Action but not the long-term benefits of watershed restoration.

*Candidate species:* The mountain yellow-legged frog is listed as Sensitive on the Region 5 Forester's Sensitive Species List and is on the USFWS candidate species list. The aquatics BE determined that the Proposed Action and Alternative 3 may affect but are not likely to lead to Federal listing of the mountain yellow-legged frog (see FONSI element #10 iii(g)).

**(10) Whether the action threatens a violation of Federal, State, or local law or other requirements imposed for the protection of the environment.**

None of the action alternatives would threaten a violation of Federal law or requirement imposed for the protection of the environment. Alternatives 1 and 3 are fully consistent with the Endangered Species Act (see element #9 above) and the Tahoe National Forest Land and Resource Management Plan (LRMP), as amended by the 2004 Sierra Nevada Forest Plan Amendment FSEIS Record of Decision. This EA is in full compliance with the National Environmental Protection Act.

**A. National Forest Management Act of 1976**

This proposal is consistent with the management direction, including Standards and Guidelines, in the Tahoe National Forest LRMP (1990), as amended by the HFQLG FEIS ROD (1999) and the HFQLG FSEIS ROD (2003), and the 2004 SNFPA FSEIS ROD (2004) and Sierra Nevada Forests Management Indicator Species Amendment (2007). The LRMP and its amendments were developed in accordance with the National Management Act of 1976 (16 USC 1604 (i) and 36 CFR 219.10 (e)).

The Perazzo Meadows Allotment is listed as a grazing allotment in the Tahoe National Forest LRMP (1990) in the Henness Management Area (MA 018) and the Lola Management Area (MA 033). Alternatives 1 and 3 are fully consistent with the LRMP, as amended by the Sierra Nevada Forest Plan Amendment Final Supplemental Environmental Impact Statement and Record of Decision of 2004. Alternative 2 deviates from direction in the LRMP in not authorizing grazing on the Perazzo Meadows Allotment.

**i. Achievement of the guidelines of the Herger-Feinstein Quincy Library Group Forest Recovery Act (1998) and HLQLG FEIS ROD (1999) and 2004 SNFPA ROD (pages 31 and 67) protecting aquatic, riparian and meadow ecosystems and associated species.**

The Herger-Feinstein Quincy Library Group Forest Recovery Act (HFQLG), which directs forest management and watershed restoration within the Plumas, Lassen, and Sierraville Ranger District of the Tahoe National Forests, requires the adoption of riparian management direction as described by the Scientific Analysis Team Guidelines. In general, HFQLG guidelines prohibit activities within the Riparian Habitat Conservation Area (RHCA) unless they are designed to maintain or restore the structure and function of the RHCA and/or benefit fish habitat. Specifically, HFQLG presents 10 Riparian Management Objectives (RMOs) that may not be adversely affected by any planned activity. HFQLG directs the proposed watershed restoration activities within the Perazzo project area. As discussed in detail in Appendix E of the EA: Compliance with Riparian Management Objectives, all proposed restoration activities within the Proposed Action have been designed to comply with the RMOs outlined in the HFQLG FEIS Appendix L. Alternatives 2 and 3 would not change current riparian conditions in the Perazzo Meadows area. Item iii(e) below addresses the consistency of the alternatives with other riparian management requirements.

**ii. Providing the wildlife habitat and other ecological conditions necessary to maintain well-distributed viable populations of Management Indicator Species (MIS) in the project area and bioregional scale, and maintain diversity of plants and animals (Tahoe National Forest LRMP as amended by the Sierra Nevada Forests Management Indicator Species Amendment (SNF MIS Amendment) Record of Decision (USDA December 2007)).**

The MIS Report analyzed the bioregional and local effects of the alternatives on three habitat – indicator species of the Perazzo project area: riverine and lacustrine habitat (aquatic macroinvertebrates), riparian habitat (yellow warbler), wet meadow habitat (pacific tree frog).

*Aquatic macroinvertebrates:* The data collected at the bioregional scale indicate that the Index of Biological Integrity metrics for macroinvertebrates are stable. At the project level, the Proposed Action is expected to provide improvements to the habitat for macroinvertebrates, although during short-term construction activities there is a potential for additional sediment to be delivered to the stream off the Perazzo project area. Under Alternatives 2 and 3, it is predicted that the project-level lacustrine and riverine habitat would continue to degrade. With the restoration activities associated with the Proposed Action habitat for macroinvertebrates would be substantially improved at the local scale. At the Bioregional scale, the beneficial affects may seem small, it would be an improvement to the habitat and macroinvertebrates across the Sierra Nevada bioregion.

*Yellow warblers:* Yellow warbler habitat in the National Forest System lands in the Sierra Nevada, and the distribution of their populations in the Sierra Nevada at the rangewide, California, and Sierra Nevada scales is stable. The Proposed Action would have beneficial effects on approximately 376 acres of wetland habitat, increasing the total riparian habitat by 0.01%. This increase would not be significant at the landscape scale, but local benefits to yellow warbler nesting and foraging habitat are expected to be substantial. There would be no indirect effects expected to willow habitat from the two light grazing management strategies (the Proposed Action and Alternative 3). Under Alternative 3, meadow conditions would continue to improve, but at a much slower rate.

*Pacific tree frog:* Pacific tree frog habitat and the distribution of their populations in the Sierra Nevada bioregion is stable. The Proposed Action of the Perazzo Meadow Restoration Project and Grazing Allotment Management Plan Update project would have beneficial effects on approximately 376 acres of wetland habitat, with short-term, negative effects from heavy equipment operating on the meadow. The beneficial increase would not be significant at the landscape scale, but local benefits to Pacific tree frogs habitat are expected to be substantial. Under Alternatives 2 and 3, watershed restoration activities would not be implemented; therefore there would be no potential for direct impacts to wet meadow habitat, although it is predicted that the wet meadow habitat would continue to degrade.

**iii. NFMA requires all projects to be consistent with the following elements: (a) resource protection; (b) vegetation manipulation; (c) silvicultural practices; (d) even-aged management; (e) riparian areas; (f) soil and water; and (g) diversity.**

**(a) Resource Protection** – The integrated design of the action alternatives, including the Standard Management Requirements and BMPs listed elsewhere in this document, the attached appendices, or in the project record, provide for protection of forest resources, including riparian resources, terrestrial wildlife, aquatic and plant species and their habitat, cultural resources, air quality, soil productivity, and recreational and visual quality resources. The Perazzo Project is within the Henness Management Area (MA 018) and the Lola Management Area (MA 033) of the 1990 LRMP. Alternatives 1 and 3 are fully consistent with the Management Area Standards and Guidelines of these MAs, while Alternative 2 is not consistent with the Resource Management Emphasis (range management) of these MAs.

**(b) Vegetation manipulation** – No vegetation manipulation proposals are proposed by any of the alternatives.

**(c) Silvicultural practices** – No timber harvesting or silvicultural work is proposed by any of the alternatives.

**(d) Even-aged management** – No group selection harvest or other forms of even-aged management are proposed by any of the alternatives.

**(e) Riparian areas** - To address both the restoration and grazing aspects of the action alternatives, the HFQLG FEIS, and the 2004 SNFPA are both used to direct management of

riparian and wetland resources on National Forest System lands. Appendix E: Compliance with Riparian Objectives details project compliance with each respective direction.

The LRMP, as amended by the 2004 SNFPA, provides specific direction for riparian resources as they relate to grazing. The SNFPA defined Riparian Conservation Areas (RCAs) and associated Riparian Conservation Objectives (RCOs). Standards and guidelines which are applicable to grazing are delineated in the SNFPA to meet specific RCOs. As discussed in detail in the Rangeland Management Report, all applicable standards and guidelines would be applied under Alternatives 1 and 3.

**(f) Soil and water** –Working cooperatively with the California State Water Quality Control Board, the Forest Service developed pollution control measures, referred to as Best Management Practices (BMPs), that are applicable to National Forest System lands. BMPs applicable to the action alternatives of the Perazzo Project are included in Appendix C.

**(g) Diversity** – The action alternatives and many of the standard management requirements and/or BMPs are designed to protect plant and animal diversity in the project area. Both of the action alternatives would promote later successional vegetation. By implementing the LRMP standards and guidelines, resource protection measures, and BMPs for this project would protect Forest Service Region 5 Sensitive species, Tahoe National Forest Management Indicator Species, and Watchlist Plants, and they limit the spread of noxious weeds and invasive species. All of these protect diversity within the Perazzo project area.

*i) Region 5 Forest Service Sensitive Species:* Cumulative effects to sensitive species are summarized in Element #7 of this FONSI. Tables 3.1 and 3.2 summarize the effects determinations of the Wildlife BE/BA and Aquatic Resources BE/BA.

**Table 3.1. Summary of effects to Region 5 Forest Service sensitive wildlife species.**

SPECIES	SPECIES STATUS	PRESENT IN PROJECT AREA: Habitat &/or detections	MANAGEMENT REQUIREMENTS, STANDARDS, GUIDELINES, SPECIES SPECIFIC PROJECT DESIGN STANDARDS	EFFECTS DETERMINATION	RECOMMENDED MITIGATION TO ACHIEVE “NO EFFECT”
Bald eagle	S	Yes	NONE	No effect	NONE
Valley elderberry longhorn beetle	T	No	NONE	No effect	NONE
American peregrine falcon	S	No	NONE	No effect	NONE
California spotted owl	S	Yes	NONE	No effect	NONE
Great gray owl	S	Yes	SNFPA S&G #83 and #84	May Affect, not likely to lead to Federal listing	NONE
Northern goshawk	S	Yes	NONE	No effect	NONE
Willow flycatcher	S	Yes	LOP May 1 through Aug. 15 for all units SNFPA S&G #56-63	May Affect, not likely to lead to Federal listing	NONE
Greater sandhill	S	Yes	LOP April 1 <sup>st</sup> to August	No effect	NONE

crane			1 <sup>st</sup> where greater sandhill cranes have been determined to be nesting.		
Pacific fisher	S, C	No	NONE	No effect	NONE
Marten	S	Yes	NONE	No effect	NONE
Sierra Nevada red fox	S	Yes	NONE	May Affect, not likely to lead to Federal listing	NONE
California wolverine	S	Yes	NONE	May Affect, not likely to lead to Federal listing	NONE
Pallid bat	S	Yes	NONE	No effect	NONE
Townsend's big-eared bat	S	Yes	NONE	No effect	NONE
Western red bat	S	Yes	NONE	No effect	NONE

**Table 3.2. Summary of effects to Region 5 Forest Service sensitive aquatic species.**

Species	Suitable Habitat Present	Species Present	Effects Determination
<b>California red-legged frog</b> ( <i>Rana aurora draytonii</i> )	Outside Historic Range	No	Will not affect <i>Rana aurora draytonii</i> or its designated critical habitat
<b>Northern leopard frog</b> ( <i>Rana pipiens</i> )	Outside Historic Range	No	Will not affect <i>Rana pipiens</i>
<b>Foothill yellow-legged frog</b> ( <i>Rana boylei</i> )	Outside Historic Range	No	Will not affect <i>Rana boylei</i>
<b>Mountain yellow-legged frog</b> ( <i>Rana muscosa</i> )	Yes	Likely	May affect but is not likely to lead to Federal listing of <i>Rana muscosa</i>
<b>Great Basin rams-horn snail</b> ( <i>Helisoma newberryi newberryi</i> )	No	Unknown	Will not affect <i>Helisoma newberryi newberryi</i>
<b>Lahontan Lake tui chub</b> ( <i>Siphateles bicolor pectinifer</i> )	No	No	Will not affect <i>Siphateles bicolor pectinifer</i>
<b>Hardhead</b> ( <i>Mylopharodon conocephalus</i> )	Outside Historic Range	No	Will not affect <i>Mylopharodon conocephalus</i>
<b>Lahontan cutthroat trout</b> ( <i>Oncorhynchus clarki henshawi</i> )	Yes	No Perazzo Meadows identified as Recovery Area	Will not affect <i>Oncorhynchus clarki henshawi</i> , or its designated critical habitat
<b>Northwestern pond turtle</b> ( <i>Clemmys marmorata marmorata</i> )	Outside Historic Range	No	Will not affect <i>Clemmys marmorata marmorata</i>
<b>California floater mussel</b> ( <i>Anodonta californiensis</i> )	No	No	Will not affect <i>Anodonta californiensis</i>

The Wildlife BE/BA and Aquatics BE/BA determined that the Proposed Action may affect, but is not likely to lead to Federal listing for the following species:

- *Great gray owl*. There are no proposed meadow restoration activities adjacent to recent (2004) sightings, or within ½ mile of the forested stands the owls were detected in. The Wildlife BE/BA determined that the action alternatives are expected to have the following direct and indirect effects. Cumulative effects are discussed in FONSI element #7.
  - No direct effects to nesting or foraging great gray owls.
  - No indirect effects to great gray owl nesting habitat.
  - Beneficial indirect effects to great gray owl foraging habitat on approximately 376 acres from the meadow restoration.
  - No measurable indirect effects to great gray owls from grazing.
  - Alternative 3 would continue the positive trend in Perazzo Meadows, even without the meadow restoration but at a much slower rate.

The BE/BA determined that implementation of any of the alternatives may affect individuals (though unlikely), but is not likely to result in a trend toward federal listing or to a loss of viability for the great gray owl. It determined that Alternative 2 would not affect this species. In the absence of a range wide viability assessment, this viability determination is based on local knowledge of this species as discussed previously in this evaluation and professional judgment. Therefore, Alternative 1, 2, or 3 would not lead to a trend toward federal listing or affect the viability of the great gray owl.

- *Willow flycatcher*. The BE/BA determined that implementation of the Proposed Action may affect individuals, but is not likely to result in a trend toward federal listing or to a loss of viability for the willow flycatcher. Generally, impacts to willows from grazing have been light to none, and recruitment has been successful. Recent (2008) monitoring has determined that grazing of willows within the Perazzo Meadows Allotment is almost non-existent and the effects to habitat quality are negligible. General willow conditions have been improving over the past 10 years as determined through photographic monitoring. The Proposed Action would have minimal effects to breeding willow flycatchers because of the following:
  1. A Limited Operating Period for ground disturbing activities (meadow restoration) is part of the proposed action.
  2. There is a Meadow Management Strategy to minimize potential impacts to breeding willow flycatchers from cattle grazing.
  3. There would be a low probability of directly affecting breeding willow flycatcher nesting activity from both the meadow restoration activities and the proposed grazing. Meadow restoration activities would have a potential impact to willow flycatcher nesting sites, as willow clumps would be temporarily moved during the construction of the plugs and ponds. Approximately 44 plugs and associated ponds are proposed for construction within the existing known nesting habitat for willow flycatchers in the Perazzo Meadows area. Resource Protection Measure #19 would minimize the

disturbance to mature willows within the known nesting areas during restoration activities. Since there are 44 plugs proposed and some of the willows would be inundated with water post project some of the willow habitat would be affected. Through careful planning and coordination during restoration activities these indirect impacts are expected to be minimal. The willows which are excavated during the plug and pond development would be saved and replanted in the plugs and surrounding the ponds. It is expected that most of the replanted mature willows will be healthy for next season nesting habitat.

4. Grazing would have minimal impacts to willow flycatcher habitat with the implementation of the standards and guidelines and grazing strategy proposed.
5. Meadow restoration activities are expected to have long term beneficial effects on 376 acres with short term negative impacts where the plug and pond treatments are implemented (approximately 36 acres).
6. Beneficial indirect effects to willow flycatcher nesting success is expected by reducing the impacts from predation as the meadow becomes more saturated during the nesting period.
7. The overall cumulative effects are expected to be positive in the long term.

Alternative 3 would have minimal effects to breeding willow flycatchers because of the same grazing impacts as in Alternative 1, but the beneficial effects from the meadow restoration would not occur. Therefore the determination for Alternative 3 would be the same as for Alternative 1, as the current grazing management does not appear to be causing a decline in willow flycatcher nesting success and meadow conditions are in a positive trend. Alternative 2 does not have any proposed actions, and therefore meadow and stream conditions would remain in a less than desirable state and would not recover as soon as Alternative 1. Therefore, this alternative may affect individuals but is not likely to result in a trend toward federal listing or to a loss of viability for the willow flycatcher because restoration activities would not occur.

- *Greater sandhill crane.* Currently, nesting habitat quality for the greater sandhill crane is poor in the analysis area due to a lack of suitable wetlands, emergent vegetation or islands. It is anticipated that the Proposed Action would improve nesting habitat by favorably changing the hydrology of the analysis area. Because Alternatives 1, 2, and 3 do not currently have any direct, indirect, or cumulative effects to sandhill crane or its habitat, the Wildlife BE determined that implementation of Alternatives 1, 2, or 3 would have “No Effect” upon greater sandhill crane or its habitat. However, a LOP would be implemented if sandhill cranes are determined to be nesting in project area.
- *Sierra Nevada red fox.* Because it is possible (though unlikely) that the proposed grazing and/or the meadow restoration project could impact low quality foraging habitat, it was determined that implementation of Alternatives 1 or 3 of the Perazzo Meadows Watershed Restoration Project and Grazing Allotment Management Plan Update may affect individuals, but are not likely to result in a trend toward Federal

listing or loss of viability for Sierra Nevada red fox within the planning area of the Tahoe National Forest.

- *California wolverine*. The analysis determined that the action alternatives are well below the expected elevational range for breeding wolverine. Activities would occur during the summer months and within low quality foraging habitat. The BE/BA determined that there is a low probability that implementation of Alternatives 1, 2, or 3 of the Perazzo Meadows Watershed Restoration Project and Grazing Allotment Management Plan Update may affect individuals, but are not likely to result in a trend toward Federal listing or loss of viability for California wolverine within the planning area of the Tahoe National Forest.
  
- *Mountain yellow-legged frog*. The mountain yellow legged frog (*Rana sierrae*) is a sensitive species (as defined by the Forest Service Region 5 Forester's Sensitive Species List) and a candidate species for listing by the U. S. Fish and Wildlife Service as threatened or endangered. The existence of the species is not certain within the project area. They were documented within the Perazzo watershed as recently as 2002. Direct and indirect effects are possible and include the potential to crush or disturb them with machinery or cattle as well as modify habitat and water quality. Either of the action alternatives may affect but would not likely to lead to Federal listing of the species or loss of viability for this species within the planning area of the Tahoe National Forest. Effects from watershed restoration activities would be mitigated by BMPs and SMRs restricting temporal and spatial access to the project and requiring planned access routes, while effects from grazing under Alternatives 1 and 3 would be mitigated by the BMPs and SMR discussed in FONSI Element #1 as well as ongoing implementation and effectiveness monitoring. The watershed restoration activities are expected to improve the overall mountain yellow-legged frog habitat shortly after implementation; Alternatives 2 and 3 would not provide these benefits.
  
- *Lahontan cutthroat trout*. The Lahontan cutthroat trout (LCT) is listed as a threatened species by the U.S. Fish and Wildlife Service. The species does not exist within the Perazzo project area; however, Perazzo Canyon Creek is currently identified as a potential area for the re-introduction of LCT. None of the alternatives would directly, indirectly or cumulatively affect the species.

*ii) Sensitive plants and fen habitat:* There are no known occurrences of sensitive plants (as defined by the Forest Service Region 5 Forester's Sensitive Species List) within the Perazzo Meadows Allotment. The sensitive plants and their habitat may benefit long-term from the effects of the watershed restoration portion of the project. The grazing standards and guidelines combined with specific measures proposed in this project are expected to retain and improve important habitat attributes for special interest plant species, fens, and riparian health and vigor. Some fens currently exhibit less than desired condition. The Proposed Action includes specific measures to take action as needed to minimize or eliminate impacts from grazing. These measures include using strategic placement of salting, off-site water development, or fencing in order to achieve proper livestock distribution to prevent adverse



effects to hydrological processes in riparian and fen ecosystems. These measures would provide a specific means to ensure compliance with LRMP standards and guidelines, as amended.

*iii) Weeds:* There are no noxious weeds present in the areas proposed for restoration activities. The risk of spreading high priority weeds would be low for the action alternatives due to resource protection measures such as cleaning equipment before it enters the project area, using locally collected native seed for re-vegetation, and certified weed-free gravel or straw bales if they are necessary for erosion control.

## **B. Additional Water Quality Regulations**

The Proposed Action would comply with the following required elements:

- Obtaining all necessary permits and prohibition exemptions from the Lahontan Regional Water Quality Control Board, U.S. Army Corps of Engineers, the California Department of Fish and Game and all applicable parts therein.
- Development of the Storm Water Protection Plan for implementation which includes the Construction phase Diversion and Dewatering Plan.

### *A) Clean Water Act*

The implementation of Best Management Practices, erosion control measures required in the Carman restoration area would protect the beneficial uses of waters within the Perazzo Meadows Allotment. Therefore, no irreversible or irretrievable impacts to water quality would occur and the requirements under the Clean Water Act would be met.

### *B) Water Quality Control Plan for the Lahontan Region (Basin Plan)*

The water quality objectives for beneficial uses that could potentially be affected by the Upper Perazzo Watershed Restoration Project include sediment, turbidity, and to a lesser degree oil and grease. The Proposed Action is designed to ensure that the objectives of the Basin Plan are met to protect and/or enhance beneficial uses of water, as detailed in the Watershed Effects Report.

This project includes work within and adjacent to the 100 year floodplain of Perazzo Canyon Creek and the Little Truckee River which is a prohibition of the Basin Plan. However, the Water Board encourages restoration projects that are intended to reduce or mitigate existing sources of soil erosion, water pollution, or impairment of beneficial uses. The nature of the proposed work makes it eligible for an exemption to the prohibition for restoration projects. The proposed project meets the following exemption criteria listed in the Basin Plan:

#### **i. The project would eliminate, reduce or mitigate existing sources of soil erosion, water pollution and/or impairment of beneficial uses of water.**

The Perazzo Meadows Watershed Restoration Project was created to eliminate and/or reduce existing sources of soil erosion. As discussed in the Purpose and Need of the EA,

years of intensive human disturbance, including historical overgrazing, road and bridge construction, and logging have all likely contributed to the degradation of the project watershed. Many tributaries to the main channels of the Perazzo Canyon Creek and the Little Truckee River are down-cutting in response to erosion in the main channels, with associated impaired floodplain function, excessive erosion from the main and adjacent channels, and a lowered seasonal water table. Proposed restoration activities include using the “plug and pond” technique to relocate stream flow to historic remnant channels while closing off existing degraded channels, installing rock grade structures to maintain meadow elevation where flow exits meadows, installing rock riffles in an incised channel on the alluvial fan, reconnecting a historic overflow channel, removing an abandoned road from the floodplain, installing culverts and low water crossings to improve flow for stream crossings at road intersections, and re-vegetation of disturbed areas.

**ii. There is no feasible alternative to the project that would comply with provisions of the Basin Plan, precluding the need for an exemption.**

Addressing the factors that perpetuate the impaired Perazzo Meadows watershed requires work within the channel and floodplain.

**iii. Land disturbance would be limited to the absolute minimum necessary to correct or mitigate existing sources of soil erosion, water pollution and/or impairment of beneficial uses of water.**

Through careful design, layout and implementation along with operator education every effort to minimize the disturbance footprint would be taken. All applicable BMPs, BMP monitoring practices, and mitigation measures have been incorporated into the project to minimize soil erosion, surface runoff, and other potential adverse environmental impacts.

**iv. All applicable Best Management Practices and mitigation measures have been incorporated into the project to minimize soil erosion, surface runoff, and other potential adverse environmental impacts.**

Best management practices and mitigation measures for this project are summarized in Appendix C and have been incorporated into the project design. With the application of selected BMPs and mitigation measures surface runoff and soil erosion would be controlled.

**v. The project complies with all applicable laws, regulations, plans and policies.**

This project would comply with all applicable laws, regulations, plans and policies. All needed permits and exemptions would be acquired from the Lahontan Regional Water Board, the Corps of Engineers and others as required. This project complies with all regulations, plans and policies of the US Forest Service.

*C. Basin Plan Water Quality Objectives:*

The water quality objectives for beneficial uses that could potentially be affected by implementation of Alternative 1 include sediment, turbidity, and to a lesser degree oil and grease. As discussed in the Watershed Report, the Proposed Action is designed to ensure that the objectives of the Basin Plan are met to protect and/or enhance beneficial uses of water, as follows:

Oil and Grease: Proper application of BMPs provides for the managing of petroleum products to protect beneficial uses. The management actions to be taken require servicing and refueling outside of RHCA's and include spill contingency plan requirements. Equipment is required to be inspected for leaks before and during project implementation. These measures ensure that activities associated with the use of petroleum products used under this project will not adversely affect water quality or beneficial uses.

Sediment and Turbidity: BMPs and project design criteria would be used to control sediment in areas affected by the proposed action. BMP requirements for re-vegetation would result in reduced sediment input and turbidity. BMPs provide erosion control measures to address any concerns related to operations. While an increased risk of erosion may typically occur for 1 to 3 years after disturbance, implementation and effectiveness monitoring, through the forestwide BMP monitoring program, have shown the BMP methods to be effective. The overall result of the proposed project would reduce current levels of sediment delivery. Turbidity consists of the inorganic and organic particles that reduce water clarity. Typically increases in turbidity from sediment are observed during runoff events. These increases then subside with the peak discharge. BMPs were integrated into the proposed action to reduce potential negative effects.

Implementation monitoring and project effectiveness monitoring will be conducted to ensure that the management requirements and mitigation measures will be properly implemented and to document that the project has the desired outcomes, as detailed in the Monitoring Plan (Section 1.4 of this EA).

## CHAPTER IV

### 4.1 Agencies and Others Consulted

A scoping letter was mailed to adjacent land owners, federal and state regulatory agencies, the grazing permittee, and those who expressed an interest in the project proposal. Many of the individuals associated with the Truckee River Watershed Council attended public meetings.

**The Project Scoping Letter was sent to the following:**

<b>Individual Name</b>	<b>Organization the Individual Represents</b>
George Cella	Lahontan Region Water Quality Control Board
Lisa Wallace	Truckee River Watershed Council
John Hiscox	California Dept. of Fish and Game
Sandy Morey	Regional Mgr, California Dept of Fish & Game
Bill Somer	California Dept. of Fish and Game
Cyndie Walk	California Department of Parks and Recreation
Andrea Jones	Army Corps of Engineers, Regulatory Branch
Lisa Heki	U.S. Fish & Wildlife Service, Reno
Bob Williams	U. S. Fish & Wildlife Service, Reno
Watershed Planning Branch	U. S. Fish & Wildlife Service, Sacramento
Tribal Chairman	Washoe Tribe of California and Nevada
Tim Beals	Sierra County Planning Dept.
Don Iversen	Sierra County Assessors Office
Linda Blum	Quincy Library Group
Terry Benoit	Plumas Corporation
Michael Morrison	Willow Flycatcher Working Group
Heather Mathewson	Willow Flycatcher Working Group
Helen Bombay-Loffland	Willow Flycatcher Working Group
Susan Sanders	Willow Flycatcher Working Group
Mary Anne Flett	Willow Flycatcher Working Group
Carl Bystry	Sierra Pacific Industries
Jack Frost	Sierra Pacific Industries
Doug Praetzel	Sierra Pacific Industries
Dan and Tanya Russell	Permittee
Tracy K. Schohr	California Cattlemen's Association
California Farm Bureau Federation	
Jim Gaither, Jr.	The Nature Conservancy
Perry Norris	Truckee Donner Land Trust
Steve Benner	Forest Issues Group
Craig Thomas	Sierra Forest Legacy
Darca Morgan	Sierra Forest Legacy
Chad Hanson	John Muir Project
Frank Pisciotta	

Richard & Ella Zuver	
William & Lori Fissel	
William Crum	Trustee
Siller Brothers	
Thomas & Gladys Schneider	
Dean Carroll Hall	Trustee
R & D Mountain Fun	
Wise Trust c/o Robert Wise	
Richard Anderson	California Fly Fisher Magazine
David Lass	Trout Unlimited
Jeff Brown	UC Berkeley, Sagehen Creek Field Station
Bruce Ajari	
Ray Butler	
Robert Cassidy	
John Eaton	
Richard Flint	
Carl Gustafson	
Amy Horne	
Jake Hudson	Holdredge & Kull
Robie Litchfield	L & P DesignWorks
Cadie Olsen	
Laura Ryan	
Sarah Trebilcock	

## **4.2 Documents Incorporated By Reference, and Available Upon Request, or Attached as Appendices**

### **Appendices**

Project Maps (*Appendix A*)

Plug and Pond Techniques and Implementation (*Appendix B*)

Best Management Practices (*Appendix C*)

Responses to Public Scoping (*Appendix D*)

Compliance with Riparian Objectives (*Appendix E*)

Re-vegetation Plan (*Appendix F*)

References and Work Cited (*Appendix G*)

### **Reports Incorporated by Reference and Available Upon Request**

Watershed Effects Report

Biological Evaluation for Sensitive Plants

Biological Evaluation for Fish, Amphibians, Reptiles, and Their Habitat

Biological Evaluation for Terrestrial Wildlife

Rangeland Management Specialist Report

Management Indicator Species (MIS) Assessment

Heritage Resources Report (Administratively confidential)

Watchlist Plant and Plant Community Report

Weed Risk Assessment

Swanson Hydrology + Geomorphology. 2008. Perazzo Meadows Geomorphic Assessment: Final Technical Report for Truckee River Watershed Council.

### Environmental Checklist Form

**1. Project Title:**

Perazzo Meadows Watershed  
Restoration and Grazing Allotment  
Management Project

**2. Lead Agency Name and Address:**

Lahontan Regional Water Quality  
Control Board  
2501 Lake Tahoe Blvd.  
South Lake Tahoe, CA 96150

This proposed project is a discretionary state action subject to the California Environmental Quality Act (CEQA). The Lahontan Regional Water Quality Control Board (Regional Board), through its Memorandum of Understanding (MOU) review process with the U.S. Forest Service, is designated Lead Agency. This CEQA Checklist, in conjunction with the information provided in the National Environmental Policy Act (NEPA)-required Environmental Assessment (EA), satisfies the requirement of an Initial Study/Mitigated Negative Declaration (IS/MND). Best Management Practices (BMPs), Standard Management Requirements (SMR) and Resource Protection Measures (RPM) included in the Project Description and Appendix C of this EA/IS/MND serve as mitigation measures to avoid or reduce potential impacts to less than significant levels. A Notice of Intent will be prepared and the IS/MND will be sent to the State Clearinghouse for a 30-day public review period. The Regional Board will consider the IS/MND, together with any comments received. If the Regional Board determines that there is not substantial evidence that the project, with the mitigation measures incorporated to reduce potential impact levels, would have a significant effect on the environment, then a Notice of Determination will be prepared and filed for approval of the document.

The proposed project is also a discretionary federal action subject to NEPA. To determine whether the proposed action could significantly affect the quality of the human environment, NEPA requires the preparation of an EA. The United States Department of Agriculture Forest Service (Forest Service) Tahoe National Forest Sierraville Ranger District, as the NEPA Lead Agency, produced the Perazzo Meadows Watershed Restoration and Grazing Allotment Management Plan Update EA in October 2008 (to which this document tiers and is also attached).

**3. Contact Person and Phone Number:**

George Cella – 530-542-5426  
Randy Westmoreland – 530-587-3558

**4. Project Location:**

There are 6 individual sites planned for watershed restoration activities within the Perazzo Meadows area.  
T 19 N, R 14 E Sections 25, 26 and 27;  
T 19 N, R 15 E Sections 15, 16, and 17  
(Mount Diablo Base Meridian).

**5. Project Sponsor’s Name and Address:**

U.S. Forest Service – Sierraville Ranger District  
317 South Lincoln St. (P.O. Box 95)  
Sierraville CA 96126

**6. General Plan Designation:**

National Forest

**7. Zoning:**

National Forest

**8. 1.1 Description of Project:**

**Project overview**

The Forest Service (Sierraville Ranger District of the Tahoe National Forest) is proposing to implement watershed restoration activities within the Little Truckee River watershed in and around Perazzo Meadows. At the same time, the Forest Service is proposing to re-authorize grazing on the Perazzo Meadows Grazing Allotment. Management of the allotment would be guided by the *Willow Flycatcher Meadow Management Strategy* and would be designed to facilitate the proposed watershed restoration activities.

The purpose of the Perazzo Meadows Watershed Restoration and Grazing Allotment Management Projects is to move existing conditions in Perazzo Meadow toward desired conditions described in the *Tahoe National Forest Land and Resource Management Plan* (LRMP, 1990), as amended by the *Herger-Feinstein Quincy Library Group Forest Recovery Act* (HFQLG) *Record of Decision* (1999), and the *Sierra Nevada Forest Plan Amendment* (SNFPA) *Record of Decision* (2004).

The proposed project is located in Sierra County, California in the south central portion of the Sierraville Ranger District, approximately 5 miles west of Highway 89 and south of Fibreboard Road. Perazzo Meadows consists of a series of wet meadow complexes fed by the Little Truckee River, Perazzo Canyon Creek and Cold Stream located along the east slope of the Sierra Nevada mountain range.

The following are the purposes of this project:

- 1) Re-establish proper floodplain function in order to provide a means for the stream to establish stability, increase surface flow capacity, improve its ability to filter out sediment and prevent soil movement downstream, allow for improved and more frequent



flow energy dissipation, temporary storage of floodwaters, moderation of peak flows, groundwater recharge, and prevention of erosion.

- 2) Improve water quality for on-site and downstream beneficial uses.
- 3) Restore a more natural erosion/deposition regime by eliminating excessive meadow and stream channel erosion as exhibited by downcutting, headcutting, widening, excessive lateral movement, and straightening.
- 4) Increase the potential for ground water storage both long-term and short-term, and retain the water in the seasonal water table for longer periods of time.
- 5) Create conditions which will allow for appropriate morphological characteristics and vegetative stabilization of the channel of Perazzo Creek and the Little Truckee River.
- 6) Improve riparian ecosystem conditions and promote sustainable, diverse, and healthy plant and associated wildlife communities.
- 7) Increase the forage for both wildlife and livestock.
- 8) Maintain a viable grazing operation on the Perazzo Meadows Allotment in a manner consistent with the Tahoe National Forest LRMP, as amended, and to provide management direction for grazing through an updated Allotment Management Plan.
- 9) Re-authorize grazing in a manner to supplement the watershed restoration activities by allowing for appropriate recovery of watershed improvement areas and maximum flexibility in the grazing operations to achieve resource objectives.

## **Project Area Description**

### *Historical land use modifications to the project area*

The Perazzo Meadows Restoration Project area was intensely used and modified during the gold rush and immigration of the late 1800s and early 1900s. Adjacent to the project area is the historical Henness Pass Road, which was used extensively by both stages and freighters, and, “For one period of time the use of the road was so great that it became necessary to regulate traffic with freight wagons running during the daylight hours and stages traveling at night,” Byrd 1992 pg. 12). A stage stop for this major transportation route is located near the project area. Henness Pass Road is still a functional county road today. It is postulated that significant changes to Little Truckee River channel form and function within Perazzo Meadows began during this time period with road use, road building across the top of the alluvial fan surface, and nearby resource extraction such as logging (the Hobart Estates Co. had an intensive logging operation east of the project area). Ranching and dairying were major industries, and two historical summer dairies, one dating to the late 1890s and one post-1900, are located along the meadow edges in the project area. During this time, it is thought that cattle and sheep ranchers actively modified the portion of the historic channel that runs through the upper meadow in an attempt to dry out the wet meadow and make it more accessible to grazing in the summer months, as is suggested by 1939 aerial photographs (Swanson 2008).

The Perazzo Meadows Geomorphic Assessment (Swanson 2008; incorporated by reference and available upon request at the Sierraville Ranger District) identified additional historical influences that contributed to the existing channel geomorphic conditions:

- Alluvial fan function became limited between 1939 and 1952 due to channel incision, which was related to road building across the fan, logging and/or grazing between 1939 and 1952. These trends also increased sediment transport.
- Large rain on snow events occurred in February 1963 and December 1964 resulting in decreased stream and meadow function.
- Access to the historic floodplain appears limited and large unvegetated bars are visible by 1983.
- More recently, bridge construction and construction of a low water crossing for vehicles has caused the flow of the Little Truckee River to be concentrated on the fan and has exacerbated degradation of the fan function, resulting in more stream bed load being deposited out into the meadow.

Today, floodplain access from Perazzo Canyon Creek and the Little Truckee River occurs every 5 to 10 years during peak flows. A proper functioning channel would allow floodplain access annually or every other year in this system. The result of these historical land uses has been headward erosion of nick points that is now limiting fan function through incision. The Perazzo Meadows Geomorphic Assessment (Table 1 specifically) and Forest Service stream surveys taken during the 2000-2007 field seasons determined that the major waterflows within the Perazzo Meadows project area have degraded components, with many of the stream banks highly unstable, and most of the reaches with a much higher width to depth ratio than is natural or desirable for hydrologic systems of this type (see the Perazzo Meadows Geomorphic Assessment, the Aquatics BE and Watershed Effects Report for more details).

#### *Current grazing management and willow flycatcher management strategy*

The Perazzo Meadows Allotment is a high elevation (approximately 6,500 to 6,600 feet) meadow allotment with the main meadow providing the primary forage base for the livestock. It is known that grazing has occurred in the Perazzo Meadows Grazing Allotment since as early as 1870, and it has been grazed by cattle under one family's beef production operation since 1912. The allotment boundary extends to the main ridgelines, approximately 2,000 feet above the meadow, and encompasses a total of 4,733 acres (Appendix A, Map 6). Today, the Perazzo Meadows Grazing Allotment completely overlaps the Perazzo Meadows Watershed Restoration Project area (refer to maps in Appendix A). The livestock stocking rate has continually decreased through the years and is currently at about one-fifth the stocking rate that was recorded in the early 1900s. The large meadow system encompassing Perazzo Canyon Creek and the upper Little Truckee River provides the vast majority of the capable rangeland. Current management of the allotment is guided by the Willow Flycatcher Meadow Management Strategy (hereby referred to as MMS; available as an attachment to the Perazzo Range Report, which is incorporated by reference and available upon request at the Sierraville Ranger District).

Perazzo Meadows was first identified as an occupied willow flycatcher site in 1982. Following the 2004 Sierra Nevada Framework Plan Amendment Standard and Guidelines #57 and #58, a site-specific meadow management strategy was developed that focuses on

protecting the nest sites and associated habitat during the breeding season, as well as the long-term sustainability of suitable habitat at breeding sites. Separated units and intensively managed grazing practices on the allotment were developed to protect willow flycatchers and their habitat with input from the Willow Flycatcher Working Group, the Permittee, District Biologist, and Range Conservationist. The MMS has been implemented since 2004 in the Perazzo allotment. Since 1997, a willow flycatcher demography study has been monitoring and evaluating the population in Perazzo Meadows, in addition to other sites throughout the central and northern Sierras. Long-term effectiveness monitoring of the strategy indicates that the rangeland resource conditions continue to improve. Long-Term Monitoring plots show that the rangeland conditions have been trending steadily upward, and photographic monitoring indicates upward trends throughout the Perazzo Meadows Allotment. Current rangeland management under the MMS is contributing to the upward trend, particularly with consideration of the observations from implementation monitoring (see the Range Report for more information).

## **1.2 Proposed Action**

The proposed project is located in Sierra County in the south central portion of the Sierraville Ranger District, approximately 5 miles west of Hwy 89 and south of Fibreboard Road. Project maps are located in Appendix A.

At this current time, lands within T19N R15E Section 16 SW1/4 and Section 17 SE1/4 are not current National Forest lands. These private lands are likely to be acquired by the Truckee Donner Land Trust and in turn potentially deeded to the National Forest.

**What:** Implement watershed restoration activities within the Little Truckee River watershed in and around the Perazzo Meadows area (Map 1 in Appendix A) and update the Perazzo Meadows Grazing Allotment Management Plan. As detailed in Table 1.1 and in text below, proposed restoration activities include using the “plug and pond<sup>1</sup>” technique to relocate stream flow to historic remnant channels while closing off existing degraded channels, installing rock grade structures to maintain meadow elevation where flow exits meadows, installing rock riffles in an incised channel on the alluvial fan, reconnecting a historic overflow channel, removing an abandoned road from the floodplain, installing culverts and low water crossings to improve flow for stream crossings at road intersections, and re-vegetation of disturbed areas. Details regarding the “plug and pond” technique and how it would be implemented in this project are described in the EA Appendix B, “Plug and Pond Technique and Implementation.” Project design features and applicable Best Management

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<sup>1</sup> Owing to the presence of somewhat continuous floodplain channels, the U.S. Forest Service is proposing a meadow restoration approach for the upper meadow using a technique referred to in short hand as the “plug and pond” method. This method consists of identifying crossover points between the existing channel and the historic channel, excavating the existing channel in the vicinity of the crossover point, and plugging the channel downstream with the excavated material. The ponds provide the material to create the plug, avoiding import of material to the site, and the plugs backwater the pond, thereby forcing flow into the historic channel. Some excavation of the historic channel may be required due to the formation of natural levees at the inlets. The approach is a cost effective way of rapidly aggrading the existing channel and can be used effectively in areas where continuous floodplain channels are still evident. See Appendix B for more details.

Practices (BMPs) that would be integral to the Proposed Action are detailed in Appendix C. The Re-vegetation Plan that would be implemented immediately after all restoration work is detailed in Appendix F. The maps referenced below are available in Appendix A. The Proposed Action would be implemented after all necessary permits and exemptions are obtained. A Diversion Plan and De-watering plan would be prepared as required.

**Table 1.1. Summary of proposed watershed restoration activities (all areas or quantities are approximate)**

Plugs installed (acres)	Plugged channel length (feet)	New channel into which new flow diverted	Ponds created (acres)	Wetland restored or enhanced (acres)	Riparian areas temporarily disturbed (acres)	Streambed or remnant channel restored or enhanced (feet)	Creation of floodplain (acres)	Other actions
3.8	9,280	15,041	14	130	1.4	-	-	Construction of rock grade structures
-	-	-	-	22.2	-	5,263	-	Remove low water crossing, reconnect historic overflow channel
2.5	12,566	10,207	14.6	155	2	41,566	-	Construction of rock grade structures
-	-	-	-	-	-	-	0.3	Remove old road fill
0.3	1,681	2,918	-	33	0.4	11,721	-	Repair headcut, install culverts
0.7	4,226	4,652	4.8	38	0.8	4,145	-	Installation of culverts or low water crossings, construction of rock grade structures
<b>7.3</b>	<b>27,753</b>	<b>32,818</b>	<b>33.4</b>	<b>378</b>	<b>4.6</b>	<b>62,695</b>	<b>0.3</b>	<b>-</b>

<sup>2</sup> Rock riffles in the alluvial fan would use material from the fan. Rock riffles at sites #3 and #6 would use rocks from a local quarry not exceeding 2 feet in diameter.

**Site #1: Upper Perazzo Meadow located in the uppermost meadow area where Perazzo Canyon Creek and the Little Truckee River enter the meadow system (Map 2).**

The main channel has downcut and widened and is actively eroding, decreasing proper meadow floodplain function. The meadow in site #1 is approximately 1.1 miles in length, with the main channel approximately 1.6 miles long through site #1. Most tributaries to the main creeks are head cutting into the surrounding floodplain area. The aquatic and riparian habitat has been degraded. At this site the proposal is to:

- 1) Move the flow out of the existing degraded channel into a stable remnant channel closer to the meadow and floodplain surface. The existing channel would be obliterated using plug and pond techniques, thus causing flow to be directed into the remnant channel which is 1.2 miles longer than the current channel. Material for approximately 20 plugs would be excavated from the channel area, and these borrow sites would become ponds, thus creating a series of plugs and ponds.
- 2) Construct rock grade control structures where the Little Truckee River leaves the uppermost meadow along an approximate length of 0.07 miles. The structures would be placed in steps and would function similar to riffles to dissipate energy and allow pool formation and fish passage. The grade control structures will aid in maintaining channel elevation in the meadow above this point.

**Site #2: Alluvial fan of the Little Truckee River from the bridge down to the meadow (Map 2).**

Past activities including bridge construction and construction of a low water crossing for vehicles has caused the flow to be concentrated on the fan and resulted in degradation of the fan function and resulting in more stream bed load being deposited out into the meadow. The bridge was expanded in 1997 to its current configuration with an increased span. At this site the proposal is to:

- 3) Remove the low water crossing and construct approximately 4 rock riffles<sup>2</sup> perpendicular to the waterflow along approximately 0.3 miles of the existing channel area to allow the water to spread out more readily on the fan.
- 4) Reconnect the historic overflow channel at the bridge. Adjust the roadbed as necessary in the bridge area to allow for flow in this flood channel.

**Site #3: The main channel in the middle meadow area of the Perazzo Meadow system (Map 3).**

The main channel has downcut and widened and is actively eroding in some places. The aquatic habitat has been degraded. There are numerous sections of remnant channel available for stream flows. The meadow through site #3 is approximately

1.5 miles in length. At this site the proposal is to:

- 5) Increase floodplain access through site #3 using “plug and pond” techniques to move the flow out of the existing degraded channel into sections of remnant channels which will more readily provide floodplain access. Material excavated from the channel the adjacent meadow area, as well as the road fill, is proposed for removal from site #4 would be used for approximately 27 plugs in site #3. The borrow sites along the current channel would become ponds. Flood flows would have the potential to occur in up to 7 miles of remnant channels during high flows exceeding a 3 year flood event.
- 6) Construct rock riffles at the lower end of site #3 where the meadow narrows along approximately 0.2 miles of the existing channel area. The riffles would be placed in steps and would dissipate energy and allow pool formation and fish passage. The grade control structures will aid in maintaining channel elevation in the meadow above this point.

**Site #4: The old road crossing in the middle meadow area of the Perazzo Meadow system (Map 3).**

The old road bed is constricting the flow of the Little Truckee River on its floodplain. At this site the proposal is to:

- 7) Remove the road fill across the meadow (approximately 0.18 miles) and use it for plug construction as described under site #3.

**Site #5: The terrace above and to the south of the middle meadow area of the Perazzo Meadow system (Map 4).**

Historical channel modifications of four small intermittent streams and some perennial springs as well as the location of the Hennes Pass Road disrupt of the natural flow regime and degrade the meadow. At this site the proposal is to:

- 8) Plug the existing unnatural channels to reconnect the flow back into the natural channels, repair a headcut along one of the channels, and install culverts where the reconnected streams cross the road to restore a more natural flow regime. The road bed would likely need to be raised in two locations to allow for appropriate drainage through the area.

**Site #6: The main channel in the lower meadow area of the Perazzo Meadow system (Map 5).**

The main channel has downcut and widened and is actively eroding in some places. The meadow through site #6 is approximately 0.6 miles in length. There are sections of remnant channel. At this site the proposal is to:

- 9) Increase floodplain access through site #6 using plug and pond techniques to

move the flow out of the existing degraded channel into sections of remnant channels which will more readily provide floodplain access. Plug and pond techniques would be used along approximately 0.8 miles of existing channel. Material excavated from the channel and adjacent meadow area would be used for the plugs. The borrow sites along the current channel would become ponds. Flood flows would have the potential to occur in up to 1 mile of remnant channels in site #6 during high flows exceeding a 3 year flood event.

- 10) Construct rock riffles at the lower end of site #6 where the meadow narrows along approximately 0.05 miles of the existing channel area. The riffles would be placed in steps and would dissipate energy and allow pool formation and fish passage. The grade control structures will aid in maintaining channel elevation in the meadow above this point.
- 11) Improve the drainage through the road area by installing culverts or rocked low water crossings.

**Site #7: The Perazzo Meadows Grazing Allotment (Maps 6 and 7).**

The grazing allotment encompasses Sites 1-5 which are planned for watershed restoration activities. The *Tahoe National Forest LRMP* (1990) identifies livestock grazing as an appropriate use of the area included within the Perazzo Meadows allotment and a rangeland capability and suitability analysis has shown that cattle grazing remains a viable action on this allotment. Meadow vegetation provides the primary forage base for livestock in the allotment. Current grazing operations occur with a modified rest-rotation schedule using five pastures which are separated by fencing and topography. Approximately 9.6 miles of barbed wire fence is located on National Forest within the allotment, and another 0.4 miles is on private land. The proposal is as follows:

- 12) Re-authorize livestock grazing on the Perazzo Meadows Allotment (Map 6) with an updated Allotment Management Plan (AMP), and reissue a 10-year Term Grazing Permit and Annual Operating Instructions (AOIs). Changes to existing grazing operations would complement the watershed restoration activities, continue to support upward-trending riparian vegetation conditions, and provide for long-term improvement of wildlife and fish habitat. The changes include providing a period of rest for restoration areas and permanently relocating the fence separating Units B and C. Other proposed activities relate to modification of existing fences and cattleguards (Map 7).
  - a) Livestock grazing would be authorized on the Perazzo Meadows Allotment consistent with the standards and guidelines of the LRMP, as amended by the *Sierra Nevada Forest Plan Amendment Final Environmental Impact Statement Record of Decision* (SNFPA, 2004), to meet LRMP objectives.
  - b) An Allotment Management Plan (AMP), Grazing Permit, and Annual Operating Instructions (AOI) would be developed. The Table 1.2 displays the level of use that is currently permitted and is expected to continue to meet the standards and guidelines and provide for improving rangeland conditions:

**Table 1.2. Current and proposed level of use of the Perazzo Meadows Allotment**

LIVESTOCK			PERIOD OF USE	
NUMBER	KIND	CLASS	FROM	TO
60	Cattle	Cow/Calf Pairs	7/1	8/15
150	Cattle	Cow/Calf Pairs	8/16	10/10

The current and proposed future level of use equates to a total of 367 head-months. Permitted use would occur with an “On/Off” 10-year Term Grazing Permit, with 97% “On” National Forest, and 3% “Off” (private land within the allotment), based on the most recent range capability analysis. The current Term Grazing Permit indicates that 72% of use within the allotment occurs on National Forest; however, this has changed to 97% due to land acquisition within the past several years. Annual authorization of grazing would occur with the AOI and through payment of grazing fees.

- c) Achievement of LRMP objectives, through adherence to standards and guidelines as outlined in 12(a), would provide the over-riding principle for management of the allotment. The AMP would prescribe a modified rest-rotation grazing strategy as has been employed in recent years. This rest-rotation strategy has proved successful in meeting the standards and guidelines and improving rangeland conditions. The original rest-rotation grazing strategy was developed in 2001 and has been refined in the *Perazzo Meadows Willow Flycatcher Meadow Management Strategy* (MMS). The MMS would remain an integral part of grazing allotment management as specified in the standards and guidelines set forth in the LRMP, as amended by the SNFPA. The following are general guidelines for management of the five units within the allotment. Units A and C would be used in the early part of the season (7/1 to 8/15) by a total of 60 cow/calf pair divided amongst the units, and then generally either Unit B or Unit D/E would receive later season use (8/16 to 10/10). Once the watershed restoration areas have stabilized, Unit B and Unit D/E would generally be rested every other year. Units D and E would be managed as one unit under this proposal as has occurred in recent years. Units A and/or C could be used for later season use also but this is not expected to be common. The drift fence separating Units B and C would be permanently relocated approximately ½ mile to the west to allow for more refined livestock distribution to complement the watershed restoration activities.
- d) Areas which undergo watershed restoration activities would be rested for two to five years or as needed to allow for re-vegetation of disturbed areas, to allow stabilization of areas that could lead to meadow function degradation, and to allow for long term success of the restoration work. Cattle grazing could resume when the vegetation is successfully re-established (as defined



in the Re-vegetation Plan in Appendix F) and the topsoil is stabilized. Generally, the desired condition for the resumption of grazing is no more than 10% bare soil in a given meadow acre. Temporary fencing of isolated areas may be necessary. Following a period of rest, if necessary particular areas could undergo a period of lighter use in order to allow sufficient stabilization of the system.

- e) Salting locations would be approved and used to concentrate use by cattle away from particular areas such as watershed restoration areas, sensitive aquatic features such as springs and fens, and willow flycatcher habitat as appropriate. If salting locations did not prove to be successful in effectively altering the use levels according to that which is desired, off-site water (i.e. spring development/installation of watering trough), fencing, or adjustment of the grazing operations would be considered to meet resource objectives.
- f) Table 1.3 displays the proposed adjustments to range structural improvements in the Perazzo Meadows Allotment. 5.6 miles of fencing would be removed, 1 mile of fencing would be constructed, 1 cattleguard would be relocated, and 1 cattleguard would be removed (Map 7). These changes would minimize the long-term cost of maintenance while providing for the necessary control of livestock distribution to meet grazing standards and guidelines:

**Table 1.3. Proposed adjustments to range structural improvements in the Perazzo Meadows Allotment**

Type/Asset #	Location	Description
Fence #7979	Separates Units D and E	Remove (0.42 miles). This would result in one pasture instead of two that have been managed as one.
Fence #7037	Separates Units B and C	Relocate the fence (currently it is 0.71 miles; new fence would be 0.85 miles). The fence would be relocated closer to Site #1 in Unit B, decreasing the amount of meadow-like area in Unit B by approximately 115 acres, resulting in a corresponding increase in Unit C.
Fence #7010 on south side of Henness Pass Road	Along the northern boundary of Unit B	Remove (1.15 miles). This section of fence has not been necessary in recent years.
Fence #7010 on south side of Henness Pass Road	East of Unit C between the short drift fence and the private land	Remove (0.14 miles). This section of fence has not been necessary in recent years.
Fence #7010 on north side of Henness Pass Road	Along the southern boundary of Units D and E	Remove fence (1.57 miles) except for short “wings” adjacent to corral. This fence would not be necessary with the relocation of a cattleguard onto the Henness Pass Road at the boundary between Units A and D.

Fence #7010 along Fibreboard Road	Along the northern boundary of Units A and D	Remove sections of this fence amounting to 1.42 miles. Topography makes portions of this fence unnecessary. In Unit A only 0.3 miles are necessary; only about 100 feet of this fence in Unit D may be necessary.
Fence #7033	Northeastern corner of Unit A, partly on private land	Relocate 0.18 miles of this fence where it crosses the Little Truckee River to approximately 200 feet upstream of its current location. This is to alleviate drift problems from Unit A into Unit D and to remove fence from a riparian area between Fibreboard Road and the Little Truckee River.
Drift fence in Unit C	Near the boundary between Units A and D	Extend approximately 0.03 miles to the south. This is to alleviate drift problems from Unit C into Unit B.
Cattleguard	Unit D and E boundary near the Fibreboard Road	Remove. This cattleguard is located in an area which is no longer a road.
Cattleguard	South of the bridge along the 07-30 Road	Relocate to the Henness Pass Road where fence #7033 between Units A and D meets the road. This is to prevent drift from Unit D into Unit B.

g) Table 1.4 displays the rangeland structural improvements (5.4 miles of fencing, 4 cattleguards, and 1 corral) that would be maintained.

**Table 1.4 Rangeland structural improvements proposed to be maintained in the Perazzo Meadows Allotment**

Type/Asset #	Location	Description
Fence #7010	Southern boundary of Unit A along Henness Pass Road	0.87 miles
Drift fence	West side of Unit A	0.06 miles attached to Cattleguard #7976
Drift fence	Northeast side of Unit A	0.3 miles of fence, attached to Cattleguard #7977
Fence #7033	Between Units A and D	0.38 miles
Drift fence	Eastern boundary fence, east side of Unit E	Eastern boundary of allotment. A total of 1.5 miles attached to cattleguard #7978 and extending to north across meadow and along Fibreboard Road.

Fence #7010	Northern boundary of Unit C along Henness Pass Road	Includes the short section of drift fence on east side of Unit C near the private land. 1.3 miles total.
Drift fence	Unit C across from fence #7033	Located at the Unit A and D boundary. 0.14 miles
Fence #7037	Between Units B and C	This would be the relocated fence. 0.85 miles
Cattleguard #7976	Western side of Unit A	On 07-30 Road at the Henness Pass Road intersection.
Cattleguard #7977	Northeastern side of Unit A	Attached to drift fence on north side of Unit A
Cattleguard	Between Units A and D	This would be the relocated cattleguard. Attached to fence #7033 on Henness Pass Road.
Cattleguard #7978	Southeastern side of Unit E on Henness Pass Road	This cattleguard may not be necessary for management of the allotment, but would be left in the allotment management plan.
Corral	Along Henness Pass Road in Unit D	This corral provides for loading and unloading of livestock.

### **1.3 Proposed Action Monitoring**

The purpose of monitoring is to ensure that the management requirements and mitigation measures will be properly implemented and to document that the project has the desired outcomes.

#### *Reporting Structure and Procedure*

The U.S. Forest Service Project Manager will be the primary contact for the Forest Service and be responsible for making sure the management requirements and mitigations are implemented and the monitoring is done. The Project Manager will complete a daily log documenting activities on site, including the following:

- On-the-ground weather conditions
- Status of implementation schedule
- Implementation of mitigation measures
- Detailed reports of any environmentally-related construction site incidents.

Two types of monitoring, implementation monitoring and project effectiveness monitoring, would be conducted. Implementation monitoring would be used to document the proper

implementation of mitigation measures. Project effectiveness monitoring will be used to measure the effectiveness in meeting the project objectives and mitigation measures, i.e., improving bank stability, keeping sediment out of the creek and meeting re-vegetation objectives.

### **Implementation Monitoring**

A qualified USFS hydrologist and/or soil scientist on the project team would conduct implementation monitoring for the restoration activities during and after project construction, assuring that applicable mitigation measures are implemented. Documentation of implementation monitoring observations and resulting actions would be a part of the daily activity log.

Implementation monitoring would consist of observations and documentation of the implementation of mitigation measures (BMPs) employed for protection of soils, stream environment zones, and water quality. These measures include the following:

- Timing of activities
- Mulching of disturbed areas
- Control of concentrated runoff onto and from work sites to reduce erosion
- Timely erosion control measures
- Avoiding disturbance to existing vegetation in and around the project areas
- Staging of materials and equipment within the project area
- Controlling discharges of hazardous substances from refueling
- Sediment control in streamside management zones

Implementation monitoring would consist of observations and documentation of the implementation of mitigation measures (BMPs) employed for protection of vegetation and wildlife. These measures include the following:

- Minimize effects on vegetation community.
- Protection of special status plant species.
- Washing equipment to control spreading weeds.
- Protection of special-status wildlife species.

Implementation monitoring would consist of observations and documentation of the implementation of mitigation measures (BMPs) employed for protection of heritage resources. These measures include the following:

- Flag and avoid known sites.
- Monitor for heritage sites during excavation.

Implementation monitoring would consist of observations and documentation of the implementation of the authorization of grazing consistent with this decision, including the standards and guidelines and BMPs for range management. This would include the following:

- Continue issuing Annual Operating Instructions and implementing the *Perazzo Meadows Willow Flycatcher Meadow Management Strategy* as necessary to direct annual grazing operations in achieving AMP objectives.

- Monitor the vegetation and soil condition of the watershed restoration areas to allow for re-vegetation of disturbed areas, to allow stabilization of areas that could lead to meadow function degradation, and to allow for long term success of the restoration work.
- Continue conducting range readiness and utilization monitoring using the regional range analysis and planning guide in established key areas on the grazing allotment.

### **Effectiveness Monitoring**

Effectiveness monitoring would be conducted to assess whether the long-term objectives of the watershed restoration activities and the allotment management plan are being attained and provide information to guide land management decisions. Monitoring as discussed below would occur throughout the first 5 years after implementation.

#### *Watershed restoration effectiveness monitoring*

Effectiveness monitoring for the restoration activities would be conducted to assess the success of project implementation in meeting performance measures and the success of the mitigation measures and management requirements to control off site soil movement. The results of effectiveness monitoring would be used to determine whether additional actions to facilitate stabilization of project areas would need to occur, such as increased re-vegetation efforts, additional stabilization of project areas, or alteration of grazing management practices. Success would be determined by achieving and maintaining stability of disturbed soils and bank stability while allowing for adjustments of the channel morphology, and would generally equate to bank cover consisting of natural channel components such as boulders, cobbles, gravels, woody debris, and vegetation adequate to achieve combined cover of 75% in restoration areas for stability. Restoration project effectiveness monitoring will include the following elements:

- Establishment of photo points for pre-project and post-project comparison would monitor vegetation change and establishment success, as well as assess stream bank stability. They would also assess the effectiveness of BMPs to control soil movement. Photo points would provide visual documentation of existing conditions, post-project conditions, and assessment of success or failure of bank stabilization and re-vegetation efforts. If concerns such as excessive water sediment are noted, efforts will be made to track and identify the source. Concerns originating from this project would be managed appropriately.
- Stream channel cross section measurements have been established and would be measured after project implementation to provide documentation of changed conditions. A certain amount of channel adjustment will be expected as the hydrologic environment equilibrates. Continued measurements of cross sections in the future will provide documentation of post-project channel adjustments for comparison to those expected.

#### *Range management monitoring*

- Continue using the R5 Range Long Term Monitoring Project (Weixelman) to assess

long-term rangeland trend.

- In willow flycatcher sites receiving late-season grazing, monitor utilization annually using regional range analysis and planning guide. Monitor willow flycatcher habitat every 3 years using established criteria (the “Monitoring Protocol for SNFPA S&G 59”). If habitat conditions are not supporting the willow flycatcher or trend downward, modify or suspend grazing.
- The need for a PFC assessment will be evaluated every 3-5 years and completed as needed by an interdisciplinary team. If trend is declining and grazing is shown to contribute to the declining trend, management practices such as a change in grazing distribution, frequency, or level of use, development of off-site water, or altering salting practices will be considered to achieve the desired conditions.
- Continue using photographic monitoring to assess long term trend in resource conditions.
- Monitor the long term vegetation and soil condition of the watershed restoration areas and adjust grazing practices as necessary to allow for re-vegetation of disturbed areas, to allow stabilization of areas that could lead to meadow function degradation, and to provide for long term success of the restoration work.

#### **1.4 Resource Protection Measures**

All of the proposed treatments would follow the Stands and Guidelines from the Tahoe National Forest Land and Resource Management Plan (LRMP) (1990), as amended by the GHQLG FEIS Record of Decision (ROD) (1999), the HFQLG FSEIS ROD (2003) and the SNFPA FSEIS ROD (2004) that are applicable to project area.

Appendix C presents the Best Management Practices (BMPs), Resource Protection Measures (RPMs) and Standard Management Requirements (SMRs) that would be used for all Perazzo Meadows action alternatives to protect water quality and beneficial uses and meet the requirements of the Water Quality Control Plan for the Lahontan Region (Lahontan Basin Plan).

**9. Surrounding Land Uses and Setting:** The Forest Service administers the majority of surrounding land in the project area. The National Forest System land is used for motorized and non-motorized recreation, grazing, and timber removal to accomplish fuels reduction objectives.

At this current time, lands within T19N R15E Section 16 SW1/4 and Section 17 SE1/4 are not current National Forest lands. These private lands are likely to be acquired by the Truckee Donner Land Trust and in turn potentially deeded to the National Forest.

**10. Other Public Agencies whose Approval Is Required:** U. S. Army Corps of Engineers, California Department of Fish and Game, Sierra County Planning Department, Sierra County Department of Public Works.

**Environmental Factors Potentially Affected:**

The environmental factors checked below would potentially be affected by this project (i.e., the project would involve at least one impact that is a “Potentially Significant Impact”), as indicated by the checklist on the following pages.

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Aesthetics                                 | <input type="checkbox"/> Agricultural Resources             | <input checked="" type="checkbox"/> Air Quality   |
| <input checked="" type="checkbox"/> Biological Resources            | <input type="checkbox"/> Cultural Resources                 | <input checked="" type="checkbox"/> Geology/Soils |
| <input checked="" type="checkbox"/> Hazards and Hazardous Materials | <input checked="" type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning        |
| <input type="checkbox"/> Mineral Resources                          | <input type="checkbox"/> Noise                              | <input type="checkbox"/> Population/Housing       |
| <input type="checkbox"/> Public Services                            | <input type="checkbox"/> Recreation                         | <input type="checkbox"/> Transportation/Traffic   |
| <input type="checkbox"/> Utilities/Service Systems                  | <input type="checkbox"/> Mandatory Findings of Significance |   |

**Determination:** *(to be completed by the lead agency)*

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have an impact on the environment that is “potentially significant” or “potentially significant unless mitigated” but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards and (2) has been addressed by mitigation measures based on the earlier analysis, as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
For

## Evaluation of Environmental Impacts:

1. A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained if it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including offsite as well as onsite, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an Environmental Impact Report (EIR) is required.
4. “Negative Declaration: Less than Significant with Mitigation Incorporated” applies when the incorporation of mitigation measures has reduced an effect from a “Potentially Significant Impact” to a “Less-than-Significant Impact”. The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less-than-significant level. (Mitigation measures from Section XVII, “Earlier Analyses”, may be cross-referenced.)
5. Earlier analyses may be used if, pursuant to tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration [Section 15063(c)(3)(D)]. In this case, a brief discussion should identify the following:
  - (a) Earlier Analysis Used. Identify and state where earlier analyses are available for review.
  - (b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards and state whether such effects were addressed by mitigation measures based on the earlier analysis.
  - (c) Mitigation Measures. For effects that are “Less than Significant with Mitigation Incorporated,” describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.



6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, when appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
  - (a) the significance criteria or threshold, if any, used to evaluate each question; and
  - (b) the mitigation measure identified, if any, to reduce the impact to a less-than-significant level.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<b>I. AESTHETICS.</b> Would the project:				
a. Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Answers to Checklist Questions a, b and d**

The project is not located in or adjacent to a designated scenic vista or along a scenic highway. The project would not result in the development of new sources of light or glare.

**Answer to Checklist Question c**

Although the aesthetic quality in project sites would be temporarily impacted by construction activities (e.g., excavation of fill material to create plugs, material transport, removal of abandoned road in the floodplain, re-contouring slopes, outcropping, tilling, fugitive dust emissions, installation of culverts, and installation of low water crossings), the restoration actions would enhance the area’s long-term aesthetic value and scenic resources.

The primary impact to aesthetics would be the creation of large areas of soil disturbance and series of ponds along sections of degraded channel within the meadow environment. The proposed project includes the implementation and maintenance of numerous site-specific BMPs which are designed to control storm-driven erosion at the sites, as well as the success of the site-specific Re-vegetation and Monitoring Plans to restore the project sites to natural conditions. The impacts to aesthetics are less than significant with mitigations.

**Mitigation Measures**

The Re-vegetation Plan included in Appendix F would establish appropriate type and density of vegetation and/or ground cover on all areas disturbed during project implementation. The

mitigation measures required to minimize impacts to aesthetics and control storm-driven erosion from the project sites are the same as those listed under Section III, Air Quality.

DRAFT

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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**II. AGRICULTURAL RESOURCES.** In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation. Would the project:

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c. Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**Answers to Checklist Questions**

No farmland is located in the project area. There would therefore be no impact to agricultural resources.

Although they is not farmland or zoned for agricultural use, most of the areas proposed for treatment are part of a Forest Service livestock grazing allotment permitted for use by a permittee. The Perazzo Meadows Allotment is designated by the Tahoe National Forest Land and Resource Management Plan of 1990, and analysis shows that the allotment remains capable and suitable for grazing. The Allotment Management Plan is being updated to complement the watershed restoration activities (Proposed Action). Areas which undergo watershed restoration activities would be rested for two to five years or as needed to allow for re-vegetation of disturbed areas, to allow stabilization of areas that could lead to meadow function degradation, and to allow for long term success of the restoration work. Cattle grazing could resume when the vegetation is successfully re-established (as defined in the Re-vegetation Plan in Appendix F) and the topsoil is stabilized. Generally, the desired condition for the resumption of grazing is no more than 10% bare soil in a given meadow acre. Temporary fencing of isolated areas may be

necessary. Following a period of rest, if necessary particular areas could undergo a period of lighter use in order to allow sufficient stabilization of the system.

Once grazing is re-introduced, the area will be monitored regularly (see monitoring plan included in the Proposed Action, Section 1.3 of the Project information in this document) to determine the impacts caused by the grazing. The Forest Service will continue to work with the permittee to develop a grazing strategy to meet the restoration goals. The livestock grazing operation remains feasible under the proposed plan.

**Mitigation Measures**

No mitigation is required.

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	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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**III. AIR QUALITY.** When available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

- |    |   |                          |                                     |                                     |                                     |
|----|---|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| a. | Conflict with or obstruct implementation of the applicable air quality plan?  | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| b. | Violate any air quality standard or contribute substantially to an existing or projected air quality violation?   | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| c. | Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)? | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| d. | Expose sensitive receptors to substantial pollutant concentrations?   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
| e. | Create objectionable odors affecting a substantial number of people?  | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**Answers to Checklist Questions b, c and e**

The project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. Due to its short-term, small scale nature, low-intensity nature, it would not result in a cumulatively considerable net increase of pollutants. As its pollutants would be limited to vehicle exhaust, and remote location, it would not create objectionable odors affecting a substantial number of people.

**Answers to Checklist Questions a and d**

The project area is within the Truckee Air Basin & Northern Sierra Air Quality Management District. Air quality impacts associated with the proposed project would be limited to those which typically occur during construction. The proposed project may result in temporary increases in dust and exhaust odor due to equipment use while implementing watershed restoration activities. BMPs will control fugitive dust and prevent potential excessive sediment

runoff and deposition into surface waters, and ensure compliance with the Basin Plan water quality objectives. Watering of disturbed soil areas will be completed with appropriate timing and intensity for dust control while preventing runoff and sediment transport.

Construction activities would generally occur in isolated areas away from areas away from heavy public use or large populations of the general public. Once construction is complete, disturbed areas will be revegetated to ensure soil stabilization. Compliance with the following BMPs and specific permit conditions will ensure compliance with Northern Sierra Air Quality Management District regulations. The proposed project will have a less-than-significant impact on air quality with the following mitigations.

### **Mitigation Measures**

- AIR –1.** All areas (including unpaved roads) with vehicle traffic must be watered as necessary for stabilization of dust emissions. Care must be taken to avoid excessive watering that could cause a discharge to surface waters.
- AIR –2.** On-site vehicle speeds will be limited to 15 miles per hour on unpaved surfaces.
- AIR –3.** Inactive soil stockpiles will be watered or covered during windy conditions.
- AIR –4.** Disturbed areas will be revegetated as per the Re-vegetation Plan immediately after the completion of construction to reduce wind. If immediate permanent re-vegetation is impractical due to factors such as poor seasonal timing, then temporary measures such as adequate covering with pine needles or jute matting will be implemented.
- AIR –5.** Construction activities will comply with EPA air quality standards on dust and condensed fumes, so that emissions do not exceed hourly levels as regulated per processing weight.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<b>IV. BIOLOGICAL RESOURCES.</b> Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



**Answers to Checklist Questions a, b, and d**

The Biological Evaluations/Biological Assessments (BEs/BAs) prepared for this project evaluate potential effects of the proposed project on species listed as endangered or threatened, or proposed for listing, under the federal Endangered Species Act of 1973 as amended, or designated as sensitive by the Regional Forester in Region 5. The BEs/BAs are available for review at the Tahoe National Forest Sierraville District and Regional Board South Lake Tahoe offices. For the purpose of this CEQA Checklist, species included in the BEs/BAs and EA are defined as “special-status species” and included in this analysis.

The following information summarizes potential effects of the proposed action on biological resources, including special-status species, and mitigation measures that are expected to reduce potential adverse effects to a less-than-significant level. Additional detailed information on the known occurrences and status of each special-status species in the project area, and a detailed analysis of potential project effects on each species, is provided in the BEs/BAs and EA. Following the mitigations listed at the end of this section as well as standard management requirements there would be no significant adverse effect any of these listed species during or after project implementation.

**Terrestrial Wildlife:**

**Summary of effects to Region 5 Forest Service sensitive wildlife species.**

SPECIES	SPECIES STATUS	PRESENT IN PROJECT AREA: Habitat &/or detections	MANAGEMENT REQUIREMENTS, STANDARDS, GUIDELINES, SPECIES SPECIFIC PROJECT DESIGN STANDARDS	EFFECTS DETERMINATION	RECOMMENDED MITIGATION TO ACHIEVE “NO EFFECT”
Bald eagle	S	Yes	NONE	No effect	NONE
Valley elderberry longhorn beetle	T	No	NONE	No effect	NONE
American peregrine falcon	S	No	NONE	No effect	NONE
California spotted owl	S	Yes	NONE	No effect	NONE
Great gray owl	S	Yes	SNFPA S&G #83 and #84	May Affect, not likely to lead to Federal listing	NONE
Northern goshawk	S	Yes	NONE	No effect	NONE
Willow flycatcher	S	Yes	LOP May 1 through Aug. 15 for all units SNFPA S&G #56-63	May Affect, not likely to lead to Federal listing	NONE
Greater sandhill crane	S	Yes	LOP April 1 <sup>st</sup> to August 1 <sup>st</sup> where greater sandhill cranes have been determined to be nesting.	No effect	NONE
Pacific fisher	S, C	No	NONE	No effect	NONE

Marten	S	Yes	NONE	No effect	NONE
Sierra Nevada red fox	S	Yes	NONE	May Affect, not likely to lead to Federal listing	NONE
California wolverine	S	Yes	NONE	May Affect, not likely to lead to Federal listing	NONE
Pallid bat	S	Yes	NONE	No effect	NONE
Townsend's big-eared bat	S	Yes	NONE	No effect	NONE
Western red bat	S	Yes	NONE	No effect	NONE

\*T = Threatened Species \*\*S = Sensitive Species

Details regarding species with a “May Affect, not likely to lead to Federal listing” determination are provided below.

*Great gray owl.*

The great gray owl effects analysis area includes the entire Perazzo Meadows complex, including approximately 500 feet into forested stands (encompassing approximately 12,040 acres). Great gray owls use two habitat types in the project analysis area: the meadow system for foraging and the forest for nesting. One proposed private timber harvest plan may affect nesting habitat adjacent to Perazzo Meadows, the Scraps THP, in which approximately 250 acres of forested stands are proposed for selection harvest, sanitation/salvage harvest, and group selection by Sierra Pacific Industries (SPI). The proposed THP actions may reduce the number of larger trees preferred as nesting structures by great gray owls, based on past SPI THP implementations and review of the proposed actions. An approved THP may be released if surveys do not detect great gray owls during the next two seasons (pers. com. Kevin Roberts, SPI biologist). Cumulative effects from this private timber harvest may reduce nesting habitat quality of approximately 250 acres adjacent to the Perazzo Meadows. The thinning from below prescriptions on USFS lands of approximately 400 acres (the Phoenix and Montez Projects by the Forest Service) are expected to have long term beneficial effects to great gray owl nesting habitat by restoring a healthy tree density within older age-class stands. It is anticipated that the Perazzo Meadows restoration actions would have beneficial indirect effects to great gray owl foraging habitat on approximately 376 acres. Cumulatively, the project is anticipated to improve habitat quality for the great gray owl in the analysis area.

There are no proposed meadow restoration activities adjacent to recent (2004) sightings, or within ½ mile of the forested stands the owls were detected in. The Wildlife BE/BA determined that the action alternatives are expected to have the following direct and indirect effects.

- No direct effects to nesting or foraging great gray owls.
- No indirect effects to great gray owl nesting habitat.

- Beneficial indirect effects to great gray owl foraging habitat on approximately 376 acres from the meadow restoration.
- No measurable indirect effects to great gray owls from grazing.

The BE/BA determined that implementation of the Proposed Action may affect individuals (though unlikely), but is not likely to result in a trend toward federal listing or to a loss of viability for the great gray owl. It would not lead to a trend toward federal listing or affect the viability of the great gray owl.

*Willow flycatcher.*

The BE/BA determined that implementation of the Proposed Action may affect individuals, but is not likely to result in a trend toward federal listing or to a loss of viability for the willow flycatcher. Generally, impacts to willows from grazing have been light to none, and recruitment has been successful. Recent (2008) monitoring has determined that grazing of willows within the Perazzo Meadows Allotment is almost non-existent and the effects to habitat quality are negligible. General willow conditions have been improving over the past 10 years as determined through photographic monitoring. The Proposed Action would have minimal effects to breeding willow flycatchers because of the following:

1. A Limited Operating Period for ground disturbing activities (meadow restoration) is part of the proposed action.
2. There is a Meadow Management Strategy to minimize potential impacts to breeding willow flycatchers from cattle grazing.
3. There would be a low probability of directly affecting breeding willow flycatcher nesting activity from both the meadow restoration activities and the proposed grazing. Meadow restoration activities would have a potential impact to willow flycatcher nesting sites, as willow clumps would be temporarily moved during the construction of the plugs and ponds. Approximately 44 plugs and associated ponds are proposed for construction within the existing known nesting habitat for willow flycatchers in the Perazzo Meadows area. Mitigation BIO-5 would minimize the disturbance to mature willows within the known nesting areas during restoration activities. Since there are 44 plugs proposed and some of the willows would be inundated with water post project some of the willow habitat would be affected. Through careful planning and coordination during restoration activities these indirect impacts are expected to be minimal. The willows which are excavated during the plug and pond development would be saved and replanted in the plugs and surrounding the ponds. It is expected that most of the replanted mature willows will be healthy for next season nesting habitat.
4. Grazing would have minimal impacts to willow flycatcher habitat with the implementation of the standards and guidelines and grazing strategy proposed.

5. Meadow restoration activities are expected to have long term beneficial effects on 376 acres with short term negative impacts where the plug and pond treatments are implemented (approximately 36 acres).
6. Beneficial indirect effects to willow flycatcher nesting success is expected by reducing the impacts from predation as the meadow becomes more saturated during the nesting period.
7. The overall cumulative effects are expected to be positive in the long term.

Cumulatively, the willow flycatcher analysis area encompasses approximately 13,500 acres of meadow habitat and is bounded temporally by the state of the land the the Forest Service acquired the land (approximately 50 years ago) to the approximate date the allotment plan would be evaluated and verified for re-authorization in 10 years. The past degradation of the stream condition (as summarized in Section 1.1 Proposed Action) has led to a decline in the meadow conditions over time. Stream and meadow degradation has had a large effect on the potential natural vegetation condition expected within the Perazzo Meadows system (by lowering the water table and by changing the natural utilization of the floodplain), leading to impaired habitat conditions for willow flycatchers. In 2004, a Willow Flycatcher Meadow Management Strategy (MMS) was developed in accordance with the 2004 SNFPA ROD Standard and Guideline #58 to minimize the potential for adverse impacts to nesting willow flycatchers and their habitat. MMS guides the Proposed Action and minimizes potential impacts to breeding willow flycatchers from cattle grazing. The adjacent Phoenix and Montez Forest Service forest health improvement projects are designed to address poor forest health on approximately 400 acres in the upper Perazzo Meadows area. They would help reverse the dry conditions the meadow system currently exhibits by restoring the historical conditions of lower density, older average age stands (which uptake less water than the overstocked conditions currently present). There would be cumulatively beneficial impacts to the willow flycatcher under the Proposed Action.

- *California wolverine.*

The analysis determined that the Proposed Action is well below the expected elevational range for breeding wolverine. Activities would occur during the summer months and within low quality foraging habitat. The BE/BA determined that there is a low probability that the Proposed Action may affect individuals, but are not likely to result in a trend toward Federal listing or loss of viability for California wolverine within the planning area of the Tahoe National Forest.

Cumulatively, the Wildlife BE/BA determined that these forest carnivores might utilize Perazzo Meadows area for foraging of prey, but it is unlikely they use it consistently or for any length of time. The Proposed Action would have a long term beneficial indirect effect to forest carnivore prey by restoring a healthier meadow system which would increase meadow habitat conditions for prey. Cumulatively, this increased prey availability could be complemented by the nearby Montez and Phoenix projects, which would increase forest health, and not measurably alter the current levels of large logs, large snags, and forested environment over the landscape

in the long-term. The adjacent Scraps THP project would not likely change prey habitat.

- *Sierra Nevada red fox.*

Because it is possible (though unlikely) that the proposed grazing and/or the meadow restoration project could impact low quality foraging habitat, it was determined that implementation of the Proposed Action may affect individuals, but are not likely to result in a trend toward Federal listing or loss of viability for Sierra Nevada red fox within the planning area of the Tahoe National Forest.

Cumulatively, the Wildlife BE/BA determined that these forest carnivores might utilize Perazzo Meadows area for foraging of prey, but it is unlikely they use it consistently or for any length of time. The Proposed Action would have a long term beneficial indirect effect to forest carnivore prey by restoring a healthier meadow system which would increase meadow habitat conditions for prey. Cumulatively, this increased prey availability could be complemented by the nearby Montez and Phoenix projects, which would increase forest health, and not measurably alter the current levels of large logs, large snags, and forested environment over the landscape in the long-term. The adjacent Scraps THP project would not likely change prey habitat. Alternative 2 would have a more negative trend in prey habitat as the meadow system would continue to decline because the restoration activities would not reverse the hydrologic decline, but grazing would not occur. Alternative 3 is expected to have the same general indirect effects as Alternative 2 because restoration activities would not occur, but a structured grazing management strategy would occur that is designed to have minimal impacts to forest carnivore habitat.

- *Greater sandhill crane.*

Currently, nesting habitat quality for the greater sandhill crane is poor in the analysis area due to a lack of suitable wetlands, emergent vegetation or islands. It is anticipated that the Proposed Action would improve nesting habitat by favorably changing the hydrology of the analysis area. Because the Proposed Action does not currently have any direct, indirect, or cumulative effects to sandhill crane or its habitat, the Wildlife BE determined that implementation of Alternatives 1, 2, or 3 would have “No Effect” upon greater sandhill crane or its habitat. However, a LOP (Mitigation BIO-11) would be implemented if sandhill cranes are determined to be nesting in project area.

Cumulatively, the Perazzo project area is currently not suitable sandhill crane nesting habitat. Therefore, Alternatives 2 and 3 would have no direct, indirect or cumulative effects on this species. It is anticipated that the Proposed Action would create suitable nesting areas in the foreseeable future, and thus may have long-term beneficial indirect effects to sandhill crane by creating these suitable nesting habitat. It is

estimated that nearby recreational use (specifically OHV use) has the potential to affect greater sandhill cranes in the foreseeable future (as the area becomes more suitable for nesting). However, with the Tahoe National Forest Route Designation and OHV restrictions there would be no negative cumulative effects to sandhill crane habitat expected in the future due to spatial and temporal OHV use restrictions.

In general, disturbances to wildlife habitat resulting from watershed restoration work would occur within stream and riparian corridors on a small scale (a combined total of 4.6 acres spread over 6 separate sites, with the largest site being less than two acres). The plugging and ponding of the existing channel and relocating the flow to an old channel would change the existing habitat structure or composition in the project area and would be a short-term disturbance. However, the long-term effect is expected to be an overall improvement of the riparian and aquatic habitat. Habitat disturbances would be minimized and disturbed areas would be stabilized and revegetated. These restoration projects would positively affect wildlife habitat by eliminating active erosion and sediment sources and promoting the establishment and succession of native riparian vegetation in those locations. In the long-term, there will be a net increase in available wildlife habitat.

In the short-term, temporary disturbances to foraging, movement, and reproductive activities resulting from noise or other project-related factors could also occur. However, project activities within the action area would be dispersed and localized; and, project activities at each location will be completed over a short period. Despite this short disturbance period, project-related noise could disturb individuals and possibly disrupt or prevent breeding activities in some locations. However, limited operating periods will be implemented around nests, dens, roost sites, and other areas of concentrated use of special-status species.

Overall, the proposed action is expected to result in long-term benefits to special-status wildlife species including an increase in total habitat. Considered separately from the long-term beneficial effects, any potential short-term effects are less than significant.

#### **Aquatic Resources, Riparian Habitats, and Special-Status Fish:**

The following table summarizes the aquatic Biological Evaluation and the Biological Assessment for this project. To mitigate potential effects to native fish within areas of active waterflow restoration work, a Forest Service aquatics biologist, in cooperation with the California Department for Fish and Game, will implement appropriate measures to prevent impacts to native fish. The Proposed Action would also utilize riffle/pool systems during grade control structure construction that will maintain fish passage. In addition, as discussed in Sections VI. Geology and Soils and VIII Hydrology and Water Quality, timing of the restoration activities will be limited to avoid periods of high waterflow.

**Summary of effects to Region 5 Forest Service sensitive aquatic species.**

<b>Species</b>	<b>Suitable Habitat Present</b>	<b>Species Present</b>	<b>Effects Determination</b>
<b>California red-legged frog</b> ( <i>Rana aurora draytonii</i> )	Outside Historic Range	No	Will not affect <i>Rana aurora draytonii</i> or its designated critical habitat
<b>Northern leopard frog</b> ( <i>Rana pipiens</i> )	Outside Historic Range	No	Will not affect <i>Rana pipiens</i>
<b>Foothill yellow-legged frog</b> ( <i>Rana boylei</i> )	Outside Historic Range	No	Will not affect <i>Rana boylei</i>
<b>Mountain yellow-legged frog</b> ( <i>Rana muscosa</i> )	Yes	Likely	May affect but is not likely to jeopardize the continued existence of <i>Rana muscosa</i>
<b>Great Basin rams-horn snail</b> ( <i>Helisoma newberryi newberryi</i> )	No	Unknown	Will not affect <i>Helisoma newberryi newberryi</i>
<b>Lahontan Lake tui chub</b> ( <i>Siphateles bicolor pectinifer</i> )	No	No	Will not affect <i>Siphateles bicolor pectinifer</i>
<b>Hardhead</b> ( <i>Mylopharodon conocephalus</i> )	Outside Historic Range	No	Will not affect <i>Mylopharodon conocephalus</i>
<b>Lahontan cutthroat trout</b> ( <i>Oncorhynchus clarki henshawi</i> )	Yes	No Perazzo Meadows identified as Recovery Area	Will not affect <i>Oncorhynchus clarki henshawi</i> , or its designated critical habitat
<b>Northwestern pond turtle</b> ( <i>Clemmys marmorata marmorata</i> )	Outside Historic Range	No	Will not affect <i>Clemmys marmorata marmorata</i>
<b>California floater mussel</b> ( <i>Anodonta californiensis</i> )	No	No	Will not affect <i>Anodonta californiensis</i>

Details regarding species with a “May Affect, not likely to lead to Federal listing” determination are provided below.

- *Mountain yellow-legged frog.* The mountain yellow legged frog (*Rana muscosa*) is a sensitive species (as defined by the Forest Service Region 5 Forester’s Sensitive Species List) and a candidate species for listing by the U. S. Fish and Wildlife Service as threatened or endangered. The existence of the species is not certain within the project area. They were documented within the Perazzo watershed as recently as 2002. Direct and indirect effects are possible and include the potential to crush or disturb them with machinery or cattle as well as modify habitat and water quality. The Proposed Action may affect but would not likely jeopardize the continued existence of the species.
- *Lahontan cutthroat trout.* The Lahontan cutthroat trout (LCT) is listed as a threatened species by the U.S. Fish and Wildlife Service. The species does not exist within the project area; however, Perazzo Creek is currently identified as a potential area for the re-introduction of LCT. The Proposed Action would affect the species.

With consideration of the past, present and future activities within the analysis areas of the mountain yellow-legged frog and LCT habitat, the BE/BA determined that the Proposed Action has cumulatively positive effects. While the BE/BA determined that there could be short-term direct adverse effects due to disturbance during restoration, and indirect adverse effects to stream channels or meadow habitat due to grazing, the risk of such effects is low due to grazing management requirements, monitoring, the required implementation of RMOs and RHCA protection measures (see Appendix E: Compliance with Riparian Objectives). There would be an overall improvement to the quality of the meadow habitat, with a gain in pool habitat, which would provide more suitable breeding habitat for the frogs, and habitat improvement for LCTs with improved stream temperatures, stream: riffle ratio and sediment.

The Proposed Action would not significantly adversely affect aquatic and riparian habitats that support waterfowl, fish, amphibians, and other aquatic species in the project area. The Proposed Action is designed to minimize potential adverse effects on aquatic and riparian habitats in the project area. In-stream activities would be conducted only when the streams are dry or during minimum flow (base flow) periods. Any in-stream structural changes are designed to allow for fish passage. The proposed action would result in long-term beneficial effects on aquatic habitat. Erosion and associated runoff of sediment and nutrient inputs would be reduced. Considered separately from the long-term beneficial effects, these potential short-term effects are less than significant.

### **Sensitive plants and fen habitat:**

There are no known occurrences of sensitive plants (as defined by the Forest Service Region 5 Forester’s Sensitive Species List) within the Perazzo Meadows Allotment. The sensitive plants and their habitat may benefit long-term from the effects of the watershed restoration portion of the project. The grazing standards and guidelines combined with specific measures proposed in this project are expected to retain and improve important habitat attributes for special interest plant species, fens, and riparian health and vigor.



Some fens currently exhibit less than desired condition. The Proposed Action includes specific measures to take action as needed to minimize or eliminate impacts from grazing. These measures include using strategic placement of salting, off-site water development, or fencing in order to achieve proper livestock distribution to prevent adverse effects to hydrological processes in riparian and fen ecosystems. These measures would provide a specific means to ensure compliance with LRMP standards and guidelines, as amended.

### **Answers to Checklist Question c**

The project proposes to work within some seasonally wet meadow areas. They may or may not be wetlands. For the purpose of this analysis it will be assumed that these areas are wetlands. This project's primary purpose is riparian habitat and water quality improvement, through eliminating active erosion and increasing functionality of hydrologic systems. Where the project proposes to do work in or near wetlands (approximately 378 acres), the Proposed Action is designed to restore and/or enhance them. All of the mitigation measures designed to protect soil resources (see Soil & Geology section) and hydrology and water quality (see Hydrology and Water Quality section) will avoid or minimize potential short-term adverse effects of project activities on aquatic, riparian, and wetland habitats.

### **Answers to Checklist Question e and f**

There are no conflicts with any local policies or ordinances protecting biological resources, including the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

### **Mitigation Measures**

- BIO - 1:** Notify the responsible Biologist if any threatened, endangered, or sensitive species are detected during operations. Flag and avoid noted plant species during project activities.
- BIO - 2:** Utilize riffle/pool systems during grade control structure construction that would maintain fish passage.
- BIO - 3:** Implement a limited operating period for great gray owls from March 1<sup>st</sup> to August 15<sup>th</sup> if birds are present at time of operations.
- BIO - 4:** Implement a limited operating period for willow flycatcher from June 1<sup>st</sup> to August 15<sup>th</sup> if birds are present in the vicinity of restoration areas.
- BIO - 5:** In known willow flycatcher nesting habitat, minimize disturbance to mature willows.

**BIO - 6:** In areas of active waterflow restoration work, a Forest Service aquatics biologist, in cooperation with the California Department for Fish and Game, will implement appropriate measures to prevent impacts to native fish.

**BIO - 7:** Measures to control the introduction and spread of noxious weeds in the action area will be implemented during project implementation, as directed by the TNF LRMP, as amended by the 2004 SNFPA ROD. The management requirements incorporated into the proposed action are designed to reduce the risk of noxious weed invasion from a moderate to a low level by using prevention measures to mitigate the risks. The Forest Service Botanist determined that there is a low risk of introducing noxious weeds into the project area, if mitigations are implemented including requirements to: clean all heavy equipment that is used for road construction and road decommissioning before it enters the Tahoe National Forest and project area, if it comes from areas infested with noxious/invasive weeds, utilize road surface gravel from weed free sources, i.e. pre-inspect gravel sources for the presence/absence of noxious weeds prior to utilization of gravel from these sources, utilize certified weed free straw or rice straw, where mulch is needed for ground cover, and monitor the project area after project completion.

**BIO - 8:** Mitigations listed under the water quality section to protect from soil erosion and those listed under the Hydrology and Water Quality section will also help to avoid or minimize potential short-term adverse effects of project activities on aquatic and riparian habitats that support waterfowl, fish, amphibians, and other aquatic species.

**BIO - 9: Range/Wildlife:** In occupied Willow Flycatcher habitat allow only late-season grazing or develop willow flycatcher meadow management strategy; monitor utilization and willow flycatcher habitat condition. For more explanation refer to SNFPA S&G #57-61.

**BIO - 10: Fen Ecosystems.** Prohibit or mitigate ground-disturbing activities that adversely affect hydrologic processes that maintain water flow, water quality, or water temperature critical to sustaining fen ecosystems and plant species that depend on these ecosystems. For more explanation refer to SNFPA S&G #118.

**BIO - 11: Limited Operating Period:** Implement a limited operating period from April 1st to August 1st to protect sandhill crane reproduction. Implemented anywhere restoration activities may have the potential to negatively effect nesting sandhill cranes. This LOP may be modified by the District Wildlife Biologist if surveys determine nesting will not be affected within ¼ mile of the proposed activities.

**RANGE-2: Salting Restrictions.** Prohibit salting within the meadow edge. LRMP S&G #30, page V-31.

**RANGE-3: Grazing and riparian vegetation.** Limit browsing to no more than 20 percent of the annual leader growth of mature riparian shrubs and no more than 20 percent of individual seedlings. Remove livestock from any area of an allotment when browsing indicates a change in livestock preference from grazing herbaceous vegetation to browsing woody riparian vegetation. SNFPA S&G #121.

**RANGE – 4: Limitations on livestock utilization.** For meadows in early seral status limit livestock utilization of grass and grass-like plants to 30 percent (or minimum 6-inch stubble height); for meadows in late seral status limit livestock utilization of grass and grass-like plants to 40 percent (or minimum 4-inch stubble height). If meadow ecological status is determined to be moving in a downward trend, modify or suspend grazing. Under intensive grazing systems (such as rest-rotation and deferred rotation) where meadows are receiving a period of rest, utilization levels can be higher than the levels described above if the meadow is maintained in late seral status and meadow-associated species are not being impacted. Degraded meadows (such as those in early seral status with greater than 10 percent of the meadow area in bare soil and active erosion) require total rest from grazing until they have recovered and have moved to mid- or late seral status. SNFPA S&G #120.

**RANGE-5: Limitations on livestock utilization.** For meadows in early seral status limit livestock utilization of grass and grass-like plants to 30 percent (or minimum 6-inch stubble height); for meadows in late seral status limit livestock utilization of grass and grass-like plants to 40 percent (or minimum 4-inch stubble height). If meadow ecological status is determined to be moving in a downward trend, modify or suspend grazing. Under intensive grazing systems (such as rest-rotation and deferred rotation) where meadows are receiving a period of rest, utilization levels can be higher than the levels described above if the meadow is maintained in late seral status and meadow-associated species are not being impacted. Degraded meadows (such as those in early seral status with greater than 10 percent of the meadow area in bare soil and active erosion) require total rest from grazing until they have recovered and have moved to mid- or late seral status. SNFPA S&G #120.

**RANGE-6: Implementation Monitoring.** Conduct implementation monitoring to ensure the parameters of the decision are being implemented as described. Implementation monitoring would include ensuring that the Standards and guidelines are met using the appropriate methods, such as those outlined in Utilization Studies and Residual Measurements (Interagency Technical Reference 1734-3, U.S. Department of the Interior, Bureau of Land Management, 1996). More details regarding this monitoring are in Section 1.4 of the Proposed Action in this CEQA document.

**RANGE-7. Effectiveness Monitoring.** Conduct effectiveness monitoring to ensure that the resource conditions are maintained or are moving toward the desired conditions as outlined in the LRMP, as amended. Effectiveness monitoring would be correlated

with utilization data. Appropriate monitoring methods would be used, such as those outlined in Sampling Vegetation Attributes ((Interagency Technical Reference 1734-3, U.S. Department of the interior, Bureau of Land Management, 1996). More details regarding this monitoring are in Section 1.4 of the Proposed Action in this CEQA document.

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	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<b>V. CULTURAL RESOURCES.</b> Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Answers to Checklist Questions c and d.** The District archeologist determined that there are no paleontological resources or sites, no unique geologic features nor any sites with human remains in the project area, and therefore there would be no impact to these resources.

**Answers to Checklist Questions a and b.**

There are 13 heritage resources within the Perazzo Meadows Allotment Management Plan Update Project. Of these, two sites are located within, and four sites are located on the edge of suitable grazing areas. Eleven of the sites were monitored, and slight evidence of cattle grazing was observed on these sites in the form of tracks and manure. No evidence of cattle grazing damage to the sites was noted and no physical alteration of the land surface was observed. The project proposes to extend the grazing for 10 years within the allotment without increasing the number of grazing animals. It is the determination that authorizing livestock grazing on the Perazzo Meadows Allotment with an updated AMP and reissuing a 10-year Term Grazing Permit and AOIs will not have an adverse effect on heritage resources.

There are 8 heritage resources within the proposed watershed restoration project. All of these sites are out of project-area floodplain, and all avoidable during restoration activities. It is the determination that the watershed restoration project will not have an adverse effect on heritage resources.

## **Mitigation Measures**

- CULT 1:** Following standard management requirements, monitoring for heritage sites would occur during excavation. Known archaeological sites would be flagged and avoided. Restoration activities would be halted if a site is found in an area during excavation to avoid further disturbance. The District Archaeologist would be notified, and would take the necessary steps to document the site before activities may potentially resume, e.g. excavating, cataloging.
- CULT 2:** Locate Plugs and Ponds and equipment access routes to avoid direct impacts to known heritage resources.
- CULT-3:** If the design of the proposed project is altered or changed, additional review by the Sierraville RD Heritage Resources staff will be required. Furthermore, if any previously unrecorded cultural resources are discovered during this action, all project-related activities must cease immediately and the consultation process as outlined in Section 800.13 of the Advisory Council on Historic Preservation's regulations 36 CFR 800 must be initiated.
- CULT 4:** Any project-related activities planned within the allotment boundaries that may cause animals to congregate in groups (such as salt licks, on/off loading sites, etc.) would be placed in locations away from heritage sites, and all activities would adhere to the provisions of the National Historic Preservation Act (NHPA), any implementing programmatic agreements (PAs), and the Tahoe National Forest Grazing-Heritage Resource Management Strategy.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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**VI. GEOLOGY AND SOILS.** Would the project:

- |    |  |                          |                                     |                          |                                     |
|----|--|--------------------------|-------------------------------------|--------------------------|-------------------------------------|
| a. | Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:  |                          |                                     |                          |                                     |
|    | 1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|    | 2. Strong seismic groundshaking?   | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|    | 3. Seismic-related ground failure, including liquefaction?   | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|    | 4. Landslides?   | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. | Result in substantial soil erosion or the loss of topsoil?   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| c. | Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?  | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d. | Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?  | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e. | Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?   | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

## **Answers to Checklist Questions a, c, d, and e**

The proposed project is not located in an Earthquake Fault Zone or on a geologic unit which is unstable or that would become unstable as a result of the project. The project is not located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code. Question e. is irrelevant to the proposed project area.

## **Answers to Checklist Question b**

Under the Proposed Action, there would be potential for a short-term increase in sediment transport in the hydrologic system and temporary loss of vegetation during the restoration process with the construction of the plugs and ponds, the construction of rock grade structures and the removal of old road fill. Much of this work would occur within and adjacent to the 100-year floodplain. There is also a potential for additional sediment to be delivered to the Perazzo Canyon Creek and Little Truckee River. Impacts and mitigations regarding work within the floodplain are discussed below. The potential for adverse effects related to sediment would be minimized by resource protection measures integrated into the Proposed Action and BMPs that include minimization of ground disturbance, stabilization of construction spoils, runoff control measures, and stabilization of streambanks.

### *Proposed Action Effectiveness*

The Perazzo Meadows Geomorphic Assessment (2008) provides recommendations to the Forest Service regarding concerns for the actions being considered under the plug and pond watershed restoration approach (Swanson pg. 50-52). The Proposed Action was planned based on these recommendations (the specific planning based on these concerns is detailed in the Watershed Effects Report). Below is a summary of the concerns brought forward and the actions developed:

*Downstream control:* There is a concern that a downstream grade break would re-initiate headcutting. Grade stabilizing structures were proposed to support long term stability of the meadow restoration, and rock riffle features were proposed to re-establish function of the Little Truckee River alluvial fan, by forcing the water to spread back onto the fan surface and causing deposition of the bed load.

*Plug stability on Perazzo Fan:* Resource Protection Measure 6 was incorporated into the Proposed Action (Section 1.5 of the EA and Appendix C). This measure requires additional measures to be implemented to reinforce the plug located on the Perazzo Canyon Creek alluvial fan by reinforcing with rock or large woody debris, as necessary.

*Road Crossings on Fan Surfaces:* Proposed Actions at site #4 were developed to reconnect flood flows and to provide for decreased road water interception.

*Continuity of Reactivated Channels and Flushing of Reactivated Channels:* Concerns were raised that reactivated channels would force water out of bank too frequently, or would generate a large flush of fine sediment when they are re-activated. While it is



expected that channel adjustment would occur, the existing system already utilizes these channels during snowmelt runoff and during flood flows. Low flow conditions (including a late-season soil moisture deficit) would be present during construction activities. Re-established floodplain functions (reduced velocities, spread flow energy, sediment collection and increased infiltration) would be utilized during construction activities to minimize sediment downstream. Proposed sediment control measures and best management practices would aid in minimizing and controlling potential effects.

In addition, all restoration activities would follow permit requirements as designated by the State and Lahontan Regional Water Quality Control Board and the U.S. Army Corps of Engineers. Short-term impacts (as described above) from restoration activities would affect the same areas currently affected by down-cutting and excessive lateral movement in the main channels and unnatural channels which resulted from historic diversion of flows.

There could be longer-term potential for increased sediment release from watershed restoration areas in high flow events within one to five years of the restoration project activities. This potential would be minimized by implementation of temporary and long term erosion control measures (Appendix C) and by re-vegetation. As described in Appendix F, re-vegetation actions would occur immediately after Proposed Action implementation. Stabilized vegetation in the project area (including remnant channels utilized by diverted flows) is expected within one to five years following restoration actions. Following the restoration actions, high flow energy would be dissipated and would have improved access to the floodplain, reducing the possibility of a high flow-triggered sediment release which currently occurs under Alternatives 2 or 3. In the long-term there would be less unstable soil available for transport, and when soil becomes mobile it would be more likely to be trapped in ponds or deposited across the floodplain.

#### *Work Within the 100-Year Floodplain*

The watershed restoration activities would occur in the 100-year floodplains of the target watershed. See Appendix B for technical details. Construction activities would generally occur in dry streambeds, or in wetted sections of the channel that had already been closed off by the top plug. At project sites where water is present at the time of construction and activities cannot be delayed until flow has ceased, such as at the uppermost plug, flow would be conveyed around the construction site and discharged into a stable location. A coffer dam would be constructed to contain flows. Diverted flows would be discharged onto a rocky substrate or clean gravel bags such that no sediments would be disturbed. Equipment would be staged outside of the floodplain areas. No major disturbance would occur outside the proposed construction areas. Potential direct and indirect adverse effects of the restoration work are described above in the “sediment” section. Appendix E: Compliance with Riparian Objectives provides a detailed discussion of how the project’s Resource Protection Measures, Standard Management Requirements, Best Management Practices and Standard and Guidelines would protect riparian areas and floodplains. They act by:

- Requiring the achievement of particular standards (such as zero-discharge during channel excavation, the prevention of soil contamination or hazardous substance

discharge, the requirement of monitoring to assess the implementation and effectiveness of the actions)

- Restricting the timing, intensity, or placement of activities to prevent undue effects (such as restricting the timing of the restoration actions by month and weather conditions), designating routes and work sites, restricting places for re-fueling, designating places for and management of stockpiles).
- Imposing additional protective measures to prevent wind or water erosion (such as mulching, tarps, re-vegetation, temporary protection structures)
- Requiring follow-up activities after actions are complete (such as breaking up compacted soil, re-vegetation, and immediate remediation of areas affected by hazardous substances. This also includes implementation and effectiveness monitoring to assess the restoration action and potentially identify corrective or needed actions).

### **Mitigation Measures**

**WQ-1: Limit timing of activities.** Watershed restoration activities will occur between June 15 and October 15 each year to avoid the period of highest rainfall, streamflows, and erosion potential. All disturbed areas would be stabilized by appropriate soil stabilization measures by October 15th of each year. During periods of inclement weather, operations will be shut down until streamflows are sufficiently low and soil/channel conditions are sufficiently dry and stable to allow for construction to continue without the threat of substantial soil compaction, erosion, sedimentation, and offsite sediment transport.

**WQ-2: Minimize ground and vegetation disturbance.** Ground and vegetation disturbance will be minimized during implementation of the proposed action. Activities are in most instances confined to designated marked access routes and well marked project worked sites. There will be a project manager or representative on site at all times during work within the floodplain. The contractor will be instructed on the importance of avoiding disturbance of anything not necessary to meet project goals. Use planned disturbance sites as access routes where possible. Plan access routes carefully by attempting to maximize use of upland and dry sites, minimize the number of disturbances. Use the existing channel where plugs will be installed for equipment travel, if the area has been dewatered through placement of upstream plugs.

**WQ-3: Stabilize construction spoils and top soil.** Earthen spoils generated during the construction will be temporarily stockpiled in stable areas. Straw wattles, silt fences, or hay bales will be installed around the base of temporary stockpiles to intercept runoff and sediment draining from the stockpiles during periods of inclement weather. Tarps will also be kept on hand to cover spoils in the event of an unexpected thunderstorm during the construction season. If necessary, the stockpiles will be further stabilized by mulching them with available forest

materials or an appropriate geotextile material. All spoils not used during construction will be hauled offsite and deposited in stable areas once construction is complete. Typically fill is removed and placed. Stockpiling for plug and pond construction does not commonly occur. No construction spoils are anticipated.

**WQ-4: Implement erosion and sediment control BMPs on temporarily delayed project elements.** Appropriate erosion and sediment control BMPs will be applied to all disturbed ground during temporary construction delays caused by inclement weather or other circumstances. Measures applied will vary with conditions, but are likely to include (i) the placement of readily available mulch materials (e.g., pine needles, branches, coarse woody debris) and/or imported mulch materials (e.g., certified weed-free rice straw) to protect disturbed surfaces from raindrop impact, reduce runoff velocity, and reduce erosion, (ii) the placement of tarps to cover exposed soil in case of an unexpected thunderstorms and (iii) the installation of straw wattles, silt fences, and/or hay bales to reduce runoff velocity and intercept sediment.

**WQ-5: Avoid loss of topsoil during excavation.** Save topsoil during any excavation and replace topsoil on constructed plugs or other desired locations in a stable location where it cannot be eroded into the stream system.

**WQ-6: Control sediment and re-vegetate to meet riparian objectives.** Ground disturbance will be minimized and confined to the marked project area. All disturbed areas will be mulched with native material or weed free straw (e.g., rice straw) and seeded with native species. Where needed, excavation sites will have perimeter containment installed around the site's lower perimeter to contain any eroded material. Native vegetation such as willows and sedges would be transplanted if they need to be removed as part of the project. All disturbed areas will be revegetated with approved native vegetation.

**WQ-7: Mulch and revegetate disturbed areas.** Soils lacking adequate ground cover because of exposure or other disturbances caused by the proposed action will be mulched with available forest materials such as pine needles, tree bark, and branches; or with imported mulch such as certified weed-free straw. In addition, areas denuded during construction will be actively revegetated with appropriate native plant species, using plant materials (i.e., seed, container stock, transplant plugs, pole cuttings) collected from local sources, see Appendix F: Re-vegetation Plan. Slash and logs from the site may also be distributed over the disturbed area to provide additional soil cover, retain sediment, provide a microclimate to speed up the soil development and re-vegetation process, and discourage motorized use.

**WQ-8: Control concentrated runoff from modified access road surfaces to reduce erosion.** Methods to reduce erosion and disperse drainage from off-site will include properly spaced water bars, cross drains, outsloping (10–12%), tilling the road prism to break up the impervious surface and enable water infiltration and re-

vegetation (see Appendix F “Re-vegetation Plan”) Mulch bare areas. Runoff from off-site will be prevented from flowing through areas that have been disturbed by construction.

**WQ-10: Control concentrated runoff from work sites.** Contour all work sites to allow for natural sheet flow and infiltration into the soil. Do not concentrate flow. Mulch and revegetate all bare soil. Break up compacted soil areas.

**WQ-16: Stabilize subject stream banks.** Any plug that will be exposed to flowing water will be stabilized and protected from erosion using a combination of structural and biotechnical methods. The specific methods used will vary depending on site conditions, but likely will include one or more of the following: adjustment of stream bank slopes; installation of rock slope protection (riprap); installation of biodegradable erosion control blankets; transplanting vegetation such as sod and willows from disturbed areas, installation of willow wattles (live fascines); and/or the use of pole cuttings, container stock, and seed collected from local sources to reestablish native stream zone vegetation.

**WQ- 17: Achieve zero discharge during in channel excavation work.** The goal during in-channel excavation is zero discharge. In-channel excavation work would occur in the channel that is planned to be obliterated. In a few cases there would be excavation in an area that would flow during the next runoff season. The following practices have proven effective in achieving zero discharge: 1) wherever possible, delay activities until flow has ceased or is at lowest flow; 2) if flow is present, convey flow around the construction site and discharge in a stable location; 3) install a coffer dam below the site to trap sediment and detain any turbid water; 4) dispose of any sediment from behind the dam in a stable location; and 5) remove turbid water by pumping and sprinkling it in a location and manner to allow infiltration into the soil. For this project sections of incised channel will be closed off using the “plug and pond” technique. Plug and pond requires fill to be used to “plug” sections of the incised channel, allowing a pond to develop between plugs when the water table rises after completion of the project. At site 1 (the upper meadow area) the construction of the plug and pond sections will occur working upstream to downstream so that the first plug diverts any flow into historic, remnant channels that are of desired geometry of the existing channel and are prepared to handle flows. This will ensure that any unexpected flow does not mobilize sediment during construction. Appendix B discusses the plug and pond technique in detail.

**WQ- 18: Temporary Erosion Control Measures.** On incomplete projects that have potential for erosion and transport to surface water temporary stabilization measures such as perimeter fencing with silt fence or mulching of exposed areas will be implemented.

**WQ- 19: Limit staging of materials and equipment.** Staging of materials and equipment will be limited to existing disturbed areas (where soils are already compacted and

vegetation has been cleared). No new disturbance will be created for staging and stockpile areas, and no trees or other vegetation will be removed. Following project completion, these areas will be tilled, seeded, and mulched.

**WQ- 20: Monitor effectiveness.** Monitor project effectiveness regularly in order to identify and correct any problems immediately. Details regarding monitoring and are available in the Monitoring Plan found in the proposed action (Section 1.3 of the Project Description in this document).

**WQ- 21: Prevent streambank disturbances.** Prevent disturbance to streambanks and natural lake and pond shorelines caused by resource activities from exceeding 20 percent of stream reach or 20 percent of natural lake and pond shorelines. For more explanation refer to SNFPA S&G #103.

The range mitigative measures RANGE – 2, RANGE-3, RANGE-4, RANGE-5, RANGE-6 and RANGE-7 are described in IV. Biological Resources, and would mitigate potential effects from livestock grazing.

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	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<b>VII. HAZARDS AND HAZARDOUS MATERIALS.</b> Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### **Answer to Checklist Questions a, c, d, e, f, g**

The proposed project would not routinely transport, use of dispose of hazardous materials. It is not located near locations listed in questions c, d, e, or f. It would not affect emergency plans.

### **Answer to Checklist Question b**

The proposed project is not expected to result in the creation of health hazards, potential health hazards or expose people to potential health hazards since the proposed project is watershed restoration and grazing authorization in remote areas. During construction, the use of construction equipment may have the potential to release hazardous substances, such as oil and diesel, or may contaminate exposed soil. However, the following precautionary mitigation measures would result in a less-than-significant risk of upset.

### **Mitigation Measures**

- WQ-11: Properly dispose of wastes and petroleum products.** Wastes and petroleum products used during construction will be collected and removed from the project site in accordance with the Resource Conservation and Recovery Act regulations and federal Occupational Safety and Health Administration (OSHA) standards.
- WQ-13: Remediate contaminated soil.** If contaminated soil and/or groundwater is encountered, or if suspected contamination is encountered during project construction, work will be halted in the area, and the type and extent of the contamination shall be identified. A qualified professional, in consultation with the appropriate federal, state, and/or local regulatory agencies, will then develop an appropriate method to remediate the contamination.
- WQ-14: Prevent discharges of hazardous substances from refueling and maintenance.** All equipment refueling and maintenance activities will occur in designated areas that are selected with the intent of minimizing the potential to negatively affect water quality. The equipment will be inspected daily for leaks.
- WQ-15: Contain spills.** The Forest Service will require onsite equipment operators to contain and clean up any spills. Materials kept on site will be properly packaged and contained and spills will be immediately cleaned up. Strict onsite handling rules will be implemented to minimize spills and keep potentially contaminated materials out of the drainage waterways.
- WQ- 19: Limit staging of materials and equipment.** Staging of materials and equipment will be limited to existing disturbed areas (where soils are already compacted and vegetation has been cleared). No new disturbance will be created for staging and stockpile areas, and no trees or other vegetation will be removed. Following project completion, these areas will be tilled, seeded, and mulched.

### **Answer to Checklist Question h**

The project area is undeveloped Forest Service land. The project site is located in an area of moderate wildfire threat. The watershed restoration work in the project area could have an initial impact on potential ignitions of wildfire because of construction equipment; however, the work will be mostly within flood plain/meadow areas where there is less fire hazard. The following mitigations will reduce the risk to less than significant.

### **Mitigation Measures**

**FIRE-1: Keep fire tools onsite.** Fire extinguishers and tools shall be required onsite during project activities.

**FIRE-2: Monitor fire weather.** Daily monitoring of fire weather and Fire Activity Level will occur during construction. If Fire Activity Levels thresholds are reached, construction will be shut down. The contractor will be required to sign and follow a fire plan developed by the district fire management staff.

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	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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**VIII. HYDROLOGY AND WATER QUALITY.**

Would the project:

a.	Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f.	Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g.	Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
h.	Place within a 100-year flood hazard area structures that would impede or redirect floodflows?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i.	Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j.	Contribute to inundation by seiche, tsunamis, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Answer to Checklist Question a**

The water quality objectives for beneficial uses that could potentially be affected within the short-term by implementation of the Proposed Action include sediment, turbidity, and to a lesser degree oil and grease. The Proposed Action is designed to ensure that the objectives of the Basin Plan are met to protect and/or enhance beneficial uses of water. FONSI element #10B of the EA summarizes how Basin Plan objectives would be met.

This project includes work within and adjacent to the 100-year floodplain of Perazzo Canyon Creek and the Little Truckee River which is a prohibition of the Basin Plan. However, the Water Board encourages restoration projects that are intended to reduce or mitigate existing sources of soil erosion, water pollution, or impairment of beneficial uses. The nature of the proposed work makes it eligible for an exemption to the prohibition for restoration projects. The proposed project meets the exemption criteria listed in the Basin Plan, as detailed in the FONSI element #10B of the EA.

**Answers to Checklist Questions g, i and j**

This project is not near developed land and the proposed action would not affect housing within a 100-year flood hazard area. It does not increase the risk of flooding or inundation.

**Answers to Checklist Questions e and f**

The project would not affect existing or planned stormwater drainage systems. The primary goal of the proposed project is to improve the watershed function and water quality by restoring the watercourse to its original channel. Under any construction activity there is a potential for additional sediment to be delivered to the stream off the project area. Additionally, there is some risk that within one to five years increased sediment transport during a large discharge event could occur. In order to attain the goal of zero discharge, the Proposed Action was designed with

resource protection measures, best management practices and a Re-vegetation Plan (Appendix F).

The project would also re-authorize a 10-year Term Grazing Permit in the Perazzo Meadows grazing allotment. Potential risks to water quality from re-authorizing grazing include undesirable levels of coliform bacteria, temperature, nutrients and increases in sediment delivery. Maintenance of water quality would be achieved through adherence to standards and guidelines, facilitated with rotation through the allotment pastures and proper placement of salt licks. Additionally, BMP implementation and effectiveness monitoring (Section 1.3 of the project description in this document) provide the means to implement corrective action measures.

#### *Water quality impacts from grazing and range management*

Potential impacts to water quality from grazing under the Proposed Action include direct inputs of fecal coliform bacteria and nutrients, sediment delivery resulting from direct disturbance and loss of vegetation, and indirect influence on water temperature, and changing local drainage patterns. The risk for these potential effects will be minimized by implementing BMPs and LRMP Standards and Guidelines (1990), as amended by the 2004 SNFPA. Annual adjustments to grazing permits can be made through the Annual Operating Instructions as found necessary through monitoring to achieve long-term resource objectives. Details regarding BMPs, SMRs and required monitoring that would minimize adverse effects from livestock are detailed in the Range Report (which is incorporated by reference and available upon request). These act by:

- Requiring the achievement of particular standards (such as assigning restrictive effects quantities to streambank disturbance, riparian vegetation affected, grazed forage stubble height, and the requirement of monitoring to assess the implementation and effectiveness of the grazing management strategies)
- Restricting the timing, intensity, or placement of activities to prevent undue effects (such as restricting the placement of saltblocks or livestock management structures).
- Imposing additional protective measures to prevent harmful effects from grazing (such as the Willow Flycatcher MMS).

If it is found that the grazing permittee does not comply with the Standards and Guidelines, BMPs, SMRs and RPMs that are in their Term Grazing Permit and Annual Operating Instructions for the Perazzo Meadows Allotment, corrective measures would be taken.

Every effort will be made to prevent possible water quality impacts from both the restoration actions and the grazing allotment re-authorization. The mitigations below will reduce the risk of degrading water quality and violating water quality standards to less than significant. By following direction outlined in the standards and guidelines and implementing best management practices, water quality will be maintained and the downstream beneficial use will not be impaired.

### **Answer to Checklist Question b**

The watertable, floodplain, riparian area and soil storage would have greater capacity to provide longer late season soil water storage release to cool stream temperatures; thus, the project would actually improve groundwater supplies and recharge. Vegetative response will be monitored to verify these changes. See Watershed Effectiveness Monitoring in the Proposed Action for more details.

### **Answers to Checklist Questions c and d**

The current hydrologic function of the Perazzo Canyon Creek and the Little Truckee River does not fully utilize the floodplain to allow for energy dissipation of stream flow, sediment capture, temporary floodwater storage, decreased peak flows, groundwater recharge, and reduced sediment. These functions affect water quality. Additionally, the inability of the water to properly access the floodplain has resulted in continued stress on the channel banks and channel erosion, leading to higher sediment transport levels, during the 2.5 and up to the 10 year flood events. The project is designed to alter the existing drainage pattern in some places by diverting the stream from the existing degraded channel system into stable remnant or historic channels. The project would restore the stream access to the flood plain and will allow the spring runoff to spread out and reduce the stream energy thus reducing erosive power and also helping to filter upstream runoff and allowing for more infiltration.

### **Answer to Checklist Question h**

Restoration work will necessitate activities within the floodplain. Other restoration work, such as improved hydraulic connectivity across roads, and road bed decommissioning within the flood plain occurs within Riparian Habitat Conservation Areas. Each Proposed Action provides a site-specific prescription developed to restore and protect water quality. All management requirements to protect watershed resources are detailed in the Proposed Action, and additional BMPs are provided for construction through the disturbance period until the site has stabilized. Appendix E: Compliance with Riparian Objectives provides a detailed discussion of how the project's Resource Protection Measures, Standard Management Requirements, Best Management Practices and Standard and Guidelines will protect riparian areas and floodplains.

The project will redirect flow in a positive way by reconnecting the channels with the flood plains and in some cases restoring flow to original channels where they have been diverted. This would be accomplished by closing off the degraded section of stream channel by constructing a series of plugs and ponds (a technique described in detail in Appendix B). These structures would not impede flood flows and would become part of the functioning flood plain.

### **Mitigation Measures to Protect Hydrology and Water Quality**

In addition to the mitigation measures for prevention of erosion and sedimentation listed in VI. Geology and Soils, and Hazards and Hazardous Materials sections, the following mitigation measures would assure a less-than-significant impact on water quality.

**WQ-10: Control concentrated runoff from work sites.** Contour all work sites to allow for natural sheet flow and infiltration into the soil. Do not concentrate flow. Mulch and revegetate all bare soil. Break up compacted soil areas.

**WQ-12: Compacted soil.** Loosen compacted soil, and install proper drainage structures as needed. Mulch and/or re-vegetate as needed.

**WQ- 19: Limit staging of materials and equipment.** Staging of materials and equipment will be limited to existing disturbed areas (where soils are already compacted and vegetation has been cleared). No new disturbance will be created for staging and stockpile areas, and no trees or other vegetation will be removed. Following project completion, these areas will be tilled, seeded, and mulched.

**WQ- 20: Monitor effectiveness.** Monitor project effectiveness regularly in order to identify and correct any problems immediately. Details regarding monitoring and are available in the Monitoring Plan found in the proposed action (Section 1.3 of the Project Information).

**WQ- 21: Prevent streambank disturbances.** Prevent disturbance to streambanks and natural lake and pond shorelines caused by grazing and other resource activities from exceeding 20 percent of stream reach or 20 percent of natural lake and pond shorelines. For more explanation refer to SNFPA S&G #103.

**WQ- 22: Plug design for stability and soil erosion control.** Design plugs to withstand expected flows from the watershed, reinforcing them with rock, large woody debris, and sedge and meadow grass sod mats as necessary to control erosion and facilitate re-vegetation.

**RANGE-1: Best Management Practices.** Apply BMPs for range management as specified in Water Quality Management for Forest System Lands in California, Best Management Practices (2000). The Range Report provides extensive details regarding consistency and compliance with applicable policy, regulations and guidance.

**Range mitigative measures:** RANGE-2, RANGE-3, RANGE-4, RANGE-5, RANGE-6 and RANGE-7 are described in section IV. Biological Resources, and would mitigate potential effects from livestock grazing.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<b>IX. LAND USE AND PLANNING.</b> Would the project:				
a. Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Answers to Checklist Questions**

Proposed watershed restoration work would not change any land use allocations or conflict with any applicable habitat or natural community conservation plans.

At this time, lands within T19N R15E Section 16 SW1/4 and Section 17 SE1/4 are not current National Forest lands. These private lands are likely to be acquired by the Truckee Donner Land Trust and in turn potentially deeded to the National Forest. This acquisition would have no effect on any land use plan, policy, or regulation.

**Mitigation Measures**

No mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<b>X. MINERAL RESOURCES.</b> Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Answers to Checklist Questions**

There are no known mineral resources of regional or state importance in the project area. The project area does not contain any designated mineral resource recovery sites.

**Mitigation Measures**

No mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<b>XI. NOISE.</b> Would the project:				
a. Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Expose persons to or generate excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Be located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Answers to Checklist Questions**

During construction, project-related noise could disturb individuals; however, the additional noise would be a temporary disturbance and most areas proposed for treatment currently experience noise and other disturbances associated with road use, maintenance, and logging activities. The proposed project sites are remote. Therefore, although project construction activities could be disruptive, the impact to noise is less than significant.

**Mitigation Measures**

No mitigation is required.



	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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**XII. POPULATION AND HOUSING.** Would the project:

- |    |  |                          |                          |                          |                                     |
|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a. | Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. | Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c. | Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**Answers to Checklist Questions**

Population and housing would not be impacted. There are no growth-inducing impacts associated with this project.

**Mitigation Measures**

No mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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**XIII. PUBLIC SERVICES.** Would the project:

- a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Answers to Checklist Questions**

Because of the project’s remote location, construction activities are not expected to interfere with police and fire access. In addition, the project would have no effect on schools or other public facilities, since none are located in the project area.

**Mitigation Measures**

No mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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**XIV. RECREATION.** Would the project:

- |    |   |                          |                          |                          |                                     |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a. | Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. | Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**Answers to Checklist Questions**

Although the project area is near various recreation resources, it would not affect these resources. The proposed project will enhance the non-motorized recreational experience by restoring degraded riparian area.

**Mitigation Measures**

No mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
<b>XV. TRANSPORTATION/TRAFFIC.</b> Would the project:				
a. Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Cause, either individually or cumulatively, exceedance of a level-of-service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Answers to Checklist Questions**

Transportation and traffic resources would not be impacted in the manner described. Traffic may be temporarily slowed or delayed, however, by equipment on the roadway, the installation of culverts at Sites 5 and 6 on Henness Pass Road, and installation of a low water crossing on the 07-30 road.

**Mitigation Measures**

No mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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**XVI. UTILITIES AND SERVICE SYSTEMS.**

Would the project:

a.	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b.	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c.	Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d.	Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e.	Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f.	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g.	Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Answers to Checklist Questions**

The project consists of restoring degraded stream and riparian area and would not add capacity to the roadways or generate additional vehicle trips. Therefore, the project would not result in the need for new communications systems, sewer or septic tanks, storm water drainage, or solid waste disposal.

**Mitigation Measures**

No mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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**XVII. MANDATORY FINDINGS OF SIGNIFICANCE**

- |    |  |                          |                                     |                          |                                     |
|----|--|--------------------------|-------------------------------------|--------------------------|-------------------------------------|
| a. | Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| b. | Does the project have impacts that are individually limited but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)   | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c. | Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?  | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**Answer to Checklist Question a**

With the previously discussed mitigations incorporated, the project will not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below a self-sustaining level or reduce the number or restrict the range of a rare or endangered plant or animal. See section IV. Biological Resources, as well as the EA, and Wildlife and Aquatic Resources BE/BA for a complete discussion. These documents are incorporated in the EA by reference.

**Answer to Checklist Question b**

The Biological Evaluation/Biological Assessments for wildlife, aquatic resources, and plants, the Rangeland Management Specialist Report, and the Watershed Effects Soils Report, which are incorporated by reference by the EA, all conclude that no significant cumulative effects would

result from implementation of the Proposed Action with its Standard Management Requirements, Resource Protection Measures and Best Management Practices.

**Answer to Checklist Question c**

The project would not have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly.

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**XVIII. EARLIER ANALYSIS.** Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, one or more effects have been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a discussion should identify the following on attached sheets:

- a. **Earlier analyses used.** Identify earlier analyses and state where they are available for review.
- A complete Environmental Assessment (EA) (including appendices and Specialists' Reports incorporated by reference) was completed for this project by the Forest Service to meet the federal NEPA requirements for project environmental analysis. It is titled "Perazzo Meadows Watershed Restoration and Grazing Allotment Management Project." The EA and specialist reports are available upon request at the Sierraville Ranger District of the Tahoe National Forest.
  - Under the cooperative assistance of the Truckee River Watershed Council a geomorphic assessment for the project area was completed in 2008. It was used to prepare the EA and also provides additional information about the project area. The Swanson Hydrology + Geomorphology Final Technical Report for the Perazzo Meadows Geomorphic Assessment for Truckee River Watershed Council (2008) is available upon request at the Sierraville Ranger District of the Tahoe National Forest.

#### **Appendices**

Project Maps (*Appendix A*)

Plug and Pond Techniques and Implementation (*Appendix B*)

Best Management Practices (*Appendix C*)

Responses to Public Scoping (*Appendix D*)

Compliance with Riparian Objectives (*Appendix E*)

Re-vegetation Plan (*Appendix F*)

References and Work Cited (*Appendix G*)

#### **Reports Incorporated by Reference and Available Upon Request**

Watershed Effects Report

Biological Evaluation for Sensitive Plants

Biological Evaluation for Fish, Amphibians, Reptiles, and Their Habitat

Biological Evaluation for Terrestrial Wildlife

Rangeland Management Specialist Report

Management Indicator Species (MIS) Assessment

Heritage Resources Report (Administratively confidential)

Watchlist Plant and Plant Community Report

Weed Risk Assessment

Swanson Hydrology + Geomorphology. 2008. Perazzo Meadows Geomorphic Assessment: Final Technical Report for Truckee River Watershed Council.



- This project is being processed through the State Clearinghouse to also meet the CEQA requirements of the State of California for environmental assessment.

b. **Impact adequately addressed.** Identify which effects from the above checklist were within the scope of and adequately analyzed in the earlier document pursuant to applicable legal standards and state whether such effects were addressed by mitigation measures based on the earlier analysis.

- All potential impacts have been analyzed under the Perazzo Meadows Watershed Restoration Grazing Allotment Management Plan Update Environmental Assessment.

c. **Mitigation measures.** For effects that are “potentially significant unless mitigated,” describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

**Authority:** Public Resources Code Sections 21083 and 21087.

**Reference:** Public Resources Code Sections 21080(c), 21080.1, 21080.3, 21082.1, 21083, 21083.3, 21093, 21094, 21151; *Sundstrom v. County of Mendocino*, 202 Cal. App. 3d 296 (1988); *Leonoff v. Board of Supervisors*, 222 Cal. App. 3d 1337(1990).

# **Perazzo Meadows Watershed Restoration and Grazing Allotment Management Project**

## *Environmental Assessment*

### **Appendices**

**Appendix A:** Project Maps

**Appendix B:** Plug and Pond Techniques and Implementation

**Appendix C:** Best Management Practices and Standard Management Requirements

**Appendix D:** Responses to Public Scoping

**Appendix E:** Compliance with Riparian Objectives

**Appendix F:** Re-vegetation Plan

**Appendix G:** References and Work Cited

## **APPENDIX B**

### **Plug and Pond Technique and Implementation**

#### **Perazzo Meadows Watershed Restoration Project**

#### **Introduction and Overview**

Closing off degraded channels will be accomplished using a “plug and pond” method. Soils excavated by widening and deepening the degraded stream channels (gullies) and removing portions of the railroad grade will be used to fill alternate portions of the degraded stream channels, creating a series of ponds and plugs. As a result, the streams will be able to access the entire floodplain without being re-captured in degraded channels. The new ponds will capture and hold rainfall and runoff, adding to groundwater recharge.

In using the plug and pond technique to close off an entrenched stream and diverting the stream into an historic channel, installing the top plug in the system creates the stream diversion. Water flow would fill up the top pond and flow directly into the historic channel. The water ponds before it enters the historic channel, and generally only “still” water with little or no velocity is against the plug. The stream is diverted into remnant channels that were capable of carrying the flow historically. The excavation and filling of the remainder of the abandoned channel is done downstream from the top plug and so the lower plugs and ponds will not receive flow during or after construction even after the creek begins to flow. In a few cases flow from ephemeral/intermittent tributaries are routed through the lower ponds to reconnect to the historic channel. In the case of the top pond and any pond designed to receive any flow, the banks of the plugs will be revegetated with transplanted sod and/or covered with erosion control fabric to prevent any potential bank erosion until the banks are sufficiently vegetated to protect against erosion.

Construction activities will generally occur in dry streambeds, or in wetted sections of channel which have already been closed off by the top plug. At project sites where water is present at the time of construction and activities cannot be delayed until flow has ceased, such as at the uppermost plug, flow will be conveyed around the construction site and discharged into a stable location. A coffer dam will be constructed to contain flows. Diverted flows will be discharged into remnant channels onto a rocky substrate or clean gravel bags such that no sediments will be disturbed. Alternately, if approved by California Department of Fish and Game, minor diverted flows will be discharged to a stable, upland location in a manner which will allow infiltration into the soil. A De-watering Plan and Diversion Plan will be prepared to guide these activities. Watershed restoration actions will be monitored with implementation and effectiveness monitoring (see Section 1.4 of the Proposed Action) for more details).

#### **Site-specific actions**

An excavator, wheeled loader with a three-to-five yard bucket, small tracked loader (equivalent to a Caterpillar 953), and occasionally a dump truck will be used to perform all construction activities at the project sites. Equipment will be staged outside of the flood plain areas. All activities will adhere to the Best Management Practices and SMRs summarized in Appendix C. Following BIO-7, all equipment will be cleaned to remove weeds before it is brought to the site. No major disturbance will occur outside the proposed construction areas. Equipment access routes will vary by site, as follows.

## **APPENDIX B**

### **Plug and Pond Technique and Implementation**

- Site 1: Equipment will access this site from the 07-30 roads and the lowermost portion of the meadow. The 07-30 road is in close proximity to the upper portion of Site 1, and an old road in the adjacent upland would provide access the lowest part of the meadow. Access would occur where practical to minimize overall disturbance to the meadow. The equipment will proceed along the degraded channel as work is completed through the length of the meadow. Equipment will install the rock grade control structure having accessed that section of channel from the old road in the adjacent uplands.
- Site 2: The equipment will access Site 2 from the bridge area along road 07-30 and from the recreation parking site adjacent to the low water crossing which will be removed.
- Site 3: Equipment will access this site from the road to be obliterated (Site #4). The equipment will proceed along the degraded channel as work is completed through the length of the meadow and will exit from the obliterated road site (Site #4). The rock grade control structure would also be installed at the bottom of the meadow after gaining access from Site #4.
- Site 4: Equipment will access the road to be obliterated from where it intersects the Henness Pass Road.
- Site 5: Equipment will access this site from the Henness Pass Road and will proceed along degraded sections and where disturbance will occur during the actual restoration work. Access will only occur where practical to minimize overall disturbance to the meadow.
- Site 6: Equipment will access the degraded channel from the Henness Pass Road where the main channel approaches the road. The equipment will proceed along the degraded channel as work is completed through the length of the meadow and will exit from the entry point at the Henness Pass Road. The rock grade control structure would also be installed at the bottom of the meadow after gaining access from the nearby Henness Pass Road.

The equipment will need to cross the channel on some of the sites to get access to the construction locations. Such crossings will be limited. The channels will not have active flow at the time of crossing, and therefore, would not be exposed to stream flows. Each site will be evaluated where equipment needs to cross the channel to access the work area. Where needed, the stream crossing bed and banks will be protected with wood, rubber mats, landing mats, or other means of protection to retain bed and bank integrity and not create a source of sediment. In some areas the crossings are rocky and will not need to be protected.

If needed due to compaction, equipment staging areas and access routes used during construction and abandoned as a result of the proposed project will be restored to natural conditions by loosening or scarifying the soil, restoring natural slope, seeding or planting with native species, and mulching with native and/or weed-free material. Staging areas should be small and existing landings and other areas already impacted will be used when possible.

**APPENDIX C – SUMMARY OF BEST MANAGEMENT PRACTICES (BMPs) & MANAGEMENT REQUIREMENTS/MITIGATION**

**Perazzo Meadows Watershed Restoration and Grazing Allotment Management Project**

<b>Best Management Practices (BMPs) and Management Requirements/Mitigation</b>	<b>FS BMP No.</b>	<b>Description</b>
<b>AIR QUALITY AND AESTHETICS</b>		
AIR-1. Temporary dust control from project work		All areas (including unpaved roads) with vehicle traffic must be watered as necessary for stabilization of dust emissions. Care must be taken to avoid excessive watering that could cause a discharge to surface waters.
AIR -2. Temporary dust control from dirt road traffic		On-site vehicle speeds will be limited to 15 miles per hour on unpaved surfaces.
AIR -3. Temporary dust control from soil stockpiles		Inactive soil stockpiles will be watered or covered during windy conditions. Protocol described in WQ-3 will be implemented.
AIR -4. Permanent dust control		Disturbed areas will be re-vegetated as per the Re-vegetation Plan immediately after the completion of construction to reduce wind erosion. If immediate permanent re-vegetation is impractical due to factors such as poor seasonal timing, then temporary measures such as adequate covering with pine needles or jute matting will be implemented.
AIR -5 Temporary control of dust and condensed fumes		Construction activities will comply with EPA air quality standards on dust and condensed fumes, so that emissions do not exceed hourly levels as regulated per processing weight.
<b>BIOLOGICAL RESOURCES</b>		
BIO-1. Avoid or minimize impacts to threatened, endangered, Sensitive, or special-status wildlife or plant species		Any detection of threatened, endangered, sensitive, or special-status wildlife species or of nests, dens, roost sites, and other areas of concentrated use of these species, before or during project implementation will be reported to the Forest Service wildlife biologist. Areas of concentrated use, particularly those that are important for reproductive activities (e.g., nest or den sites), will be protected in accordance with the Tahoe National Forest Land and Resource Management Plan (TNF LRMP), as amended by the 2004 Sierra Nevada Forest Plan Amendment Final Supplemental Environmental Impact Statement Record of Decision (2004 SNFPA ROD). Any detection of threatened, endangered, sensitive, or special-status plant species before or during project implementation will be reported to the Forest Service botanist. Where these plants are detected, they will be flagged and avoided during project activities.
BIO - 2. Aquatic function		Utilize riffle/pool systems during grade control structure construction that will maintain fish passage.
BIO - 3. Great gray owl LOP		Implement a limited operating period for great gray owls from March 1 <sup>st</sup> to August 15 <sup>th</sup> if birds are present at time of operations.

**APPENDIX C – SUMMARY OF BEST MANAGEMENT PRACTICES (BMPs) & MANAGEMENT REQUIREMENTS/MITIGATION**

**Perazzo Meadows Watershed Restoration and Grazing Allotment Management Project**

BIO – 4. Willow flycatcher LOP	Implement a limited operating period for willow flycatcher from June 1 <sup>st</sup> to August 15 <sup>th</sup> if birds are present in the vicinity of restoration areas.
BIO – 5. Minimize disturbance to willows	In known willow flycatcher nesting habitat, minimize disturbance to mature willows.
BIO – 6. Native fish protection	In areas of active waterflow restoration work, a Forest Service aquatics biologist, in cooperation with the California Department for Fish and Game, will implement appropriate measures to prevent impacts to native fish.
BIO-7. Control noxious and invasive weeds	Measures to control the introduction and spread of noxious weeds in the action area will be implemented during project implementation, as directed by the TNF LRMP, as amended by the 2004 SNFPA ROD. The management requirements incorporated into the proposed action are designed to reduce the risk of noxious weed invasion from a moderate to a low level by using prevention measures to mitigate the risks. The Forest Service Botanist determined that there is a low risk of introducing noxious weeds into the project area, if mitigations are implemented including requirements to: clean all heavy equipment that is used for road construction and road decommissioning before it enters the Tahoe National Forest and project area, if it comes from areas infested with noxious/invasive weeds, utilize road surface gravel from weed free sources, i.e. pre-inspect gravel sources for the presence/absence of noxious weeds prior to utilization of gravel from these sources, utilize certified weed free straw or rice straw, where mulch is needed for ground cover, and monitor the project area after project completion.
BIO-8. Minimize effects on aquatic and riparian habitats	Mitigations listed under the Water Quality section to protect from soil erosion will also help to avoid or minimize potential short-term adverse effects of project activities on aquatic and riparian habitats that support waterfowl, fish, amphibians, and other aquatic species.
BIO – 9. Grazing restrictions on Willow flycatcher habitat	In occupied Willow Flycatcher habitat allow only late-season grazing or develop willow flycatcher meadow management strategy; monitor utilization and willow flycatcher habitat condition. A willow flycatcher meadow management strategy was developed for this range management allotment and is currently being implemented. This has been incorporated by reference and is available upon request to the Sierraville Ranger District. For more explanation refer to SNFPA S&G #57-61.
BIO – 10. Fen ecosystems	Prohibit or mitigate ground-disturbing activities that adversely affect hydrologic processes that maintain water flow, water quality, or water temperature critical to sustaining fen ecosystems and plant species that depend on these ecosystems. For more explanation refer to SNFPA S&G #118.

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BIO-11. Sandhill Crane LOP		Limited Operating Period: Implement a limited operating period from April 1st to August 1st to protect sandhill crane reproduction. Implemented anywhere restoration activities may have the potential to negatively effect nesting sandhill cranes. This LOP may be modified by the District Wildlife Biologist if surveys determine nesting will not be affected within ¼ mile of the proposed activities.
<b>CULTURAL RESOURCES</b>		
CULT-1. Standard management requirements		Following standard management requirements, monitoring for heritage sites will occur during excavation. Known archaeological sites will be flagged and avoided. Restoration activities will be halted if a site is found in an area during excavation to avoid further disturbance. The District Archaeologist will be notified, and will take the necessary steps to document the site before activities may potentially resume, e.g. excavating, cataloging.
CULT-2. Avoidance in site design		Locate Plugs and Ponds and equipment access routes to avoid direct impacts to known heritage resources.
CULT-3. Changes in site design		If the design of the proposed project is altered or changed, additional review by the Sierraville RD Heritage Resources staff will be required. Furthermore, if any previously unrecorded cultural resources are discovered during this action, all project-related activities must cease immediately and the consultation process as outlined in Section 800.13 of the Advisory Council on Historic Preservation’s regulations 36 CFR 800 must be initiated.
CULT-4. Protecting cultural sites		Any project-related activities planned within the allotment boundaries that may cause animals to congregate in groups (such as salt licks, on/off loading sites, etc.) will be placed in locations away from heritage sites, and all activities will adhere to the provisions of the National Historic Preservation Act (NHPA), any implementing programmatic agreements (PAs), and the Tahoe National Forest Grazing-Heritage Resource Management Strategy.
<b>FIRE</b>		
FIRE-1. Keep fire tools onsite		Keep fire tools onsite. Fire extinguishers and tools shall be required onsite during project activities.

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<p align="center">FIRE-2. Monitor fire weather</p>		<p>Monitor fire weather. Daily monitoring of fire weather and Fire Activity Level will occur during construction. If Fire Activity Levels thresholds are reached, construction will be shut down. The contractor will be required to sign and follow a fire plan developed by the district fire management staff.</p>
<p><b>RANGE</b></p>		
<p align="center">RANGE-1. Best Management Practices applicable to grazing</p>		<p>Best Management Practices. Apply BMPs for range management as specified in Water Quality Management for Forest System Lands in California, Best Management Practices (2000). The Range Report provides extensive details regarding consistency and compliance with applicable policy, regulations and guidance.</p>
<p align="center">RANGE-2. Salting Restrictions</p>		<p>Salting Restrictions. Prohibit salting within the meadow edge. LRMP S&amp;G #30, page V-31.</p>
<p align="center">RANGE-3. Willow Flycatcher Restrictions</p>		<p>Willow Flycatcher Restrictions. In occupied Willow Flycatcher habitat allow only late-season grazing or develop willow flycatcher meadow management strategy; monitor utilization and willow flycatcher habitat condition. For more explanation refer to SNFPA S&amp;G #57-59.</p>
<p align="center">RANGE-4. Grazing and riparian vegetation</p>		<p>Grazing and riparian vegetation. Limit browsing to no more than 20 percent of the annual leader growth of mature riparian shrubs and no more than 20 percent of individual seedlings. Remove livestock from any area of an allotment when browsing indicates a change in livestock preference from grazing herbaceous vegetation to browsing woody riparian vegetation. SNFPA S&amp;G #121.</p>
<p align="center">RANGE-5. Limitations on livestock utilization</p>		<p>Limitations on livestock utilization. For meadows in early seral status limit livestock utilization of grass and grass-like plants to 30 percent (or minimum 6-inch stubble height); for meadows in late seral status limit livestock utilization of grass and grass-like plants to 40 percent (or minimum 4-inch stubble height). If meadow ecological status is determined to be moving in a downward trend, modify or suspend grazing. Under intensive grazing systems (such as rest-rotation and deferred rotation) where meadows are receiving a period of rest, utilization levels can be higher than the levels described above if the meadow is maintained in late seral status and meadow-associated species are not being impacted. Degraded meadows (such as those in early seral status with greater than 10 percent of the meadow area in bare soil and active erosion) require total rest from grazing until they have recovered and have moved to mid- or late seral status. SNFPA S&amp;G #120.</p>



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RANGE-6. Implementation Monitoring		Implementation Monitoring. Conduct implementation monitoring to ensure the parameters of the decision are being implemented as described. Implementation monitoring would include ensuring that the Standards and guidelines are met using the appropriate methods, such as those outlined in Utilization Studies and Residual Measurements (Interagency Technical Reference 1734-3, U.S. Department of the interior, Bureau of Land Management, 1996). More details regarding this monitoring are in Section 1.4 of the EA.
RANGE-7. Effectiveness Monitoring		Conduct effectiveness monitoring to ensure that the resource conditions are maintained or are moving toward the desired conditions as outlined in the LRMP, as amended. Effectiveness monitoring would be correlated with utilization data. Appropriate monitoring methods would be used, such as those outlined in Sampling Vegetation Attributes ((Interagency Technical Reference 1734-3, U.S. Department of the interior, Bureau of Land Management, 1996). More details regarding this monitoring are in Section 1.4 of the EA.
<b>WATER QUALITY</b>		
WQ-1. Limit timing of activities	1-5, 2-3, & 5-6	Limit timing of activities. Watershed restoration activities will occur between June 15 and October 15 each year to avoid the period of highest rainfall, streamflows, and erosion potential. All disturbed areas will be stabilized by appropriate soil stabilization measures by October 15th of each year. During periods of inclement weather, operations will be shut down until streamflows are sufficiently low and soil/channel conditions are sufficiently dry and stable to allow for construction to continue without the threat of substantial soil compaction, erosion, sedimentation, and offsite sediment transport.
WQ-2. Minimize ground and vegetation disturbance	1-8, 1-9, 1-15, 1-18, 2-8 & 5-3	Minimize ground and vegetation disturbance. Ground and vegetation disturbance will be minimized during implementation of the proposed action. Activities are in most instances confined to designated marked access routes and well marked project worked sites. There will be a project manager or representative on site at all times during work within the floodplain. The contractor will be instructed on the importance of avoiding disturbance of anything not necessary to meet project goals. Use planned disturbance sites as access routes where possible. Plan access routes carefully by attempting to maximize use of upland and dry sites, minimize the number of disturbances. Use the existing channel where plugs will be installed for equipment travel, if the area has been dewatered through placement of upstream plugs.

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<p align="center">WQ-3. Stabilize construction spoils and top soil</p>	<p align="center">1-8, 1-14, 1-22, 2-2 &amp; 2-4</p>	<p>Stabilize construction spoils and topsoil. Earthen spoils generated during the construction will be temporarily stockpiled in stable areas. Straw wattles, silt fences, or hay bales will be installed around the base of temporary stockpiles to intercept runoff and sediment draining from the stockpiles, during periods of inclement weather. Tarps will also be kept on hand to cover spoils in the event of an unexpected thunderstorm during the construction season. If necessary, the stockpiles will be further stabilized by mulching them with available forest materials or an appropriate geotextile material. All spoils not used during construction will be hauled offsite and deposited in stable upland areas once construction is complete. Typically fill is removed and placed. Stockpiling for plug and pond construction does not commonly occur. No construction spoils are anticipated.</p>
<p align="center">WQ-4. Implement erosion and sediment control BMPs on temporarily delayed project elements</p>	<p align="center">1-14, 1-22 &amp; 2-9</p>	<p>Implement erosion and sediment control BMPs on temporarily delayed project elements. Appropriate erosion and sediment control BMPs will be applied to all disturbed ground during temporary construction delays caused by inclement weather or other circumstances. Measures applied will vary with conditions, but are likely to include (i) the placement of readily available mulch materials (e.g., pine needles, branches, coarse woody debris) and/or imported mulch materials (e.g., certified weed-free rice straw) to protect disturbed surfaces from raindrop impact, reduce runoff velocity, and reduce erosion, (ii) the placement of tarps to cover exposed soil in case of an unexpected thunderstorms and (iii) the installation of straw wattles, silt fences, and/or hay bales to reduce runoff velocity and intercept sediment.</p>
<p align="center">WQ-5. Avoid loss of topsoil during excavation</p>		<p>Avoid loss of topsoil during excavation. Save topsoil during any excavation and replace topsoil on constructed plugs or other desired locations in a stable location where it cannot be eroded into the stream system.</p>
<p align="center">WQ-6. Control sediment and re-vegetate to meet riparian objectives</p>		<p>Control sediment and re-vegetate to meet riparian objectives. Ground disturbance will be minimized and confined to the marked project area as noted in EA Appendix A. All disturbed areas will be mulched with native material or weed-free straw (e.g., rice straw) and seeded with native species. Where needed, excavation sites will have perimeter containment installed around the site's lower perimeter to contain any eroded material. Native vegetation such as willows and sedges will be transplanted if they need to be removed as part of the project. All disturbed areas will be re-vegetated with approved native vegetation.</p>
<p align="center">WQ-7 Mulch and re-vegetate disturbed areas</p>	<p align="center">1-14, 1-22, 2-4 &amp; 5-4</p>	<p>Mulch and re-vegetate disturbed areas. Soils lacking adequate ground cover because of exposure or other disturbances caused by the proposed action will be mulched with available forest materials such as pine needles, tree bark, and branches; or with imported mulch such as certified weed-free straw. In addition, areas denuded during construction will be actively re-vegetated with appropriate native plant species, using plant materials (i.e., seed, container stock, transplant plugs, pole cuttings) collected</p>

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		from local sources, see Appendix F: Re-vegetation Plan. Slash and logs from the site may also be distributed over the disturbed area to provide additional soil cover, retain sediment, provide a microclimate to speed up the soil development and re-vegetation process, and discourage motorized use.
WQ-8. Control concentrated runoff from modified access road surfaces to reduce erosion	1-17, 2-5 & 2-7	Control concentrated runoff from modified access road surfaces to reduce erosion. Methods to reduce erosion and disperse drainage from off-site will include properly spaced water bars, cross drains, outsloping (10–12%), tilling the road prism to break up the impervious surface and enable water infiltration and re-vegetation (see Appendix F). Mulch bare areas. Runoff from off-site will be prevented from flowing through areas that have been disturbed by construction.
WQ-9. Decommission abandoned staging areas	1-16	Decommission abandoned staging areas. Equipment staging areas used during construction and abandoned as a result of the proposed work will be restored to natural conditions by loosening or scarifying the soil, seeding or planting with native species, and mulching with native and/or weed-free material. (See Appendix F).
WQ-10. Control concentrated runoff from work sites		Control concentrated runoff from work sites. Contour all work sites to allow for natural sheet flow and infiltration into the soil. Do not concentrate flow. Mulch and re-vegetate all bare soil. Break up compacted soil areas.
WQ-11. Properly dispose of wastes and petroleum products	2-12	Properly dispose of wastes and petroleum products. Wastes and petroleum products used during construction will be collected and removed from the project site in accordance with the Resource Conservation and Recovery Act regulations and federal Occupational Safety and Health Administration (OSHA) standards.
WQ-12. Compacted soil.		1) Loosen compacted soil, and install proper drainage structures as needed. Mulch and/or re-vegetate as needed. Rehabilitate all access routes used to accomplish restoration work, i.e. loosen compacted soils, drain the area appropriately, install proper drainage structures as needed, apply mulch to bare soil, and reseed or replant with native vegetation as necessary.
WQ-13. Remediate contaminated soil		Remediate contaminated soil. If contaminated soil and/or groundwater are encountered, or if suspected contamination is encountered during project construction, work will be halted in the area, and the type and extent of the contamination shall be identified. A qualified professional, in consultation with the appropriate federal, state, and/or local regulatory agencies, will then develop an appropriate method to remediate the contamination.
WQ-14. Prevent discharges of hazardous substances from refueling and	7-4	Prevent discharges of hazardous substances from refueling and maintenance. All equipment refueling and maintenance activities will occur in designated areas that are selected with the intent of minimizing the potential to negatively affect water quality. The equipment will be inspected daily for

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maintenance		leaks.
WQ-15. Contain spills	5-10	Contain spills. The Forest Service will require onsite equipment operators to contain and clean up any spills. Materials kept on site will be properly packaged and contained and spills will be immediately cleaned up. Strict onsite handling rules will be implemented to minimize spills and keep potentially contaminated materials out of the drainage waterways.
WQ-16. Stabilize subject stream banks	1-19 & 2-14	Stabilize subject stream banks. Any plug that will be exposed to flowing water will be stabilized and protected from erosion using a combination of structural and biotechnical methods. The specific methods used will vary depending on site conditions, but likely will include one or more of the following: adjustment of stream bank slopes; installation of rock slope protection (riprap); installation of biodegradable erosion control blankets; transplanting vegetation such as sod and willows from disturbed areas, installation of willow wattles (live fascines); and/or the use of pole cuttings, container stock, and seed collected from local sources to reestablish native stream zone vegetation.
WQ- 17. Achieve zero discharge during in-channel excavation work	2-8, 2-11, 2-15	The goal during in-channel excavation is zero discharge. In-channel excavation work would occur in the channel that is planned to be obliterated. In a few cases there would be excavation in an area that would flow during the next runoff season. The following practices have proven effective in achieving zero discharge: 1) wherever possible, delay activities until flow has ceased or is at lowest flow; 2) if flow is present, convey flow around the construction site and discharge in a stable location; 3) install a coffer dam below the site to trap sediment and detain any turbid water; 4) dispose of any sediment from behind the dam in a stable location; and 5) remove turbid water by pumping and sprinkling it in a location and manner to allow infiltration into the soil. For this project sections of incised channel will be closed off using the “plug and pond” technique. Plug and pond requires fill to be used to “plug” sections of the incised channel, allowing a pond to develop between plugs when the water table rises after completion of the project. At site 1 (the upper meadow area) the construction of the plug and pond sections will occur working upstream to downstream so that the first plug diverts any flow into historic, remnant channels that are of desired geometry of the existing channel and are prepared to handle flows. This will ensure that any unexpected flow does not mobilize sediment during construction. Appendix B discusses the plug and pond technique in detail.
WQ- 18. Temporary Erosion Control Measures		Temporary Erosion Control Measures – On incomplete projects that have potential for erosion and transport to surface water temporary stabilization measures such as perimeter fencing with silt fence or mulching of exposed areas will be implemented.
WQ- 19. Limit staging of materials and equipment and rehabilitate used areas	1-16	Limit staging of materials and equipment. Staging of materials and equipment will be limited to existing disturbed areas (where soils are already compacted and vegetation has been cleared). No new disturbance will be created for staging and stockpile areas, and no trees or other vegetation will be

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		removed. Following project completion, these areas will be tilled, seeded, and mulched.
WQ- 20 Monitor effectiveness		Monitor effectiveness. Monitor project effectiveness regularly in order to identify and correct any problems immediately. Details regarding monitoring and are available in the Monitoring Plan found in the proposed action.
WQ- 21 Prevent streambank disturbances		Prevent streambank disturbances. Prevent disturbance to streambanks and natural lake and pond shorelines caused by grazing and other resource activities from exceeding 20 percent of stream reach or 20 percent of natural lake and pond shorelines. For more explanation refer to SNFPA S&G #103. The need for a Proper Functioning Condition assessment will be evaluated every 3-5 years and completed as needed by an interdisciplinary team. If trend is declining and grazing is shown to contribute to the declining trend, management practices such as a change in grazing distribution, frequency, or level of use, development of off-site water, or altering salting practices will be considered to achieve the desired conditions.
WQ-22 Plug design for stability and soil erosion control		Plug design for stability and soil erosion control. Design plugs to withstand expected flows from the watershed, reinforcing them with rock, large woody debris, and sedge and meadow grass sod mats as necessary to control erosion and facilitate re-vegetation.

## APPENDIX D: Public Scoping Comments, Issues, and Questions

This appendix addresses the comments and questions which were raised during public scoping. A Public Notice was put in the newspaper of record, *The Mountain Messenger*, published on January 31, 2008. A public scoping letter with the Proposed Action, purpose and need, and maps was mailed to potentially interested and/or affected individuals on February 5, 2008. As a result of public scoping, eight individuals commented or contacted the Forest Service with questions. In addition, Forest Service representatives met with one individual to address questions in a meeting organized by the Truckee River Watershed Council.

Typically, public scoping comments include many non-issue comments and questions, as well as comments which raise significant and non-significant issues. An issue is a clear point of dispute with the Proposed Action that is based on some anticipated effect. Significant issues are addressed in the EA; non-significant issues and other types of comments and questions are addressed in this appendix. The Interdisciplinary Team reviewed individual comments and classified them into one of the following four categories:

- **Significant Issues** – A clear point of dispute with the Proposed Action that is based on some anticipated effect, and is not “non-significant” as defined below.
- **Non-Significant Issues** – A clear point of dispute with the Proposed Action that is based on some anticipated effect, but falls under one of the following:
  1. Outside the scope of the Proposed Action
  2. Already decided by law, regulation, Forest Plan, or other higher level decision
  3. Irrelevant to the decision to be made
  4. Conjectural and not supported by scientific or factual evidence.
- **Suggested Alternatives** – Comments which clearly propose an alternative
- **Non-Issues** – Comments which do not pose any clear dispute with the Proposed Action, or are merely questions.

The following table identifies those who commented and/or had questions, and assigns a number to each respondent for reference to their comments and the responses.

Respondent	Reference Numbers
Carl Gustafson	1-1 through 1-8
Michael Morrison, Willow Flycatcher Demography Study	2-1 through 2-4
John Eaton, Mountain Area Preservation Foundation	3-1 through 3-10
Doug Praetzel, SPI	4-1 through 4-3
Carl Bystry, SPI	5-1 through 5-2
Helen Loffland, Willow Flycatcher Demography Study	6-1 through 6-4
Richard and Ella Zuver, private landowners below project area	7-1 through 7-5
Jennifer LP Johnson, Washoe Tribe of Nevada and California	8-1

Comments and questions are referenced according to the numbers in the table. Quotation marks are used for direct quotation, but in cases where the essence of a comment or question is paraphrased, quotation marks are not used. Comments or questions are paraphrased if they were not provided by the respondent in written format.

### **Significant Issues**

There were no significant issues.

### **Non-Significant Issues**

1-1: I would prefer the river look pristine and natural. The plugs and ponds won't look natural.

Response: As stated in the Purpose and Need for the Project (Section 1.2 of the EA) Perazzo Meadows has been identified as a hydrologically degraded stream and meadow system. Years of intensive human disturbance, including a dairy operation, historic overgrazing, road construction, and logging have all likely contributed to the degradation of this watershed. The Proposed Action would restore more natural conditions and restore more proper hydrological function throughout the meadow system. The Proposed Action was developed by the interdisciplinary team according to the most effective and efficient methodology for restoration of the hydrological processes in the meadow system. The plug/pond technique is based on the latest science and has been found to be effective and efficient in providing re-establishment of proper floodplain function, thereby providing conditions which will perpetuate more natural conditions in Perazzo Meadows. In addition, Alternatives 2 and 3 also consider "no restoration".

1-2: The large ponds could pose a safety risk at night.

Response: The Forest Service strives to maintain the highest levels of safety for employees and the public in all its activities. The ponds would be sloped to minimize the chance someone could fall in, and could get out in case they did. Alternatives 2 and 3 also consider "no restoration."

1-5: The restoration work will improve meadow vegetation while reducing bitterbrush. This will increase forage for cattle while reducing it for deer.

Response: Deer diet in the Perazzo Meadows area is dominated by meadow vegetation. Bitterbrush does not widely occur in the area. The project would increase the forage for deer by facilitating production of more vigorous and healthy meadow vegetation. Livestock grazing would be re-authorized to continue to be consistent with the Standards and Guides (S&G) of the Land and Resource Management Plan as amended by the 2004 Sierra Nevada Forest Plan Amendment (SNFPA) and would strongly adhere to S&Gs such as RANGE-4 and RANGE-5 such as listed in Appendix C of the EA. Such S&Gs would limit grazing timing, intensity and height and would continue vigorous implementation and effectiveness monitoring (as discussed in the EA (Section 1.4)

5-2: "... concern however, over the reconnection of the historic overflow channel at the bridge (Site #2 Item #4). From my recollection this would occur north of the existing bridge structure and would cause periodic flooding of a portion of SPI lands in Section 27, T19N, R14E and the USFS 07-30 Cooperative Road System. While I remember the topography of the area as being quite flat I would hate to see the access road degraded by flood waters and would be opposed to the imposition of any kind of limited operations to the road because of the establishment of this area as a special habitat area or area of special sensitivity."

Response: With or without reconnection of the historic overflow channel the road would experience infrequent flooding in a very high flood event. Reconnection of the historic overflow channel would reduce the likelihood of the access road and bridge to be degraded during these infrequent events. It would do this by preventing floodwater which is exiting the main channel in going around the bridge and causing erosion of the road fill where the flow would drop back into the channel. The last time floodwaters were this high was when the previous lower-capacity bridge in this location was damaged and shifted downstream by high flows. There is no anticipated reason for infrequent flooding of the road area to cause greater potential for establishment of the area as a special habitat area or area of special sensitivity.

7-3: "One other problem of which you may not be aware of, is the condition of the drift fence for the Eastern boundary of your cattle allotment and cattle guard on Henness Pass Road. The cattle guard #7978 on Henness Pass Road is in great need of repair. The wooden structures and wire fencing have been destroyed. The fence no longer runs south of cattle guard #7978 and does not meet up with the Cold Spring road, as shown on your map. Also the whole drift fence, especially where it crosses the river, is in very poor shape. The cattle are always breaking it down and drifting into our area. This has caused some major river erosion on our property, as they make trails right along the river. We have also been trying to promote willow growth, which can't happen with the cows. We think that it should be necessary to have this fence up and the cattle guard repaired before you can allow your cattle allotment for Unites D/E to be used. We also think you should physically inspect this drift fence and cattle guard to make sure it is up before allowing the cattle in. Unless these measures are taken, there is nothing stopping the cattle from drift off their allotment onto our property. This would be especially true when you remove Fence #7010 along the southern boundary of Units D and E on the north side of Henness Pass Road. We strongly disagree with your statement (pg. 7) "This cattle guard may not be necessary for management of the allotment, ....". We think it is absolutely necessary to keep the cattle on their allotment."

Response: This issue is already decided by law, regulation, Forest Plan, or other higher level decision. Cattle guard #7978 and the associated fence at the furthest eastern extent of the allotment have not been maintained in the recent past and the Forest Service has not been aware of any major drift problems as a result; however, the eastern boundary cattle guard #7978 and associated fence would be included in the Perazzo Meadows Allotment Management Plan as integral means of livestock control on the allotment, as needed. They have been used in the past to keep cattle from drifting off of the allotment to the east, and would be maintained as necessary to prevent cattle movement off of the allotment. Whether



maintained to the highest standards or not, occasional drift off of the allotment is not unexpected. The permittee is responsible for required range improvements, and the Forest Service will continue to inspect the condition of the improvements as warranted and necessary. It is, however, inevitably a private landowner's responsibility to fence livestock out of their land if they wish to absolutely keep livestock permitted on National Forest off of their land. Private land within National Forest Boundaries and grazing allotments is considered "Land Not Under Jurisdiction of Forest Service." National Forest Service policy for Lands Not Under Jurisdiction of Forest Service (FSM 2230.6) states:

"The United States is not responsible for intrusion of permitted livestock upon private lands or for the settlement of controversies between the owner of the livestock and the owner of the land. Federal courts have rendered decisions (Shannon v. United States, 160 Fed. 870 (Cir. 9 1908); Light v. United States, 220 U.S., 523; United States v. Gurley, 279 Fed. 874 (N.D. GA. 1922); United States v. Johnston, 38 F. Supp. 4 (S.D.W.VA. 1941)) holding that the United States is not required to fence its lands to protect them against unauthorized livestock or to control the livestock permitted to graze on the National Forest."

The Forest Service until now has not been made aware of any conflicts regarding livestock with private landowners in the area. The Forest Service depends on communication from the public concerning complaints and will work with adjacent landowners to resolve conflicts to the extent possible.

7-4: "Another issue that is related to your Perazzo Meadows Project is your other cattle allotment off the eastern edge of your project (Level allotment [Independence Allotment]). During the 1997 flood portions of that drift fence (the western side of their allotment) was washed out and never replaced. The cattle from that allotment have been using the river as a freeway to Perazzo Meadows, which damages our property and river frontage. Also the southern end of this fence adjoining Siller land is in very bad shape and no longer goes up the hill as far as it did in the past. The cattle have also been leaving their allotment there by going around the drift fence, and drifting into the Perazzo project. This winter we also noticed that the cattle guard on Henness Pass Road for the Level allotment was damaged. We can't tell how bad it is, because of the snow. I know it will need repair. We feel that this drift fence and cattle guard should also be repaired and inspected before allowing the cattle on."

Response: The issue is outside the scope of the Proposed Action. Also refer to response 7-3.

7-5: "Cattle from both allotments [Independence Allotment and Perazzo Meadows Allotment] are mixing and drifting into areas where they do not belong. We feel that the Forest Service should be held accountable for keeping the cattle on their respective allotments, since the Forest Service allows these allotments. That would involve the inspection of the drift fences and their respective cattle guards to make sure they are up and in good repair, before allowing the cattle to use the allotment."

Response: This issue is already decided by law, regulation, Forest Plan, or other higher level decision. Refer to response 7-3.

## **Suggested Alternatives**

1-7: There is a tradition to graze cattle in the meadow and the current permittee's family has used Perazzo Meadows for a long time, but I would prefer no grazing.

Response: "No grazing" is considered in Alternative 2.

## **Questions and Comments**

1-3: The stream restoration field is flooded with too many people right now who are trying to do stream restoration when they could just let nature take its course.

Response: The project is designed to meet the Purpose and Need which is derived from the desired conditions described in the Tahoe National Forest Land and Resource Management Plan (1990), as amended by the Sierra Nevada Forest Plan Amendment (2004).

1-4: The watershed restoration activities will increase the level of the water table and allow stream flow more access to the floodplain.

Response: Support for the Proposed Action is noted.

1-6: Nesting willow flycatchers could be disturbed by the heavy equipment in the meadow.

1) Response: The Proposed Action would prescribe a limited operating period for equipment nearby willow flycatchers during their nesting season. As described in the resource protection measures for the Proposed Action, "Implement a limited operating period for willow flycatcher from June 1<sup>st</sup> to August 15<sup>th</sup> if birds are present in the vicinity of restoration areas.", and "In known willow flycatcher nesting habitat, minimize disturbance to mature willows."

1-8: Is this is a good project?

Response: The project is designed to meet the purpose and need, which is derived from the desired conditions described in the Tahoe National Forest Land and Resource Management Plan (1990), as amended by the Sierra Nevada Forest Plan Amendment (2004), and the objectives of the Herger-Feinstein Quincy Library Group Forest Recovery Act.

2-1: "I reviewed your plans and think you have developed a multifaceted project that has a good likelihood of achieving meadow restoration goals."

Response: Support for the Proposed Action is noted.

2-2: "... although parasitism of flycatcher nests by cowbirds is overall low in the Sierra, it is relatively high in Perazzo. Thus, changing grazing patterns to potentially limit cowbird presence is an important aspect of restoration. It is important to remember that restoration involves more than physical changes in the environment, and to be successful often must

include changes in livestock and other human-related activities during at least certain portions of the year.”

Response: Significant changes in the grazing operations in Perazzo Meadows have occurred in the past 15 years, primarily in response to concerns over the willow flycatcher. Permitted numbers have been reduced by more than half in that time period, and the modified rest-rotation grazing pattern has implemented. These changes are contributing to improving habitat conditions in the meadow system. The Proposed Action and Alternative 3 (No Management) would both be implemented with the *Perazzo Meadows Willow Flycatcher Meadow Management Strategy* (MMS) as detailed in Item 12c) of the Proposed Action. In addition, under the Proposed Action areas which undergo watershed restoration activities would be rested for two to five years or as needed to allow for re-vegetation of disturbed areas, to allow stabilization of areas that could lead to meadow function degradation, and to allow for long term success of the restoration work (detailed in Item 12d)). The Proposed Action and Alternative 3 are compared to the No Action Alternative 2 “No grazing” throughout resource analyses in the EA.

2-3: “... we have quantified in the Sierra Nevada a likely loss of flycatcher nestlings late in the breeding season because of food limitations. It appears that the premature drying of meadows is causing a lack of insect prey available to adults to feed their young. Thus, prolonging wet conditions in the meadow must be an essential part of any meadow restoration plan; I think your plan addresses this issue. In the Lake Tahoe Basin, one of the goals of restoration of the meadow in Cookhouse was prolonged wet conditions. Our preliminary data from Cookhouse shows some rapid and positive responses by birds (willow flycatchers do not occur there yet).”

Response: Support for the Proposed Action is noted.

2-4: “... wet conditions will inhibit certain nest predators (e.g., chipmunks) from easily accessing nests. Clearly, the enhancements you propose to the ecology of these meadows will help support a continued presence of a viable number of willow flycatchers. Also, many other species will benefit from an overall improvement in meadow conditions.”

Response: Support for the Proposed Action is noted.

3-1: There is concern about allowing cattle grazing following the restoration activities but it sounds like we have many safeguards in place and it will be interesting to see how the conditions change.

Response: Support for the Proposed Action is noted.

3-2: What is the purpose of the rock grade control structures?

Response: The purpose of the rock grade control structures are to support the restoration activities above that location in the meadow by eliminating the possibility of a head-cut

developing in that location which would in turn cause down-cutting of the channel above that location.

3-3: Where and what is the low water crossing at Site #2 of the Proposed Action (alluvial fan of the Little Truckee River from the bridge down to the meadow)?

Response: The low water crossing is located across the alluvial fan adjacent to the area which recreationists use for parking and camping. The low water crossing is a well worn area across the alluvial fan that is used by people to drive across the Little Truckee River and is currently constricting flow. Removal of the low water crossing and construction of the rock riffles would help spread flow out in the alluvial fan.

3-4: Where is the historic overflow channel and what is its purpose at Site #2 of the Proposed Action (alluvial fan of the Little Truckee River from the bridge down to the meadow)?

Response: The historic overflow channel leaves the Little Truckee River just above the bridge and re-enters the main channel in a location with boulders and sufficient stability so head-cutting would be prevented. The purpose of reconnecting this channel would be to help distribute flood energy in extremely high flows.

3-5: What is the old road bed, described in Site #4 of the Proposed Action, and what is the proposed action in this area?

Response: The old road bed is located from near the corrals on the Henness Pass Road and extends across the meadow. This is not currently a functioning road except close to the Henness Pass Road outside of the floodplain. The watershed restoration project would remove the old road fill in the meadow which is constricting flow through the area, facilitating dissipation of flood energy through the area.

3-6: The area outside the grazing allotment but planned for restoration activities (if it becomes National Forest), described as Site #6 Lower Perazzo Meadow, should be used as a control for monitoring to compare with the restoration areas which will be grazed within the grazing allotment.

Response: Achievement of resource objectives would provide the ultimate measure of success of the project in each project area; however, the Forest Service Region 5 Long-Term Range Monitoring Project may establish a long-term monitoring site in this area, if it becomes National Forest, in order to compare the long-term trend in vegetation and soil conditions between grazed and ungrazed restoration areas. Additionally, the Willow Flycatcher Demography Study has collected data in this area since 1997.

3-7: What is the purpose of the fences on the allotment and those planned for removal?

Response: The numerous fences on the allotment are used for control of livestock distribution in several pastures within the grazing allotment. Some of the fences have proven to be unnecessary, such as the redundancy of fences on both sides of the Henness Pass road.

Other portions of fence have been in a state of disrepair without causing known livestock distribution problems.

3-8: Are adequate safeguards and monitoring in place to prevent degradation of the watershed restoration areas by grazing?

Response: There are standards and guidelines for grazing which are in place and which are designed to achieve resource objectives, and that these would provide conditions to support the watershed restoration activities. There are standards and guidelines and monitoring of streambank alteration, residual herbaceous vegetation (stubble height), and willow and aspen utilization which provide tools to meet the resource objectives. The proposed plan provides direction for grazing to be monitored and adjusted as necessary in order to assure that the watershed restoration project objectives are met. These are described under Site #7 of the Proposed Action. The ponds created by the restoration activities would also provide sources of water off-site from where the new stream channels would be located, helping to alleviate disturbance to the stream banks.

3-9: What plans are in place to determine when any particular restoration area is suitable for grazing?

Response: The proposed plan provides direction for determining when any particular restoration area is suitable for grazing, i.e. when vegetation conditions, in particular vegetative cover, will provide sufficient soil stability to allow some livestock use of the area. This direction is described under Site #7 of the Proposed Action.

3-10: Has the Forest Service considered carbon sequestration in its planning process for the Perazzo Meadows project? How much increased carbon sequestration takes place as a result of the watershed restoration project, and how much grazing affects it, would be an interesting research topic. The watershed restoration activities would increase the productivity of the meadow, thereby increasing the potential for carbon to be stored in the meadow, and it is assumed grazing would offset that increase to some extent.

Response: Carbon sequestration is not a component of the purpose and need for this project.

4-1: In regards to Site #2 Item 4 of the Proposed Action, the historic overflow channel, “What side of the bridge would this be on?”

Response: The point of overflow would be just upstream of the bridge, and the flow would cross the road to the north of the bridge. Flow would then enter the historic overflow channel rather than dropping back into the main channel on the other side of the bridge. This would prevent the road fill being eroded and the foundation of the bridge from being affected as the flow drops back into the main channel on the other side of the bridge. The historic overflow channel by-passes the alluvial fan and enters the Little Truckee River below the point where it leaves the main meadow.

4-2: In regards to Site #2 Item 4 of the Proposed Action, the historic overflow channel, “How much flow would you predict would pass the overflow in typical year; in a 100yr. storm?”

Response: The overflow channel would only be accessed in very high flow events, not annually. The road area would become inundated in flood waters during these very high flow events without any action being taken. We currently do not have an estimate of the amount of flow expected in the overflow channel in a 100 yr event, but the majority of the flow would be going under the bridge and onto the alluvial fan. Access to the overflow channel would help prevent degradation of the road at the bridge during very high flows when these flows would come up onto the road area anyway.

4-3: In regards to the historic overflow channel in Site #2 Item 4 of the Proposed Action, is the project considering some type of rock structure (like a fjord) there?

Response: The point where the flow would go across the road would be engineered to withstand expected flows, and would very likely be a rocked low water crossing.

5-1: “The overall project sound very good; improving the hydrology of the meadow while providing for continuing livestock grazing is very admirable . It seems these days the poor rancher's needs are too often neglected with the primary concerns being overwhelmingly placed on water quality and wildlife needs . I think your approach of balancing use of the meadow and monitoring for any decline in wildlife habitat quality/use or degradation to water quality is very sensible.”

Response: Support for the Proposed Action is noted.

6-1: “I have been involved in many phases of implementing the willow flycatcher demography study in that area since 1997 and am encouraged by the restoration plans being proposed. As I am sure you are aware the extensive meadow systems occurring along the Little Truckee River are of utmost importance to the willow flycatcher population in the Sierra Nevada. Public ownership of such a large tract of meadows and wetlands is a rarity in this region, and provides an excellent opportunity for large scale restoration. I was very pleased to see such a thorough and ambitious hydrologic restoration plan in combination with efforts to correct problems with road systems, and with an update to the allotment management plan.”

Response: Support for the Proposed Action is noted.

6-2: “One additional area that I expect may require some planning efforts will be dispersed recreation, most notably along the west side of the Upper Perazzo Meadow site where vehicles are able to gain access to the meadow in a number of locations.”

Response: The Forest Service will continue to prohibit and assess potential ways to prevent resource damage by vehicles in the meadow.

6-3: “I was also encouraged to see monitoring of meadow condition and willow flycatcher populations already being considered, rather than an afterthought. With over 10 years of

intensive willow flycatcher demographic data for the entire project area the agency is in the unique position of having excellent data regarding numbers, animal locations, etc prior to the completion of the restoration. What an exceptional opportunity to learn about how restoration influences at-risk wildlife populations!”

Response: Support for the Proposed Action is noted.

6-4: “One final question is regarding the "lower Perazzo Meadow restoration site # 6" at T 19N, R 15 E, sec 17 SW. I was unaware that this site was currently owned by the Tahoe National Forest. We have conducted our willow flycatcher monitoring at this site since 1997 but we were currently considering changing our level of monitoring intensity due to concerns regarding the private landowners in recent years. In reviewing map # 1, ownership was still unclear to me because although it is not coded as private land it is also outside the nearby "ranger district boundary". Clarification on this point would be appreciated.”

Response: At the time the proposal was finalized the section of land referred to was not National Forest; however, the Forest Service was aware that the land was likely to be acquired by the Truckee Donner Land Trust and that it then may be deeded to the National Forest. The proposed project has included this area, anticipating that it will become National Forest, thereby providing a comprehensive watershed restoration plan.

7-1: “...on your Map 1 (Private Land) we noticed that our property was not shown even though it is on your map... I also noticed that several other lots (that do not belong to Siller) were also not indicated on your map... This area should have been marked as Misc. Private on your Map...”

Response: Map 1 did not correctly show the private land on the eastern side of the project area. The Forest Service will correct this on any other project maps.

7-2: “Did your negotiations with Siller to acquire his land for the Project go through?”

Response: The status of this private land can be found under response 6-4.

8-1: “The Washoe Tribe of Nevada and California has no documented record of any cultural archaeological sites on this parcel. The Washoe Tribe Environmental Protection Department (WEPD) asks that if at any point artifacts are found, operations cease and the WEPD as well as the Tribe’s cultural resource coordinator ... be contacted.”

Response: The resource protection measures for the Proposed Action of the project state: “... Monitor for heritage sites during excavation. Halt restoration activities if a site is found in an area during excavation to avoid further disturbance. Notify the District Archaeologist, who will take the necessary steps to document the site before activities may potentially resume, e.g. excavating, cataloging.” The District Archaeologist would notify the WEPD and the Tribe’s cultural resource coordinator as part of the necessary steps described in the resource protection measure.

## APPENDIX E: Compliance with Riparian Objectives

### Perazzo Meadows Watershed Restoration and Grazing Allotment Management Project

#### Introduction

To address both the restoration and grazing aspects of this proposed action the Herger-Feinstein Quincy Library Group Forest Recovery Act (HFQLG FEIS), and the Sierra Nevada Forest Plan Amendment (SNFPA), 2004 are used to address direction for management of riparian and wetland resources on National Forest System (NFS) lands.

Since the HFQLG FEIS directs forest management and watershed restoration within the project area on the Tahoe National Forest the first part of this document is focused on addressing the actions associated with the restoration as directed under the HFQLG FEIS requirements. Similarly, applicable portions of the direction for management of riparian and wetland resources are addressed for the grazing management plan update because the Sierra Nevada Forest Plan Amendment (SNFPA, 2004) provides specific direction for rangeland. The format of this document starts by defining differences in terms related to these two documents and is followed by addressing the HFQLG FEIS, Resource Management Objectives (RMOs) and then the SNFPA requirements for the Riparian Conservation Areas (RCAs). Some elements of the combined actions (grazing and restoration) may be addressed under the appropriate sections of either the RMOs, or RCAs. To address the issues related to the alternatives, the proposed alternative is assessed and additional information or clarification is provided to address Alternative 2 (no grazing), or Alternative 3 (continued grazing under the existing plan) where applicable. Otherwise the analysis is considered to apply to all alternatives.

#### Differences in terms and processes

**Riparian Conservation Areas (RCAs):** Riparian Conservation Areas (RCAs) from the SNFPA are land allocations that are managed to maintain or restore the structure and function of aquatic, riparian, and meadow ecosystems. They follow the RCA widths described in the - Aquatic Management Strategy Goals (SNFPA ROD, Page 32).

**Riparian Habitat Conservation Areas (RHCAs)** Direction from the HFQLG FEIS nomenclature varies as described by the Scientific Analysis Team's (SAT) Guidelines. The objectives for riparian areas and the recommendations for management direction are summarized in Appendix L of the HFQLG-FEIS.

**Riparian Conservation Objectives (RCOs):** The SNFPA ROD defines the standard and guidelines that address the types of management activities that are allowed within RCAs. They provide direction for evaluating whether an activity proposed within a RCA is consistent with the desired conditions described in the AMS.

**Riparian Management Objectives (RMOs)** Direction comes from the proposed treatments within RHCAs and responds to the 10 RMOs identified on pages L-4 through L-5 in Appendix L of the HFQLG FEIS.

**Aquatic Management Strategy (AMS):** The strategy for aquatic management provides broad goals (described in the SNFPA, 2004), which are endpoints toward which management moves watershed processes and functions, habitat, attributes, and populations.



## **Herger-Feinstein Quincy Library Group Final Environmental Impact Statement**

The Final Environmental Impact Statement for the Herger-Feinstein Quincy Library Group Forest Recovery Act (HFQLG FEIS), which directs forest management and watershed restoration within portions of the Plumas, Lassen, and Tahoe National Forests, requires the adoption of riparian management direction as described by the Scientific Analysis Team's (SAT) Guidelines. In general, the HFQLG FEIS guidelines prohibit activities within the Riparian Habitat Conservation Area (RHCA) unless they are designed to maintain or restore the structure and function of the RHCA and/or benefit fish habitat. Specifically, the HFQLG-EIS presents 10 Riparian Management Objectives (RMO) that may not be adversely affected by any planned activity. Those RMOs are as follows:

- 1) Maintain or restore water quality to a degree that provides for stable and productive riparian and aquatic ecosystems. Water quality parameters that apply to these ecosystems include timing and character of temperature, sediment, and nutrients.
- 2) Maintain or restore the stream channel integrity, channel processes, and sediment regime under which the riparian and aquatic ecosystems developed. Elements of the sediment regime include the timing, volume, and character of sediment input and transport.
- 3) Maintain or restore instream flows to support desired riparian and aquatic habitats, the stability and effective function of stream channels, and the ability to route flood discharges.
- 4) Maintain or restore the natural timing and variability of the water table elevation in meadows and wetlands.
- 5) Maintain or restore the diversity and productivity of native and desired non-native plant communities in the riparian zone.
- 6) Maintain or restore riparian vegetation to provide an amount and distribution of large woody debris characteristic of natural aquatic and riparian ecosystems.
- 7) Maintain or restore habitat to support populations of well-distributed native and desired non-native plant, vertebrate, and invertebrate populations that contribute to the viability of riparian plant communities.
- 8) Maintain or restore riparian vegetation to provide adequate summer and winter thermal regulation within the riparian and aquatic zones.
- 9) Maintain or restore riparian vegetation to help achieve rates of surface erosion, bank erosion, and channel migration characteristics of those under which the desired communities developed.
- 10) Maintain and restore riparian and aquatic habitats necessary to foster the unique genetic fish stocks that evolved within that specific geo-climatic ecoregion.

### **Compliance with RMOs**

The objectives of the Upper Perazzo Meadow Area Watershed Restoration Project are to restore the structure and function of the Perazzo Meadows Allotment area. The project is focused on the meadow system, the meadow streams (Perazzo Canyon Creek and portions of the Little Truckee River) and the Terrace meadow adjacent to and above the middle meadow of the proposed

project area. The ID Team has designed the Perazzo Meadows Restoration Project to improve the function of the floodplain and channel network, fisheries habitat and sediment transport functions of the stream and meadow network to achieve the maximum benefit for the designated uses of water (RMOs 2, 3, 4, 5, 8, and 9).

The Water Quality Control Plan for the California Regional Water Quality Control Board Lahontan Region (CRWQCBLR, 2000) defines the beneficial uses of water for the Little Truckee River Drainage. All proposed restoration activities have been designed to comply with the RMOs outlined in the HFQLG FEIS Record of Decision. The Perazzo Meadow Restoration Project would restore water quality improving the timing and character of temperature, sediment and nutrients, by reestablishing the meadow function.

Designated uses defined by the basin plan are presented under the following section on compliance with RCOs, Objective #1. This section addresses the means of achieving water quality objectives. Timing and character of temperature, stream flow and water table function are described under the description in RCOs Objective #1(RMOs 1, 2, and 3) and Standard and Guideline # 96. RCOs Objective # 1 provides more extensive discussions of nutrients and coliforms. Temperature, in-stream flows and the meadow systems' hydrologic function will be improved under the proposed action, slowly improved under Alternative 2, and maintained under Alternative 3.

The project, as designed, would reduce current sources of active in channel erosion and nick points that result from adjusting to the lowered water table and stream channel elevation currently present in the Perazzo Meadows Area (RMOs 2 and 3). The design provides for re-establishing the function of the alluvial fan, which will re-adjust the bedload transports more inline with a stable meadow system. The plug and pond design provide for a stable, productive and diverse riparian system including improved habitat for aquatic and terrestrial species (RMOs 7, 8, 9, and 10). Road drainage improvements and road decommissioning would help to restore natural timing of runoff by reconnecting meadow systems across the roads (RMOs 4). Improvement of all of these functions improves riparian communities (RMOs 5, 8, 9 and 10). This would also result in increased infiltration and aid in soil water recharge and has the potential to indirectly stabilize upland fens and springs.

Restoration work will necessitate activities within the floodplain. Other restoration work, such as improved hydraulic connectivity across roads, and road bed decommissioning within the flood plain occurs within the RHCA. Each proposed action provides a site-specific prescription developed to restore and protect water quality. All management requirements to protect watershed resources are detailed in the proposed action, and additional BMPs are provided for construction through the disturbance period until the site has stabilized (RMOs 1, and 2).

In summary, resource protection measures included in the proposed action area are designed to improve riparian habitat, while minimizing soil disturbance. Measures used to demonstrate compliance are defined through successful compliance and implementation of actions associated with the following:

- Obtaining all necessary permits for the Lahontan Regional Water Quality Control Board, U.S. Army corps of engineers, the California Department of Fish and Game and all applicable parts therein.
- Development of the Storm Water Protection Plan for implementation which includes the Construction phase Diversion and Dewatering Plan.

- Implementation of the Re-vegetation and Monitoring Plans (Appendix E).
- BMPs and Management Requirements outlined in the proposed action and in Appendix D.

Through careful layout of equipment use, and adherence to all standard and special operating procedures, it is anticipated that there would be no detrimental disturbance to meadows, wetlands or other seasonal wet areas associated with implementation of the proposed actions within RHCAs. Even though site specific areas along stream banks will be reconfigured by equipment, it is expected that streambank erosion would be decelerated by the resulting meadow configuration. Existing floodplain access would be improved by implementation of the proposed actions, thus re-establishing functional channel characteristics (RMOs 2, 3, and 9).

The proposed project is designed to restore the stream channel integrity, channel process, and sediment regime (including timing, volume and character of sediment input and transport, RMO 2). Improved floodplain access will promote fine sediment deposition. Improvements of floodplain access and alluvial fan function will improve the equilibrium of stream channel and bedload transport, thus leading to improved riparian and aquatic health (RMOs 2, 3, and 9).

Within the first growing season desired riparian plant communities begin to flourish and channel migration and flood plain characteristics will begin to reflect more historic conditions (RMO 8). The project area is located within a large meadow system with little potential for inputs from large woody debris; this system is not outside of the expected range of woody debris for a large meadow system (RMO 9).

Historically, streams within the Perazzo watershed were occupied by Lahontan Cutthroat Trout (LCT). Though suitable habitat exists, Forest Service surveys indicate that no LCT are present within the vicinity of the project area. The objectives of the Perazzo Meadows Area Watershed Restoration Project are consistent with the Recovery Objectives of the US Fish and Wildlife Service for the LCT (RMO10). Although there is a minimal risk of short-term impacts to suitable aquatic habitat, the benefits expected in the long-term should maintain or improve conditions necessary for LCT.

**Compliance with RCOs**

***RIPARIAN CONSERVATION OBJECTIVE #1:*** *Ensure that identified beneficial uses for the water body are adequately protected. Identify the specific beneficial uses for the project area, water quality goals from the Regional Basin Plan, and the manner in which the standards and guidelines will protect the beneficial uses. (RCO #1 is linked to the following AMS goals: #1: Water Quality; #2: Species Viability; #7: Watershed Condition)*

**Designated Beneficial Uses**

Chapter 2 the Lahontan Basin Plan lists the following existing and potential beneficial uses for the Perazzo Meadows Allotment area:

Agricultural Supply	Municipal and Domestic Supply
Preservation of Biological Habitats of Special Significance	Navigation
Cold Freshwater Habitat	Hydropower Generation
	Rare, Threatened, or Endangered Species

Commercial and Sportfishing Flood Peak Attenuation/Flood Water Storage Freshwater Replenishment Ground Water Recharge Migration of Aquatic Organisms	Water Contact Recreation Non-contact Water Recreation Spawning, Reproduction, and Development Wildlife Habitat
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Standard and guidelines are designed to protect beneficial uses. See the discussion under the RMO's above for a summary and added discussion regarding the standards and guidelines designed to protect the specific uses during restoration. Information on monitoring can be found in the proposed action. Implementation and effectiveness of BMPs are evaluated following the R5 BMP Evaluation Program guidelines. Results of this monitoring as well as the results from other projects on the Tahoe and throughout the Region are used to fine tune BMPs.

Water quality concerns related to grazing include sediment loads, nutrients, bacteriological contamination (E. Coli), floodplain function for flood attenuation and filtering, riparian vegetation available for stream bank stability, and erosion that may be caused by or exacerbated by grazing.

Effects from grazing that could affect water quality are nutrients, bacteria or sedimentation. The potential for negative effects are controlled by limiting the duration and numbers of cattle using the allotment. Over the years the numbers of cow/calf pairs have decreased under recent management (Rangeland Management Specialist Report). Recent photographic and long-term monitoring shows improved range conditions. These improved range conditions, vegetative retention, woody browse and streambank stability standards aid in retaining floodplain function, erosion and channel stability.

For nutrients and coliform bacteria, the most sensitive period of use is typically when cattle are concentrated, vegetation is limited, infiltration is limited and runoff is delivered directly to the stream. Typically, the highest risk for these conditions would be dominated during the fall season under moderate to high intensity precipitation events with high numbers of cattle present.

The potential for levels of E. Coli to be high due to direct fecal contamination by domestic livestock occurs with high concentrations of livestock, where they are directly adjacent to the water, where water is present to mobilize bacteria directly to the stream, and where little infiltration or vegetation exists. Site specific conditions in this system, long dry summer periods and high summer infiltration rates reduce potential for negative effects to water quality from grazing. More recent literature have suggested that the means for determining levels of undesirable fecal contamination are not directly related to the metrics used by the water quality board, and contamination from wildlife can contribute to levels of contamination in excess of cattle. By following direction outlined in the standards and guidelines an attainment of best management practices water quality standards will be maintained.

This system provides extensive natural filtering mechanisms soil percolation is deep and vegetation is lush over most of the meadow allotment area. The persistence of water and wetlands in this system provides extensive natural filtering mechanisms. This site, under conditions that will be met based on the standards and guidelines would not result in detrimental

effects to water quality. Additionally, under Alternative 1 site conditions would result in even a larger zone of natural filtering mechanisms, increasing sediment deposition on the floodplain, increasing floodplain function and improved streambank stability. Under Alternative 2, bacterial levels would be contributed solely from wildlife.

The State and Regional Boards entered into an agreement with the U.S. Forest Service which requires the agency to control non-point source discharges by implementing water control actions certified by the State Board as Best Management Practices (BMPs). BMPs are designed to protect water quality including sediment, turbidity, and water temperature. The BMPs for livestock grazing within these allotments were applied in the design of this proposed action and are incorporated into the project proposal for the grazing alternatives.

The factors included in the proposed action that contribute to maintaining water quality are described under Site #7 #12) a), b), c), d), e), f), and the implementation and effectiveness Monitoring Strategy. Additionally, Resource Protection Measures 26) through 33) are proposed for all grazing alternatives essentially there are no differences between the alternatives that include grazing.

**S&G #95:** *For waters designated as “Water Quality Limited” (Clean Water Act Section 303(d)), participate in the development of Total Maximum Daily Loads (TMDLs) and TMDL Implementation Plans. Execute applicable elements of completed TMDL Implementation Plans.*

The Little Truckee River is under consideration for designation as “Water Quality Limited” and included on the Clean Water Act Section 303(d) list. The process remains under study for sediment. The Little Truckee River currently does not have a TMDL requirement for an implementation plan.

**S&G #96:** *Ensure that management activities do not adversely affect water temperatures necessary for local aquatic- and riparian-dependent species assemblages.*

Water temperatures can be affected when riparian vegetation is significantly reduced. Water temperatures may be further affected when the width to depth ratio and channel stability are affected. Hoof action together with vegetative removal can lead to over widened channels and shallow flow depth.

The proposed action includes a means of rotating and reduced grazing activities for two to five years to ensure the success of the proposed watershed restoration. The placement of the creek into a remnant channel will quickly return width to depth ratios that favor decreased stream temperatures. The stream restoration promotes floodplain access and should improve infiltration into the meadow soils which can lead to extended soil water discharge increasing late season flows and promoting cooler temperatures in the channels. Although, the ponds themselves may provide areas of warmer water, the increased water retention associated with the ponds and increased flood access increases the soil water storage and results in late season soil water discharge with a longer duration of flow and indirectly results in cooler stream temperatures in the late summer.

Implementation of the TNF LRMP S&Gs, the Allotment Management Plan (AMP) and annual operating instructions (AOI) for that AMP, are all a part of the grazing permit terms and conditions for each allotment. Administration of the grazing permit includes monitoring and enforcement of the permit terms and conditions. Routine field checks will include monitoring of these terms and conditions. Appropriate actions will be implemented if riparian vegetation is reduced to the point that water temperatures are adversely affected. These actions will maintain in-stream temperatures once restoration is completed.

Alternative 2 and Alternative 3 are likely to maintain existing in-stream temperature patterns over the short-term. It is recognized that the existing raw bank configuration is not fully attributable to grazing, and it is difficult to determine how much of the raw bank exposure is related to grazing (Details are presented in the watershed effects report. However, the existing trend in range condition for the allotment is upward (Range Report).

Under Alternative 3, it would be reasonable to assume the vegetative trend would continue and over the long-term bank stability could increase. However, stream channel width to depth improvements would be unlikely. This is primarily due to the fact that in-stream channel flow greater than a 2.5-year return interval and up to a 10-year return interval, in some locations, would continue to be confined in the channel. This leads to un-vegetated depositional bars, lateral movement and in-channel bedload transport.

Under Alternative 2, without cattle grazing, it is likely that over a moderate period of time the vegetation would recover, as has been demonstrated by numerous drainages where grazing is removed. With significantly improved vegetation the width to depth ratio would re-establish except that the floodplain, water table, and channel elevation would be lower than with meadow restoration. In the long-term the late season water temperature would be decreased from the exiting conditions, but probably not to the level of Alternative 1 where the watertable, floodplain, riparian area and soil storage would have greater capacity to provide longer late season soil water storage release to cool and stream temperatures.

**Other S&Gs:** All remaining Standard and Guidelines associated with RCO #1 are not applicable to this project.

***RIPARIAN CONSERVATION OBJECTIVE #2: Maintain or restore: (1) the geomorphic and biological characteristics of special aquatic features, including lakes, meadows, bogs, fens, wetlands, vernal pools, springs; (2) streams, including in stream flows; and (3) hydrologic connectivity both within and between watersheds to provide for the habitat needs of aquatic-dependent species. (RCO #2 is linked to the following AMS goals: #2: Species Viability; #3: Plant and Animal Community Diversity; #4: Species Habitats; #5: Watershed Connectivity; #6: Floodplains and Water Tables; #8: Stream flow Patterns and Sediment Regimes; #9: Streambanks and Shorelines)***

#### **Standards and Guidelines Associated with RCO #2:**

***S&G #103: Prevent disturbance to streambanks and natural lake and pond shorelines caused by resource activities (for example, livestock, off-highway vehicles, and dispersed recreation) from***

*exceeding 20 percent of stream reach or 20 percent of natural lake and pond shorelines. Disturbance includes bank sloughing, chiseling, trampling, and other means of exposing bare soil or cutting plant roots. This standard does not apply to developed recreation sites, sites authorized under Special Use Permits and designated off-highway vehicle routes.*

Administration of the grazing permit for each allotment includes monitoring and enforcement of the permit terms and conditions. The proposed implementation monitoring and effectiveness monitoring are included on page 7, 8, and 9 of the proposed action. Routine field checks include monitoring to check whether these terms and conditions are being followed. Grazing standards and guidelines are found in the Perazzo Meadows Range Report. For the most part, the limiting standard and guideline for this allotment is streambank stability and not stubble height. Under Grazing standards and guidelines used to meet resource objectives riparian areas will be managed so that riparian-dependent resources take precedence over non-riparian related resources. Appropriate actions will be implemented if bank sloughing, chiseling, excessive trampling and/or bare soil conditions are being formed along more than 20 percent of a particular stream reach or natural lake or pond shoreline.

**Other S&Gs:** All remaining Standard and Guidelines associated with RCO #2 are not applicable to this project.

**RIPARIAN CONSERVATION OBJECTIVE #3 S&Gs:** All Standard and Guidelines associated with RCO #3 are not applicable to this project.

*RIPARIAN CONSERVATION OBJECTIVE #4: Ensure that management activities, including fuels reduction actions, within RCAs and CARs enhance or maintain physical and biological characteristics associated with aquatic- and riparian-dependent species. (RCO #4 is linked to the following AMS goals: #2: Species Viability; #7: Watershed Condition)*

**S&G #114:** *As appropriate, assess and document aquatic conditions following the Regional Stream Condition Inventory protocol prior to implementing ground disturbing activities within suitable habitat for California red-legged frog, Cascade frog, Yosemite toad, foothill and mountain yellow-legged frogs, and northern leopard frog.*

The project area is outside the historic range of California red-legged frog, Yosemite toad, and foothill yellow-legged frogs. Mountain yellow-legged frogs have been documented within Perazzo Meadows. The Regional Stream Condition Inventory protocol has been applied to four reaches within the project analysis area, two in the upper meadow, and two along the Little Truckee River. These stream reaches will be resurveyed upon completion of the restoration activities to document pre and post project aquatic conditions.

**S&G #116:** *Identify roads, trails, OHV trails and staging areas, developed recreation sites, dispersed campground, special use permits, grazing permits, and day use sites during landscape analysis. Identify conditions that degrade water quality or habitat for aquatic and riparian-dependent species. At the project level, evaluate and consider actions to ensure consistency with standards and guidelines or desired conditions.*

This grazing management plan updates the AMPs for the allotment to insure that standards and guidelines for water quality are met and habitat for aquatic-and riparian-dependent species are at or moving toward desired conditions. At the project level actions were evaluated to ensure consistency with standards and guidelines or desired conditions. For example, the grazing allotment management plan includes a management strategy to protect willow flycatchers from loss of reproduction due to cattle grazing.

**Other S&Gs:** All remaining S&Gs associated with RCO #4 are not applicable to this project.

***RIPARIAN CONSERVATION OBJECTIVE #5:*** *Preserve, restore, or enhance special aquatic features, such as meadows, lakes, ponds, bogs, fens, and wetlands, to provide the ecological conditions and processes needed to recover or enhance the viability of species that rely on these areas. (RCO #5 is linked to the following AMS goals: #1: Water Quality; #2: Species Viability; #3 Plant and Animal Community Diversity; #4: Special Habitats; #7: Watershed Condition; #9: Stream Banks and Shorelines)*

**S&G #117:** *Assess the hydrologic function of meadow habitats and other special aquatic features during range management analysis. Ensure that characteristics of special features are, at a minimum, at Proper Functioning Condition (PFC), as defined in the appropriate Technical Reports (or their successor publications): (1) “Process for Assessing PFC” TR 1737-9 (1993), “PFC for Lotic Areas” USDI TR 1737-15 (1998) or (2) “PFC for Lentic Riparian-Wetland Areas” USDI TR 1737-11 (1994).*

The geomorphic assessment describes the geomorphology of the meadow system and hydrologic function. This assessment is more extensive than the process used when following the Proper Functioning Condition protocol. Results from the geomorphic assessment found that floodplain access is currently occurring every 5 to 10 years during peak flows, when a proper functioning channel would allow floodplain access every 2 to 2.5 years, in this system. Results from the geomorphic study also identify the potential historic influences to the existing channel conditions. See S&G #118 for information on wetland areas.

**S&G #118:** *Prohibit or mitigate ground-disturbing activities that adversely affect hydrologic processes that maintain water flow, water quality, or water temperature critical to sustaining bog and fen ecosystems and plant species that depend on these ecosystems. During project analysis, survey, map, and develop measures to protect bogs and fens from such activities as trampling by livestock, pack stock, humans, and wheeled vehicles. Criteria for defining bogs and fens include, but not limited to, presence of: (1) sphagnum moss (*Sphagnum* spp.), (2) mosses belonging to the genus *Meesia*, and (3) sundew (*Drosera* spp.). Complete initial plant inventories of bogs and fens within active grazing allotments prior to re-issuing permits.*

The Perazzo Meadow Allotment contains slope fens and mound fens and other fen-like wetlands. Implementation of the proposed action will be likely to indirectly benefit fens. Impacts to fens and wetlands are not considered significant unless livestock are allowed to utilize these plant communities in excess of the standards and guidelines.



Evidence of grazing along the margins of fens, in the interior of fens and at the head of fens can alter vegetative conditions and affect hydrologic conditions. If the fen is drained more quickly through headcuts that may develop from overgrazing the adjacent meadow or from other combined factors, the fen can be dewatered more quickly and loose processes that contribute to retaining organic matter. The enforcement of standards and guidelines and routine monitoring is designed to reduce grazing impacts to fens within the allotment boundaries. The permittees will be made aware of the fen locations prior to the operating season and advised to keep grazing livestock out of these areas. The proposed action includes management actions to protect these areas under site # 12) e). Salting locations would be approved and used to concentrate use by cattle away from particular areas such as watershed restoration areas, sensitive aquatic features such as springs and fens. Within the Perazzo Meadows Range Report, it is stated that riparian areas will be managed so that riparian-dependent resources (water, fish, wildlife, riparian-related aesthetics, and riparian-related vegetation) take precedence over nonriparian-related resources. Where there is a conflict, it will be resolved in favor of the riparian-dependent resource. Implementation of these commitments would allow for maintenance, of the existing fen hydrology and protect these features from detrimental impacts due to grazing activities. See the Botanical B. E. for further information on plant inventories.

**S&G #119:** *Locate new facilities for gathering livestock and pack stock outside of meadows and riparian conservation areas. During project-level planning, evaluate and consider relocating existing livestock facilities outside meadows and riparian areas. Prior to re-issuing grazing permits, assess the compatibility of livestock management facilities located in riparian conservation areas with riparian conservation objectives.*

The existing livestock corral is currently considered to be appropriately located. Stock is moved through the upper terrace meadow adjacent to the facility. Movement of stock through the upper terrace to the corral is appropriate; however, during drought years late season use to the south of this facility can contribute to heavy grazing of the green line that typically remains around the wetlands/fens and stream. The permittee will be made aware of the fen locations prior to the operating season and advised to keep an eye on cattle distribution and grazing impacts to these areas during droughty periods and late season grazing.

**S&G #120:** *Under season-long grazing:*

- *For meadows in early seral status: limit livestock utilization of grass and grass-like plants to 30 percent (or minimum 6-inch stubble height).*
- *For meadows in late seral status: limit livestock utilization of grass and grass-like plants to 40 percent (or minimum 4-inch stubble height).*

*Determine ecological status on all key areas monitored for grazing utilization prior to establishing utilization levels. Use Regional ecological scorecards and range plant lists in regional range handbooks to determine ecological status. Analyze meadow ecological status every 3 to 5 years. If meadow ecological status is determined to be moving in a downward trend, modify or suspend grazing. Include ecological status data in a spatially explicit GIS database.*

*Under intensive grazing systems (such as rest-rotation and deferred rotation) where meadows are receiving a period of rest, utilization levels can be higher than the levels described above if the meadow is maintained in late seral status and meadow-associated species are not being impacted. Degraded meadows (such as those in early seral status with greater than 10 percent of the meadow area in bare soil and active erosion) require total rest from grazing until they have recovered and have moved to mid- or late seral status.*

Livestock utilization levels and grazing systems for the Perazzo Meadow Allotment is determined using the standards and guidelines and desired conditions in the TNF LRMP as amended by the SNFPA (2004). For example, if a key area contains hardwoods, S&G #50 directs that livestock browse on no more than 20 percent of annual growth of hardwood seedlings and advanced regeneration. If a key area is within a meadow that is occupied by willow flycatchers, only late-season grazing (after August 15) is allowed in the entire meadow. As described in this analysis, riparian conservation objectives determine how much riparian vegetation can be utilized by livestock and still meet the desired conditions for riparian plant communities.

Routine field checks will be conducted to determine whether grazing permit terms and conditions are being met. Routine field checks are identified in the Rangeland Management Report. If it is found that terms and conditions are not being met, the permittee will be instructed to take corrective actions which may include removal of livestock from the affected area and/or the allotment. This standard and guideline applies to all grazing alternatives.

**S&G #121:** *Limit browsing to no more than 20 percent of the annual leader growth of mature riparian shrubs and no more than 20 percent of individual seedlings. Remove livestock from any area of an allotment when browsing indicates a change in livestock preference from grazing herbaceous vegetation to browsing woody riparian vegetation.*

Routine field checks include monitoring of browse on riparian shrubs to insure implementation of this S&G. If it is found that this S&G is not being met, the permittee will be instructed to take corrective actions which may include removal of livestock from the affected area and/or the allotment.

## APPENDIX F: Re-vegetation Plan

Areas denuded during construction will be actively re-vegetated with appropriate native plant species, using plant materials (i.e., seed, container stock, transplants, pole cuttings, willow wattles) collected from local sources. Soils will be prepared before being re-vegetated, loosening compacted areas. Slash and logs from the site may also be distributed over the disturbed area to provide additional soil cover, retain sediment, and provide a microclimate to speed up the soil development and re-vegetation process. In addition, soils lacking adequate ground cover (roughly considered 75% combined physical or vegetative cover but variable by landscape element) because of exposure or other disturbances caused by the proposed action will be mulched with available forest materials such as pine needles, tree bark, and branches; or with imported mulch such as certified weed-free straw or tub-ground wood chips, where native materials are not available or are impractical. Vegetation will be monitored for successful establishment.

The re-vegetation strategy will be to establish appropriate type and density of vegetation and/or ground cover on all areas disturbed during project implementation. This includes all access routes, staging areas, and construction areas. There will be three basic types of areas: wetland sites, moist meadow sites, and upland (drier) sites. Each site within each type has a specific set of plant species and plant density associated with it. The detailed plans for re-vegetation at each site (exact number and type of plants) will be tailored to each site and done as the construction activities are completed. The first effort of re-vegetation will be to transplant as much of any vegetation that is disturbed during construction activities. Plugs may be re-vegetated by sod or grass mats excavated from the adjacent pond area. If immediate permanent re-vegetation is impractical due to factors such as poor seasonal timing, then temporary measures such as adequate covering with pine needles or jute matting will be implemented. When done with construction and transplanting, each site will be evaluated for further re-vegetation needs and capabilities and a plan will be developed to fully re-vegetate the site. Monitoring for successful vegetation establishment would be an on-going process for at least the first 5 years after project implementation.

Following is a list of potential plant species to be used at each type of site:

<b>Type of Site</b>	<b>Name of Plant</b>	<b>Scientific Name</b>	<b>Planting Method</b>
<b>Wetland sites</b>	Baltic Rushes	<i>Juncus balticus</i>	Seed, Plugs
	Sedges	<i>Carex nebrascensis</i> , <i>Carex anthrostachya</i>	Seed, Plugs
	Willows	<i>Salix sp.</i>	Cuttings, Rooted Cuttings
<b>Moist sites</b>			
	Tufted Hair Grass	<i>Deschampsia cespitosa</i>	Seed
	Meadow Barley	<i>Hodeum brachyantherum</i>	Seed
	Kentucky Blue Grass	<i>Poa pratensis</i>	Seed

<b>Upland sites</b>	Sagebrush	<i>Artemisia tridentata</i> var. <i>vassayana</i>	Seed, Super Cell
	Bottlebrush Squirreltail	<i>Elymus elymioides</i>	Seed
	Bitterbrush	<i>Purshia tridentata</i>	Seed

**APPENDIX G**  
**References and Work Cited**  
**Perazzo Meadows Watershed Restoration Project**

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