

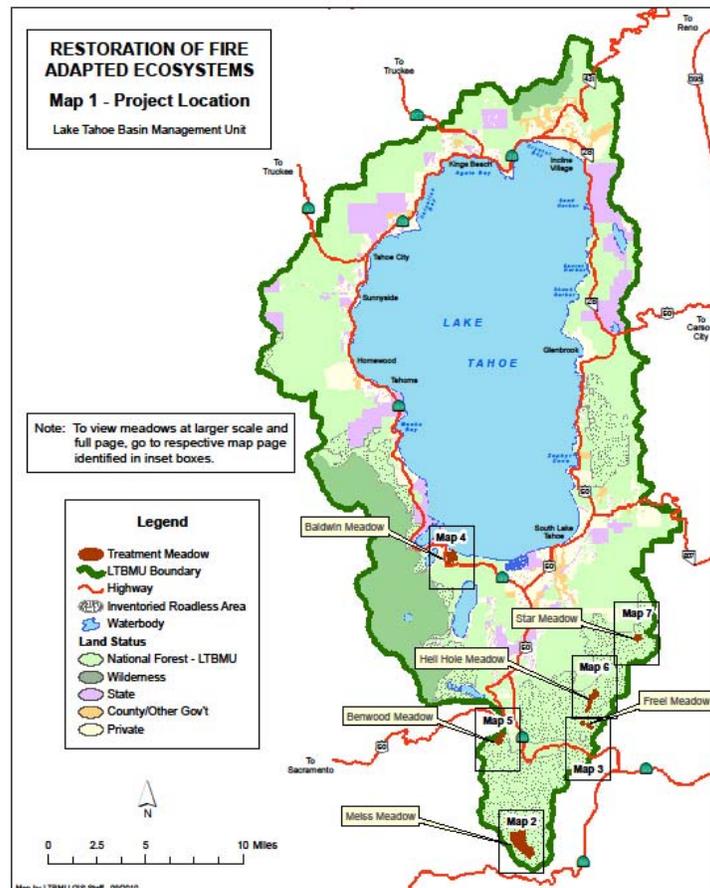


Restoration of Fire Adapted Ecosystems Project Proposal

Location:

The proposed project includes six meadows located around the Lake Tahoe Basin (Map 1). Meadows included in the analysis for future implementation activities include:

- Meiss Meadow (T10N, R17E, Sec 9, Caples Lake Quad)
- Baldwin Meadow (T13N, R17E, Sec 26, Emerald Bay Quad)
- Freel Meadow (T11N, R18E, Sec 11 and 12, Freel Peak Quad)
- Benwood Meadow (T11N, R18E, Sec 18, Echo Lake Quad)
- Hellhole Meadow (T11N, R18E, Sec 1, Freel Peak Quad)
- Star Meadow (T12N, R19E, Sec 30, South Lake Tahoe Quad)



Map 1 - Project Location



Proposed Action:

This project proposes to restore approximately 530 acres of meadow habitat in six priority meadows within the Lake Tahoe Basin by conifer removal, prescribed fire, and addressing identified head-cuts within the meadows (Table 1). Priority meadows were selected based on vegetative trend data collected in 2004 and in 2009, results of the Meadow Restoration Pilot Project that was implemented in 2008 and 2009, and from field investigations. Meadows that have moderate to severe conifer encroachment, past grazing impacts that have altered plant community and altered hydrologic processes, declining vegetative trend, and provide or have the potential to provide critical habitat for Threatened, Endangered, or Sensitive (TES) species were considered the highest priority meadows.

The six priority meadows include Baldwin Meadow, Benwood Meadow, Freel Meadow, Hellhole Meadow, Meiss Meadow, and Star Meadow. Of these six meadows, five meadows are in Inventoried Roadless Areas (IRAs) (Table 1). Benwood Meadow and Meiss Meadow are located in Dardanelles IRA. There are approximately 312 proposed project acres within Dardanelles IRA (Table 1), which will affect 2.2 percent of the entire IRA (Table 2). Freel Meadow, Hellhole Meadow, and Star Meadow are located in Freel IRA. There are approximately 100 acres within Freel IRA (Table 1), which will affect 0.67 percent of the entire IRA (Table 2).

Table 1: Proposed project acres by meadow and acres within inventoried roadless areas (IRA)

Meadow Name	Inventoried Roadless Area (IRA)	Category	Total Meadow Acres	Total Acres in IRA
Baldwin Meadow	N/A	N/A	121	0.0
Benwood Meadow	Dardanelles	Roadless	27	27
Freel Meadow	Freel	Roadless	21	21
Hellhole Meadow	Freel	Roadless	66	66
Meiss Meadow	Dardanelles	Roadless	285	285
Star Meadow	Freel	Roadless	13	13
Total Acres			533	412

Table 2: Percentage of IRA's affected by proposed treatments

Inventoried Roadless Area (IRA)	Total Acres	Project acres in IRA	Percentage of IRA Affected by Project
Dardanelles	13,943	312	2.2
Freel	14,894	100	0.67

All vegetation treatments in the priority meadows will be conducted by hand treatments only. No permanent or temporary roads will be constructed for proposed implementation activities in any of the priority meadows. Hand thinning treatments would include felling of live trees up to 18 inches diameter at breast height (dbh). Trees larger than 18 inches that are considered a seed source for future encroachment may be girdled or piles may be placed underneath to encourage

mortality. These trees would provide wildlife habitat. Some trees greater than 18 inches dbh may also be felled, but not removed, to promote meadow restoration efforts. Additional woody debris, slash and bole wood less than 18 inches dbh will be lopped and scattered where 1) lop and scatter density is low enough to scatter organics on the ground and/or 2) where lop and scatter provides an advantage to carrying the fire through herbaceous vegetation.

Prescribed fire will be used where deemed an appropriate management tool to remove small lodgepole pines (<3 inches dbh) and enhance native riparian plant vigor and diversity. Prescribed fire may be used as the primary treatment method or subsequent to thinning treatments. Fire intensity would be light to moderate and residence time would be limited. Pile burning would occur within thinning treatments, potentially including limited portions of the SEZ. Burn piles would be burned prior to scheduled broadcast burns. In meadows with large amounts of conifer encroachment, thinning and burning will need to occur in the same year for optimal success due to expected increases in the water table after conifers are removed.

Existing roads and trails would be utilized as fire lines to minimize new ground disturbance, though additional fire lines may be constructed with hand tools, if needed. All constructed fire lines would be rehabilitated after implementation following Best Management Practices (BMPs) and resource protection measures. Rehabilitation activities would include using hand crews and hand tools to rake in berms, install water bars, and scatter downed wood where appropriate. For feasibility of implementation burn piles may be adjacent to existing trails, however where feasible they will be moved at least 10 feet from existing trails.

Any small head-cuts identified in the priority meadows will be restored during implementation activities. A head-cut is an unstable erosion point in a stream channel that actively erodes during periods of high flow yield and results in channel incision, meadow drying, and loss of aquatic habitat. A small head-cut is one where no heavy equipment will be needed for restoration of head-cuts. Head-cuts will be stabilized by hand crews using on-site rock, log material, or willow stacking. Head-cut locations that were not identified during the 2010 field season will be identified prior to implementation.

Meiss Meadow (Map 2): Meiss Meadow is a 285 acre meadow surrounding the headwaters of the Upper Truckee River and located in Dardenelles Inventoried Roadless Area. This portion of the Upper Truckee River supports a self sustaining population of Lahontan cutthroat trout. Meiss Meadow was grazed as part of the Meiss Grazing Allotment until 2002. Proposed treatment activities include conifer removal and prescribed fire. Proposed treatment activities are anticipated to remove conifer seed sources from the meadow, remove encroaching conifers, enhance native plant vigor, improve habitat for native terrestrial and aquatic species and increase water yield. Data from the Meadow Restoration Pilot Project suggest that lop and scatter methods will be required to carry surface fire into sparsely vegetated areas within the meadow and on the meadows edge.

Freel Meadow (Map 3): Freel Meadow is a 21 acre meadow located in the Freel Inventoried Roadless Area. Freel meadow was part of the Trout Creek Grazing Allotment. This is a vacant allotment and no grazing has occurred since 2002. Proposed treatment activities include conifer removal, prescribed fire, and head-cut restoration. Proposed treatment activities are intended to remove conifer seed sources from the meadow, remove small diameter lodgepole pine, enhance

native plant vigor, improve habitat for native terrestrial and aquatic species and increase water yield. Approximately eight head-cuts have been identified in Freel Meadows. Head-cuts will be addressed by placing willow stakes, or other vegetative material, logs, or boulders at the head-cut location.

Baldwin Meadow (Map 4): Baldwin Meadow is a 121 acre meadow located on the south shore of Lake Tahoe. The Baldwin Grazing Allotment, which encompassed the majority of the meadow, was closed in 2008. No buffer is required to implement proposed treatment activities in this meadow because the project area is surrounded by already planned vegetation restoration projects. These projects, South Shore Fuels Reduction Project and Aspen Restoration, will remove conifers from the meadows edge as well as eliminate future seed sources. Proposed treatment activities will include removing small conifers within the meadow and prescribed fire. Proposed treatment activities are anticipated to remove small diameter lodgepole, thatch, improve habitat for native terrestrial and aquatic species and enhance native plant vigor within the meadow.

Benwood Meadow (Map 5): Benwood Meadows is a 27 acre meadow located in Dardenelles Inventoried Roadless Area. Proposed treatment activities include conifer removal and prescribed fire. Proposed treatment activities are intended to remove conifer seed source for the meadow, remove small diameter lodgepole pine, enhance native vegetation, improve habitat for native terrestrial and aquatic species and increase water yield.

Hellhole Meadow (Map 6): Hellhole Meadow is a 66 acre meadow is located in the Freel Inventoried Roadless Area. Hellhole meadow was part of the Trout Creek Grazing Allotment. This is a vacant allotment and no grazing has occurred since 2002. Hellhole meadow provides suitable habitat for *Rana sierra*, Sierra Nevada yellow-legged frog, a candidate species under the Endangered Species Act. Proposed treatment activities include conifer removal and prescribed fire. Prescribed fire will only be used to address piles created by conifer removal. Piles will be placed on the meadow edge. No broadcast burns are anticipated within the meadow. Proposed treatment activities are intended to remove conifer seed source for the meadow, remove small diameter lodgepole pine, enhance native vegetation, improve habitat for native terrestrial and aquatic species and increase water yield.

Star Meadow (Map 7): Star Meadows is a 13 acre meadow located in Freel Inventoried Roadless Area. Star meadow was part of the Cold Creek Grazing Allotment. This is a vacant allotment and no grazing has occurred since 2003. Proposed treatment activities include conifer removal, prescribed fire, and head-cut restoration. Approximately three head-cuts are located within the proposed treatment area. Head-cuts will be addressed by placing willow stakes, or other vegetative material, logs, or boulders at the head-cut location. Proposed treatment activities are intended to remove conifer seed source for the meadow, remove small diameter lodgepole pine, enhance native vegetation, improve habitat for native terrestrial and aquatic species and increase water yield.

Inventoried Roadless Area Direction

The Regional Forester issued direction regarding projects in IRAs, dated November 5, 2009 in response to the delegated authority from the Secretary of Agriculture dated October 16, 2009. Per this direction, any projects planned in IRAs need to be thoroughly reviewed prior to public release. Specifically, prior to commencement of scoping or announcement of public comment periods or decision notices, certain projects will be reviewed in the Regional Office, and if appropriate, shared with the Chief prior to public release.

This project includes the cutting or removal of generally small diameter timber to:

- Improve Threatened, Endangered or Sensitive species habitat.
- Maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire effects within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period.

Purpose and Need for the Proposed Project:

The purpose of this project is to restore meadows using pre-European conditions for reference – managing for resiliency to prepare for uncertain future outcomes. Pre-European conditions are considered conditions prior to Comstock logging, livestock grazing, mining, and fire suppression. Restoration to these conditions does; however, recognize that other potential impacts including, but not limited to, climate change and current land use (i.e. trails) would prevent some historic characteristics from being restored. This restoration approach supports adaptations to changing future conditions, such as changing climate.

Meadows are important in maintaining hydrological processes downstream and conserving stream flows. This attribute could play a vital role in conserving water as the earth's climate changes. Conifer encroachment may suppress local water tables and limit the amount of subsurface water available within the meadow system. Suppressed local water tables may lead to accelerated conifer invasion. A reduction in the amount of available subsurface water may also lead to increased growth of upland species within meadows thus changing the plant community over time.

There is a need to restore physical (hydrological) and biological (ecological) meadow processes (infiltration, percolation, evapotranspiration) and functions (terrestrial and aquatic diversity and abundance, flow dispersal, ground water recharge, sediment detention) that are comparable to historic conditions under the current climate regime. Methods that can be utilized for restoring hydrologic function of meadows are addressing head cuts, removal of conifers, and the reintroduction of fire. Conifer removal needs to occur both within the meadow and along the forest/meadow ecotone (edge) to reduce seed sources. Biological meadow processes may be restored naturally once the hydrologic regime is restored. By reintroducing natural disturbance regimes in meadows, specifically fire, riparian habitat for native riparian dependent species will be enhanced. In addition, natural disturbances will benefit the biological diversity and ecological condition of the forest-riparian interface.

Goals and Objectives:

The goal of the Restoration of Fire Adapted Ecosystems Project is to restore and maintain ecosystem functions in priority meadows on National Forest Land that will continue to provide habitat for self-sustaining native riparian dependant species given projected changes in climate.

Objective 1: Reduce conifer and upland species invasion through thinning activities in priority meadows.

Objective 2: Re-establish fire as a management tool to reduce conifer recruits and reduce xeric derived upland herbaceous species in priority meadows where data supports incorporation of fire into the system.

Objective 3: Increase water availability and meadow wetness by significantly reducing the presence of conifer species through management identified in objective 1 (thinning) and objective 2 (fire) and restoring identified head-cuts.

This project meets the aquatic, riparian and meadow ecosystems and associated species goals (species viability, plant and animal community diversity, and special habitats) and objectives (Riparian Conservation Objective #2, 4, 5 and 6) found in the Sierra Nevada Forest Plan Amendment ROD 2004. Additionally, goals from fire and fuels management (*actively restoring fire-adapted ecosystems by making demonstrated progress in moving acres out of unnaturally dense conditions*) and noxious weed management (priority 1, 2 and 3) will be met.

Additionally, the objectives contribute to the attainment of the following TRPA threshold standards:

- Soil Conservation: SC2- Stream Environment Zones
- Fisheries: F2 - Stream Habitat