Twomile Ecological Restoration: Meadow Restoration (34043)
Decision Memo

Stanislaus National Forest
Mi-Wok and Groveland Ranger Districts
Tuolumne County, California

This decision memo provides documentation, pursuant to the National Environmental Policy Act (NEPA), related to the Twomile Ecological Restoration: Meadow Restoration (Twomile Meadow) project located on the Mi-Wok and Groveland Ranger Districts in Tuolumne County, California. This is one project within the Twomile planning area; others include: vegetation management; motorized trails; barrier installation; noxious weed control; wildlife habitat improvement; and, soil improvement.

The Twomile Meadow project includes three areas with five meadows in the Clavey River watershed:

1. Wolfin Meadow-Main and Wolfin Meadow-North, on the Groveland Ranger District northeast of Thompson Peak and west of Reed Creek (Sec 19-20, 29-30, T2N R18).
2. Upper Fahey Meadow-South and Lower Fahey Meadow, on the Mi-Wok Ranger District northeast of Marble Mountain and east of Hull Creek (Sec 9, 16, T2N R17E).
3. 2N55 Meadow, on the Mi-Wok Ranger District northeast of Marble Mountain and east of Hull Creek (Sec 3, T2N R17E).

Purpose and Need

The Forest Service completed the Stanislaus National Forest Land and Resource Management Plan (Forest Plan) on October 28, 1991. The Stanislaus National Forest “Forest Plan Direction” (USDA 2010) presents the current Forest Plan management direction, based on the original Forest Plan, as amended. The Forest Plan Goal for Aquatic, Riparian, and Meadow Ecosystems (p. 12) includes: “Maintain and restore the species composition and structural diversity of plant and animal communities in riparian areas, wetlands, and meadows to provide desired habitats and ecological functions.”

Desired conditions related to meadows in the Clavey River watershed include:

- Meadows are hydrologically functional. Sites of accelerated erosion such as gullies and headcuts are stabilized or recovering. (USDA 2010, p. 192)
- Species compositions in and the condition of riparian, meadow, and other streamside habitats are highly similar to their natural potential. (CREP 2008, p. 2-1)

Field reviews found eroded banks, headcuts, depressed water tables, encroaching conifers and non-native vegetation existing within five meadows and their associated streams in the Twomile planning area. Headcuts and downcut channels are areas where flowing water cut down through bare soil and/or damaged vegetation. As headcuts and channel cutting progress, they leave gullies that lower water tables and cause drying of the meadow or riparian area. These effects change vegetative composition and diminish water-storing abilities. This is the case on Lower Fahey Meadow and the Upper Fahey Meadow-South where encroachment by conifers and non-desirable shrubs occur in the upland meadow areas. In order to meet goals and desired conditions, the Forest Service identified the following needs:

- Meadow restoration treatments are needed to improve the hydrologic function of the five meadows.
- Removal of non-desirable vegetation is needed to improve productivity of meadow vegetation.

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**Proposed Action**

In response to the purpose and need to improve meadow hydrologic function and productivity, the Forest Service proposes meadow restoration treatments to: stabilize headcuts and eroded stream channels; remove encroaching conifers and non-desirable shrubs; and, subsoil compacted areas. The proposed meadow restoration treatments are described below.

**Headcuts and Stream Channels**

Repair headcuts and channels using one or more of the following techniques:

- Reshape and fill the incised channel with soil and install rock grade stabilizers with rock aprons and rock base structures as needed.
- Push in banks, reshape to stable angles and grade the site.
- Revegetate with native plants and mulch to stabilize bare soil in and near headcuts or degraded channels.
- Upper Fahey Meadow-South: Fill the incision, compact fill and place rocks to armor up to the toe of the fill material.

**Tree Removal and Thinning**

Cut, pile and burn encroaching small trees (< 10 inch dbh) and undesirable shrubs (i.e. white thorn) within Lower Fahey Meadow (2.7 acres) and Upper Fahey Meadow-South (4.6 acres). Construct a perimeter fire-line around the piles prior to burning using hand tools, scraping to mineral soil. Remove small trees/shrubs using hand tools and low ground pressure (< 5 lbs./sq. in.) mechanical equipment.

**Subsoiling**

A Crawler Tractor D6 or equivalent machine with a 3 tined winged subsoiler would subsoil heavily compacted portions of Wolfin Meadow-North and 2N55 Meadow (one acre in each meadow). A map will be provided of the treatment locations. The 3 tined winged subsoiler lifts and shatters the compaction, minimizing the surface soil mixing and vertical trenches. A sample design of the subsoiler shall be provided in the contract package. Subsoiling would be done to a depth of 18-24 inches and begin on or around September 1 proceeding until October 15 or the onset of winter rains. A Forest Service watershed specialist would oversee subsoiling to insure implementation is consistent with objectives.

**Fencing**

Cattle exclosure electric fences would be installed at all meadows except Upper Fahey Meadow-South, primarily around the in-stream work sites. Forest Service personnel would maintain the fences for a minimum of 3 years or until the meadows “...have recovered and have moved to mid- or late seral status.” (USDA 2010, p. 195)

**Temporary Access Routes**

A temporary route (200 feet) would be constructed to access the north-east part of Lower Fahey Meadow from 3N86; brush would be removed. An existing unauthorized route (500 feet) would access Wolfin Meadow-North from 2N14 in the north-east part of the meadow and then bordering the meadow using the forest field. An existing unauthorized route (500 feet) would access Wolfin Meadow- Main from 2N59, about 100 feet from 2N14; four small trees (6-12 inches dbh) would be removed.

**Rock and Fill Materials**

Material needed for the project would be collected on site and from nearby areas. Fill material sources would include: a cut bank on 2N59 (about 100 feet from 2N14); a side berm on 2N55 (below the meadow); and, a soil windrow located 500 feet north of Faust Cabin and 65 feet from 3N07. Rocks would be obtained from Bourland and Clarey quarries and outside commercial sources if the quarry rocks are not suitable for the intended work.
Project Design Elements

The proposed action includes the following project design elements.

1. Notify the District wildlife biologist immediately and implement mitigations if any threatened, endangered, candidate or Forest Service sensitive species are discovered during or prior to work.
2. Protect all known or newly discovered occurrences of sensitive plants.
3. All equipment, including subsoiler, grader, and any other soil moving equipment must be free of soil, mud (wet or dried), seeds, vegetative matter or other debris that could contain seeds in order to prevent new infestations of noxious weeds in the project area.
4. Subsoil the 2N55 meadow before the bull thistle sets seed or pull the bull thistle before it sets seed the year subsoiling occurs. Also, pull the bull thistle the following year. Use the equipment last at this location, or clean it following use before moving to a different meadow.
5. Do not drive on or park on sensitive plants or unsurveyed suitable habitat along roads 1N04, 2N14, 2N55, 3N01, 3N86 and 21703R.
6. An Archeologist must be present during machinery access, mechanical brush removal, construction, gully restoration, fireline construction and fence construction. Restrict equipment staging to locations outside site boundaries. For specifics, see Project Compliance Letter (Strain; CRMR 05-16-1307C; March 9, 2012).
7. Notify the District Archeologist and cease all activities if cultural resources are discovered.
8. Archeologist shall review tracked equipment use for removing brush; remove brush by hand in areas deemed unsuitable for mechanical treatment.
9. Avoid heritage resources sites when constructing burn piles.
10. Follow pertinent air quality regulations for all burning activities. Conduct burning during weather periods favorable to smoke dispersion. Extinguish piles if smoke or weather becomes excessive.
11. Place burn piles within the encroachment removal area (see Proposed Action document, Map 4, p. 10), outside of areas that show signs of water runoff, at least 50 feet from the pond in Upper Fahey and the perennial stream in Lower Fahey Meadow.
12. Conduct operations during dry season (late summer), when rain or runoff is unlikely.
13. Do not construct permanent routes; block and restore3 project access routes after project completion.
14. Install soil erosion controls, such as silt fence, straw wattles or other suitable means to contain material on site along temporary access routes and stockpile areas.
15. Implement onsite dust abatement as necessary on all disturbed areas including roads and stockpile areas, to ensure fine sediments are not transported offsite as airborne particles.
16. Conduct fuel storage and equipment re-fueling and servicing outside of streamside zones and meadows designated by the Contracting Officer or Forest Service Representative.
17. Limit equipment use only to the designated work area where tilling/ripping work is prescribed.
18. Regrade the 2N59 cut bank in a convex design (angle of repose) allowing for revegetation after removing fill material.
19. Monitor cattle exclusion fences for cattle trampling/trailing; move the fences as needed.

Decision

My decision is to implement the proposed action as described above including the project design elements. This action falls within two categories of actions that are excluded from documentation in an Environmental Assessment (EA) or Environmental Impact Statement (EIS) and no extraordinary circumstances4 would preclude use of the categories: “Timber stand and/or wildlife habitat improvement.

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3 Block and restore may include: installing barriers; tilling or ripping; constructing water bars or dips; spreading woody debris; and, signing.
4 The mere presence of one or more of these resource conditions does not preclude use of a categorical exclusion (CE). It is the existence of a cause-effect relationship between a proposed action and the potential effect on these resource conditions and if such a relationship exists, the degree of the potential effect of a proposed action on these resource conditions that determine whether extraordinary circumstances exist. (36 CFR 220.6(b))
activities that do not include the use of herbicides or do not require more than 1 mile of low standard road construction” [36 CFR 220.6(e)(6)]; and, “Regeneration of an area to native tree species, including site preparation that does not involve the use of herbicides or result in vegetation type conversion” [36 CFR 220.6(e)(5)]5. The approved actions fit these categories because they: improve wildlife habitat; allow natural regeneration to occur; include only 0.2 miles of temporary road construction; and do not include herbicides. Appendix A includes a “Review of Extraordinary Circumstances” supporting my determination that no extraordinary circumstances exist.

Resource specialists provided input covering wildlife, heritage, botany and noxious weeds, fuels, and water quality, included in the project file. I considered their recommendations in making this decision.

**Reasons for the Decision**

This decision will improve the hydrologic functionality of the meadows and provide overall net benefits for soil, water, and wildlife resources as described below.

1. Elevating stream channels and stabilizing headcuts will improve the hydrologic function of the meadows. Water tables will be raised to nearer natural levels and the plant species composition will move toward the historic potential composition. Stream energy from high flows will dissipate, reducing erosion and improving water quality and downstream aquatic and riparian habitat. Meadows with good hydrologic function will provide crucial habitat for sensitive species like the great gray owl. All these positive effects would improve water quality and biologic attributes within the Clavey River Watershed (a Critical Aquatic Refuge).

2. Tree removal and thinning will alleviate the de-watering of the site and allow for the reestablishment of desirable species in the area.

3. The treatments will improve the vegetation composition by allowing the restored sites to regenerate from non-desirable, poor vegetation to meadow vegetation similar to their natural potential.

4. Subsoiling compacted areas will improve infiltration thus enhancing floodwater retention and groundwater recharge. Meadows with good hydrologic function provide carbon storage benefits.

5. The cattle exclusion will allow for prompt recovery of herbaceous vegetation species re-establishment, resulting in better bank stability; therefore, reducing surface erosion and slumping.

6. Block and restore actions on all temporary access routes after project completion will prevent unauthorized motor vehicle access, and reduce compaction and sedimentation.

**Public Involvement**

The Twomile Meadow project was first listed in the October 2010 issue of the Stanislaus National Forest Schedule of Proposed Actions (SOPA). The Forest distributes the SOPA to about 160 parties and it is available on the internet [http://www.fs.fed.us/sopa/forest-level.php?110516]. On October 14, 2010 the Forest sent scoping letters to 69 individuals, permittees, organizations, agencies, and Tribes interested in this project. The letter requested comments on the Proposed Action by November 10, 2010. The project was presented at a public scoping meeting on October 20, 2010 attended by 17 members of the public. One commenter submitted a letter of support for the project during the scoping process; no other specific comments were received.

A legal notice, announcing the 30-day Opportunity to Comment on the draft decision memo appeared in the Union Democrat on May 11, 2012. The comment period, provided pursuant to the March 19, 2012 U.S. District Court order (1:11-CV-00679-LJO-DLB), allows an opportunity for interested or affected parties to make their concerns known before the Responsible Official makes a final decision. The 30-day comment period ended on June 11, 2012 with no comments submitted.

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5 Forest Service Handbook 1909.15 – National Environmental Policy Act Handbook, Chapter 32.2 – Categories of Actions for Which a Project or Case File and Decision Memo are Required
**Findings Required by Other Laws**

This action is consistent with the Forest Plan; the National Historic Preservation Act; and, all other applicable laws and regulations (see Appendix A).

**Implementation Date**

Implementation of the decision may begin immediately following the publication date of the legal notice of this decision in the Union Democrat (36 CFR 215.9(c)).

**Administrative Review or Appeal Opportunities**

Since no comments or only supportive comments were received during the 30-day comment period (36 CFR 215.6), this decision is not subject to appeal (36 CFR 215.12).

**Contact Person**

For additional information regarding this project, contact Fernando Perez; Mi-Wok Ranger District; 24695 Highway 108; Mi Wuk Village, CA  95346; or, call (209) 586-3234 ext. 672.

**Signature and Date**

![Signature]

SUSAN SKALSKI  
Forest Supervisor  
Stanislaus National Forest  

June 14, 2012  
Date

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APPENDIX A
Review of Extraordinary Circumstances

In accordance with FSH 1909.15 Section 30.3(2), the Responsible Official considered the following resource conditions in determining whether extraordinary circumstances related to the proposed action would warrant further analysis and documentation in an Environmental Assessment (EA) or an Environmental Impact Statement (EIS).

1. **Federally listed threatened or endangered species or designated critical habitat, species proposed for Federal listing or proposed critical habitat, or Forest Service sensitive species.**

   From the Aquatics Biological Assessment and Evaluation (Holdeman; February 2012, p. 45):
   - No suitable habitat in the treatments areas for the Sierra Nevada yellow-legged frog and Foothill yellow-legged frog. Two ponds in Fahey Meadow provide suitable habitat for the WPT and are outside of the local range of the Foothill yellow-legged frog and Sierra Nevada yellow-legged frog. Overall, there would be a neutral to slightly beneficial effect to the Western pond turtle.

   From the Sensitive Plant Biological Assessment and Evaluation (Willits; February 2012, p. 26):
   - No concerns for sensitive plants and no effects to sensitive plants. The project would benefit sensitive plant habitat in the long-term by increasing the water level at several sites.

   From the Terrestrial Wildlife Biological Assessment and Evaluation (Baumbach; March 2012, p. 149):
   - Will not affect the valley elderberry longhorn beetle since the project area is outside the elevation range of this species.
   - May affect individuals, but is not likely to contribute to the need for Federal listing or result in loss of viability for the Pacific fisher: disturbance of individuals may occur during the implementation phase; and, foraging habitat within meadows is expected to improve.
   - Will not affect the bald eagle, willow flycatcher, Swainson’s hawk, California wolverine, Sierra Nevada red fox, northern goshawk, or the California spotted: no suitable breeding habitat present for bald eagle, northern goshawk, California spotted owl, Swainson’s hawk; no suitable habitat for Sierra Nevada red fox; no sufficient habitat to sustain individuals for willow flycatcher; and, no occurrence documented within 100 miles of the project area for California wolverine.
   - May affect individuals, but is not likely to result in a trend toward Federal listing or loss of viability for the great gray owls, American marten, pallid bats, Townsend’s big-eared bats, and western red bats: disturbance of individuals may occur during the implementation phase; and, foraging habitat within meadows is expected to improve.

2. **Floodplains, wetlands, or municipal watersheds.**

   **Floodplains:** Executive Order 11988 defines floodplains as, “. . . the lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands, including at a minimum, that area subject to a one percent [100-year recurrence] or greater chance of flooding in any one year.”

   - Treatments improve channel sinuosity, provide armoring for constructed channels, decrease channel slope, and put flood flows back on the floodplain. This reduces the erosive energy of flowing water precluding continued lateral erosion of banks and enables deposition of transported sediment on the meadow surfaces (Perez; Hydrology Report; March 2012, p. 55).

   **Wetlands:** Executive Order 11990 defines wetlands as, “. . . areas inundated by surface or ground water with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions
for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds.”

- The project is not expected to have an effect on wetlands; it is expected to result in a reversal of the cumulative effects accrued to date, not in addition to those effects. Restoration with removal of encroaching conifers and brush would improve hydrologic conditions to sustain and expand wet meadows. Restored conditions would expand aquatic habitat, stabilize riparian zones, increase riparian and meadow vegetation diversity and improve habitat overall (Perez; Hydrology Report, March 2012, p. 55).

**Municipal Watersheds:** FSM 2542.05 defines municipal watersheds as: “A watershed that serves a public water system as defined in the Safe Drinking Water Act of 1974, as amended (42 U.S.C. §§ 300f, et seq.); or as defined in state safe drinking water statutes or regulations.”

- The Central Valley Regional Water Quality Control Board lists municipal supply as a beneficial use of Tuolumne River including tributaries. The project is not expected to have an effect on beneficial uses of water; it is expected to result in a reversal of the cumulative effects accrued to date, not in addition to those effects (Perez; Hydrology Report; March 2012, p. 56).

3. **Congressionally designated areas such as wilderness, wild and scenic rivers, or national recreation areas.**

No designated Wilderness, Wild and Scenic Rivers or National Recreation Areas exist within the project area or nearby (Maschi; personal communication; February 8, 2012). Congress has not designated the Clavey as a Wild and Scenic River; however, since the Clavey is eligible and recommended for designation, it is managed to protect the values that resulted in its eligibility. This action, along with other past and known foreseeable actions, has no cumulative impact on Wild and Scenic river values (Sorensen; Recreation, Visual, and Wild and Scenic Rivers; January 2012, p. 8).

4. **Inventoried Roadless Areas.**

No Inventoried Roadless Areas (IRAs) exist within or adjacent to the project area (Maschi; personal communication; February 8, 2012).

5. **Research Natural Areas.**

No existing or proposed Research Natural Areas (RNAs) exist within or adjacent to the project area. (Maschi; personal communication; February 8, 2012)

6. **American Indians and Alaska Native religious or cultural sites.**

All local Native American tribes were consulted for the presence of religious and/or cultural sites in the project area. No sites are known to exist (Strain; personal communication; February 8, 2012).

7. **Archaeological sites, or historic properties or areas.**

From the Project Compliance Letter (Strain; CRMR 05-16-1307C; March 9, 2012):

- The heritage resource files show that part of the Area of Potential Effect (APE) had not been previously inventoried to current professional standards. The APE was inventoried, and documented in the Soils and Meadow Restoration - CRMR 05-16-1307C report.
- Heritage resources of interest are located within the APE and are to be protected using protection methods identified in the Project Compliance Letter.
- A No Effect Recommendation is made for the above undertaking in accordance with the provisions set forth in the “Programmatic Agreement among the U.S.D.A. Forest Service, Pacific Southwest Region, California State Historic Preservation Officer and Advisory Council on Historic Preservation Regarding Identification, Evaluation and Treatment of Historic Properties Managed by the National Forests of the Sierra Nevada, California” (October 1996).