

**California Environmental Quality Act (CEQA) Initial Study
for the
Mattley Meadow Restoration Project**

May 5, 2020

Project Title: Mattley Meadow Restoration Project

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Project location: Stanislaus National Forest, Calaveras Ranger District
Calaveras County, T07N, R17E, Sections 8 and 17 MDBM

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General Plan designation: Unclassified (U) and Agriculture Preserve (AP)

Zoning: public (USFS) zoned U; private zoned AP

Description of Project:

The Mattley Meadow Restoration Project would restore channel-floodplain connectivity in Mattley and Mattley Creek meadows at the headwaters of Mattley Creek, tributary to the North Fork Mokelumne River. The Project would eliminate incised gullies in the meadows. Construction will require one month during the low/no flow period (proposed for September 1-30, 2021). The Project would restore approximately 45 acres of riparian and meadow habitat (32 acres of federal lands, 13 acres on private property), enhancing wetland conditions on 30.86 acres of palustrine wetland (montane meadow), creating 1.61 acres of palustrine open water, and reconnecting 1,926 feet of riverine channel (0.64 acres) with the meadow floodplain.

Filling the incised channels would require excavation and placement, using heavy equipment, of 15,991 cubic yards of soil fill in 6 plugs to eliminate the existing gullies and raise/restore the base elevation of surface water flow in the meadow by redirecting flow into existing vegetated remnant channels. Fill sources include 9 borrow pits in meadow margins and other elevated features.

The project will include the relocation of a 0.1 mile segment of a motorized trail (17EV16) that crosses Mattley Creek Meadow. The trail would be rerouted outside of the meadow to a rerouted trail segment approximately 0.2-0.4 miles in length. Five cubic yards of 6" rock would be used to armor the new rerouted trail crossing of Mattley Creek outside of the meadow. The existing trail segment within the meadow would be restored by scarifying the trail surface and placing woody debris and/or vegetation as needed to promote vegetation regrowth. Revegetation with native seed and riparian woody species (i.e. willows, aspens, etc.), and stockpiling of existing topsoil, sod mats, and willow wads are an integral component of the Project, as well.

Cattle grazing would be restricted within the meadow restoration areas until the sites have revegetated and stabilized, generally a minimum of 2-3 years. In Mattley Meadow, range fencing on the north property boundary and east edge of the meadow would be reconstructed. Temporary fencing would be constructed around the immediate restoration area in Mattley Creek Meadow. An off-channel water source may be constructed to increase dispersal of cattle.

Surrounding land uses and setting:

The Mattley Meadow Restoration Project is located in mixed coniferous forest on both public and private lands at approximately 7,000 ft. The meadow is accessible via the USDA-Forest Service road network. Primary land uses include cattle grazing and dispersed recreation (e.g. hunting, OHV use, etc.). Surrounding land uses in the vicinity of the meadow include timber harvest, fuels reduction, and dispersed summer and fall recreational activities.

Other public agencies whose approval is required:

- CA Department of Fish & Wildlife: Fish and Game Code, Section 1602, Lake and Streambed Alteration Agreement (in process)
- Central Valley Regional Water Quality Control Board: 401 Water Quality Certification (in process)
- U.S. Army Corp of Engineers: Clean Water Act, Section 404, Nationwide Permit #27 (in process)
- U.S. Fish & Wildlife Service: Endangered Species Act, Section 7 Consultation, Biological Opinion (April 29, 2020; Appendix E)
- U.S. Forest Service, Stanislaus National Forest: Decision Memo (May 4, 2020; Appendix A).

California Native American Tribal Consultation Summary:

The USFS consulted the Tuolumne Band of Me-Wuk about restoring Mattley Meadow during an annual consultation meeting on June 1, 2015. A follow-up field trip was held with the tribe on June 25, 2015 with favorable feedback. The Tuolumne Band of Me-Wuk tribe supported restoration of the meadow. Consultation with the Calaveras Band of Miwuk and the Washoe Tribe was solicited via mailing a detailed list of 2015 proposed projects (including Mattley Meadow) on June 3, 2015. The Washoe tribe responded and visited the project area on July 7, 2015. The Washoe tribe was also supportive of the proposed restoration of Mattley Meadow and expressed wanting to see other meadows have similar restoration.

All local Native American tribes were notified by the Upper Mokelumne River Watershed Authority (UMRWA), pursuant to Public Resources Code Section 21080.3.1, of the proposed project and of the tribes' opportunity to request consultation. On March 17, 2020 the UMRWA notified the local Calaveras Band of Mi-Wok Tribe. The California Valley Miwok Tribe and the Lone Band of Miwok Tribe were both notified on May 1, 2020. No groups have requested to participate in the consultation process to date.

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Project Description

Background

The Mattley Meadow Restoration Project encompasses approximately 45 acres of meadow and riparian habitat in the headwaters of Mattley Creek, tributary to the North Fork Mokelumne River on public lands (32 acres) administered by the USDA-Forest Service (USFS), Calaveras Ranger District, Stanislaus National Forest and private lands (13 acres) owned by Stan Dell'Orto. The project area is located in Calaveras County, approximately 40 miles east of Jackson, CA, three miles southeast of the east end of Salt Springs Reservoir and four miles west of Bear Valley. Mattley Meadow was identified as a target meadow for restoration in the Amador Calaveras Consensus Group (ACCG) Collaborative Forest Landscape Restoration Project (ACCG 2011). The ACCG CFLR Project is a multi-stakeholder process to collaboratively address common natural resource concerns over a large geographic area. Calaveras Ranger District (District) staff had expressed interest in having Plumas Corporation, a meadow restoration group in Plumas County, conduct data collection and design services for this meadow project. Plumas Corporation design work has been funded under a grant contract with the National Fish & Wildlife Foundation. The completed Design Report is provided in Appendix B.

The purpose of the project is to restore ecosystem function in the currently degraded channel floodplain system in Mattley and Mattley Creek meadows. Historically, the Mattley meadow complex lacked deep stream channels and water travelled as sheet flow and through shallow swales on the surface of the meadows. Existing remnant vegetation indicates Mattley Meadow once supported a large aspen stand and a vigorous wet meadow plant community. However, natural and human caused disturbances over the past 100 years have caused the formation of three large gully channels in Mattley Meadow and one gully in Mattley Creek Meadow which have resulted in meadow degradation and impaired ecological function. The gullies prevent surface flows from accessing the floodplain and cause accelerated erosion. The gullies have also effectively drained the meadow by lowering ground water elevations, reducing groundwater storage, and altering stream flows. These hydrologic alterations in turn have negatively impacted the plant community and wildlife habitat. The aspen stand has suffered mass die-offs and has been encroached by conifers as the meadow has dried. There has been a conversion of moist plant communities to drier plant communities, increased conifer encroachment, and an overall deterioration of aquatic and terrestrial habitats.

Design Narrative

The Calaveras Ranger District, Stanislaus National Forest and project stakeholders are seeking to restore the natural hydrologic functions of the Mattley Meadow system to provide improved water quality and timing of flows, increased extent and vigor of meadow vegetation and aspen stands, and enhanced aquatic and terrestrial habitats onsite and downstream.

The Mattley Meadow Restoration Project proposes to meet these objectives by filling gullies within the meadow using local fill taken from meadow margins or other elevated features. This will require excavation and placement of approximately 15,991 cubic yards in six (6) total plugs to eliminate the existing gullies as a conduit for flow. The design of the proposed action applies the principles of fluvial geomorphology and the science of landscapes formed by flowing water, to understand the processes that have governed the development of the meadow through the Holocene period (last 10,000 years). This method also helps determine the possible mechanisms that have led to channel degradation and loss of floodplain connection/ecosystem function. This approach combines quantitative data with qualitative observations and historical overviews of land uses, both onsite and watershed-wide.

Table 1 summarizes the action items proposed to restore the hydrologic functions of the Mattley meadow complex utilizing the partial fill or commonly referred to “pond-and-plug” restoration technique. The design for Mattley Meadow is a near-complete gully fill (“plugs”), with the majority of fill material generated from borrow ponds along the margins of the meadow or other elevated features. The purpose of the fill material is to raise/restore the base elevation of surface water flow in the meadow. Generally, surface flows will be re-directed to remnant channel(s) elsewhere in the meadow. Surface flows would only cross the “plugs” during floods. Specific features of the project design are discussed in greater detail in the Meadow Component section, below.

Project construction will require one month during the lowest/no flow period, when the channels are expected to be dry (currently proposed for September 1-30, 2021). The Project area can be delineated into four gullied channel reaches delineated as follows: In Mattley Meadow- the “East” channel, an isolated “Middle” gully (a central constructed channel that is no longer functional but has contributed to the meadow drying out), and the “West” channel; and one channel in Mattley Creek Meadow. The West channel in Mattley Meadow would not be treated or directly impacted as part of the proposed project due to the presence of a population of Sierra Nevada yellow-legged frogs (SNYLF), a federal and State endangered species. **Figure 1** (Vicinity Area Map) shows the general location of the treatment areas and **Figure 2** (Project Design Plan View) shows the relative location of each treatment reach.

Table 1. Action items of the Mattley Meadow Restoration Project

Item Number	Action
1	Fill and stabilize the gullied channels in Mattley Meadow and Mattley Creek Meadow through (Figure 2): <ul style="list-style-type: none"> • Excavation of approximately 15,991 yd³ of material from nine (9) borrow pits along the margins of the meadow and other elevated features in the meadow. This material will be used to construct the plugs. The ponds will total approximately 3.34 acres. • Construction of six (6) plugs in the meadow(s) to achieve the partial or complete filling of approximately 2,688 feet of channels. The plugs will total approximately 2.67 acres in size. Motorized equipment in the meadow would be used in order to accomplish this action item. The existing project area consists of approximately 0.79 acres of wet meadow floodplain, 0.32 acres are intermittent and perennial channels, and 43.89 acres of upland.
2	Plant riparian vegetation in all disturbed areas within the meadow (access routes, borrow pond margins, gully fill/plugs). Sod and willow transplants would be excavated and placed using heavy equipment. Native seeding and willow plantings would be done by hand.
3	Reroute a 0.1 mile segment of motorized trail 17EV16 that crosses Mattley Creek Meadow around the meadow. The new rerouted trail segment would be approximately 0.2-0.4 miles in length. The existing trail segment in the meadow would be scarified and woody debris and/or vegetation placed as needed to promote vegetative regrowth. The new trail segment stream crossing would be armored with approximately 5 cubic yards of 6 inch rock.
4	To restrict grazing in the restored areas until treatment areas are revegetated and stabilized (approximately 2-3 years), range fencing would be reconstructed on the north property boundary and east edge of Mattley Meadow. Temporary fencing would be constructed around the immediate restored area in Mattley Creek Meadow. An off-channel water source may be constructed to increase livestock dispersal.

Meadow Restoration Component

Ultimately, the design concept for degraded meadows in the Mattley Meadow project area is to implement near-complete gully fill of the “East” incised channel and “Middle” isolated gully. No work would occur in, or adjacent to, the “West” incised channel occupied by SNYLF. Fill material for the two (2) incised channels in Mattley Meadow would be excavated from eight (8) borrow ponds along the margins of the meadow or other elevated features. This material would be used to construct five (5) plugs along the treated channels. This design significantly reduces risk associated with frequent overland flow over plugs and into ponds. Given meadow slopes of 2% -7% and multiple gullies in proximity to the restored flow paths, the more traditional pond and plug technique would have some risk.

The principal function of the borrow ponds is to provide native fill material for plug construction. Since the ponds will fill with groundwater and maintain ponded water year-round, habitat features and diversity are incorporated into their construction. Specifically, these would include varying water depths, semi-submerged boulders, islands, peninsulas, basking logs, etc., to provide diverse thermal refugia for SNYLF. USFS, U.S. Fish & Wildlife Service (USFWS), California Department of Fish & Wildlife (CDFW), and other amphibian experts would assist with the placement/orientation of these features to maximize potential benefits to SNYLF.

Topsoil is removed and stockpiled adjacent to the plug fill zones to top dress the completed plug. All plugs and borrow ponds are sited and configured to accommodate surface and subsurface through flow, as well as adjacent hillslope-generated surface and groundwater inflows. Plugs are constructed with wheel loader(s) to provide wheel compaction of the fill. The compaction levels are intended to match the porosity/transmissivity of the native meadow soils. This allows moisture to move freely within the plug soil profile and support erosion resistant meadow vegetation for long term durability, as well as preventing preferential pathways for subsurface flows either in the plug or the native material. Meadow vegetation such as sod mats and willow wads would be salvaged by excavating and stockpiling the material to use for revegetation of the completed project.

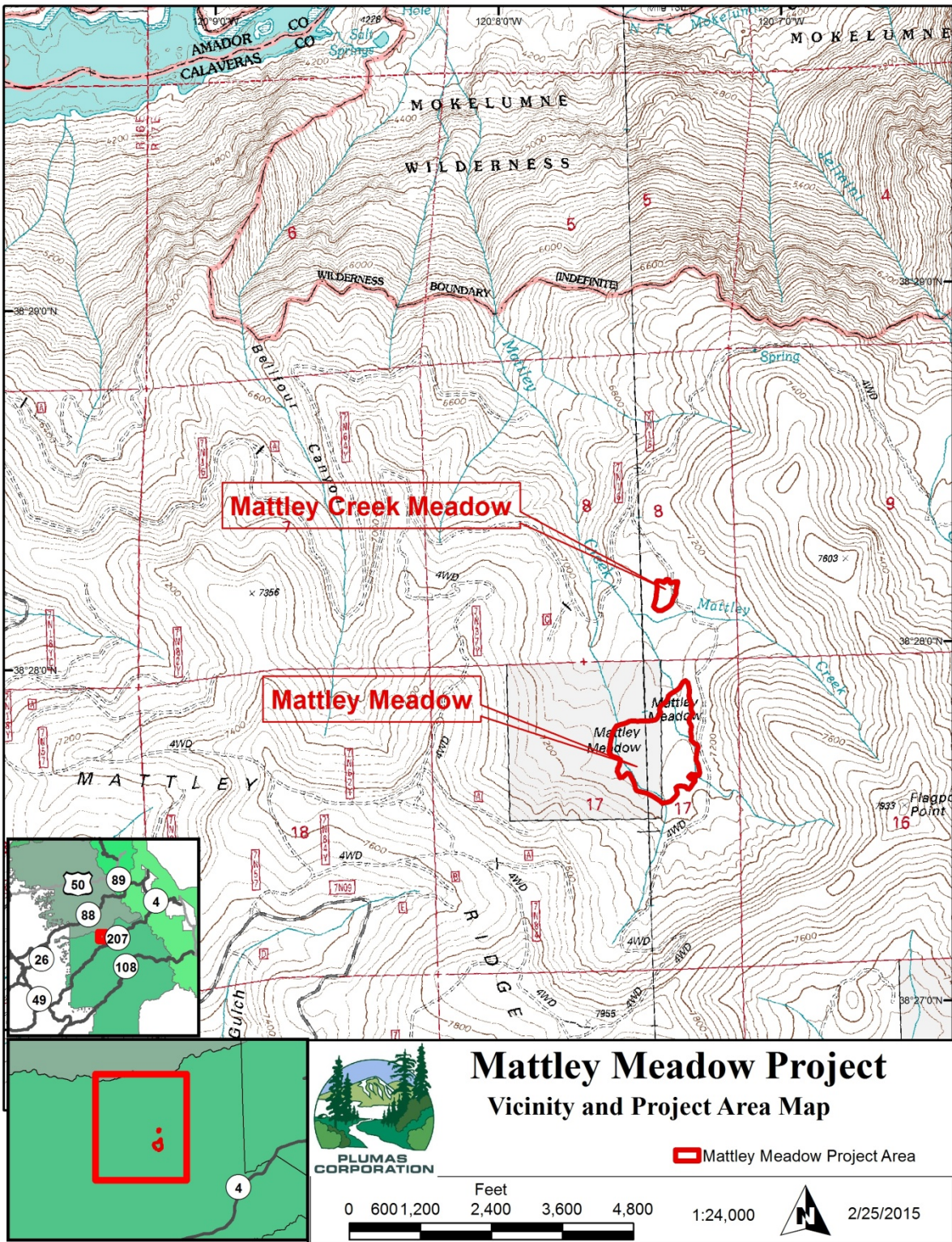


Figure 1. Mattley Meadow Restoration Project Area Locations

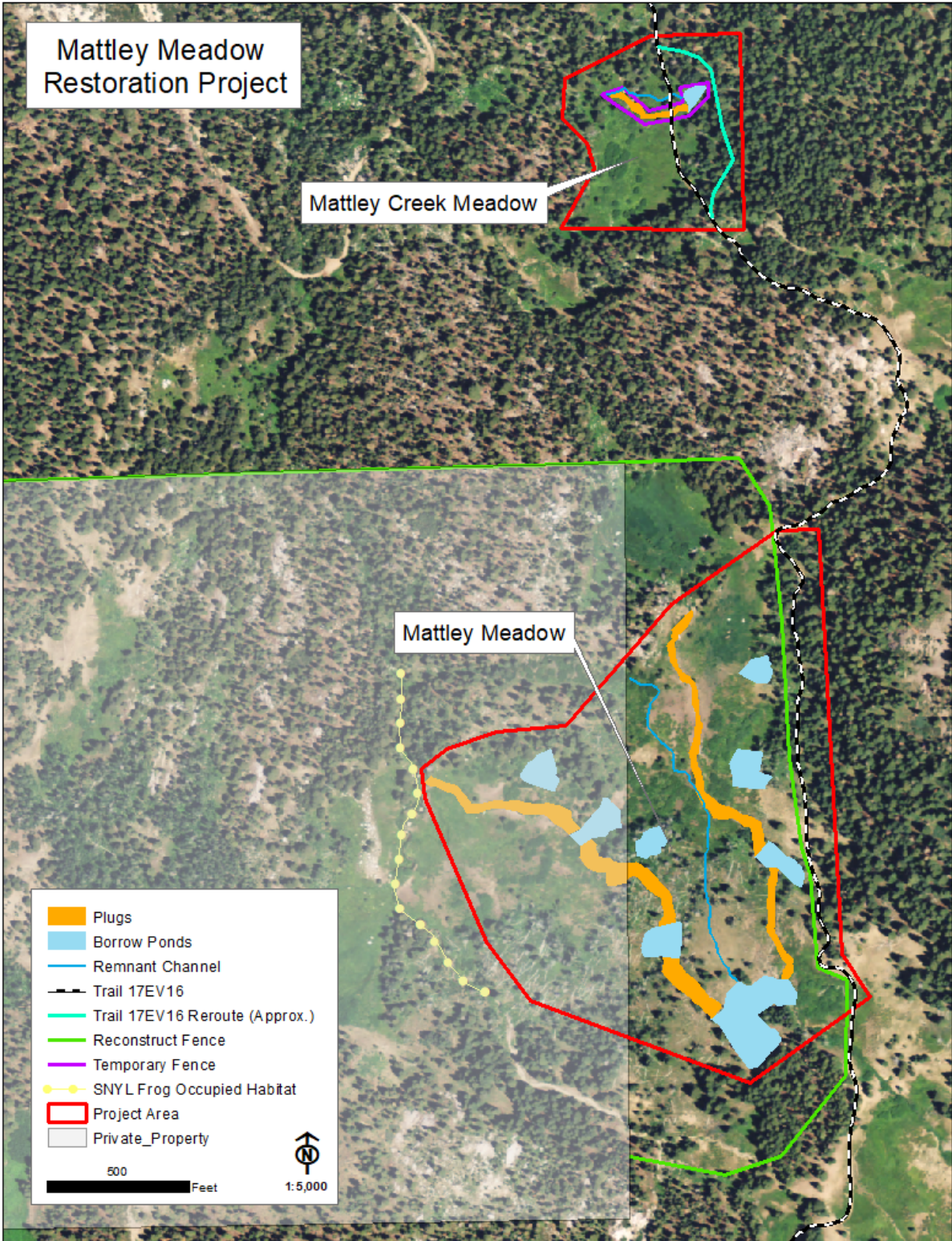


Figure 2. Mattley Meadow Restoration Project Treatment Reaches

Design features specific to Mattley Meadow are depicted in **Figure 3**. There is considerable large woody debris (LWD) in the meadow as evidenced by the down aspen trees visible in the orthoimagery. Mattley Meadow has an over-steepened facet between cross-sections #6 and #7 of the East incised channel. Vegetative conversion from resilient carex/juncus sod to sparse forbs has been the most pronounced on this facet. This facet is also where sheet flow characteristics of the upper meadow begin to transition to a defined channel. Consequently, the restoration design proposes to concentrate an effort to place live and dead woody debris through this slope facet to reduce velocities. This will allow for a metering of channel scour while the carex/juncus sod becomes reestablished. The woody debris would consist of conifers and aspen removed during pond excavation as well as any currently down material still solid enough to handle with equipment. It is estimated approximately 75 trees would be removed during the pond excavation.

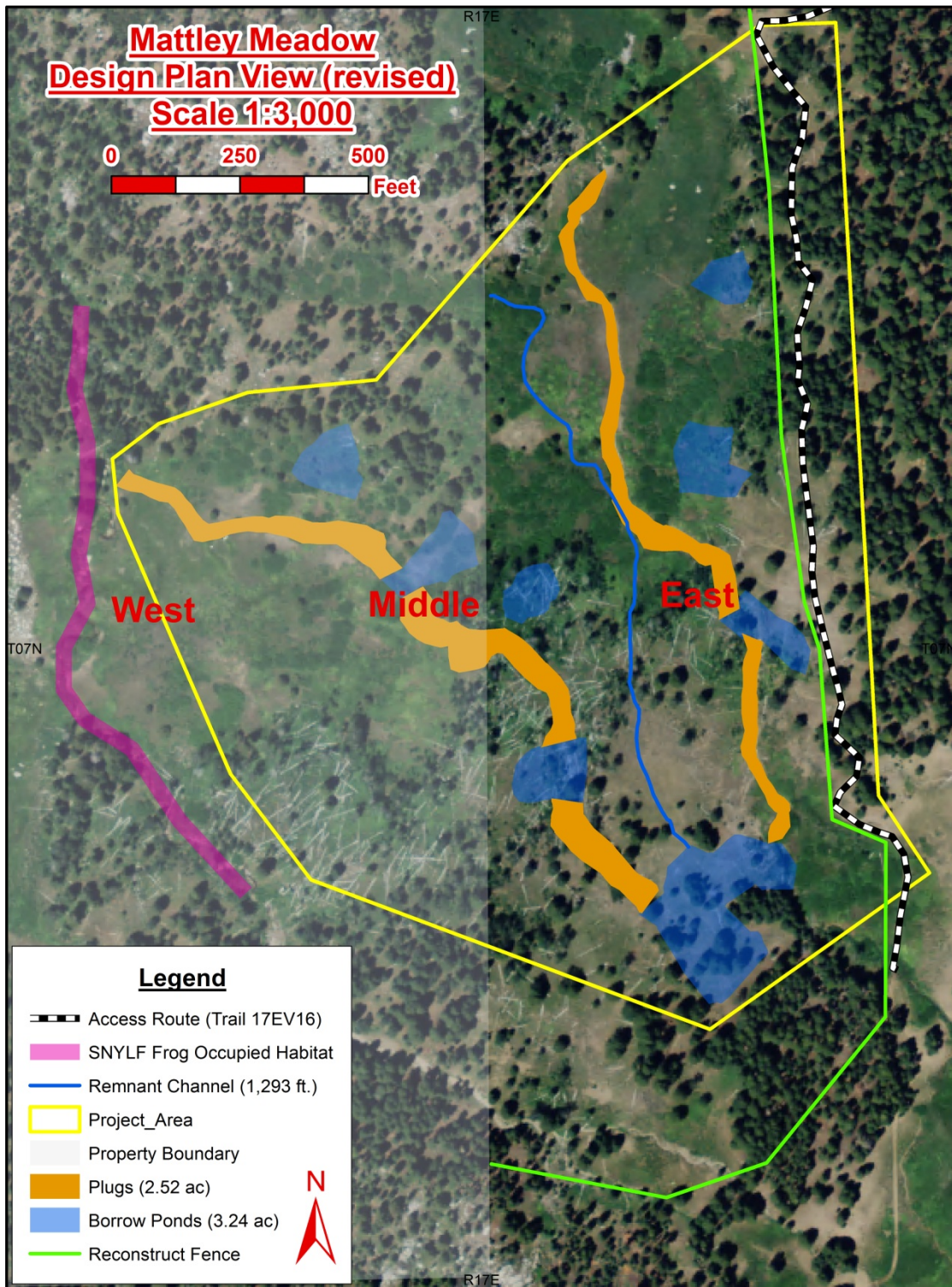


Figure 3. Mattley Meadow Restoration Design Schematic

The design features specific to the Mattley Creek Meadow (**Figure 4**) would completely fill the existing incised channel with material from one (1) borrow pond. The existing off-highway vehicle (OHV) trail would be relocated to an alternate location outside of the meadow. The existing route would be used

for access by equipment to accomplish the restoration work, and then rehabilitated where it crosses the creek and meadow. All access for equipment and materials would be on existing open or closed roads, OHV routes, skid trails and landings. The new re-routed trail stream crossing would be armored with rock.

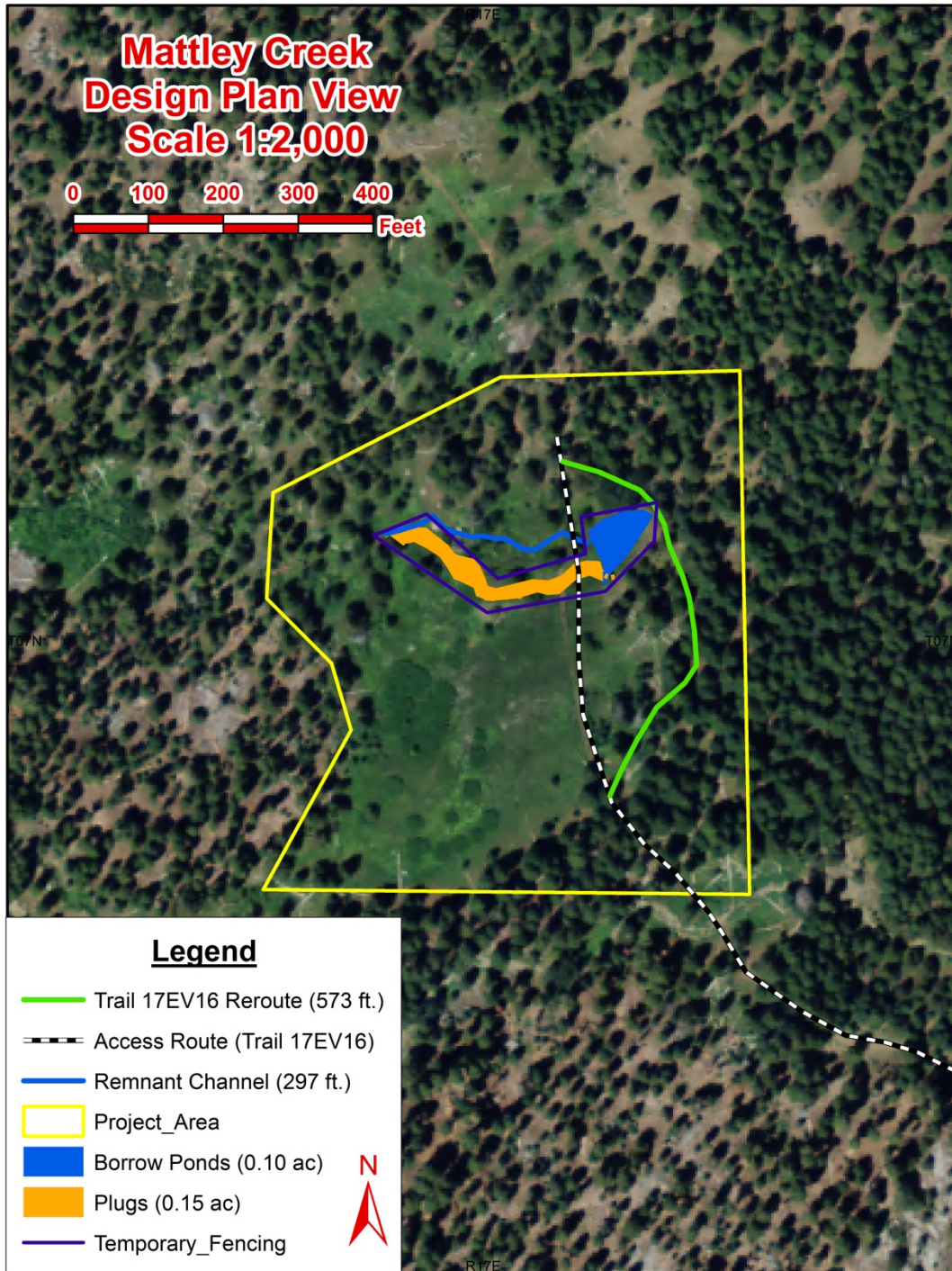


Figure 4. Mattley Creek Meadow Restoration Design Schematic

Revegetation

Upon completion, all plug surfaces are ripped to a depth of 12” to facilitate rainfall infiltration, dressed with the recovered topsoil, and seeded with native seed. Sod mats, willow wads, and other meadow vegetation from fill and borrow sites would be transplanted to plug edges, terraces and key locations on the remnant channel. Willow stakes would be planted next to stream channels and disturbed areas following construction in the fall to reduce immediate post-project vulnerability to erosion. USFS staff will monitor survival of willow cuttings and percent cover of seeded areas for three years following construction. Successful revegetation will be achieved with 70% survival of willow cuttings and 50% cover of seeded areas. Any areas that do not meet the survival or cover area would be replanted.

Project Monitoring

The Mattley Meadow Restoration Project is expected to benefit multiple resources by restoring the hydrological and ecological functions of the meadow floodplain system. The purpose of project monitoring is to measure project effectiveness on water quality, timing of flows, and enhancement of wildlife and aquatic habitats. Monitoring parameters and methods that would be utilized are outlined in **Table 2**.

Table 2. Project Effectiveness Monitoring of the Proposed Action

Monitoring Parameter	Method	Responsible Party
Water Temperature	Water temperature data loggers installed above and below project area May-Sept*	Plumas Corporation**
Aquatic Habitat	California Rapid Assessment Method (CRAM) conducted once pre- and post-project	Plumas Corporation
Groundwater	6 groundwater wells (approximately 6 to 12 ft in depth) made of 3/4” galvanized perforated pipe, measured monthly*	Plumas Corporation**, USFS as time allows
Stream Flow	Staff gage and pressure transducer installed at the bottom of project area; monthly* manual calibration flow measurements; quarterly* collection of oxygen isotope samples and measurement of electrical conductivity (EC) from inflows, springs, and wells	Plumas Corporation**
Sediment Supply	Channel cross-section surveys; CRAM	Plumas Corporation
Meadow Vegetation	All revegetation areas would be monitored for three years following project completion. Monitoring will quantify willow survival and percent cover of native meadow vegetation.	USFS
Sierra Nevada yellow-legged frog Population	Existing SNYLF population in the untreated “West” channel would be monitored annually, as well as the remnant channel and borrow ponds in the restored area of Mattley Meadow for potential SNYLF dispersal.	USFS

*As access permits

**Plumas Corporation has secured funding for monitoring through June 2022. Additionally, Plumas Corporation is working with the ACCG so that this group can continue monitoring outside of the existing funding window.

Environmental Factors Potentially Affected

This Initial Study has determined that in the absence of mitigation the proposed project could have the potential to result in significant impacts associated with the factors checked below. Mitigation measures are identified in this Initial Study that would reduce all potentially significant impacts to less-than-significant levels.

- | | | |
|---|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture/Forestry Resources | <input checked="" type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input checked="" type="checkbox"/> Geology/Soils | <input type="checkbox"/> Greenhouse Gas Emissions | <input checked="" type="checkbox"/> Hazards & 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 | <input checked="" type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Wildfire | <input type="checkbox"/> Mandatory Findings of Significance |

On the basis of this initial evaluation:

- I find that the 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 in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the project MAY have a “Potentially significant impact” or “potentially significant unless mitigated” impact on the environment, 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 project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Signature

May 7, 2020

Date

Signature

Date

Initial Study and Checklist

Introduction

This checklist is to be completed for all projects that are not exempt from environmental review under the California Environmental Quality Act (CEQA). The information, analysis and conclusions contained in the checklist are the basis for deciding whether an Environmental Impact Report (EIR) or Negative Declaration is to be prepared. Additionally, if an EIR is prepared, the checklist shall be used to focus the EIR on the effects determined to be potentially significant.

1. Aesthetics

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, 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 within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

Scenic resources in Calaveras County are a valued asset, with forests, oak woodlands, river corridors, lakes, and streams as just a few of the County’s exceptional scenic resources that contribute to the County’s sense of place and characteristic beauty (Calaveras County 2019a). The Mattley Meadow project area is in a natural setting, surrounded by forest lands administered by the Stanislaus National Forest, Calaveras Ranger District and privately owned by Stan Dell’Orto. The meadow is located approximately three miles southeast of the east end of Salt Springs Reservoir, a designated scenic corridor in the Stanislaus National Forest Land and Resource Management Plan (LRMP) (USDA 1991), and four miles west of Bear Valley, in the headwaters of Mattley Creek, a tributary to the North Fork Mokelumne River. The project area is remote and accessible via State Route (SR) 4 to Forest Service (FS) road 7N09 to FS road 7N16, from which you must hike approximately .25 mile to reach the meadow. A 24-mile stretch of SR 4 in Calaveras County from east of Arnold to the Alpine County line is part of the Ebbetts Pass National Scenic Byway. The project area is not visible from the scenic corridor around Salt

Springs Reservoir, from the SR 4 scenic byway corridor, nor from Forest Service road 7N09. The meadow complex can be accessed via Forest Service OHV routes 17EV16 and 17EV84. The project area is visible only from the OHV trails. There are no campgrounds near the project area, but dispersed camping off of nearby FS roads and OHV trails is permissible.

Calaveras County's General Plan Conservation and Open Space Element's goals, policies, and measures for scenic resources call for the conservation and maintenance of scenic resources that preserve the rural character, scenic beauty, and tourism component of the local economy (Calaveras County 2019a). The Land and Resource Management Plan (LRMP) for the Stanislaus National Forest (SNF) (USDA 1991) contains a discussion of Visual Quality Objectives (VQOs) based on management areas and land use types using the USFS Visual Management System. The Mattley Meadow area is managed to meet the VQO of Partial Retention. Under this VQO, management activities may be noticeable, but must remain visually subordinate to the surrounding landscape (USDA 1991). Views from the project area are middleground (0.5 to 3 mile) views of the surrounding forested hillsides. The middleground distance zone represents the area where individual details cannot be discerned but patterns (such as a stand of trees) are obvious (USDA 1991). The middleground partial retention designation for Mattley Meadow is characterized as a Class B Common Landform landscape. Based on existing visual condition (EVC) class descriptions within the Forest Plan, the existing visual condition (EVC) class rating for Mattley Meadow would be IV, "An area in which changes in the landscape are easily noticed by the average Forest visitor. They appear to be disturbances but resemble natural patterns" (USDA 1991).

Impact Discussion

This project seeks to restore the hydrologic function of the meadow ecosystem and will not alter the existing vegetation structure. The forest surrounding Mattley Meadow is fairly dense and does not provide views beyond the immediate forest from the meadow. Due to the degraded meadow conditions, the stress on the aspen stand can be visually observed with dead and dying trees and little recruitment. The proposed project would restore the meadow hydrology, benefitting the aspen stand with potential greater recruitment due to the increased water table levels. In addition the project would remove approximately 75 trees from the borrow sites along the meadow margin and other elevated meadow features; however, the removal of these trees is negligible relative to the overall forest landscape, meets the County scenic resource goals, policies, and measures and Forest LMP partial retention VQO, and would not significantly impact the meadow viewshed.

The proposed restoration project would not degrade the existing visual character or quality of the site, nor create any new sources of light or glare. The meadow itself would have bare areas for the first year resulting from the project; however, the degraded hydrology and drought conditions for water years 2012 through 2015 also have created substantial bare ground and loss of meadow vegetation.

Additionally, the project description includes a revegetation component to accelerate establishment of meadow vegetation. After the first growing season, meadow vegetation would begin to recover, and would result in an aesthetic benefit in the long term. The revegetation component includes the following features:

- After project construction, all fill surfaces will be seeded with native plant seed that has been purchased for use in Mattley Meadow(s).
- Sod mats, willow wads, and other meadow vegetation salvaged from fill and borrow sites will be transplanted to plug edges, terraces and key locations on the remnant channel. Sod would be placed with heavy equipment and could be secured using live willow stakes. Willow wads also

would be excavated and replanted using heavy equipment.

- All revegetation areas would be monitored for three years following project completion. Successful revegetation would consist of 70% survival of willow cuttings. Seeded areas would have at least 50% cover of native vegetation. Any areas that do not meet the survival or cover criteria would be reseeded or replanted.

Project construction will require use of the standard suite of heavy equipment: one excavator with 36" bucket, one excavator with 48" bucket, one track loader, one wheel loader, and one water truck. All access for equipment and materials will be on existing open or closed roads and recent timber harvest skid trails and landings. Heavy equipment would be visible from the OHV trails for a 5-week period during construction, representing a temporary but less-than-significant impact to the visual character of the site.

Mitigation Measures: No mitigation required.

2. Agriculture/Forest Resources

In determining whether impacts to 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 Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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 a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 1 2220(g)) or timberland (as defined by Public Resources Code section 4526)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The proposed project is located on private land parcels zoned as Agricultural Preserve (AP) and public land parcels zoned as Unclassified on the Calaveras County Open Data Zoning Map (2019b). The purpose of the AP zone is to protect and preserve lands for intensive agriculture and ranching production. Agriculture preserve zoning applies to lands for which a Williamson Act contract has been executed. The AP zone may also be utilized for open space protection and preservation. The U zone applies to lands until more precise zoning is adopted by the County. The following uses are permitted in the U zone and compatible with Forest Service management plan guidelines: accepted farming practices; accepted timber practices on parcels of twenty acres or more; accepted ranching practices on parcels of twenty acres or more. Other accepted uses in the U zone are incompatible with public land management of the site, and would not be applicable for the proposed project area. The proposed project area is a montane meadow surrounded by coniferous forest, and is used primarily for livestock grazing and recreation.

Impact Discussion

Mattley Meadow was identified as a target meadow for restoration in the Amador Calaveras Consensus Group (ACCG) Collaborative Forest Landscape Restoration Project (ACCG 2011), and therefore the project is consistent with the overall forest management direction for the region. The proposed project would remove approximately 75 trees from the meadow margins and elevated features that will serve as borrow sites for fill material. The trees would be used to create habitat features via incorporation into plug fill surfaces, the remnant channel, and ponds formed by borrow sites. The removal of conifers under the project would not result in a loss of forested land in the overall forest landscape surrounding the meadow. Therefore, there would be no impact to agricultural and forest resources under the proposed project.

Mitigation Measures: No mitigation required.

3. Air Quality

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The goals of air resource management on the Stanislaus National Forest are to (1) minimize air pollutants caused by forest management activities and (2) cooperate with CA Air Resources Board (CARB) and applicable Air Pollution Control Districts in monitoring and regulating off-forest air pollution sources (USDA 1991). The proposed Mattley Meadow project located on National Forest and private lands in northeastern Calaveras County, is located in the Mountain Counties Air Basin, and is under the jurisdiction of the Calaveras County Air Pollution Control District (CCAPCD). The District is a recognized Special District governed by the Calaveras County Air Pollution Control Board, whose primary goal is to manage the county’s air quality to protect public health pursuant to state and federal Clean Air Acts and in accordance with state and federal guidelines (Calaveras County 2019c). Air quality impacts from

sources within the District are negligible; however, Calaveras County air quality is impacted through transport pollutants from the Central Valley (Ibid). Open burning of vegetation by individual property owners, industry, and state agencies for purposes of reducing wild land fire hazards are the most visible impacts to air quality within the District (Ibid).

The Mountain Counties Air Basin is designated as a “nonattainment area” for ozone and PM10 under California ambient air quality standards. Sensitive populations to poor air quality include children, the elderly, the acutely ill and the chronically ill. Sensitive receptors are facilities that are occupied by these sensitive populations, including residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics. If a proposed project results in the exposure of sensitive receptors to substantial pollutant concentrations, Calaveras County requires the preparation of a Health Risk Assessment (Ibid).

Local sources of impact on air quality in the project area are imported constituents from outside the Mountain Counties Air Basin, emissions from vehicular traffic on SR 4 and Forest Service roads, forest management activities, photochemical transformation of local and imported emissions, and dust from infrequent travel on the nearby Forest Service roads. Other infrequent air quality impacts result from wildfires and intermittent controlled burns implemented by the Forest Service. In addition, Calaveras County has naturally-occurring asbestos.

Impact Discussion

The proposed project would have no long-term impacts to air quality. However, the project includes excavation and grading activities to fill the incised channels in the Mattley Meadow complex. The project area is outside of areas identified as likely to contain naturally occurring asbestos (CA Dept. of Conservation 2000; Calaveras County 1996). Construction activities have the potential to affect PM10 and ozone concentrations through the production of exhaust emissions, and also may affect PM10 through the generation of fugitive dust from soil-disturbing activities.

The neighboring county (El Dorado County Air Quality Management District (EDCAQMD)) has a CEQA Guide to Air Quality Assessment that provides an evaluation of construction exhaust emissions based on fuel use estimates. Under this approach, the average daily fuel use per quarter (or the duration of the construction period if less than 90 days) for all construction equipment at a single site would be used to ensure that emissions remain below the combined 82 lbs/day significance thresholds for ROG and NOx on a quarterly basis (EDCAPCD 2002). **Table 3** summarizes the screening levels identified for this approach:

Table 3. Construction Equipment Fuel Use Screening Levels (EDCAPCD 2002).

Equipment Age Distribution	Average Daily Fuel Use Per Quarter (Gallons per Day)
All equipment 1995 model year or earlier	337
All equipment 1996 model year or later	402

The proposed project will utilize 5 pieces of construction equipment per day at any given time (e.g., track loader, two excavators, wheel loader, and water truck) for the duration of construction. The average daily fuel consumption on past Plumas Corporation meadow restoration projects of this size is approximately 175 gallons/day. This usage is well below 337 gal/day, the most conservative significance threshold. Based on the EDCAQMD CEQA Guide, the impact of exhaust emissions on CO and PM10

would be less-than-significant, and would not cumulatively contribute to an increase in PM10, ozone, or ozone precursors.

The proposed project includes soil-disturbing activities that have the potential to generate fugitive dust PM10 emissions. As a natural restoration project located on National Forest and private lands used for agricultural operations (range management), the project would not require a grading permit. The effects of a proposed project are assumed to be less-than-significant if the project includes mitigation measures that will prevent visible dust beyond the project property lines. Because of its rural forested location, it is expected that grading work under the proposed project would not generate visible dust beyond the project property lines. However, fugitive dust control measures will be implemented as necessary to prevent visible emissions beyond the project property lines; therefore, impacts to PM10 emissions under the proposed project would be less than significant.

Mitigation Measures: The following fugitive dust control measures will be implemented as needed to ensure that PM10 fugitive dust emissions from construction activities are maintained at a less-than-significant level:

- 3a.** Construction fill and cut areas would be watered as necessary to prevent visible emissions from extending more than 100 feet beyond the active work areas unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.
- 3b.** Disturbed surface areas would be watered in sufficient quantity and frequency to suppress dust and maintain a stabilized surface.
- 3c.** At least 80 percent of all inactive disturbed surface areas would be watered on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible due to excessive slope or other safety conditions.
- 3d.** All unpaved roads used for any vehicular traffic would be watered at least once per every two hours of active operations.
- 3e.** The Geology/Soils impact discussion includes mitigation measures to address re-vegetation, which include the following:
 - All desirable plant material that would be excavated or buried in plugs, such as sod mats and willow wads, will be removed and transplanted to plugs and at key locations in the remnant channel. Locations of transplants are prioritized according to need for maximum soil protection in bare areas and areas of potentially high stress.
 - Following project completion, purchased native seed and locally collected willow stakes, would be dispersed and planted around borrow areas, plugs, and other heavily disturbed areas.
 - All revegetation areas would be monitored for three years following project completion. Successful revegetation would consist of 70% survival of willow cuttings and transplants. Seeded areas would have at least 50% cover of native vegetation. Any areas that do not meet the survival or cover criteria would be reseeded or replanted.

4. Biological Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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 Wildlife 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, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>

The following discussion is summarized from the following sources, provided as appendices to this document:

- Appendix C: Biological Assessment Mattley Meadow Restoration (47053) (USDA-Forest Service 2018)
- Appendix D: Wildlife Specialist Report & Biological Assessment & Evaluation Mattley Meadow Restoration Project (USDA-Forest Service 2020)
- Appendix E: Biological Opinion Mattley Meadow Restoration Project 08ESMF00-2017-F-1659 (USFWS 2020)
- Appendix F: Mattley Meadow Restoration Project Sensitive Plant Biological Evaluation (USDA-Forest Service 2020)

Environmental Setting

Mattley Meadow consists of a 45-acre upper alpine meadow (elevation 7,200 ft) in the headwaters of the Mattley Creek, tributary to the North Fork Mokelumne River. The channels are deeply incised but support typical meadow riparian vegetation consisting of willow (*Salix* sp.), *Lupinus polyphyllus*, *Mimulus guttatus*, *Mertensia oblongifolia*, and *Delphinium polycladon*. As a result of the down cut channels, large patches of xeric vegetation have become established, characterized by open sparse cover of mesic meadow vegetation. These areas are typically dominated by *Veratrum californica*, *Sidalcea asprella*, *Achnatherum* sp., *Collinsia sparsiflora*, and *Hackelia velutina*. The bottom of the meadow is still sustained by shallow groundwater where more typical wet meadow vegetation has managed to persist, dominated by *Carex nebrascensis*, *Eleocharis* sp., *Trifolium longipes*, and grasses and forbs. As a result of reduced groundwater recharge, the altered meadow hydrology has led to significant conifer encroachment and widespread mortality of the large aspen stand in the upper half of Mattley Meadow.

A list of potential state- and federally-listed, special-status, and Forest Sensitive species that may be present in the project area was compiled using information requested from the US Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife Biogeographic Information and Observation System (BIOS), and the USDA-Forest Service Region 5 Sensitive Species List (June 2013). The evaluation of botanical impacts also included a review of Forest special-interest, or “watchlist” species, which includes rare plants on the California Rare Plant list that were identified in BIOS.

Terrestrial Wildlife

Table 4 presents a list of terrestrial species from the CNDDDB, USFWS, and Regional Forester’s lists that may occur in the project area.

Table 4. Terrestrial wildlife species potentially occurring in the Mattley Meadow Restoration Project Area.

Species	Listing Status*
Mammals	
Pacific marten (<i>Martes americana</i>)	FS; MIS
Fisher – West Coast DPS (<i>Pekania pennanti</i>)	FS; FT-Proposed; ST; SSC
California wolverine (<i>Gulo gulo luteus</i>)	FS; FT-Proposed; ST; FP
Sierra Nevada red fox (<i>Vulpes vulpes necator</i>)	ST; FS; FE-Proposed
Pallid bat (<i>Antrozous pallidus</i>)	FS; SSC
Townsend’s big-eared bat (<i>Corynorhinus townsendii</i>)	FS; SSC
Fringed myotis (<i>Myotis thysanodes</i>)	FS
Mule Deer (<i>Odocoileus hemionus</i>)	MIS
Birds	
California spotted owl (<i>Strix occidentalis occidentalis</i>)	FS; SSC
Northern goshawk (<i>Accipiter gentilis</i>)	FS; SSC
American bald eagle (<i>Haliaeetus leucocephalus</i>)	FS; SE; FP
Great gray owl (<i>Strix nebulosa</i>)	FS; SE
Willow flycatcher (<i>Empidonax traillii</i>)	FS; SE
American peregrine falcon (<i>Falco peregrines anatum</i>)	FP
Yellow Warbler (<i>Dendroica petechia</i>)	MIS
Invertebrates	
Morrison bumblebee (<i>Bombus morrisoni</i>)	SA
Western bumblebee (<i>Bombus occidentalis</i>)	FS

*FS = Forest Service Sensitive Species within the Stanislaus National Forest; FE = Federal Endangered; FT = Federal Threatened; MIS = Forest Service Management Indicator Species; SE = State Endangered; ST = State Threatened; SSC = CDFW Species of Special Concern; FP = CDFW Fully Protected; SA = CDFW Special Animal; CH = Critical Habitat

Aquatic Wildlife

Table 5 presents the listed and FS-Sensitive aquatic wildlife species occurring on the Stanislaus National Forest that may potentially occur in the project area. The action area used to analyze impacts to aquatic wildlife species is defined in 50 CFR 402.02 to mean all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. The action area for the Mattley Meadow Restoration Project is comprised of 262 acres including the project footprint, a 200 foot buffer around the project footprint where noise or visual disturbance could occur, and 1.2 miles of Mattley Creek downstream of the project where indirect effects could occur (**Figure 5**).

Table 5. Evaluation of potential for project effects under the Mattley Meadow Restoration Project to listed and special-status aquatic wildlife species.

Species	Listing Status	Preferred Habitat
Fish		
Delta smelt (<i>Hypomesus transpacificus</i>)	FT; SE	Sacramento-San Joaquin delta
Steelhead (<i>Oncorhynchus mykiss</i>) Northern California DPS	FT	Central Valley delta and up rivers to man-made and natural barriers
Amphibians		
Sierra Nevada yellow-legged frog (SNYLF) (<i>Rana sierrae</i>)	FE; ST	Above 4,500 ft. High elevation low-gradient streams and small ponds that are either intermittent or perennial
Sierra Nevada yellow-legged frog (SNYLF) (<i>Rana sierrae</i>) Critical Habitat (CH)	CH	Above 4,500 ft. High elevation low-gradient streams and small ponds that are either intermittent or perennial
Southern long-toed salamander (SLTS) (<i>Ambystoma macrodactylum sigillatum</i>)	SSC	Riverine and Lacustrine; from near sea level to 9,180 feet
Yosemite toad (YOTO) (<i>Anaxyrus canorus</i>)	FT; FS; SSC	Above 6,400 feet. Breeding habitat occurs in lakes, ponds and wetlands, south from the Blue Lakes region of Alpine County.
Yosemite toad (YOTO) (<i>Anaxyrus canorus</i>) Critical Habitat	CH	Above 5000 feet. Breeding habitat occurs in lakes, ponds and wetlands, south from the Blue Lakes region of Alpine County. Designated Critical Habitat: Blue Lakes unit

Species	Listing Status	Preferred Habitat
Reptiles		
Western pond turtle (WPT) (<i>Actinemys marmorata</i>)	FS; SSC	Below 5,000 ft. Ponds and slow moving streams

The project would not affect delta smelt, steelhead (northern California DPS), or Western pond turtle as the habitat for these species is not located within the project area, or is located far enough downstream that there would be no measurable effects to the species or habitat. Visual encounter surveys (Fellers and Freel 2005) conducted in aquatic habitats within the project area are summarized in **Table 6**.

Table 6. Visual Encounter Surveys for amphibians conducted in the project area.

Location	Date	Detections
Mattley Meadow (FS portion)	8/3/2009	None
Mattley Meadow (all outside channels)	6/19/2018	PSSI
Mattley Meadow- West Channel	9/17/14, 9/18/14, 8/3/15, 6/20/16, 7/17/17, 7/18/17, 7/25/2018	RASI, PSSI, ONMY
Mattley Meadow- Middle Channel	6/10/16, 7/17/17, 7/18/17, 7/25/18	NONE
Mattley Meadow – East Channel	9/17/2014, 6/10/16, 7/18/17, 7/25/18	PSRE
Mattley Creek Meadow	8/4/2009	NONE
Meadow A	8/3/2009	NONE
Meadow B	8/3/2009	NONE
Meadow C	8/3/2009	NONE
Meadow D	8/3/2009	NONE
Meadow E	8/4/2009	NONE
Meadow F	8/4/2009	NONE
Meadow G	8/4/2009	NONE
Meadow H	8/4/2009	NONE
Mattley Creek (Lower)	9/16/2014, 7/29/15	PSRE, ONMY
Mattley Creek (Upper)	8/4/2009, 9/17/2014, 8/3/15	ONMY

Yosemite Toad

No YOTO were found during the 31 VES conducted in aquatic habitats within the action area from 2009-2018 (**Figure 6** and **Table 6**), and no historical records for YOTO exist in the action area (CNDDDB, ARCTOS, Aquasurv). There are three known YOTO occurrences within 10 miles of the action area: 1) Meadow on Underwood Valley tributary 6.8 miles NE of action area. 1 subadult reported in 2008; 2) Duck Lake 7 miles east of the action area. 2 subadults detected in 2002, 150 subadults detected in 2008; and 3) Wheeler Lake 8.3 miles NE of the action area. 6 adults and 2 egg masses detected in 1995.

The entire Mattley Meadow complex is approximately 80 acres and occupies the confluence of multiple small drainages and hillslope flows. It has high and middle gradient riparian meadow types as well as discharge slope hydrogeomorphic types. The tributaries to Mattley Creek that flow through the meadow are incised in gullies from 3.8 to 7.3 feet deep. A large mature aspen stand within the meadow has died off with significant conifer encroachment due to meadow dewatering. Approximately six (6) acres of Mattley Meadow have marginally suitable breeding habitat for Yosemite toad (**Figure 7**). These portions of the meadow have shallow surface water in spring with obligate meadow vegetation. However, observations of the habitat made in 2016, 2017, and 2018 indicate that potential breeding areas may not hold water long enough to allow tadpole development in most years. The remaining portions of Mattley Meadow do not retain surface water for a sufficient period to support tadpole development, but provide suitable non-breeding habitat. The meadow likely had larger areas of suitable YOTO breeding habitat before formation of gullies lowered the water table elevation. Upland habitat surrounding Mattley Meadow is predominantly red fir forest, with smaller components of sierra mixed conifer, lodgepole pine, and montane chaparral. Meadows A,B,C,D,E,F,G, and Mattley Creek Meadow (**Figure 6**) lack sufficient surface water to support Yosemite toad breeding.

Sierra Nevada Yellow-legged Frog

Mattley Meadow contains three main channels (**Figure 2**). Sierra Nevada yellow legged frogs have only been detected in and adjacent to the western channel (**Figure 7**). Within the west channel, detections were as follows: 212 Larvae on 9/17/14; 2 adults, 18 metamorphs, and 22 tadpoles in 2015; 2 adults and 4 tadpoles on 6/16/2016; 2 adults and 1 subadult on 7/17/17; 2 adults and 7 tadpoles on 06/29/2018. Negative surveys were made in the middle and east channel in 2014, 2016, 2017, and 2018 (**Table 6**). On August 19, 2017 eDNA samples were made in all three channels. The eDNA samples corroborated previous VES results with positive detections on the lower and central parts of the west channel, but negative results on the upper western channel and on the middle and east channels. The existing survey data indicated that the population in Mattley Meadow is small. Inconsistent tadpole detections and sparse detections of subadults may indicate that recruitment is irregular. All occurrences in the action area are within general forest management areas and do not fall within proposed critical habitat.

Other known SNYLF occurrences in the vicinity of the action area are as follows:

- 1) Moore Creek approximately 1.3 miles west of the action area. Detections as follows: 10 adults in 1993; 15 adults, 5 tadpoles, 3 egg masses in 1996; 4 adults and 1 subadult in 1997; 2 adults, 2 subadults, and 9 larvae in 2008.
- 2) Pond near Moore Creek approximately 2 miles west of the action area. One adult detected in 2009.
- 3) Big Meadow approximately 2.5 mi south of the action area. Collections made in 1928 and 1952. No detection were made in surveys in 2009 and 2015.

The populations at Moore Creek and Mattley Meadow are somewhat disjunct from other known populations in the vicinity. The nearest known extant populations are over 8.5 miles to the northeast at Wheeler Lake.

As described earlier, the tributaries to Mattley Creek that flow through the meadow are incised in 3-7 foot gullies that effectively dewater the meadow. Except for immediately following snowmelt, there is little surface water in the meadow outside of the channels. SNYLF have been detected only in the northern portion of the west channel in Mattley Meadow (**Figure 7**). Although this channel is also deeply incised, a lowered floodplain has formed at the bottom of the gully. Within the meadow, tadpoles have been found in two general areas, one is a slow moving pool around 0.5 meters deep near the outlet of the meadow (**Figure 8A**). The second is an off channel, groundwater fed, willow shrouded

pool within the lowered floodplain that is approximately 0.3 meters in depth (**Figure 8B**). Tadpoles have also been detected approximately 100 meters downstream of the meadow. Here the channel is not incised and has a bedrock, boulder, gravel substrate. These breeding sites are atypical and perhaps lower quality in that they are relatively shallow and may not be permanent in drier years. This is consistent with the irregular observations of tadpoles and young of year in the meadow.

The middle channel in Mattley Meadow is deeply incised (3-10 ft.), has deep silty substrate, and extensive emergent vegetation. The east channel is also deeply incised (2.5 -9 ft.), has minimal sinuosity, and has primarily sand/gravel substrate. Both of these channels have been observed to dry nearly completely in late fall of low water years. Neither channel provides suitable breeding habitat for SNYLF. Suitability for non-breeding use by post metamorphic individuals is low-moderate, but none have been detected here. Because the channels are detached from the floodplain, the majority of the surrounding terrestrial habitat is xeric and does not provide suitable dispersal habitat for SNYLF. Meadows A, B, C, D, E, F, G, H, and Mattley Creek Meadow (**Figure 6**) lack sufficient surface water to support SNYLF.

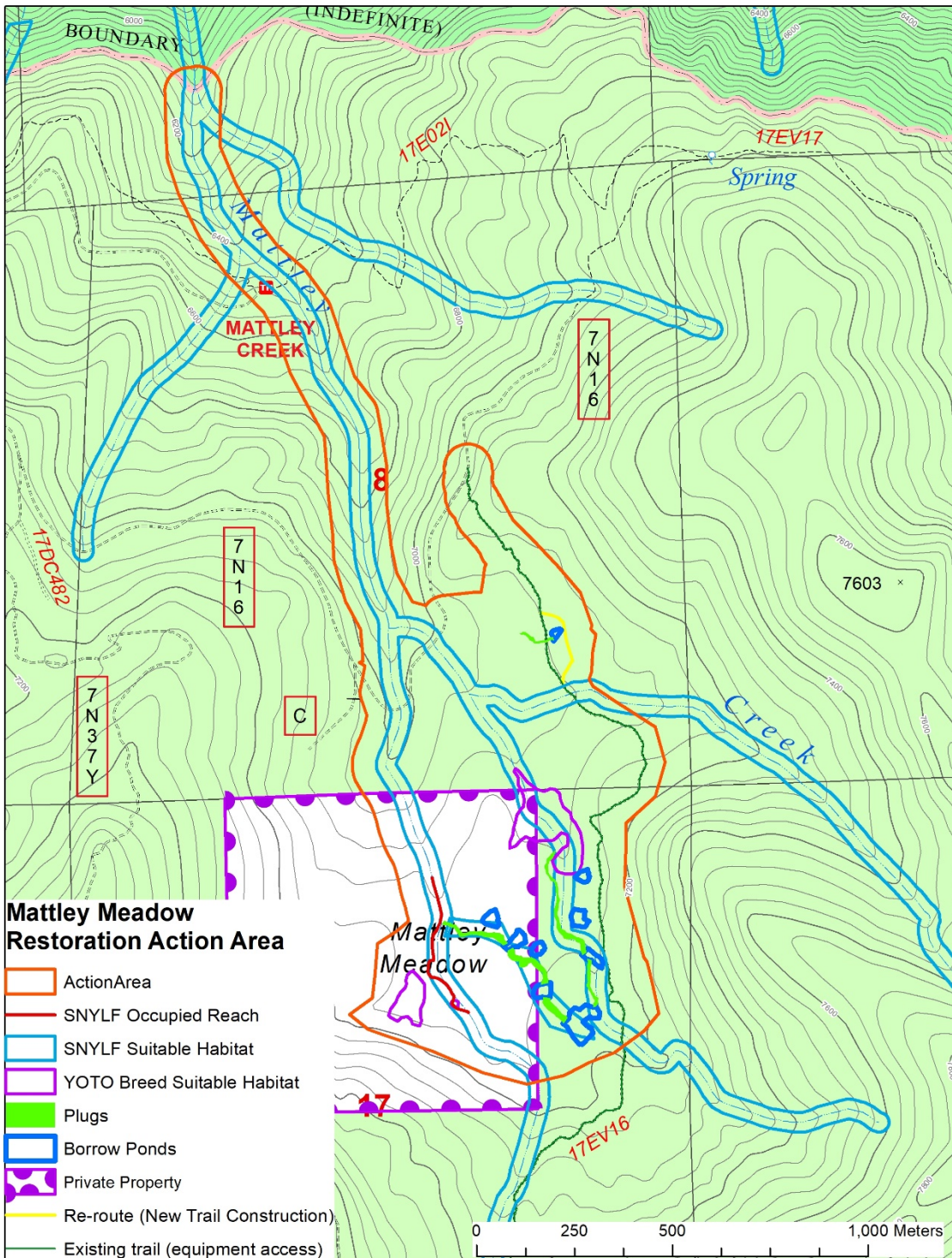


Figure 5. Aquatic wildlife analysis Action Area (USDA-Forest Service 2018a).

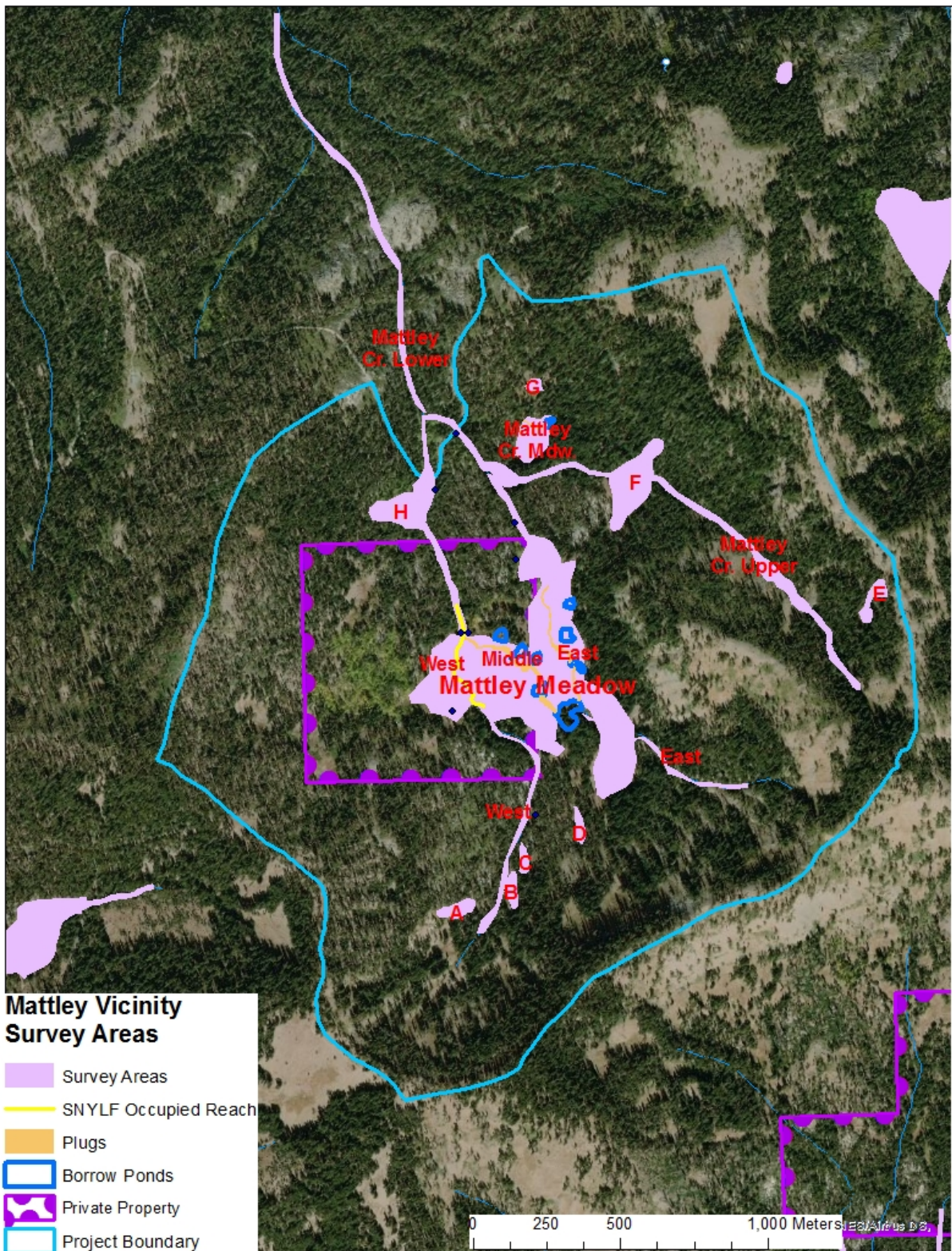


Figure 6. Aquatic survey areas within the Action Area for Mattley Meadow Restoration Project.

Botanical Species

Currently there is no listed or proposed plant species or critical habitats expected to occur within or near the project area. A query of California Rare Plants identified in BIOS and the California Native Plant Society (CNPS) database are presented in **Table 7**. The project area was surveyed for special status and invasive plants in 2014 and 2015. Botanical surveys conducted for the proposed project focused on species with potential habitat. Surveys were intuitive, targeting potential habitat in the project area. No Regional Forest Sensitive or other listed or rare plant species were detected in the project area during surveys conducted in June and July 2014.

Table 7. List of CA rare plants from the CNDDDB and CNPS database that may occur in the project area.

Plant Species	CA – Rare Plant Ranking*
Vascular Plants	
Three-bracted onion (<i>Allium tribracteatum</i>)	1B.1
Stebbins' lomatium (<i>Lomatium stebbinsii</i>)	1B.1
Upswept moonwort (<i>Botrychium ascenden</i>)	2B.3
Scalloped moonwort (<i>Botrychium crenulatum</i>)	2B.2
Narrowleaf grapefern (<i>Botrychium lineare</i>)	1B.1
Common moonwort (<i>Botrychium lunaria</i>)	2B.3
Mingan moonwort (<i>Botrychium minganense</i>)	2B.2
Western goblin (<i>Botrychium montanum</i>)	2B.1
Stalked moonwort (<i>Botrychium pedunculolum</i>)	2B.1
Northwestern moonwort (<i>Botrychium pinnatum</i>)	2B.3
Bolander's bruchia moss (<i>Bruchia bolanderi</i>)	4.2
Blandow's helodium moss (<i>Helodium blandowii</i>)	2B.3
Kellog's lewisia (<i>Lewisia kelloggii ssp. kelloggii</i>)	3.2
Meesia moss (<i>Meesia uliginosa</i>)	2B.2
Western waterfan lichen (<i>Peltigera gowardii</i>)	4.2
Male fern (<i>Dryopteris filix-mas</i>)	2B.3
Fresno ceanothus (<i>Ceanothus fresnensis</i>)	4.3
Coleman's rein orchid (<i>Piperia colemanii</i>)	4.3
Slender cottongrass (<i>Eriophorum gracile</i>)	4.3
Sierra bolandra (<i>Bolandra californica</i>)	4.3

*1B.1 = Plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California; 2B.1 = Plants rare, threatened, or endangered in California, but more common elsewhere; seriously threatened in California 2B.2 = Plants rare, threatened, or endangered in California, but more common elsewhere; fairly threatened in California; 2B.3 = Plants rare, threatened, or endangered in California, but more common elsewhere; not very threatened in California; 3.2 = Plants about which we need more information; fairly threatened in California; 4.2 = Plants of limited distribution; fairly threatened in California; 4.3 = Plants of limited distribution; not very threatened in California.

Sensitive Natural Communities

CDFW and CNPS have developed a standard classification system for floristically describing vegetation communities, also known as 'natural communities' (CDFW 2018), that has been compiled in "A Manual of California Vegetation", Second Edition (Sawyer et al. 2009). The Manual of California Vegetation (MCV) classifications assist in defining vegetation based on quantitative-based rules to distinguish between vegetation community types, local variation, ecological land classification/composition, species rarity and significance, and historical and current land management practices (Sawyer et al. 2009). Natural Communities with ranks of S1 – S3 are considered Sensitive Natural Communities to be addressed in the environmental review processes of CEQA and its equivalents. Sensitive plant communities known or with potential to occur at Mattley Meadow were developed based on

botanical survey data and wetland delineation plant lists. **Table 8** presents the five alliances and basic characteristics for the alliances that occur or have the potential to occur in the project area.

Table 8. List of Natural Communities that are known or may occur in the project area. Sensitive Natural Communities are in bold type.

Alliance Scientific Name	Alliance CaCode	Common Name	Alliance Global Rank	Alliance State Rank	NWPL Classification	Alliance membership rules
<i>Carex nebrascensis</i>	45.130.00	Nebraska sedge	G5	S4	OBL	>25% relative cover and exceeding other species such as <i>Eleocharis quinqueflora</i> in cover in the herbaceous layer
<i>Mimulus (guttatus)</i>	44.111.00	Common monkey flower seeps	G4?	S3?	OBL	> 50% relative cover in the herbaceous layer, though may be > 30% with <i>Eleocharis acicularis</i> present; <i>Trifolium variegatum</i> is absent or < 1% absolute cover
<i>Populus tremuloides</i>	61.111.00	Aspen groves	G5	S3	FAC+	>50% relative cover in the tree canopy; in mixed stands with conifers >1% absolute cover
<i>Solidago canadensis</i>	45.420.00	Canada goldenrod patches	G4?	S4?	NL	Not defined (provisional alliance)
<i>Veratrum californicum</i>	45.423.00	White corn lily patches	G5	S4	FACU	>50% relative cover in the herbaceous layer

Alliance CaCode = CDFW numeric code for the vegetation alliance; Global Rank= NatureServe Global Rank (across entire distribution of the alliance); State Rank = NatureServe State Rank (within California distribution of the alliance); NWPL Classification = National Wetland Plant Inventory (Lichvar et al. 2016) classification; All rankings defined in Attachment A of Appendix F.

Impact Discussion

The proposed project will use heavy equipment to restore the meadow floodplain function. The meadow restoration work requires use of heavy equipment for cut and removal of fill material (native soil) from nine areas along meadow margins and other elevated features, creating nine ponds as a result of the borrow sites filling with groundwater. The fill material will be used to plug the existing gullies in the east and middle channels in Mattley Meadow and the channel in Mattley Creek Meadow. Construction will take place during the low-flow season with proposed implementation planned for September 1-30, 2021.

Terrestrial Wildlife Species Impacts

The project will not affect Pacific fisher, Sierra Nevada red fox, bald eagle, California wolverine, or fringed myotis (bat) because suitable habitat for these species does not occur within the project areas and/or it is not expected that the project will generate any direct, indirect, or cumulative impacts to these species or their habitats.

Although there are willows in the project area, Mattley Meadow is not believed to provide high capability habitat for willow flycatcher due to the downcut channels and little standing water to provide insect prey for foraging. Willow flycatcher surveys (avian point counts) were conducted to protocol in the project area during 2014 and 2015, but the species was not detected within the Mattley Meadow complex or any nearby habitat in these or previous surveys. Marginal habitat for nesting and foraging also occurs in the sparse willows and along the intermittent creeks within the project area for yellow warblers. Incidental sightings of yellow warblers were not detected during the avian point counts. In the short term (during implementation and first summer following implementation), willow and riparian

vegetation would be impacted—reduced in density or moved for revegetation. These impacts would occur after the nesting season for both species and, combined with the lack of detection of the species or nesting, are not expected to result in impacts to the willow flycatcher or yellow warbler. Similarly, disturbance impacts to foraging would be less than significant and limited to temporary displacement of individuals due to project timing (after nesting period), location outside of the high capability habitat, and lack of species detection in the project area.

There is the potential for the project to result in short-term effects to American marten, mule deer, great gray owl, pallid bat and Townsend's big-eared bat. Great gray owls, carnivore camera surveys, spotted owl and northern goshawk surveys were also conducted to protocol during 2014 – 2015. Martens were detected on at least 3 of the cameras along Mattley Creek below FS road 7N16 outside the project area; other target carnivores were not detected (fisher and wolverine); one spotted owl was detected twice in Jelmini Basin approximately 0.75 miles east of the project area; one goshawk was detected approximately 0.75 miles north of the project area; no spotted owls or goshawks were detected within or near the project area, likely due to the presence of several great horned owls, a natural predator of spotted owls. Potential impacts include disturbance/displacement due to construction noise and equipment use in the meadow. The likelihood of effects is very low for nocturnal foragers such as the great gray owl and bat species, due to the timing of construction (day) versus foraging (night). Additionally, there is expected to be sufficient undisturbed areas in the meadow for diurnal species for dispersal during the construction period. Construction activities could also result in short-term disturbance to insect populations; however, these reductions are not likely to have significant effects on foraging bat species due to timing of construction (late fall), after insect populations have peaked. Construction disturbance could affect and temporarily displace individuals of American marten, but not affect marten denning due to timing of project activities, late summer-early fall, and crucial denning being winter-spring. Mule deer may also be temporarily displaced due to construction disturbance, as they are known to browse on leaves of small trees, shrubs, and herbaceous plants and bed down in grassy vegetation beneath trees in wet and dry montane meadow habitats. However, undisturbed areas of the meadow complex and surrounding forest provides ample dispersal habitat for mule deer. Overall, impacts to American marten, mule deer, great gray owl, pallid bat, and Townsend's big-eared bat would be less than significant.

The proposed project has the potential to result in short-term effects to western bumblebee and Morrison bumblebee. Excavation and transplanting of vegetation would result in removal of some flowering plants used for foraging. These impacts are not expected to affect a large number of western bumblebees or Morrison bumblebees. Should either species be present, the timing of the project is after the bee populations peak, most of the plant flowering has completed, and only queens would be expected to be in the meadow in any number at that time. For these reasons, only a few individuals would potentially be impacted and displaced to forage outside of the area of treatment. Therefore, impacts to western and Morrison bumblebee would be less than significant.

Over the long-term, the quality and quantity of meadow and riparian vegetation would improve, increasing prey for great gray owl; enhancing foraging of aquatic insects for willow flycatcher, yellow warbler, and pallid and Townsend's big-eared bats; and improving quality and quantity of flowering forage species for western and Morrison bumblebees. Willow density and area along the channel and availability of standing water is also expected to increase, providing enhanced nesting and foraging habitat for potential willow flycatcher and yellow warbler colonization.

California spotted owl and northern goshawk

The area surrounding Mattley Meadow has been surveyed for California spotted owl and northern goshawk periodically since 1989. Protocol surveys for both of these species were conducted from May through August in 2014 and 2015. Individual California spotted owls, but no nesting activities, were detected adjacent to Mattley Meadow during the 2014 and 2015 surveys. A single Northern goshawk was detected approximately 0.75 miles north of the Mattley project area during 2014-2015 surveys. Based on these survey results, it is assumed that California spotted owl and northern goshawk likely forage in the project area. The project would not affect habitat suitability for these species; project activities will be centered in the meadow. The removal of approximately 75 trees from the margins of the meadow for fill material would not result in a change in canopy closure or removal of nesting or denning trees and snags within the suitable habitat adjacent to the meadow.

Equipment use could disturb individuals of California spotted owl and northern goshawk, resulting in temporary displacement to adjacent suitable habitat. Should disturbance occur, it would be unlikely to affect more than one or two individuals, due to the small scale of the project and timing of the project. There are two spotted owl protected Activity Centers (PACs); one is over 0.25 miles north of Mattley Creek Meadow and the second is 1.3 miles west of the project area. The nearest goshawk PAC is almost 0.6 miles north of the project area. The two closest PACs (one spotted owl and one goshawk) were included in the protocol surveys conducted in the suitable habitat adjacent to the project area with negative results. The late summer/early fall implementation window for the project would generally not coincide with the reproductive period for these species. However, the project incorporates the following design criteria (mitigation measures) to reduce or remove the potential for impacting reproduction for either spotted owl or northern goshawk:

- The Stanislaus National Forest District Biologist will conduct pre-construction surveys for California spotted owl and northern goshawk in August, at least two weeks prior to project construction, to determine presence and status of these species within the project area. If California spotted owl or northern goshawk nesting is detected, a limited operating period (LOP) for the detected species may be observed through September 15, when nesting activities are complete. The LOP may not be necessary depending on where the nest/reproductive activity is taking place, in relation to project activities, and will be assessed by the biologist to protect reproduction as necessary. If deemed necessary, the LOP would restrict project activities no more than 0.25 mile from the located nesting/reproductive activity center. Project construction outside the 0.25 mile buffer may continue during the specified LOP.

This mitigation measure ensures that potential disturbance impacts to California spotted owl and northern goshawk would be less than significant

Aquatic Wildlife Species Impacts

Southern long-toed salamander

The project has the potential to result in short-term effects to the southern long-toed salamander (SLTS). Although no focused surveys were conducted for SLTS in the Mattley Meadow project area, the species is typically detected during surveys for Sierra Nevada yellow-legged frogs or other listed amphibian species. In the 31 visual encounter surveys (VES) for special status amphibians from 2009-2018 (**Table 6**), no adult or larval SLTS were detected within the project area. If individuals of SLTS are present, they are likely in low numbers. The project would not have the potential for crushing or trampling of breeding adults because construction activities would occur during the fall low-flow period, after breeding migrations have completed. Further, cut and fill activities would not result in significant direct impacts to larvae due to the lack of suitable ponds for breeding within the meadow. Potential

direct effects to SLTS could result from construction disturbance of subterranean adults. There is the potential to dig up subterranean adults while grading or excavating fill material in the meadow. However, due to the low likelihood of occupancy, relatively small area of grading and excavating (3.34 acres of the 45-acre project area), overall impacts from project implementation to this species would be less than significant.

Yosemite Toad

Table 8 identifies the direct and indirect indicators for YOTO that may be impacted by the proposed Mattley Meadow Restoration Project.

Table 8. Yosemite Toad direct and indirect indicators.

Indicator	Acres
Suitable Breeding Habitat Acres in Action Area	7.5
Suitable Non-Breeding Habitat Acres in Action Area	243.5
Suitable Breeding Habitat Acres in Action Area Affected	5.5
Suitable Non-Breeding Habitat Acres in Action Area Affected	243.5
Acres of Habitat Occupancy in Utilized	0
Acres of Habitat Occupancy in Utilized Unknown	251
Acres of Habitat Occupancy in Unutilized Potential	0
Acres of Designated CH in Action Area	0

There is a possibility that individual Yosemite toads could be killed or injured during implementation of meadow restoration actions. The proposed locations of ponds and plugs do not overlap suitable YOTO breeding habitats, so no effects to eggs or larvae would occur. Restoration activities would directly impact approximately 5 acres of suitable non-breeding habitat. Heavy equipment will be moved over the meadow surface and could crush individuals or trap them in burrows. However, the risk of this occurring is negligible. No individuals have been detected in the project area despite thorough surveys. The quality of available breeding habitat is marginal and restoration actions would take place in late summer/early fall when meadows are very dry and individuals are unlikely to be present in the meadow. There would be limited direct impacts to toad breeding habitat. Borrow pond sites are generally located in areas without sufficient surface water to support toad breeding and the channels that would be filled are unsuitable for toad breeding. After project implementation, it is likely that the extent and duration of surface water in the meadows will be increased. This may provide additional suitable breeding habitats for Yosemite toad, but it is not possible to predict with any certainty how much or what quality of habitat would be created. It is highly likely that existing depressions will have increased hydroperiods, increasing their suitability for toad breeding.

Terrestrial habitat within the meadows is expected to be improved after project implementation. The project is expected to raise the stream base level to the historic floodplain elevation and restore the ground water table. This should result in re-establishment of meadow and riparian vegetation in areas of the meadow that have converted to more mesic and xeric species. This would be a beneficial effect for YOTO, as occupancy is strongly driven by meadow wetness (Allen-Diaz et al. 2010). The moister habitat should decrease risk of desiccation during overland movements and increase the likelihood of dispersal between habitat patches.

Decommissioning and re-routing of trail 17EV16 through Mattley Creek Meadow would overlap approximately 2.5 acres of suitable upland habitat for Yosemite toad. There is no overlap with suitable breeding habitats so effects to eggs and tadpoles would not occur. Subadult and adult toads could be killed or injured during trail construction and rehabilitation activities. A small tractor would likely be employed and large woody debris will be placed that could crush or trap toads if present. As noted above, this risk is considered to be negligible due to the low-likelihood of toad occurrence in the action area. Direct mortality of Yosemite toads on roads and trails has been documented (Brown et al. 2015, S. Barnes pers. comm.). The existing route along Mattley Meadow runs very close to the most suitable breeding habitat and may pose a risk to toads from vehicles and equipment traveling the trail for site access. However, overall effects to suitable habitats would be minimal. Approximately 0.5 acres where new construction would occur would have decreased suitability because of soil compaction, loss of burrows, and addition of vehicle traffic. On the other hand the 0.5 acres of existing route that would be decommissioned and blocked would have increased suitability due to prohibition of vehicle traffic, soil decompaction where necessary, and return of native vegetation. These small effects would have negligible impact on the overall suitability of the habitat at large.

Sierra Nevada Yellow-Legged Frog

Table 9 identifies the direct and indirect indicators for SNYLF that may be impacted by the proposed Mattley Meadow Restoration Project.

Table 9. Sierra Nevada Yellow-legged Frog direct and indirect effects indicators

Indicator	Acres
Suitable Habitat Acres in Action Area	63
Suitable Habitat Acres in Action Area Affected	63
Acres of Habitat Occupancy in Utilized	6
Acres of Habitat Occupancy in Utilized Unknown	0
Acres of Habitat Occupancy in Unutilized Potential	57
Acres of Designated CH in Action Area	0

There is a possibility that individual Sierra Nevada yellow-legged frogs could be killed or injured during implementation of meadow restoration actions. Suitable stream habitats would be excavated with heavy equipment or completely filled with borrow material. The affected area would include 0.31 miles of the middle channel (1.8 acres ponds, 1.5 acres plugs) and 0.34 miles of the east channel (1.4 acres ponds, 1 acre plugs). No plug and pond actions are proposed for the occupied west channel. There is a very low likelihood that individuals would be crushed or buried by this process for the following reasons 1) SNYLF have not been detected in the work areas by VES or eDNA sampling, 2) a qualified biologist would conduct surveys before and during operations to ensure no individuals are present, 3) if individuals are detected they will be avoided or relocated as described in the management requirements section. The duration of risk is limited to around one month while heavy equipment work is ongoing in the meadows. Because population size at Mattley Meadow is assumed to be small, the death of even a single adult individual may reduce the viability of the population. Because tadpole recruitment to adulthood is relatively low, loss of a small number of tadpoles would have a more limited effect on population size and persistence. However because reproductive output in this population appears to be limited, the possible effect is greater than in a population with more robust reproduction.

Effects on meadow/stream habitats derived from monitoring of completed pond and plug restoration treatments in the Sierra Nevada are well summarized by Hoffman (2011) and Hoffman et al. (2013). In summary, completed projects have restored channel/floodplain connectivity and returned meadow water tables to historic condition. This, in general, has led to reduced peak flood flows in winter and early spring, increased base flow in late spring into summer, and reduced base flow in late summer to fall. However flow timing effects were highly variable. Treatment has resulted in conversion of dryland vegetation to riparian species and increased soil moisture more similar to historic condition. Improved vegetation along with reduced flood peaks has led to reduced stream bank erosion. The proposed meadow restoration will primarily alter non-utilized stream and meadow habitats. The proposed project would completely eliminate channel habitat in the central and east channels, and replace it with pond habitat. This habitat modification is designed to be permanent. Because these channels are not currently utilized, the potential for negative indirect effects to SNYLF is extremely low. Instead, it is expected that the resulting ponds would be more suitable for SNYLF than the existing incised channels. Ponds are expected to hold water year-round and would lack the scouring flows present in the channels (Plumas Corporation 2018). To ensure the greatest likelihood that created ponds will support breeding and rearing, selected ponds will be designed to take into account the primary constituent elements of suitable aquatic breeding and rearing habitats (USFWS 2016). The depth of ponds will be maximized to avoid freezing and hypoxic conditions. Pond depth may be constrained by substrate in some locations, but should be able to meet or exceed the depth of the existing habitats. Pond margins would be constructed with gradual banks to provide extensive shallow water habitats. Boulders and woody debris would be incorporated into banks and island to provide basking areas and refugia. Native plantings would stabilize banks and provide additional escape cover. However, it is not known if stream adapted individuals will readily breed in lake habitats when they are made available. On the Stanislaus National Forest, the vast majority of known breeding sites are in lakes and ponds. There is at least one location on the Stanislaus where tadpoles have been detected in stream habitats and nearby lake habitats (C. Brown unpubl. data). There is also a possibility that in the absence of dynamic stream processes, dense vegetation may restrict open areas suitable for basking and maintaining warm shallow water areas. This will be mitigated by incorporating boulders, rocks, and logs into the banks to maintain open areas.

There is some possibility that actions in the middle and east channel will have indirect effects on the occupied west channel. The nature of hydrologic connection between these zones through the water table is unknown, so the exact nature of the effect is somewhat uncertain. There are two scenarios that are most likely. The first is that there is little connection between the channels. In this scenario, the portion of the west channel above the confluence with the middle channel would be virtually unaffected as this watershed would operate independently of the others. Below the confluence, the flow contribution from the center channel would be decreased as described below. In a scenario where there is strong groundwater connectivity between the channels, the entire west channel could see decreased flood peaks, increased early season base flows and reduced late season flows. For SNYLF, reduced flood flows could improve habitat quality by reducing scour risk that could prevent successful overwintering or breeding. On the other hand, reduced late season flows could increase the risk of tadpole desiccation if breeding pools are more likely to dry up. This is likely a minor risk for the upstream breeding location which is an off channel pool that is dependent on groundwater elevation, not stream flow to remain semi-permanent (**Figure 8**). The downstream pool and the stream reach north of the meadow where tadpoles were located in 2014 are presently subject to periodic drying which could be worsened if late season flows decrease and strong spring scour which could be improved by reduction in flood peaks.

Terrestrial habitat within the meadows is expected to be improved after project implementation. The project is expected to raise the stream base level to the historic floodplain elevation and restore the ground water table. This should result in re-establishment of meadow and riparian vegetation in areas of the meadow that have converted to more mesic and xeric species (Hoffman et al. 2013). The moister habitat should decrease risk of desiccation during overland movements and increase the likelihood of dispersal between habitat patches.

Meadow restoration activities are also likely to modify downstream stream habitats. The risk of effects to SNYLF is considered low as frogs have not been detected downstream of the east channel and both the center and east channels are typically dry or have extremely low flow at the time of implementation (late summer/early fall). The majority of the flow downstream of the west/ center channel confluence derives from the west channel, so modifications of flow in the center channel should be of insignificant impact. In the short term, it is likely that the project would temporarily reduce or completely stop flow in the channel downstream of the east channel. Plugs placed into the existing channel would interrupt flow in the channel and instead divert some of this water towards filling ponds and subsurface storage. Flows would likely return once ponds and subsurface storage was filled after the first winter. If tadpoles are present but undetected in these reaches, they could be killed because of desiccation or hypoxia. Adult frogs are also dependent on aquatic habitats and could be forced to move from preferred habitats if the channel becomes too dry. This could reduce growth and reproduction as it may reduce opportunities for feeding and basking. Frogs moving downstream would also be at increased risk of predation from resident trout. To mitigate these effects, the channels downstream of the restoration sites would be thoroughly surveyed and tadpoles at risk of desiccation or exhibiting signs of distress would be translocated to nearby suitable sites that retained water.

Increased risk of colonization by invasive species is a concern following a pond and plug project. In particular, the created ponds would potentially create high quality breeding habitat for bullfrogs. Dramatic increase in bullfrog populations have been observed post-project in plug and pond projects in the Feather River drainage, however these sites had existing populations within or nearby the project area (Hoffman 2011). Although studies of the effects of bullfrogs on SNYLF have not occurred, colonization by bullfrogs would likely present a negative effect to the SNYLF population at Mattley Meadow. Introduced bullfrogs are voracious opportunistic predators and have been implicated in the decline or displacement of many amphibians including foothill yellow-legged frogs and northern red-legged frogs (Brown et al. 2014). Nevertheless, the risk of colonization at Mattley Meadow is quite low at the current time. In the vicinity of the project, bullfrogs are documented from the Middle Fork Mokelumne River about 16 miles west at about 3000 ft. elevation and from San Antonio Creek and White Pines Lake 18 miles southwest at 3700-4000 ft. Given the large distance and elevation gradient between these sites and the project (7000-7500 ft. elev.) it is unlikely that bullfrog colonization by natural means would occur. Human introduced colonization remains a possibility, but given the remote nature of the site and infrequent public visitation this remains unlikely, as well.

Installation of fencing and water troughs would reduce the impacts of cattle on frogs and their habitats. The temporary fencing would prevent cattle from disturbing the restored area until vegetation had recovered enough to sufficiently stabilize the area (likely 2-3 years). Placement of water troughs would help to permanently increase the dispersal of cattle in the project area and reduce concentrations in the meadows. Reduced cattle use of the meadows would reduce the risk of frogs being injured or killed by trampling or entrapment in hoof prints. These range improvements would also limit negative effects of cattle on frog habitat. Grazing can remove vegetation cover from frog habitat leading to increased predation, desiccation, and siltation of pond habitat.

Decommissioning and re-routing of 0.1 miles of trail 17EV16 has a limited potential to impact SNYLF and their habitats. These activities would occur ~2 miles from the occupied stream reach in Mattley Creek Meadow, so risk for direct effects is negligible. These activities overlap approximately 0.7 acres of suitable but unoccupied habitat. There is a minor risk that trail building and closure activities could lead to short-term increases in sedimentation as soil may be disturbed and compacted. This trail reroute would move an existing route that crosses Mattley Creek Meadow out of the meadow into the adjacent forest. As a result, the potential for negative effects such as sedimentation, fuel/fluid contamination, and direct mortality would be reduced.

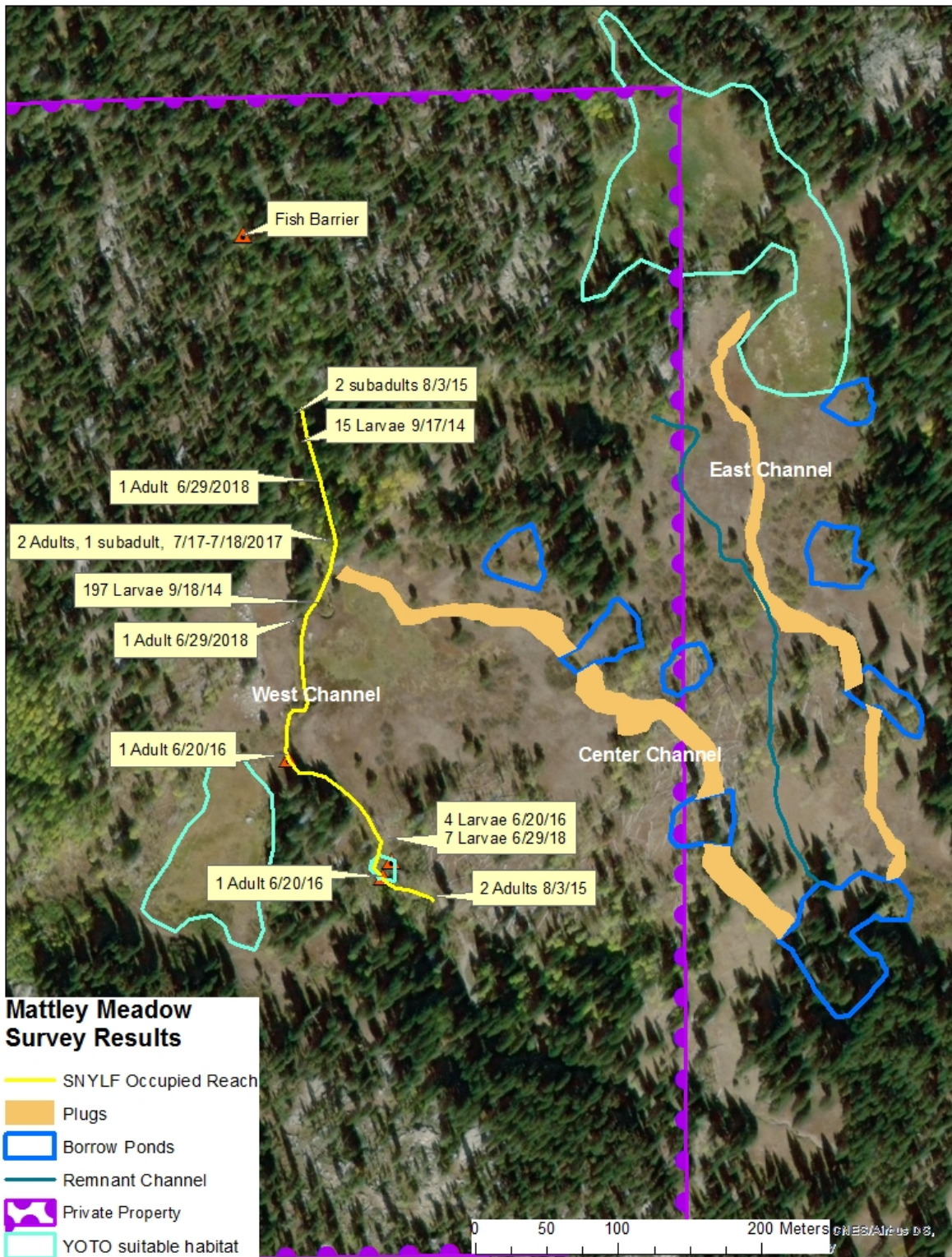


Figure 7. SNYLF detections in Mattley Meadow from 2014 to 2018.

Under the Endangered Species Act (50 CFR 402.02) cumulative effects are “those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation.” Within the action area, the only identified



State or private action is livestock grazing of the 160 acre private parcel in Mattley Meadow. This parcel is grazed as part of a larger allotment administered by the Stanislaus National Forest. The permit authorizes 171 cow/calf pairs with a typical season of use of 6/16 – 09/15. Mattley Meadow is typically used as a late season gathering pasture, so the majority of use occurs 8/15 through 9/15. Grazing overlaps suitable habitat for YOTO and suitable and occupied habitat for SNYLF. Limited cattle activity or disturbance has been noted in close proximity to known SNYLF occurrences, perhaps because the incised gully is relatively inaccessible to the cows.

The existing literature on effects of cattle grazing on Yosemite toads and Sierra-Nevada yellow-legged frogs is equivocal and incomplete. Some studies have found no significant effects from grazing on YOTO (McIlroy et. al. 2013; Roche et al. 2012); while Lind et al. (2011) found negative correlations between livestock utilization and tadpole density. No studies have directly examined effects to SNYLF.

Nevertheless, there is some potential for negative effects. Livestock in aquatic habitats present a low risk of trampling individuals, particularly tadpoles who have lower mobility and tend to escape into fine sediments. Excessive livestock grazing can impact terrestrial habitats directly from browsing on obligate riparian vegetation that provides cover and feeding habitats for the frog. Excessive livestock grazing can affect aquatic habitats indirectly primarily through erosion and sedimentation processes if the activity occurs in near-stream environments. Secondly, the livestock’s metabolic waste products may cause minor nutrient enrichment (nitrogen and phosphorus) of aquatic habitats.

Effects on newly restored habitats would be mitigated by excluding cattle from the restoration area until bare soils are sufficiently vegetated – approximately 2-3 years. Effects would be further minimized by application of Forest Plan standards to the allotment at large. These include limitations on allowable utilization on herbaceous vegetation and shrubs, limits on allowable streambank disturbance, and defined season of use. The Forest Service portion of Mattley Meadow is a monitoring site for forage use and is representative of the entire meadow. Completion of the Mattley Meadow Restoration project is likely to improve forage conditions across the meadow surface and reduce the tendency of cows to congregate in limited areas of superior forage. This should help reduce impacts such as trampling and chiseling as impacts should be spread more evenly across the meadow.

A monitoring plan would be developed to track abundance and habitat use by SNYLF in Mattley Meadow. At minimum, annual VES surveys that document all individuals encountered and their locations in the meadow would be performed along with photo point monitoring of habitats. Other techniques could include capture -mark – recapture studies and additional habitat monitoring techniques (as separately authorized by permit with USFWS and CDFW). The goals would be to monitor trends in relative abundance by life stage, determine if frogs utilize the created ponds for breeding or non-breeding habitat, and determine if existing habitats are negatively modified. Monitoring should continue for a period of at least 5 years after implementation.

The following conservation measures would be incorporated into the project design to minimize resource impacts:

- Follow all applicable Standards and Guidelines and Best Management Practices from Forest Plan Direction.
- All persons involved with project activities will be informed about the presence of the Sierra Nevada yellow-legged frog and potential for Yosemite toads within the work areas, and be provided a training session about life history and habitat elements. This should reduce the potential for unintended injury or mortality during project activities.

Botanical Species Impacts

There are no listed species known from the project area, so direct and indirect effects are not expected. The project area was surveyed for sensitive and invasive plants in 2014 and 2015. No Forest Sensitive species were detected in botanical surveys of the project area, though several of the species are notoriously difficult to identify and their presence cannot be ruled out given the presence of suitable habitat. Survey coverage of the meadow was complete, but it is always possible for a Sensitive plant population to be overlooked during surveys. If this were the case, undetected individuals could be crushed, uprooted, or destroyed during the construction of plugs or excavation of borrow material within the meadow. Additionally, any undetected Sensitive species occurring in the meadow could be impacted following project implementation by altered microsite and hydrologic conditions. Any new occurrences of sensitive plants identified within the project area would be flagged and avoided with a ten-foot buffer when necessary.

Soil disturbances can provide opportunities for the introduction and proliferation of invasive species. These species have the potential to quickly outcompete native plants, including Sensitive plants, for sunlight, water, and nutrients. These species can also form dense monocultures which can alter habitat for Sensitive plant species. Seeds of these species can be carried into Sensitive plant areas on equipment, vehicles, and on workers boots and clothing. The magnitude of this impact is difficult to predict since it is contingent on the introduction of a noxious weed species into an area, an event which may or may not occur. The project incorporates mitigation measures/design criteria to minimize the likelihood of project activities enhancing or spreading invasive species into the proposed project area.

Sensitive Natural Communities

The proposed project is a meadow restoration project that would restore channel-floodplain connectivity in Mattley Meadow, improving the condition of wetland plant communities on approximately 1.1 acres and expanding total acreage of wetlands by approximately 31.12 acres. The meadow is currently in a xeric trend, and the single known Sensitive Natural Community, *Populus tremuloides*, is expected to benefit from the project via the restored hydrologic regime. Potential

impacts to Sensitive Natural Communities that may occur in the project area could result from removal of vegetation during excavation of borrow ponds, or burial of vegetation when filling the incised channel. The following project components will ensure that potential impacts to sensitive natural communities would be less than significant:

1. Transplanting of native vegetation: Sod mats, willow wads, and other meadow vegetation from fill and borrow sites will be transplanted to plug edges, terraces, and key locations on the remnant channel. This action will preserve any sod-forming native species, as well as the soil seed bank, including those for annual species that may co-occur with perennial species.
2. Supplemental native planting: In addition to willow staking, native seed will be purchased and used to re-vegetate disturbed areas (i.e. access routes, plugs, pond margins).

Additionally, the design criteria/mitigation measures for botanical species would protect the introduction or spread of invasive species into sensitive natural communities.

Mitigation Measures:

4a. The project activities will conform to the conservation measures and terms and conditions requirements in the Biological Opinion (USFWS 04/29/20), and Lake and Streambed Alteration Agreement (CDFW application in process), which appends this to those documents.

4b. Precautions to minimize turbidity/siltation shall be taken into account during project planning and implementation. This shall require the placement of silt fencing or sediment barrier cloth along the boundary of the project area so that silt and/or other deleterious materials are not allowed to pass to adjacent or downstream reaches. Passage of sediment beyond the sediment barrier(s) is prohibited. If any sediment barrier fails to retain sediment, corrective measures shall be taken. The sediment barrier(s) shall be maintained in good operating condition throughout the construction period and the entire stretch of barrier shall be monitored daily prior to commencement of construction activities to ensure wildlife species have not become trapped or displaced by the barrier. All sediment contained along the barrier shall be removed and disposed of where it will not re-enter a watercourse. All non-biodegradable silt barriers (such as plastic silt fencing) after the disturbed areas have been stabilized with erosion control vegetation shall be removed. Upon CDFW determination that turbidity/siltation levels resulting from project related activities constitute a threat to aquatic life, activities associated with the turbidity/siltation shall be halted until effective CDFW approved control devices are installed or abatement procedures are initiated.

4c. Prior to commencement of construction, grading, vegetation removal, equipment staging or other project-related activities, a focused survey for sensitive species (such as but not limited to fish, plants, reptiles, and amphibians) that are listed under the California Endangered Species Act (CESA) or Federal Endangered Species Act (ESA) shall be conducted by a Designated Biologist (i.e. Forest Service- or USFWS and CDFW-approved biologist) within a 200 feet radius of the project area by a designated individual that is educated and familiar with all life stages of local fish, plants and amphibians, within three (3) days prior to the beginning of project-related activities and prior to beginning work on a daily basis.

4d. If any CESA or ESA listed species are encountered during the conduct of project activity, including maintenance and restoration activities, work shall be suspended, the USFWS and CDFW notified, and conservation measures shall be developed in agreement with respective regulatory authorities prior to initiating the activity. Work may not re-initiate until respective regulatory authorities (USFWS and

CDFW) have been consulted and avoidance measures implemented.

Terrestrial Wildlife

4e. The Stanislaus NF District Biologist will conduct pre-construction surveys for California spotted owl and northern goshawk in August, at least two weeks prior to project construction, to determine presence and status of these species within the project area. If California spotted owl or northern goshawk nesting is detected, a limited operating period (LOP) for the detected species may be observed through September 15, when nesting activities are complete. The LOP may not be necessary depending on where the nest/reproductive activity is taking place, in relation to project activities, and will be assessed by the biologist to protect reproduction as necessary. If deemed necessary, the LOP would restrict project activities no more than 0.25 mile from the located nesting/reproductive activity center. Project construction outside the 0.25 mile buffer may continue during the specified LOP.

4f. If construction is scheduled during the bird breeding season (February 15th to August 31st), a Designated Biologist (i.e. Forest Service- or USFWS and CDFW-approved biologist) shall conduct a breeding bird survey no more than 15 days prior to the start of construction. All active bird nests will be marked following the survey to avoid destruction by equipment. If nesting raptors or migratory birds are identified within the area, a non-disturbance buffer and any other restrictions will be determined, before project activities commence, through consultation with the CDFW following completion of the survey.

Aquatic Wildlife

4g. During restoration work within Mattley Meadow, a Forest Service- or USFWS and CDFW-approved biologist must be on site during all activities. Survey the immediate work area for listed amphibians before commencement of daily work and following work stoppages exceeding one hour.

4h. Maintain an 82-foot limited operating area around the SNYLF occupied western channel in Mattley Meadow where mechanical operation for conifer removal is prohibited.

4i. If Sierra Nevada yellow-legged frogs are detected within the work area, the following procedures will be followed: Each Sierra Nevada yellow-legged frog or Yosemite toad encounter shall be treated on a case-by-case, but the general procedure is as follows: (1) Leave the non-injured animal alone if it is not in danger; or (2) move the animal to a nearby safe location if it is in danger. These two actions are further described below:

- a. When a Sierra Nevada yellow-legged frog or Yosemite toad is encountered within the project site, the first priority is to stop all activities in the surrounding area that may have the potential to result in the harassment, injury, or death of the individual. Then, the situation shall be assessed by a Forest Service- or USFWS-approved biologist in order to select a course of action that will minimize adverse effects to the individual.
- b. Individuals of the three listed species shall be captured and moved by hand only when it is necessary to prevent harassment, injury, or death. A Forest Service- or USFWS-approved biologist shall inspect the animal and the area to evaluate the necessity of fencing, signage, or other measures to protect the animal. If suitable habitat is located immediately adjacent to the capture location, then the preferred option is relocation to that site. An individual shall not be moved outside of the radius it would have traveled on its own.
- c. Only Forest Service- or USFWS-approved biologists may capture the three listed amphibians. Nets or bare hands may be used to capture the animals. Soaps, oils, creams,

lotions, repellents, or solvents of any sort cannot be used on hands within two hours before and during periods when the biologist is capturing and relocating individuals. If the animal is held for any length of time in captivity, they shall be kept in a cool, dark, moist environment with proper airflow, such as a clean and disinfected bucket or plastic container with a damp sponge. Containers used for holding or transporting shall not contain any standing water, or objects (except sponges), or chemicals.

4j. Existing waterholes and other aquatic sites including ponds, lakes and streams used for water drafting would be surveyed for Aquatic State and federal TES species and flow levels taken prior to use. In the event State and/or federal TES species are found to occur at drafting sites; sites will not be used and future surveys would be conducted by an aquatic specialist to determine presence of potential populations.

4k. The use of low velocity water pumps and screening devices for pumps (per S&G 110) will be utilized during drafting for project treatments to prevent mortality of eggs, tadpoles, juveniles, and adult SNYLF. A drafting box measuring 2 feet on all sides covered in a maximum of 0.25 inch screening is required.

4l. Mechanical operation would be prohibited on days where >0.5 inches of rain are predicted and within 24 hours of such rain events.

Botanical Species

4m. Any new occurrences of sensitive, rare, or other listed plants identified within the project area would be flagged and avoided when necessary.

4n. All off-road equipment would be cleaned to insure it is free of soil, seeds, vegetative matter or other debris that could contain seeds before entering the project area.

4o. Infestations of invasive plants that are discovered during project implementation would be documented and locations mapped. New sites would be reported to the Forest Service botanist.

4p. Onsite sand, gravel, rock, or organic matter would be used where possible.

4q. Any seed used for restoration or erosion control would be native species known to occur in the meadow complex purchased from a reputable local native seed supplier.

5. Cultural Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>

The following discussion is summarized from the following source, provided as appendices to this document:

Appendix G: Mattley Meadow Restoration, Cultural Resources Management Report 05-16-2305 (USDA-Forest Service 2016)

Environmental Setting

In accordance with the provisions of the "*Programmatic Agreement among the U.S.D.A. Forest Service, Pacific Southwest Region (Region 5), the California State Historic Preservation Officer, the Nevada State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding Processes for Compliance with Section 106 of the National Historic Preservation Act for Management of Historic Properties by the National Forest of the Pacific Southwest Region (Regional PA 2013)*", a review of the Forest's heritage resource files revealed that the Area of Potential Effect (APE) of the proposed project has been previously adequately inventoried to current professional standards through the following reports (*note that this report is administratively confidential, and is not available for public review*):

- 05-16-2006 Mattley Insect Salvage Timber Sale, R. Dies, 1993
- 05-16-2040 Mattley Creek Watershed, J. Abernathie, 1994
- 05-16-2082 Bellfour Timber Sale, E. Goldsmith, 1995
- 05-16-2146 1998 OHV Trail Projects, B. Balen, 1998

A total of four historical and/or archaeological sites were identified within the proposed project's area of potential effects (APE). All sites must be avoided.

Impact Discussion

The USFS has made a "No Effect Recommendation" for the undertaking of the proposed project, and that management measures, other than flag and avoidance, are not required to protect historic properties (Recommendations E.1 and E1.3). Although no further inventory of these areas is required, this does not fully eliminate the chance of discovering unrecorded sites or subsurface remains within the project boundary. If project ground disturbance should expose a cultural deposit, disturbance activities

will be suspended until a qualified archaeologist can examine the area, evaluate the material, and adequate protection measures are incorporated. In the event that human remains are uncovered during project activity, project managers must stop work and contact Stanislaus National Forest. Existing law requires that the County coroner be contacted, as well. If the remains are determined to be of Native American origin, both the Native American Heritage Commission and any identified descendants shall be notified (Health and Safety Code 7050.5, Public Resources Code Section 5097.94 and 5097.98).

Mitigation Measures:

5a. Four cultural sites in the project area will be flagged with a buffer of at least ten meters prior to project implementation. All contractors will be informed of this location, and no ground disturbing activities will occur within the flagged area. The flagging will be removed post project implementation.

6. Energy

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

Mattley Meadow(s) is in a natural setting, part of and surrounded by forest lands administered by the Stanislaus National Forest, Calaveras Ranger District. No electrical services are located in the project area. Energy consumption in the project area is limited to fuel use associated with dispersed recreation (e.g., vehicles traveling to/through project area, OHV’s utilizing 4-WD trails, snowmobiles, etc.)

Calaveras County’s Conservation and Open Space Element of the General Plan identifies goals, policies, and implementation measures with the primary purpose of reducing impacts related to the emission of criteria pollutants and to avoid conflicts with applicable air quality plans. Implementation measures for air quality and greenhouse gases (GHG) include developing a GHG reduction plan, utilizing green waste in energy facilities, and developing incentives for providing alternative energy sources and energy conservation. Measures also require the application of mitigation measures provided in the CCAPD’s Guidelines for Assessing and Mitigating Air Quality Impacts of Land Use Projects (2018) if proposed developments anticipate resulting in significant impacts related to emissions of criteria air pollutants. Efforts to reduce emissions also reduce energy consumption; therefore the impact analysis for Air Quality also will address impacts to energy resources.

Impact Discussion

The Project is a restoration activity that would not create an additional source of energy demand. Energy consumption would occur during Project construction through the operation of heavy equipment for grading and fill activities. There would be no unusual equipment operation that would result in energy consumption that is wasteful, inefficient, or unnecessary during Project construction. All equipment will be provided through equipment contractors and rental fleets, which are required to meet California Air Resources Board (emissions) standards for diesel equipment. Further, each piece of equipment has a dedicated function during construction—e.g., excavating, grading, placing large woody debris, transplanting vegetation, or scarifying completed surfaces for seed planting. All equipment not required for a task will be turned off.

The Air Quality analysis concluded that projected fuel consumption during Project construction would be well below 337 gal/day, the most conservative significance threshold to protect against CO and PM10 exhaust impacts in the El Dorado County AQMD CEQA Guide to Air Quality Assessment. By extension, fuel consumption is neither wasteful nor unnecessary. Overall, there would be no impact to energy resources under the proposed Project.

Mitigation Measures: No mitigation required.

7. Geology and Soils

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) 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"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) 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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect 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 waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) 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"/>

The following discussion is summarized from the following source, provided as appendices to this document:

Appendix H: Mattley Meadow Wetland Delineation (Plumas Corporation 2017)

Environmental Setting

Mattley Meadow is located in the North Fork Mokelumne River watershed. The project area is not located along or near an earthquake fault delineated on the Alquist-Priolo Earthquake Fault Zoning map, nor does it occur on a geologic unit or soil that is unstable, or would become unstable as a result of the proposed activities. Mattley Meadow lies within the Sierra Nevada geomorphic province where soils are primarily derived from Permian to Neogene granodiorite and quartz monzonite with some nearby deposits of Neogene andesite and rhyolite (Rust et al. 2019). Mattley Meadow meadow soils are likely derived from the andesitic mudflows surrounding the top of the watershed. All rock units are of igneous origin and have no potential to contain paleontological resources (SVP 2010).

A Custom Soil Resource Report for Mattley Meadow and the surrounding area was obtained from the USDA Natural Resource Conservation Service Web Soil Survey application. The soils in the Mattley Meadow portion of the survey area are described as Entic Cryumbrepts, deep, on 1 to 10 percent slopes. These loamy sand soils are derived from igneous rock alluvium, and are well drained, with a depth of more than 80 inches to a restrictive layer. They occur in alluvial fan features. In the Mattley Creek Meadow portion of the survey area, the soils are Gerle family, bouldery-Rock outcrop complex, 5 to 35 percent slopes. Gerle family soils are found in moraine landforms and are derived from granitic glacial till. These soils are stony to bouldery sandy loams and are well drained. The soils in and around the project area are not classified as expansive soils. The Gerle family soils are classified as susceptible to erosion.

Impact Discussion

Although some soils in the project area are susceptible to erosion, the project would not result in erosion or loss of topsoil. The objective of the project is to restore floodplain function and reduce ongoing soil erosion from the incised channel and expanding gullies. The design concept for the project is to implement near-complete gully fill. The fill material would be excavated from nine borrow ponds

along meadow margins and other elevated features. A total of 15,991 yds³ of fill would be placed in 6 total plugs, totaling 2.67 acres, to eliminate the east and middle gullies in Mattley Meadow and the degraded channel in Mattley Creek Meadow as conduits for flow.

Restoring floodplain function would have a long-term beneficial effect on soils by reducing erosion, increasing the frequency of floodplain sediment deposition, and retaining moisture. Prior to the establishment of vegetation, there is a short-term potential for negative impacts from soil erosion on newly disturbed areas, in the event of significant storms. The design criteria/mitigation measures described below are designed to ensure that soil resources remain on-site.

Mitigation Measures: Standard mitigation measures have been developed under consultation with soil scientists and engineers as an integral component of meadow floodplain restoration. These mitigation measures have been monitored and refined based on previous projects of this type (e.g., Last Chance Creek, 2002-5; Red Clover/McReynolds, 2006; Long Valley Creek, 2008).

7a. Construction would occur during the low flow period, and coincides with the most favorable moisture conditions to the depth of borrow site excavation. The subsurface soil material excavated is used to plug the channel incision. This material requires enough moisture to allow for compaction to background condition of the adjacent native soil. (The purpose of compaction is to preclude subsidence of the plug material during saturated conditions. Subsidence can lead to the initiation of erosion on the plugs.) Utilization of onsite fill material allows the best match of soil types at the least cost. Material too wet to efficiently transport and work would be avoided. The subsurface (compacted) portions of the plug are constructed using the 'layer lift' method, which entails spreading the material in a thin veneer over the general area of the plug with each delivered bucket load of material. This repeated action, with occasional re-cutting of the working surface allows for efficient wheel compaction without supplemental equipment.

7b. Topsoil, and any organic material, in the area of excavation will be removed to a depth of approximately one foot and stockpiled adjacent to the plugs. When the plugs have been constructed to the design elevation, the plug surface will be cross-rippled to a depth of 12" to restore a deep infiltration capacity. Stockpiled topsoil with associated organics and native seed bank will be spread across the plug with a low ground-pressure track loader. The final pass with equipment is to dress and roughen the topsoil surface for microclimate roughness and to fully incorporate the topsoil with the surface of the subsoil.

7c. Equipment travel into the project area will be restricted to existing open or closed OHV roads and recent timber harvest skid trails and landings. During construction, routes from the borrow sites to plug areas with compaction resulting from construction will be scarified perpendicular to expected surface water flow and dressed with scattered organic material.

7d. Staging areas and temporary haul routes used during the project will be minimized to lessen soil compaction and disturbance to the greatest extent possible. After construction, they will be sub-soiled, perpendicular to surface flow directions, to the full depth of compaction to restore soil porosity. Areas with residual meadow sod will only be lightly scarified to preserve sod integrity. The emphasis is on the least soil disruption while loosening the soil. Extensive mixing or plowing can have a negative effect on soil microorganisms. This technique has been successful in loosening the soil, restoring soil porosity, providing a high infiltration capacity, and thereby reducing cumulative watershed effects.

7e. The project will require re-vegetation. Access routes are expected to have residual sod, and thus not require seeding, but may receive mulching and possibly seed, depending on the condition of the sod. Revegetation will consist of the following measures:

- All desirable plant material that would be excavated or buried in plugs, such as sod mats and willow wads, would be removed and transplanted to plugs, pond margins, and at key locations in the remnant channel. Locations of transplants are prioritized according to need for maximum soil protection in bare areas and areas of potentially high stress. Sod would be placed with heavy equipment and could be secured using live willow stakes. Willow wads also would be excavated and replanted using heavy equipment.
- Following project completion in the fall, purchased native seed would be dispersed into plugs, around ponds, and other heavily disturbed areas.
- All revegetation areas would be monitored for three years following project completion. Successful revegetation would consist of 70% survival of willow cuttings and transplanted sod and willow wads. Seeded areas would have at least 50% cover of native vegetation. Any areas that do not meet the survival or cover criteria would be reseeded or replanted.

7f. Erosion control would be accomplished using locally collected materials (wood chips, duff, pine needles, etc.). Straw would not be used.

7g. Meadow restoration projects include rest from grazing in disturbed areas for up to three years after construction in order to allow the newly planted vegetation to become established. The project area would be fenced to protect disturbed areas from livestock for 2-3 years. Off-site water may also be developed to lessen livestock impacts on riparian areas after grazing is re-established in the project area.

8. Greenhouse Gas Emissions

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The project is located in a natural setting in the Stanislaus National Forest. Ongoing greenhouse gas (GHG) emissions in this area are from normal ecosystem function and emissions from vehicles engaged in dispersed recreation. Intermittent sources of greenhouse gas emissions occur from forest management activities and wildfire.

The project area is a meadow ecosystem in a degraded state, with incised (downcut) channels that have resulted in a loss of floodplain connectivity and drying of the meadow. Carbon dioxide (CO₂), nitrous oxide (N₂O) and methane (CH₄) are GHGs associated with meadows, and fluxes in the emission of these GHGs can be dependent on soil moisture content (Blankinship and Hart 2014). Functional meadows are considered to be net reservoirs for greenhouse gases; however, there are a number of active research projects across the state that are attempting to quantify the net flux of GHGs in restored and degraded meadows. Currently, there is a statewide effort to restore wetlands and mountain meadows as a climate change adaptation strategy through increased carbon sequestration that includes quantitative research on GHG fluxes (CDFW 2017).

Impact Discussion

The proposed project would restore the hydrologic function of Mattley Meadow(s), which is expected to provide a long-term reduction in GHG emissions from the project area, although with current data gaps it is not possible to accurately quantify this benefit. Construction of the project would generate temporary and one-time GHG emissions by on-site construction equipment and travel to the work site during the 4-week construction period. The GHGs emitted during construction would come from diesel fuel combustion from off-road construction equipment and diesel or gasoline combustion from on-road vehicles. The primary GHG generated from these processes would be carbon dioxide (CO₂), with smaller amounts of emissions of methane (CH₄) and nitrous oxide (N₂O). Construction emissions would permanently cease at the end of the Project. Over the long-term, these temporary emissions would be offset by the restoration of meadow hydrology and re-establishment of meadow vegetation. Thus, while the project would have an incremental, short-term, and one-time contribution to GHG emissions within the context of the county and region, the individual impact is considered less than significant.

The proposed project would not conflict with an applicable plan, policy, or regulation adopted to reduce the emissions of greenhouse gases.

Mitigation Measures: No mitigation required.

9. Hazards and Hazardous Materials

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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 handle 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"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
d) Be located on a site which 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) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) 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"/>

Environmental Setting

The project area is in a natural setting. There are no known hazards, nor hazardous materials, in the project area. The project is located within the Federal Fire Protection Responsibility area, and the forest surrounding the meadow was treated in 1996 under the Belfour Multiproduct timber sale to produce forest products, promote fuel reduction, and improve forest health in the surrounding forest. The project lies in the “*very high fire hazard severity zone*”, pursuant to the California Department of Forestry and Fire Protection’s (CALFIRE) Fire Resource Assessment Program Fire Hazard Severity Zone Map for Calaveras County (CALFIRE 2009).

Impact Discussion

There are no hazardous materials that will be transported or disposed of as part of this project. There is no risk of accidental release of hazardous substances associated with this project, other than those normally associated with use of any equipment with an internal combustion engine. The heavy equipment used to construct the project will be fueled with diesel fuel. Re-fueling and equipment maintenance will be conducted outside of the riparian/floodplain area, and hazardous material cleanup supplies will be kept onsite during construction in the event of an accidental spill or leak. In addition, contracting specifications will ensure equipment is in good working condition prior to mobilization to the project area.

While the project area is located in a meadow, the area is identified as a very high fire hazard severity zone. Portions of the meadow are expected to be dry, with a risk for wildfire associated with the use of any internal combustion engine. A trash pump and/or water truck will be on site to assist with vegetation transplants and dust control, as well as to reduce the risk of wildfire.

Mitigation Measures:

9a. Equipment will be re-fueled and serviced at the designated staging area, which is outside of the riparian area and meadow. No fuel will be stored on-site. In the event of an accidental spill, hazmat materials for quick on-site clean-up will be kept at the project sites during all construction activities, and in each piece of equipment.

9b. For fire prevention, a trash pump and/or water truck will be on-site at all times.

10. Hydrology and Water Quality

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<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 or through the addition of impervious surfaces, in a manner which would:				
(i) result in substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(iv) impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The following discussion is summarized from the following sources, provided as appendices to this document:

Appendix B: Mattley Meadow Restoration Design Report (Plumas Corporation 2018)

Environmental Setting

The 45-acre Mattley Meadow Project area consists of two distinct meadow areas, Mattley Meadow and the Mattley Creek Meadow at approximately 7,200 feet elevation, within the Mattley Meadows complex in the headwaters of Mattley Creek, a tributary to the North Fork Mokelumne River. Mattley Meadow occupies the confluence area of multiple small drainages and hillslope flows supporting high and middle gradient riparian hydrogeomorphic meadow types as well as discharge slope meadows (Weixelman et.al., 2011). There are two principal flow paths through, and out of, Mattley Meadow referred to here as the East channel gully and West channel gully. The drainage area to the upstream end of the East channel is .21 mi² (136 acres), while the drainage area to the downstream end of the East channel is .32 mi² (204 acres). The drainage area to the upstream end of the West channel is .32 mi² (204 acres), while the drainage area to the downstream end of the West channel is .55 mi² (352 acres). Fourteen (14) valley-wide cross-sections were surveyed perpendicular to the axes of Mattley Meadow flow paths. Mattley Creek Meadow is principally a discharge slope hydrogeomorphic meadow type occupying a very small drainage area (Weixelman et.al. 2011). The drainage area to the upstream end of the Mattley Creek Meadow gully is .05 mi² (32 acres). Three (3) valley-wide cross-sections were surveyed perpendicular to the axis of Mattley Creek Meadow within the incised meadow sections.

As a result of the elevation, most of the precipitation occurs in the form of snow between October and April, although thunderstorms can contribute rain in the summer. The hydrology of the Mattley Meadow complex in the headwaters of the North Fork Mokelumne River is dominated by snowmelt in late spring and early summer. As a result, the flow of Mattley Creek and its tributaries in the Mattley Meadow complex is low and frequently intermittent in late summer and early fall.

Mattley Meadow has not been formally surveyed using the USFS Proper Functioning Condition Survey protocol. Based on qualitative information about site conditions, the meadow would be classified as *Non-Functional* because of a) erosional features in the meadow complex, which includes numerous headcuts and incised channels, b) segments of the incised channels where they are actively eroding laterally, c) the disruption of surface and subsurface flow through the Mattley Meadow where a constructed channel down the center of the meadow has incised and further drains the system, and d) disruption of surface and subsurface flow through Mattley Creek Meadow where the existing OHV route crosses the creek and meadow. The result is that much of the meadow complex is wet immediately following late spring/early summer snowmelt and then dries out fairly quickly as the summer progresses. The meadow is part of an active grazing allotment.

Impact Discussion

There are no structures, including levees and dams, associated with the project. The project also would not create a risk of inundation by tsunami, seiche, or mudflow. The project is expected to improve groundwater supplies and water quality due to restored function of the floodplain. Treatment of the incised channels would reconnect Mattley Creek and its tributaries to the floodplain in the Mattley Meadow complex. Flood flows would more frequently spill onto the floodplain, which is expected to increase groundwater recharge into the shallow floodplain aquifer. Groundwater recharge would generally occur in conjunction with precipitation and snowmelt with negligible effects on any downstream uses. Typically, in functional and restored meadows, the floodplain aquifer continues to drain (albeit, more slowly than in the degraded condition) through the summer, and provides groundwater recharge to the channel, until surface and subsurface inflows to the meadow resume in fall.

The project would have a negligible overall effect on water supply in the North Fork Mokelumne River watershed. The improved vegetative vigor on the floodplain is expected to improve infiltration by improving soil porosity, and would filter out sediments entrained in overland flow. Water quality is expected to improve via improved filtration and fine soil deposition on the floodplain, and reduced water temperatures. Water temperatures would be reduced via improved exchange between cooler groundwater and surface water.

The project could potentially result in short-term, temporary impacts to the water quality of the Mattley Creek during construction, due to earth-moving activities. The impacts would be minimized through the permitting process for the project and implementation of Best Management Practices (BMPs).

Coverage under two permits will ensure that water quality standards are protected. The project will need to obtain a Clean Water Act Section 404 permit from the US Army Corps of Engineers. Although the permit has not yet been obtained, 404 permits for meadow restoration projects typically limit the total area of ground disturbance and contain requirements for erosion control. The project will also be required to obtain a Section 401 Water Quality Certification from the Central Valley Regional Water Quality Control Board. Although this permit has not yet been obtained, 401 permits for meadow restoration projects typically require water quality monitoring and measures to ensure that water quality standards are met. The BMPs that would minimize sedimentation in the first year after construction are described under mitigation measures, below. Additional measures are described in Section 6, Geology and Soils.

The following mitigation measures incorporate required Best Management Practices (BMPs) as outlined in the U.S. Forest Service Region 5 *Water Quality Management Handbook* (USDA-Forest Service 2011) and the National Best Management Practices for Water Quality Management on National Forest System Lands, Volume 1: National Core BMP Technical Guide (USDA-Forest Service 2012). These requirements have been incorporated into the project design and implementation planning to ensure protection of water quality and beneficial uses. The proposed design for restoration of Mattley Meadow restores the meadow condition and hydrologic function to the watershed as described in this document.

Mitigation Measures:

Erosion Control Plan (BMP 2.13 Erosion Control Plans)

10a. The erosion control plan will consist of the BMPs incorporated into the project design criteria as well as any additional measures required by regulating agencies as part of the project permitting process (e.g., 404/401 permits, Streambed Alteration Agreement, etc.)

10b. Implementation of BMPs will be documented in a BMP checklist that will be prepared prior to project implementation.

10c. Construction would be supervised on-site by at least one person who has worked on at least one previous partial fill (pond and plug) meadow floodplain restoration project.

Meadow Restoration (BMP 1.19 Streamcourse and Aquatic Protection; BMP 7.1 Watershed Restoration)

10d. Required permits would be obtained including the 404 permit from the U.S. Army Corps of Engineers, 401 Permit from the Central Valley Regional Water Quality Control Board, and a 1600 Lake and Streambed Alteration Agreement from the California Department of Fish and Wildlife.

10e. Construction activities in Mattley Meadow(s) would occur during the time of year when the flow of Mattley Creek is at its lowest. This typically occurs between August 1 and October 30. Anticipated implementation is September 1-30, 2021.

10f. Equipment access would be on existing and temporary routes. Temporary routes would be restored at the end of project implementation.

10g. Erosion of disturbed areas would be reduced utilizing one or more of the following techniques: placement of large and small woody debris; soil scarification; scattering of fine organic debris (such as wood straw or chips, pine needles, etc.); other practices as needed or required by permits.

10h. To promote revegetation, topsoil would be removed and stockpiled during pond excavation and then used to top dress the completed plugs. Live plant material such as sod mats and willows excavated during construction may be transplanted to plugs or other areas. Locally collected seed, plant stakes, or live plants may be used where needed.

10i. Grazing would be excluded from restoration areas using temporary fencing until the site has sufficiently revegetated and stabilized, generally a minimum of 2 – 3 years.

Equipment Refueling and Servicing (BMP 2.11 Equipment Refueling and Servicing; 7.4 Forest and Hazardous Substance Spill Prevention Control and Countermeasure Plan; 1.19 Streamcourse and Aquatic Protection)

10j. Allow equipment refueling and servicing only at approved locations, which are well away from waterbodies. Servicing and refueling activities would be located a minimum of 100 feet away from the meadow edge. Site specific locations for equipment fueling would be identified prior to or during project implementation. A non-porous mat or equivalent would be used for the refueling at the staging area.

10k. Report spills and initiate appropriate clean-up action in accordance with applicable State and Federal laws, rules and regulations. A Spill Prevention Control and Countermeasure (SPCC) plan would be implemented when a total oil product at a site exceeds 1,320 gallons or any single container exceeds 660 gallons. The Forest has a SPCC spill plan designed to guide the emergency response to spills during construction.

10l. Clean equipment used for instream work prior to entering the water body: Remove external oil, grease, dirt and mud from the equipment and repair leaks prior to arriving at the project site. Inspect all equipment before unloading at site. Inspect equipment daily for leaks or accumulations of grease, and correct identified problems before entering streams or areas that drain directly to waterbodies. Remove all dirt and plant parts to ensure that noxious weeds and aquatic invasive species are not brought to the site.

Water Sources (2.5 Water Source Development and Utilization)

10m. Use of water sources would be in accordance with the conditions (e.g., minimum instream flows, etc.) specified in BMP 2.5 (Water Source Development and Utilization). Water may be needed to assist in construction of structures. Approved drafting sites designated by the District hydrologist would be utilized.

Monitoring (BMP 7.6 Water Quality Monitoring)

10n. Visual and photo point monitoring of the meadow restoration area would be conducted for several years after implementation to ensure restoration actions are functioning as intended and meeting project objectives. BMP effectiveness monitoring using the national protocol may also be conducted. Corrective actions consisting of any of the tools and techniques as described for the proposed action may be implemented where needed.

10o. Implement all monitoring and reporting required by terms of the 401, 404, and 1600 permits.

11. Land Use and Planning

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The project site is on public land administered by the USDA-Forest Service, Stanislaus National Forest, and private land owned by Stan Dell’Orto, and is used primarily for livestock grazing and dispersed recreation (e.g., OHV and hunting). The project area will be rested from livestock use for 2-3 years until vegetation is re-established. The last timber harvest project to be implemented in the vicinity of the meadow was in 1996, and no future timber harvest or fuel reduction projects in the Mattley Creek watershed are planned at this time.

Impact Discussion

The proposed project would not alter any existing land uses. There are no other known plans for the project area. There is no established community in, or close, to the project sites. There would be no impacts to land use and planning under the proposed project.

Mitigation Measures: No mitigation required.

12. Mineral Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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"/>

Environmental Setting

Per the State Mining and Geology Board, as of 2013, there are no lands designated in Calaveras County as mineral areas of regional or statewide significance. In addition, the project area is not within any important mineral resource areas mapped in the 2019 Calaveras County General Plan Update nor are there other mineral resources in the project area.

Impact Discussion

There are no mineral resources in the project area, therefore, there would be no impact to mineral resources under the proposed project.

Mitigation Measures: No mitigation required.

13. Noise

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project 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"/>

Environmental Setting

The project is within a natural landscape, with noise coming from natural sources (e.g., bird song), vehicles and OHVs passing on nearby USFS roads and trails, and timber management activities (e.g., equipment associated with timber harvesting). The project is over three air miles from State Route 4, so noise from highway traffic is not audible at the meadow. There are no noise-sensitive developments (e.g., hospitals, schools, churches, residential developments) located near the meadow.

The Calaveras County General Plan establishes limits for maximum allowable noise exposure for construction noise sources for residential, commercial, and industrial land use types. However, the limits shall not apply to those activities associated with actual construction of a project as long as such construction occurs during daylight hours between 7 a.m. and 6 p.m. (Calaveras County 2018).

Impact Discussion

The restoration project will require construction with heavy equipment, which will create temporary noise for approximately four weeks. Construction activities will be conducted in the late summer/early fall during daylight hours of the work week (Monday-Friday, 7:00 AM – 5:30 PM). Because project construction will occur in the exemption hours for project construction, there would be no impact from project-related construction noise.

Mitigation Measures: No mitigation required.

14. Population and Housing

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting and Impact Discussion

There is no housing near the project site. The Mattley Meadow restoration project is located in a remote location, and would not cause direct or indirect population growth, nor would it displace existing housing or people.

Mitigation Measures: No mitigation required.

15. Public Services

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 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"/>

Environmental Setting and Impact Discussion

No public services are available in the area. The project is a restoration project in a natural setting, and would not affect populations or public services.

Mitigation Measures: No mitigation required.

16. Recreation

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project 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) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting and Impact Discussion

The project is located on public National Forest land and private land used for dispersed recreation such as hunting and OHV touring. The meadow is accessible by foot or OHV Routes 17EV16 and 17EV84, with Forest Service Road 7N16 as the nearest road. A 0.1 mile segment of a OHV trail 17EV16 that crosses Mattley Creek Meadow would be rerouted outside of the meadow. The new rerouted trail segment would be approximately 0.2 – 0.4 miles in length. The existing trail segment within the meadow would be restored by scarifying the trail surface and placing woody debris and/or vegetation as needed to promote vegetation regrowth. This modification of the OHV route would temporarily impact recreational use of the area during construction (i.e. the rerouted section of trail would be temporarily closed); however, this would be short-term and would not impact or significantly change recreational use of the area in the long-term. The project does not include recreational facilities, nor would it lead to a need for recreational facilities. The project is not expected to increase recreational use of the area, because the primary character of the area, open meadow, would not change.

Mitigation Measures: No mitigation required.

17. Transportation/Traffic

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially increase hazards due to a geometric 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"/>
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting and Impact Discussion

The surrounding area is occasionally used for dispersed recreation such as hunting, camping, and OHV touring. The meadow is accessible by foot, with FS road 7N16 as the nearest road, which is not a primary route to any destination. The project would not affect the existing capacity of the transportation system near Mattley Meadow. The project would not change the nature of travel in the area, and therefore would not increase hazardous conditions, nor affect emergency access. There are no alternative transportation plans that affect the project area because of its natural setting and low use.

Mitigation Measures: No mitigation required.

18. Tribal Cultural Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Environmental Setting and Impact Discussion

Evaluation of tribal cultural resources based on previous historical/archaeological inventories is provided in Section 5 of this checklist (Cultural Resources). A total of four historical and/or archaeological sites were identified within the heritage resources analysis area and the project Area of Potential Effects (APE). The sites were not evaluated for local register or California Register of Historical Resources eligibility. All sites in the project APE must be avoided. Avoidance of all sites will ensure that potential impacts to tribal cultural resources would be less-than-significant (Mitigation Measure 18a).

The USFS consulted the Tuolumne Band of Me-Wuk about restoring Mattley Meadow during an annual consultation meeting on June 1, 2015. A follow-up field trip was held with the tribe on June 25, 2015 with favorable feedback. The Tuolumne Band of Me-Wuk tribe supported restoration of the meadow. Consultation with the Calaveras Band of Miwuk and the Washoe Tribe was solicited via mailing a detailed list of 2015 proposed projects (including Mattley Meadow) on June 3, 2015. The Washoe tribe responded and visited the project area on July 7, 2015. The Washoe tribe was also supportive of the proposed restoration of Mattley Meadow and expressed wanting to see other meadows have similar restoration.

The Native American Heritage Commission (NAHC) was contacted on March 17, 2020 by the UMRWA to request a review of the Sacred Lands file for information on Native American cultural resources in the study area and to request a list of Native American contacts in the vicinity of the project site. In the response letter dated March 20, 2020, the NAHC reported that there were no known Sacred Sites in the project area or immediate vicinity.

A local list of Native American individuals/ organizations that may have knowledge of local cultural resources were contacted to solicit tribal input on the project. On March 17, 2020 a consultation letter was sent to the Calaveras Band of Mi-Wok Tribe. The California Valley Miwok Tribe and the Lone Band of Miwok Tribe were both sent consultation letters on May 1, 2020. No groups have requested to participate in the consultation process to date.

Mitigation Measures:

18a. All cultural sites in the vicinity of the project area will be flagged with a buffer of at least ten meters prior to project implementation. All contractors will be informed of site locations, and no

ground disturbing activities will occur within the flagged areas. The flagging will be removed post project implementation.

18b. The following mitigation measure is intended to address inadvertent discoveries made by construction personnel, agencies, or consultants at the work site when no archaeological or tribal monitor is present during ground disturbing activities.

If potential tribal cultural resources (TCRs) or archaeological resources are discovered during ground disturbing construction activities, all work shall cease within 100 feet (or an appropriate distance based on the apparent distribution of the TCR) of the find. A qualified cultural resources specialist meeting the *Secretary of Interior's Standards and Qualifications for Archaeology*, as well as Native American Representatives from traditionally and culturally affiliated Native American Tribes will assess the significance of the find. To avoid or minimize adverse impacts when tribal cultural resources, archaeological resources, or other cultural resources are discovered, Native American Representatives may make recommendations for further evaluation and treatment as necessary. Culturally appropriate treatment may include, but is not limited to, processing materials for reburial, minimizing handling of cultural objects, leaving objects in place within the landscape, or returning objects to a location within the Project area where they will not be subject to future impacts. Recommendations of the treatment of a TCR will be documented in the project record. For any recommendations made by traditionally and culturally affiliated Native American Tribes that are not implemented, a justification for why the recommendation was not followed will be provided in the project record.

If articulated or disarticulated human remains are discovered during ground disturbing construction activities or ground disturbing activities, all work shall cease within 100 feet of the find and all ground disturbing activities shall not resume until the requirements of Health and Safety Code section 7050.5 and, if applicable, Public Resources Code 5097.98 are met.

19. Utilities and Service Systems

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
c) Result in a determination by the wastewater treatment provider which 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"/>
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting and Impact Discussion

The project area is within a natural setting with no utilities or service systems. The project is a restoration project that will not affect utilities and service systems.

Mitigation Measures: No mitigation required.

20. Wildfire

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Substantially impair an adopted energy response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The project is located within the Federal Fire Protection Responsibility area (FFRA) and is in the very high fire hazard severity zone (CALFIRE 2009). The private lands within the project area lie within the State Responsibility Area (SRA) and are also mapped VHFHSZ. The mapped VHFHSZ lands within and around Mattley Meadow in the FFRA were treated in 1996 under the Belfour Multiproduct Timber Sale to produce wood products, promote fuel reduction, and improve forest health in the surrounding forest. This project was implemented several years before the CALFIRE maps were published in 2009. The Hemlock Landscape-Level project in the adjoining watershed west and south of the Mattley Meadow project area includes timber stand improvement projects, whose primary purpose is to thin, masticate/biomass removal of smaller diameter trees (<16 inches dbh). This is a currently active Forest Service project near the Mattley Meadow project.

Impact Discussion

The project is a restoration activity that would not result in land use changes that would affect an energy response or emergency evacuation plan. Although the project is within VHFHSZ lands, the project site is in a meadow and therefore is not an area of high slope or other factors that would exacerbate wildfire risks. However, portions of the meadow are expected to be dry, with a risk for wildfire associated with the use of any internal combustion engine. A trash pump and/or water truck will be on site to assist with vegetation transplants and dust control, as well as to reduce the risk of wildfire. The project would not require installation of infrastructure that would exacerbate fire risk, and would not result in downstream flooding or landslide risk due to post-fire slope instability or drainage changes. Ongoing timber stand improvement work under the Hemlock project in the adjoining watershed will reduce fuels along the ridge south of Mattley. The Mattley Meadow restoration project will reconnect the stream channel to its floodplain in the Mattley Meadow complex, allowing seasonal high flows to spread and slow, thereby reducing peak flood flows downstream of the project area.

Mitigation Measures: No mitigation required; mitigation 9b under Hazards and Hazardous Materials will provide protection from wildfire by requiring a trash pump and/or water truck to be on-site at all times.

21. Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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 which 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"/>

Impact Discussion

Overall, implementation of this restoration project is expected to have a long-term, beneficial impact to the environment, improving fish and wildlife habitat, wetland plant communities, and water quality. There would be no cumulative significant impacts caused or created by construction of the restoration project that would degrade existing natural resources, adversely affect human beings, or have an incremental negative effect in connection with past, current or foreseeable future projects. Best management practices, standard operating procedures, and project-specific mitigation measures described in this initial study would ensure that resources are protected and impacts under the proposed project would be less than significant.

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Mitigation, Monitoring and Reporting Program Summary for the Mattley Meadow Restoration Project

This sheet summarizes the Mitigation Measures discussed under each section of the Initial Study checklist. Some of the measures are redundant because they protect more than one resource.

Mitigation Measures

Air Quality

3a. Construction fill and cut areas would be watered as necessary to prevent visible emissions from extending more than 100 feet beyond the active work areas unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.

3b. Disturbed surface areas would be watered in sufficient quantity and frequency to suppress dust and maintain a stabilized surface.

3c. At least 80 percent of all inactive disturbed surface areas would be watered on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible due to excessive slope or other safety conditions.

3d. All unpaved roads used for any vehicular traffic would be watered at least once per every two hours of active operations.

3e. The Geology/Soils impact discussion includes mitigation measures to address re-vegetation, which include the following:

- All desirable plant material that would be excavated or buried in plugs, such as sod mats and willow wads, will be removed and transplanted to plugs and at key locations in the remnant channel. Locations of transplants are prioritized according to need for maximum soil protection in bare areas and areas of potentially high stress.
- Following project completion, purchased native seed and locally collected willow stakes, would be dispersed and planted around borrow areas, plugs, and other heavily disturbed areas.
- All revegetation areas would be monitored for three years following project completion. Successful revegetation would consist of 70% survival of willow cuttings and transplants. Seeded areas would have at least 50% cover of native vegetation. Any areas that do not meet the survival or cover criteria would be reseeded or replanted.

Biological Resources

4a. The project activities will conform to the conservation measures and terms and conditions requirements in the Biological Opinion (USFWS 04/29/20), and Lake and Streambed Alteration Agreement (CDFW application in process), which appends this to those documents.

4b. Precautions to minimize turbidity/siltation shall be taken into account during project planning and implementation. This shall require the placement of silt fencing or sediment barrier cloth along the boundary of the project area so that silt and/or other deleterious materials are not allowed to pass to adjacent or downstream reaches. Passage of sediment beyond the sediment barrier(s) is prohibited. If any sediment barrier fails to retain sediment, corrective measures shall be taken. The sediment

barrier(s) shall be maintained in good operating condition throughout the construction period and the entire stretch of barrier shall be monitored daily prior to commencement of construction activities to ensure wildlife species have not become trapped or displaced by the barrier. All sediment contained along the barrier shall be removed and disposed of where it will not re-enter a watercourse. All non-biodegradable silt barriers (such as plastic silt fencing) after the disturbed areas have been stabilized with erosion control vegetation shall be removed. Upon CDFW determination that turbidity/siltation levels resulting from project related activities constitute a threat to aquatic life, activities associated with the turbidity/siltation shall be halted until effective CDFW approved control devices are installed or abatement procedures are initiated

4c. Prior to commencement of construction, grading, vegetation removal, equipment staging or other project-related activities, a focused survey for sensitive species (such as but not limited to fish, plants, reptiles, and amphibians) that are listed under the California Endangered Species Act (CESA) or Federal Endangered Species Act (ESA) shall be conducted by a Designated Biologist (i.e. Forest Service- or USFWS and CDFW-approved biologist) within a 200 foot radius of the project area by a designated individual that is educated and familiar with all life stages of local fish, plants and amphibians, within three (3) days prior to the beginning of project-related activities and prior to beginning work on a daily basis.

4d. If any CESA or ESA listed species are encountered during the conduct of project activity, including maintenance and restoration activities, work shall be suspended, the USFWS and CDFW notified, and conservation measures shall be developed in agreement with respective regulatory authorities prior to initiating the activity. Work may not re-initiate until respective regulatory authorities (USFWS and CDFW) have been consulted and avoidance measures implemented.

Terrestrial Wildlife

4e. The Stanislaus NF District Biologist will conduct pre-construction surveys for California spotted owl and northern goshawk in August, at least two weeks prior to project construction, to determine presence and status of these species within the project area. If California spotted owl or northern goshawk nesting is detected, a limited operating period (LOP) for the detected species may be observed through September 15, when nesting activities are complete. The LOP may not be necessary depending on where the nest/reproductive activity is taking place, in relation to project activities, and will be assessed by the biologist to protect reproduction as necessary. If deemed necessary, the LOP would restrict project activities no more than 0.25 mile from the located nesting/reproductive activity center. Project construction outside the 0.25 mile buffer may continue during the specified LOP.

4f. If construction is scheduled during the bird breeding season (February 15th to August 31st), a Designated Biologist (i.e. Forest Service- or USFWS and CDFW-approved biologist) shall conduct a breeding bird survey no more than 15 days prior to the start of construction. All active bird nests will be marked following the survey to avoid destruction by equipment. If nesting raptors or migratory birds are identified within the area, a non-disturbance buffer and any other restrictions will be determined, before project activities commence, through consultation with the CDFW following completion of the survey.

Aquatic Wildlife

4g. During restoration work within Mattley Meadow, a Forest Service- or USFWS and CDFW-approved biologist must be on site during all activities. Survey the immediate work area for listed amphibians before commencement of daily work and following work stoppages exceeding one hour.

4h. Maintain an 82-foot limited operating area around the SNYLF occupied western channel in Mattley Meadow where mechanical operation for conifer removal is prohibited.

4i. If Sierra Nevada yellow-legged frogs are detected within the work area, the following procedures will be followed: Each Sierra Nevada yellow-legged frog or Yosemite toad encounter shall be treated on a case-by-case, but the general procedure is as follows: (1) Leave the non-injured animal alone if it is not in danger; or (2) move the animal to a nearby safe location if it is in danger. These two actions are further described below:

- d. When a Sierra Nevada yellow-legged frog or Yosemite toad is encountered within the project site, the first priority is to stop all activities in the surrounding area that may have the potential to result in the harassment, injury, or death of the individual. Then, the situation shall be assessed by a Forest Service- or USFWS-approved biologist in order to select a course of action that will minimize adverse effects to the individual.
- e. Individuals of the three listed species shall be captured and moved by hand only when it is necessary to prevent harassment, injury, or death. A Forest Service- or USFWS-approved biologist shall inspect the animal and the area to evaluate the necessity of fencing, signage, or other measures to protect the animal. If suitable habitat is located immediately adjacent to the capture location, then the preferred option is relocation to that site. An individual shall not be moved outside of the radius it would have traveled on its own.
- f. Only Forest Service- or USFWS-approved biologists may capture the three listed amphibians. Nets or bare hands may be used to capture the animals. Soaps, oils, creams, lotions, repellents, or solvents of any sort cannot be used on hands within two hours before and during periods when the biologist is capturing and relocating individuals. If the animal is held for any length of time in captivity, they shall be kept in a cool, dark, moist environment with proper airflow, such as a clean and disinfected bucket or plastic container with a damp sponge. Containers used for holding or transporting shall not contain any standing water, or objects (except sponges), or chemicals.

4j. Existing waterholes and other aquatic sites including ponds, lakes and streams used for water drafting would be surveyed for Aquatic State and federal TES species and flow levels taken prior to use. In the event State and/or federal TES species are found to occur at drafting sites; sites will not be used and future surveys would be conducted by an aquatic specialist to determine presence of potential populations.

4k. The use of low velocity water pumps and screening devices for pumps (per S&G 110) will be utilized during drafting for project treatments to prevent mortality of eggs, tadpoles, juveniles, and adult SNYLF. A drafting box measuring 2 feet on all sides covered in a maximum of 0.25 inch screening is required.

4l. Mechanical operation would be prohibited on days where >0.5 inches of rain are predicted and within 24 hours of such rain events.

Botanical Species

4m. Any new occurrences of sensitive, rare, or other listed plants identified within the project area would be flagged and avoided when necessary.

4n. All off-road equipment would be cleaned to insure it is free of soil, seeds, vegetative matter or other debris that could contain seeds before entering the project area.

4o. Infestations of invasive plants that are discovered during project implementation would be documented and locations mapped. New sites would be reported to the Forest Service botanist.

4p. Onsite sand, gravel, rock, or organic matter would be used where possible.

4q. Any seed used for restoration or erosion control would be native species known to occur in the meadow complex purchased from a reputable local native seed supplier.

Cultural Resources

5a. Four cultural sites in the project area will be flagged with a buffer of at least ten meters prior to project implementation. All contractors will be informed of this location, and no ground disturbing activities will occur within the flagged area. The flagging will be removed post project implementation.

Geology and Soils

7a. Construction would occur during the low flow period, and coincides with the most favorable moisture conditions to the depth of borrow site excavation. The subsurface soil material excavated is used to plug the channel incision. This material requires enough moisture to allow for compaction to background condition of the adjacent native soil. (The purpose of compaction is to preclude subsidence of the plug material during saturated conditions. Subsidence can lead to the initiation of erosion on the plugs.) Utilization of onsite fill material allows the best match of soil types at the least cost. Material too wet to efficiently transport and work would be avoided. The subsurface (compacted) portions of the plug are constructed using the 'layer lift' method, which entails spreading the material in a thin veneer over the general area of the plug with each delivered bucket load of material. This repeated action, with occasional re-cutting of the working surface allows for efficient wheel compaction without supplemental equipment.

7b. Topsoil, and any organic material, in the area of excavation will be removed to a depth of approximately one foot and stockpiled adjacent to the plugs. When the plugs have been constructed to the design elevation, the plug surface will be cross-rippled to a depth of 12" to restore a deep infiltration capacity. Stockpiled topsoil with associated organics and native seed bank will be spread across the plug with a low ground-pressure track loader. The final pass with equipment is to dress and roughen the topsoil surface for microclimate roughness and to fully incorporate the topsoil with the surface of the subsoil.

7c. Equipment travel into the project area will be restricted to existing open or closed OHV roads and recent timber harvest skid trails and landings. During construction, routes from the borrow sites to plug areas with compaction resulting from construction will be scarified perpendicular to expected surface water flow and dressed with scattered organic material.

7d. Staging areas and temporary haul routes used during the project will be minimized to lessen soil compaction and disturbance to the greatest extent possible. After construction, they will be sub-soiled, perpendicular to surface flow directions, to the full depth of compaction to restore soil porosity. Areas with residual meadow sod will only be lightly scarified to preserve sod integrity. The emphasis is on the least soil disruption while loosening the soil. Extensive mixing or plowing can have a negative effect on

soil microorganisms. This technique has been successful in loosening the soil, restoring soil porosity, providing a high infiltration capacity, and thereby reducing cumulative watershed effects.

7e. The project will require re-vegetation. Access routes are expected to have residual sod, and thus not require seeding, but may receive mulching and possibly seed, depending on the condition of the sod.

Revegetation will consist of the following measures:

- All desirable plant material that would be excavated or buried in plugs, such as sod mats and willow wads, would be removed and transplanted to plugs, pond margins, and at key locations in the remnant channel. Locations of transplants are prioritized according to need for maximum soil protection in bare areas and areas of potentially high stress. Sod would be placed with heavy equipment and could be secured using live willow stakes. Willow wads also would be excavated and replanted using heavy equipment.
- Following project completion in the fall, purchased native seed would be dispersed into plugs, around ponds, and other heavily disturbed areas.
- All revegetation areas would be monitored for three years following project completion. Successful revegetation would consist of 70% survival of willow cuttings and transplanted sod and willow wads. Seeded areas would have at least 50% cover of native vegetation. Any areas that do not meet the survival or cover criteria would be reseeded or replanted.

7f. Erosion control would be accomplished using locally collected materials (wood chips, duff, pine needles, etc.). Straw would not be used.

7g. Meadow restoration projects include rest from grazing in disturbed areas for up to three years after construction in order to allow the newly planted vegetation to become established. The project area would be fenced to protect disturbed areas from livestock for 2-3 years. Off-site water may also be developed to lessen livestock impacts on riparian areas after grazing is re-established in the project area.

Hazards and Hazardous Materials

9a. Equipment will be re-fueled and serviced at the designated staging area, which is outside of the riparian area and meadow. No fuel will be stored on-site. In the event of an accidental spill, hazmat materials for quick on-site clean-up will be kept at the project sites during all construction activities, and in each piece of equipment.

9b. For fire prevention, a trash pump and/or water truck will be on-site at all times.

Hydrology and Water Quality

Erosion Control Plan (BMP 2.13 Erosion Control Plans)

10a. The erosion control plan will consist of the BMPs incorporated into the project design criteria as well as any additional measures required by regulating agencies as part of the project permitting process (e.g., 404/401 permits, Streambed Alteration Agreement, etc.)

10b. Implementation of BMPs will be documented in a BMP checklist that will be prepared prior to project implementation.

10c. Construction would be supervised on-site by at least one person who has worked on at least one previous partial fill (pond and plug) meadow floodplain restoration project.

Meadow Restoration (BMP 1.19 Streamcourse and Aquatic Protection; BMP 7.1 Watershed Restoration)

10d. Required permits would be obtained including the 404 permit from the U.S. Army Corps of Engineers, 401 Permit from the Central Valley Regional Water Quality Control Board, and a 1600 Lake and Streambed Alteration Agreement from the California Department of Fish and Wildlife.

10e. Construction activities in Mattley Meadow(s) would occur during the time of year when the flow of Mattley Creek is at its lowest. This typically occurs between August 1 and October 30. Anticipated implementation is September 1-30, 2021.

10f. Equipment access would be on existing and temporary routes. Temporary routes would be restored at the end of project implementation.

10g. Erosion of disturbed areas would be reduced utilizing one or more of the following techniques: placement of large and small woody debris; soil scarification; scattering of fine organic debris (such as wood straw or chips, pine needles, etc.); other practices as needed or required by permits.

10h. To promote revegetation, topsoil would be removed and stockpiled during pond excavation and then used to top dress the completed plugs. Live plant material such as sod mats and willows excavated during construction may be transplanted to plugs or other areas. Locally collected seed, plant stakes, or live plants may be used where needed.

10i. Grazing would be excluded from restoration areas using temporary fencing until the site has sufficiently revegetated and stabilized, generally a minimum of 2 – 3 years.

Equipment Refueling and Servicing (BMP 2.11 Equipment Refueling and Servicing; 7.4 Forest and Hazardous Substance Spill Prevention Control and Countermeasure Plan; 1.19 Streamcourse and Aquatic Protection)

10j. Allow equipment refueling and servicing only at approved locations, which are well away from waterbodies. Servicing and refueling activities would be located a minimum of 100 feet away from the meadow edge. Site specific locations for equipment fueling would be identified prior to or during project implementation. A non-porous mat or equivalent would be used for the refueling at the staging area.

10k. Report spills and initiate appropriate clean-up action in accordance with applicable State and Federal laws, rules and regulations. A Spill Prevention Control and Countermeasure (SPCC) plan would be implemented when a total oil product at a site exceeds 1,320 gallons or any single container exceeds 660 gallons. The Forest has a SPCC spill plan designed to guide the emergency response to spills during construction.

10l. Clean equipment used for instream work prior to entering the water body: Remove external oil, grease, dirt and mud from the equipment and repair leaks prior to arriving at the project site. Inspect all equipment before unloading at site. Inspect equipment daily for leaks or accumulations of grease, and correct identified problems before entering streams or areas that drain directly to waterbodies. Remove all dirt and plant parts to ensure that noxious weeds and aquatic invasive species are not brought to the site.

Water Sources (2.5 Water Source Development and Utilization)

10m. Use of water sources would be in accordance with the conditions (e.g., minimum instream flows, etc.) specified in BMP 2.5 (Water Source Development and Utilization). Water may be needed to assist in construction of structures. Approved drafting sites designated by the District hydrologist would be utilized.

Monitoring (BMP 7.6 Water Quality Monitoring)

10n. Visual and photo point monitoring of the meadow restoration area would be conducted for several years after implementation to ensure restoration actions are functioning as intended and meeting project objectives. BMP effectiveness monitoring using the national protocol may also be conducted. Corrective actions consisting of any of the tools and techniques as described for the proposed action may be implemented where needed.

10o. Implement all monitoring and reporting required by terms of the 401, 404, and 1600 permits.

Tribal Cultural Resources

18a. All cultural sites in the vicinity of the project area will be flagged with a buffer of at least ten meters prior to project implementation. All contractors will be informed of site locations, and no ground disturbing activities will occur within the flagged areas. The flagging will be removed post project implementation.

18b. The following mitigation measure is intended to address inadvertent discoveries made by construction personnel, agencies, or consultants at the work site when no archaeological or tribal monitor is present during ground disturbing activities.

If potential tribal cultural resources (TCRs) or archaeological resources are discovered during ground disturbing construction activities, all work shall cease within 100 feet (or an appropriate distance based on the apparent distribution of the TCR) of the find. A qualified cultural resources specialist meeting the *Secretary of Interior's Standards and Qualifications for Archaeology*, as well as Native American Representatives from traditionally and culturally affiliated Native American Tribes will assess the significance of the find. To avoid or minimize adverse impacts when tribal cultural resources, archaeological resources, or other cultural resources are discovered, Native American Representatives may make recommendations for further evaluation and treatment as necessary. Culturally appropriate treatment may include, but is not limited to, processing materials for reburial, minimizing handling of cultural objects, leaving objects in place within the landscape, or returning objects to a location within the Project area where they will not be subject to future impacts. Recommendations of the treatment of a TCR will be documented in the project record. For any recommendations made by traditionally and culturally affiliated Native American Tribes that are not implemented, a justification for why the recommendation was not followed will be provided in the project record.

If articulated or disarticulated human remains are discovered during ground disturbing construction activities or ground disturbing activities, all work shall cease within 100 feet of the find and all ground disturbing activities shall not resume until the requirements of Health and Safety Code section 7050.5 and, if applicable, Public Resources Code 5097.98 are met.

Monitoring & Reporting

Monitoring is a means to determine if conditions in Mattley Meadow are meeting or moving toward the desired conditions. Extensive surveys have been conducted to document the existing conditions within the meadow and stream channel(s). Additional monitoring would take place immediately after the project is implemented and annually for two years to document the effectiveness of the project. This monitoring would be conducted by Calaveras Ranger District staff and project partners, and includes: ground water, surface water, sediment transport, planted vegetation success or mortality, wetland condition (CRAM), noxious weed presence, the integrity of the restoration, and the presence of new headcuts (see **Table 1** for details).

During construction, Plumas Corporation and SNF staff would be on-site continuously, and responsible for ensuring that Best Management Practices are followed, mitigations measures are implemented, and water quality leaving the project area is sampled (in the event of surface water during construction). Once the project is completed, a report on construction is sent to the funding agency, as well to the permitting agencies (Regional Water Quality Control Board and US Army Corps of Engineers). The report will certify compliance with mitigation measures.

Project Monitoring

The Mattley Meadow Restoration Project is expected to benefit multiple resources by restoring the hydrological and ecological functions of the meadow floodplain system. The purpose of project monitoring is to measure project effectiveness on water quality, timing of flows, and enhancement of wildlife and aquatic habitats. Monitoring parameters and methods that would be utilized are outlined in **Table 1**.

Table 1. Project Effectiveness Monitoring of the Proposed Action

Monitoring Parameter	Method	Responsible Party
Water Temperature	Water temperature data loggers installed above and below project area May-Sept*	Plumas Corporation**
Aquatic Habitat	California Rapid Assessment Method (CRAM)	Plumas Corporation
Groundwater	6 groundwater wells (approximately 6 to 12 ft in depth) made of 3/4" galvanized perforated pipe, measured monthly*	Plumas Corporation**; USFS as time allows
Stream Flow	Staff gage and pressure transducer installed at the bottom of project area; monthly* manual calibration flow measurements; quarterly* collection of oxygen isotope samples and measurement of electrical conductivity (EC) from inflows, springs, and wells	Plumas Corporation**
Sediment Supply	Channel cross-section surveys; CRAM	Plumas Corporation
Meadow Vegetation	All revegetation areas would be monitored for three years following project completion. Monitoring will quantify willow survival and percent cover of native meadow vegetation.	USFS

Monitoring Parameter	Method	Responsible Party
Sierra Nevada yellow-legged frog Population	Existing SNYLF population in the untreated "West" channel would be monitored annually, as well as the remnant channel and borrow ponds in the restored area of Mattley Meadow for potential SNYLF dispersal.	USFS

**As access permits*

***Plumas Corporation has secured funding for monitoring through 2020. Additionally, Plumas Corporation is working with the ACCG so that this group can continue monitoring outside of the existing funding window.*

Appendices

Appendix A – Decision Memo Mattley Meadow Restoration Project (56125)

Appendix B - Mattley Meadow Restoration Design Report

Appendix C – Mattley Meadow Restoration Project Aquatic Species Biological Assessment

Appendix D – Mattley Meadow Restoration Wildlife Species Report BA/BE

Appendix E - Mattley Meadow Restoration Project Biological Opinion

Appendix F – Mattley Meadow Restoration Sensitive Plant BE

Appendix G – Mattley Meadow Cultural Resource Management Report

Appendix H – Mattley Meadow Wetland Delineation

Appendix I – Mattley Meadow Restoration Hydrology Report