Mid-Mattole Fuel Break and Instream Wood Placement

Environmental Assessment (EA)/Negative Declaration (ND)

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U.S. Department of the Interior
Bureau of Land Management (BLM)
Arcata Field Office
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Table of Contents

1. Introduction

Background and Setting

Save the Redwoods League (League) in collaboration with the Mattole Restoration Council (MRC), Mattole Salmon Group (MSG), and the Bureau of Land Management (BLM) are proposing to establish a series of fuel breaks across conservation easements and public lands within the "Redwoods to the Sea Corridor" (Corridor; Figure 1) located in the Mattole River Watershed in Humboldt County (Property). Larger trees felled as part of the fuel breaks will be transported to nearby fish-bearing tributaries of the Mattole River. The Mid-Mattole Fuel Break and Instream Wood Placement Project (Project) will serve to increase forest resilience and enhance land protection and stewardship efforts in an ecologically significant landscape. The League currently holds conservation easements over tracts in the Corridor with rights to conduct stewardship projects in order to restore and maintain the ecological integrity of the Property. The Project encompasses both public and private lands within the Property (Figure 2). Public lands are managed by the BLM and the private lands are owned and managed by Robert Stansberry. The MRC will manage the fuel treatments and the MSG will manage the placement of instream wood.

When the League took hold of the conservation easements from 2000 to 2009, the Property had an overabundance of small trees, brush, and unnaturally heavy fuel loads. These conditions were exacerbated by the ongoing drought, which not only made the forest more susceptible to catastrophic wildfire, but also imposed further strain on healthy trees that compete for limited resources. The high ridge top in the Gilham Butte section of the Property has been known for frequent lightning strikes during storms, further contributing to the fire risk in the area. Given the adjacency of the unique and ecologically significant Mattole River Watershed and surrounding public lands, it has been imperative that the League effectively manage the Property and protect the conservation values of the surrounding watershed and forest.

The Project will establish a 15.7 mile fuel break along Pringle Ridge and ridgelines in the vicinity of Gilham Butte. On public lands, fuels and forest thinning work will occur on 148 acres (6.1-mile fuel break path with a 200-foot buffer). On private lands, the Project will establish a 9.6-mile fuel break along the ridgetops of the adjacent 4,000-acre ranch owned by Robert Stansberry.

Larger trees generated during fuel break development will be used to enhance aquatic habitats at dispersed sites across approximately 5.3 miles of Sholes Creek (2.6 miles) and Fourmile Creek (2.7 miles). Similar to the upslope treatments, these streams occur on a combination of private and public lands.

Project Location

Located within the Mattole River watershed, the Project Area extends across both public and private lands (Figure 2). The landscape is primarily forested with Douglas-fir, tanoak, and madrone mixed hardwood forest, interspersed with patches of prairie grassland. The forest is densely populated with congested timber stands competing for limited nutrients and water from the soil and streams.

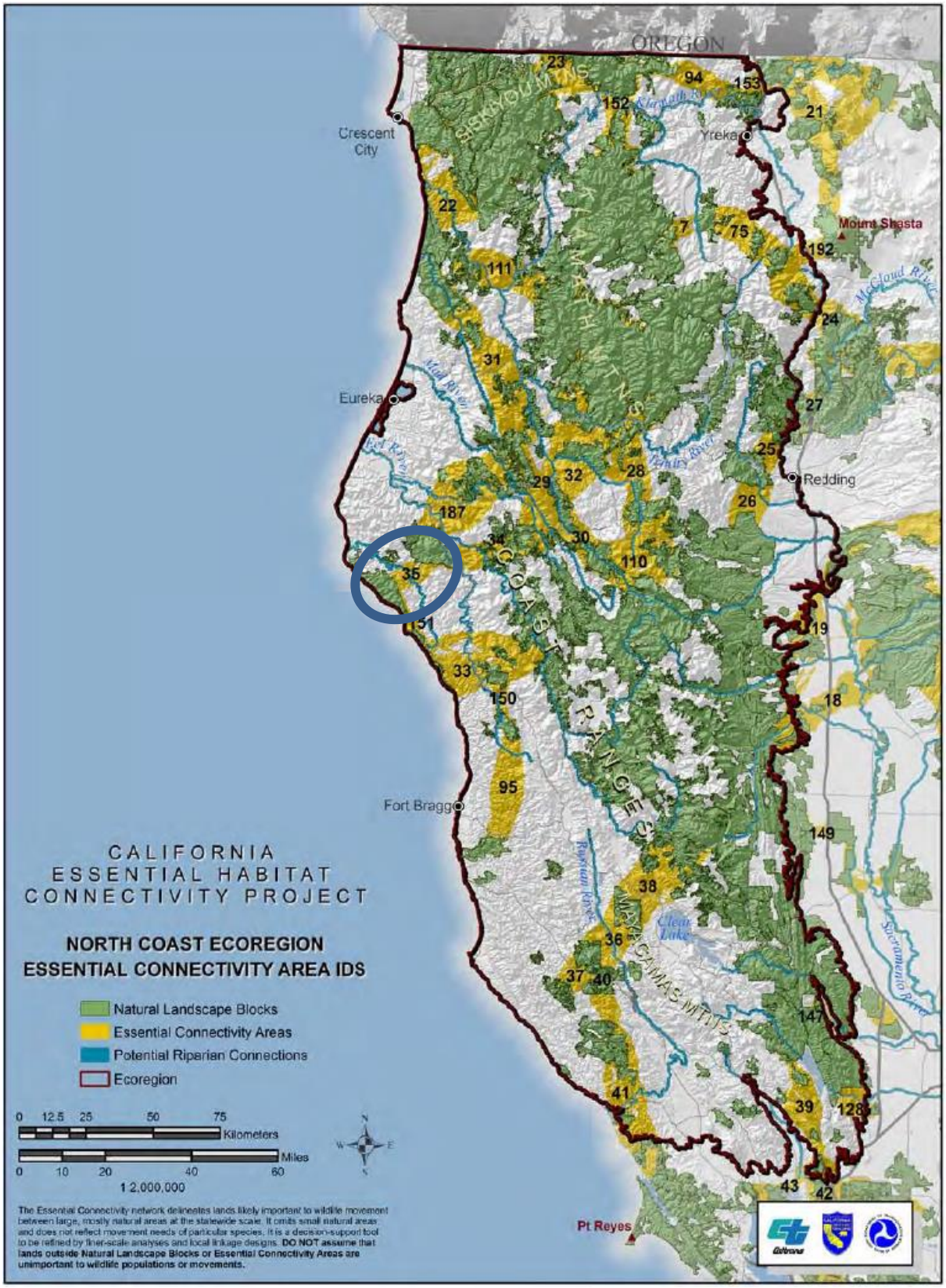


Figure 1. The Redwoods-to-the-Sea Corridor (from Spencer et al. 2010).

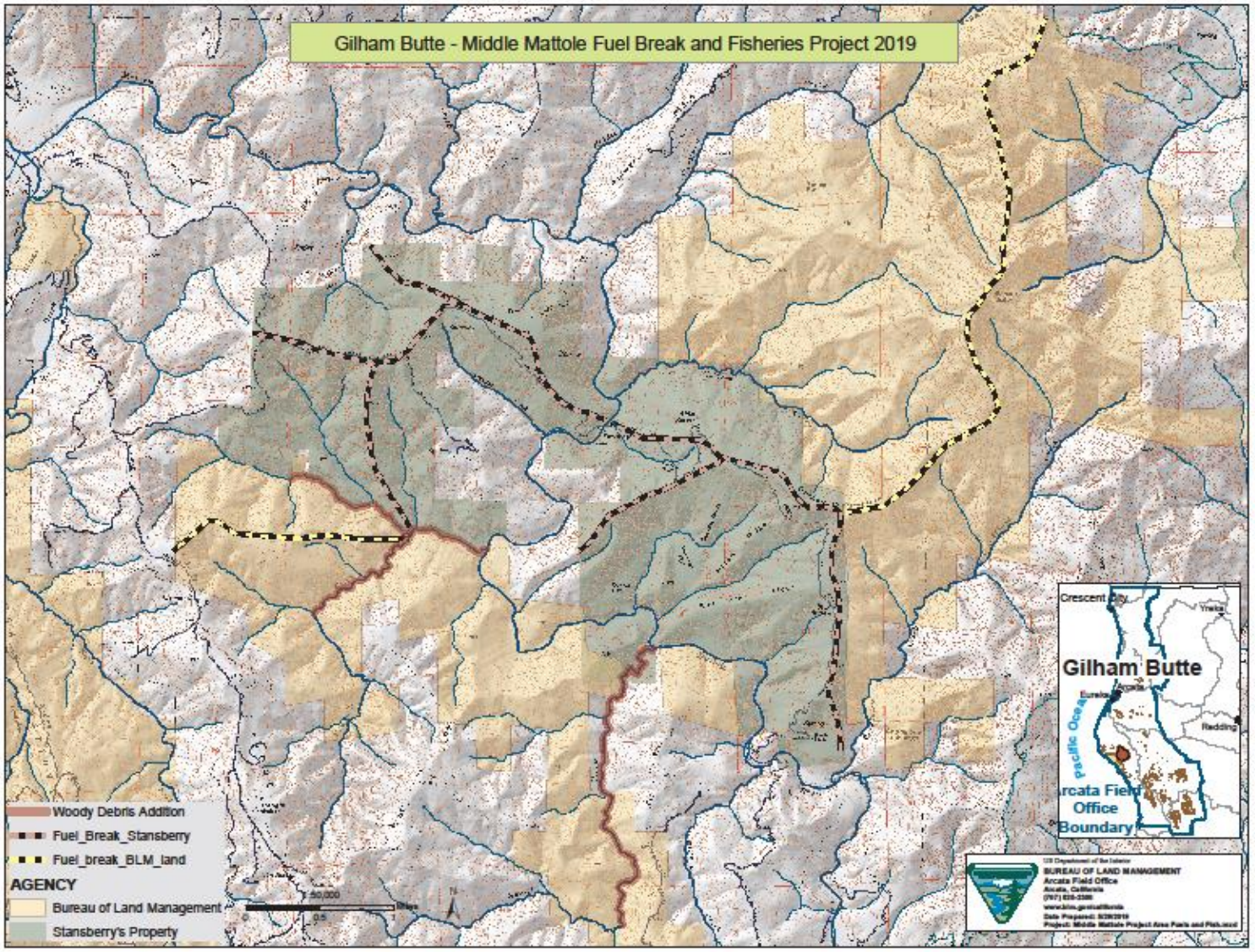


Figure 2. Project area location within the middle Mattole River watershed.

Purpose and Need for Action and Decision to be Made

A need exists to reduce the risk of catastrophic wildfire, and recover federally listed fish species. The purpose of the project is to create a series of fuel breaks and improve aquatic habitat for salmon and steelhead. The BLM will determine whether or not to develop these fuel breaks on public lands, and whether or not to implement actions to improve fish habitat on public lands within the Project Area.

Conformance with Land Use Plans

The proposed action is subject to conformance with the Arcata Planning Area Resource Management Plan Amendment and Environmental Assessment Decision Record (1996), and the Northwest Forest Plan (USDA and USDI 1994), as amended. These plans have been reviewed to determine if the proposed action conforms with applicable land use plan terms and conditions as required by 43 CFR 1610.5

Management actions would comply with the Northwest Forest Plan Aquatic Conservation Strategy. The Mattole River watershed is designated as a Tier 1 Key Watershed. Since a portion of the project area lies within Riparian Reserves, standards and guidelines for Riparian Reserves prohibit or regulate activities that retard or prevent attainment of the Aquatic Conservation Strategy objectives (USDA and USDI 1994).

Upon review, the proposed project conforms to the current Resource Management Plan (RMP; USDI-BLM 1996). The project area falls within the "Scattered Tracts" management area. Relevant management objectives for the Scattered Tracts include:

- Implement "an ecosystem approach to forest management to enhance, maintain and restore natural forest and aquatic ecosystem processes to provide habitat that will support populations of native species (particularly those associated with late-successional and old-growth forests) and protection for fish and other riparian-dependent species and resources. Silvicultural techniques would be utilized to establish and accelerate development of the old-growth characteristics."
- "Control fire, disease and insects to prevent spreading to other lands and to protect the existing forest conditions."
- Designate the Mattole River watershed as a Tier 1 Key Watershed under the Northwest Forest Plan which gives highest priority for watershed restoration and emphasizes the conservation of anadromous salmonids.

Relationship to Statutes, Regulations or Other Plans

The Proposed Action requires federal Endangered Species Act Section 7 consultation with the National Marine Fisheries Service (NMFS). Three listed fish species are present in the vicinity of the project area.

The Proposed Action would require permitting under Sections 404 and 401 of the Clean Water Act. For Section 404, the BLM will obtain a general permit from the Army Corps of Engineers.

For Section 401, the BLM will obtain a Water Quality Certification from the North Coast Regional Water Quality Control Board.

The Project will also require permitting through the California Department of Fish and Wildlife 1600 program (Lake and Streambed Alteration Agreements).

The project will receive state grant funds; therefore, this document is written to conform to regulations of both the Federal National Environmental Policy Act (NEPA) and the State California Environmental Quality Act (CEQA). A CEQA environmental checklist was completed during project scoping to determine that this project would be considered a negative declaration (Appendix E). Article 14 of the CEQA handbook (Association of Environmental Professionals 2016) provides guidance regarding development of joint NEPA/CEQA documents.

The Proposed Action is consistent the 2001 Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines (USDA and USDI 2001), as modified by the 2011 Settlement Agreement (see Appendix E). The Project meets *Northwest Ecosystem Alliance v. Rey*, Case No.04-844 (W.D. Wash. Oct.10, 2006) Pechman Exemption c: "*Riparian and stream improvement projects where the riparian work…obtaining material for placing in-stream,…; and where the stream improvement work is the placement large wood…"* as well as the 2011 Settlement Agreement *Conservation Northwest v. Sherman* Case No. 08-CV-1067-JCC (W.D. Wash.) Non-Commercial Fuel Treatments exemption, Section IV.A.6. "*Portions of restoration or hazardous fuels projects where fuel is modified via noncommercial hand treatments, non-commercial mechanical treatments, and/or prescribed fire, are exempt."*

Scoping and Issues

The project was scoped among the resources staff of the BLM Arcata Field Office in March 2019. Resources that may be affected include: cultural resources, Native American religious concerns, invasive species, vegetation, threatened and endangered species, aquatic species and essential fish habitat, riparian, water quality, and soils.

2. Proposed Action and Alternatives

The Proposed Action has five principal goals to be achieved through upslope, forestry and fuels management actions and instream fisheries actions:

1) Reduce the risk of catastrophic fire potentially impacting the adjacent Humboldt Redwoods State Park, King Range National Conservation Area (NCA), and surrounding land in Humboldt County;

2) Preserve natural habitat linkages between the two protected areas;

3) Buffer the largest contiguous reserve of ancient coast redwood groves in Humboldt Redwoods State Park, and the longest roadless coastline in the contiguous United States in the King Range NCA;

4) Enhance forest and grassland ecosystem health; and

5) Improve aquatic habitats in the Mattole River watershed, which supports three federally listed salmonid species.

Project activities will commence August 2019 and be complete by November 2022.

Forest Management

Conifer Release

Conifer release treatments will be implemented along fuel breaks in accordance with the following guidelines:

- Thinning should generally occur from below to promote a generally larger and more widely spaced forest.
- In areas where there is minimal conifer stocking, as appropriate, saplings/seedlings should be removed adjacent to co-dominant and dominant conifers, to allow for additional growing space.
- Trees with the most desirable phenotypes will be retained (*i.e.*, full crowns, fast growing, and disease free).
- Trees preferred for removal will be those that are ill-formed, exhibiting signs of poor growth or contain disease.
- For the public lands fuel breaks, no trees greater than 10" diameter or providing suitable nesting habitat for Northern Spotted Owl (NSO) will be removed.
- Appendix F contains species-specific conservation measures for all special status plant species with range overlap with the project area.

Fire and Fuels Management

Fuels Reduction Tree Thinning

Thinning of conifers along proposed fuel breaks will adhere to the following guidelines:

- Conifer saplings/seedlings should be removed adjacent to wildlife trees.
- Trees with the most desirable phenotypes will be retained (*i.e.*, full crowns, fast growing, and disease free).
- Trees preferred for removal will be those exhibiting signs of poor growth or contain disease.
- Dense shrub cover will be broken up to remove fuels continuity.
- In open areas, residual trees will be left for stocking, with a preference for retaining redwood and true oak species.
- For the public lands fuel breaks, no trees greater than 10" diameter or providing suitable nesting habitat for Northern Spotted Owl (NSO) will be removed.
- Appendix F contains species-specific conservation measures for all special status plant species with range overlap with the project area.

Description of Fuel Break Development
The width of the fuel break would generally be 200 feet wide, with localized variances in the width to accommodate topographic constraints and achieve a more continuous break. Width increases may occur where vegetative patterns and slopes allow. For example, conifers encroaching into prairie grasslands beyond 200 feet could be removed to enhance and retain these ecologically important areas along the fuel break.

Specific activities to develop fuel breaks include the following:

- Remove conifer trees subject to prescriptive treatments described below
- Prune low branches on trees within the designated area up to a height of 6'
- Reduce ladder and forest floor fuels by removing thick, dry understory brush
- Remove conifers encroaching in prairie grasslands along and adjacent to the fuel break lines
- Along the west side treatment areas, where vehicle access exists, slash may be piled and burned. Slash piles for burning would be located away from residual trees and structures.

Treatments would be implemented using heavy equipment where existing roads allow access. Heavy equipment could include an excavator outfitted with a masticator head, dozer, loader, chipper and necessary support vehicles. In steeper slopes (>35%) and more inaccessible areas such as the east side areas, hand treatments would occur using chainsaws. Given the ridgetop location, no watercourses occur along the proposed fuel break lines. Treatment methods and guidelines for establishing the fuel breaks are described below.

Pruning
Pruning will reduce ladder fuels and improve wood quality by lopping low branches up to a minimum height of 6' (above the level of slash on the uphill side of the tree).

Debris Disposal
All slash produced (branches, limbs, and treatment debris less than four inches in diameter) will be treated using one of the following methods:

- Chip or masticate adjacent to roads and other accessible portions of the treatment areas.
- Pile and burn: slash piles for burning should be located away from residual trees and structures. Pile and burn operations would occur on the west side where vehicle access is available.
- Lop and scatter: lopping is the severing and spreading of slash so that no part of it remains more than 18 inches above the ground. Lop and scatter would be implemented by hand crews on steeper slopes and areas with limited access where chipping, mastication, and burning piles is difficult.

Larger, individual trees on private lands will be retained for instream placement via helicopter. Individual trees may be skidded short distances along the ridgetop to a suitable staging area for retrieval by the helicopter. In other cases, smaller trees may be bundled for use in more complex wood structures.

Instream Fisheries Actions

Instream Wood Placement

Woody debris will be sourced from both the upslope fuel breaks and individual trees selectively fallen nearer to the streams, consistent with the Northwest Forest Plan Aquatic Conservation Strategy Standards and Guidelines (specifically TM-1). Trees that provide overstory shade canopy to the wetted channel will not be fallen. Wood placement will occur on both private and public lands (Figure 2). Individual trees and bundles of smaller trees would be transported to designated treatment reaches in both Sholes and Fourmile creeks via helicopter. General flight lines from anticipated wood staging areas are shown in Figure 3. Collectively, the treatment reaches encompass 5.3 miles of stream channels. Placement would occur either directly by the helicopter or staged adjacent to the stream bank and placed via heavy equipment where road access to the stream is available. Additionally, up to 40 individual trees along the stream would be directionally fell to augment existing wood accumulations. Helicopter transport of up to 400 pieces may occur, and up to 10 structures composed of five to 10 trees would be built with heavy equipment in lower Fourmile Creek.

Timing of Wood Placement

Helicopter wood placement would occur between August 1 and November 1. Wood would be slowly lowered into position, guided by ground staff to specific locations and structure designs (Appendix A). Pre-operations surveys will occur to identify sensitive habitat areas (e.g., unstable slopes) to be avoided during wood placement.

Along the lower Fourmile Creek segment, where roads are present, wood may be placed by heavy equipment to develop more complex and stable structures. All heavy equipment operations would occur during the dry season defined here as June 15 through November 1. Access trails to the wood placement sites would be temporary and disturbed soil will be mulched upon completion of equipment operations. Otherwise, access to placement sites will be by foot throughout the treatment reaches where road access is largely absent.

Placement Site Selection

Prior to helicopter operations, a number of sites will be flagged for wood placement. Sites will be selected based on one or more of the following criteria:

- Gravel bedded channel capable of being modified by wood debris (*i.e.*, a deformable bed)
- Where wood has the potential to recruit, sort and store sediment (*e.g.*, accumulating spawning-sized gravels in a straight, cobble-dominated reach)
- Where wood is able to augment existing woody habitat features
- Where wood is able to provide cover and complexity to pools
- Where wood is able to armor unstable landslide slopes or eroding banks
- Poorly sorted, straight and/or simplified channels where complex wood accumulations have the potential to induce reach-scale changes
- Where wood is able to create slow water habitat or create hydraulic diversity in mostly uniform reaches

Methods of Placement
Styles of wood placement are shown in Appendix A. Single trees would be lowered, either directly into the active channel bed, or onto the bank, and pivoted into final position. Additional trees from streamside stands may also be fallen and incorporated into existing wood accumulations subject to the constraints described below. Some incidental damage to riparian vegetation (e.g., broken limbs) would occur during tree placement.

To facilitate helicopter placement of more complex, multi-piece structures, localized felling or pruning of individual trees obscuring the sightline between the helicopter and ground crew would occur. Most of these trees would be alder. No trees greater than 10" diameter would be felled to create these openings and sites would be chosen to minimize riparian disturbance and meet Northwest Forest Plan Aquatic Conservation Strategy Objectives. All felled trees would remain onsite to be incorporated into the structures. Cleared areas would not exceed more than 25 feet of bank length. No more than six cleared areas would be created along each of four treatment segments: lower Fourmile, North Fork Fourmile, South Fork Fourmile and Sholes Creek.

Additional streamside conifers could be fallen into the channel (known as "accelerated recruitment") where conifer density is high. Consistent with Northwest Forest Plan Aquatic Conservation Strategy Objectives, felling of these trees would have a minimal effect on future instream wood recruitment potential and would promote growth of neighboring trees. Additional criteria for determining which trees are fallen include: source area that is topographically shaded, source areas on south facing slopes, and understory trees not contributing to the overstory canopy. Trees would be directional felled to augment existing large wood accumulations and stream habitat elements. Tree diameters would range from 12–30 inches.

Appendix F contains species-specific conservation measures for all special status plant species with range overlap the overall project area.

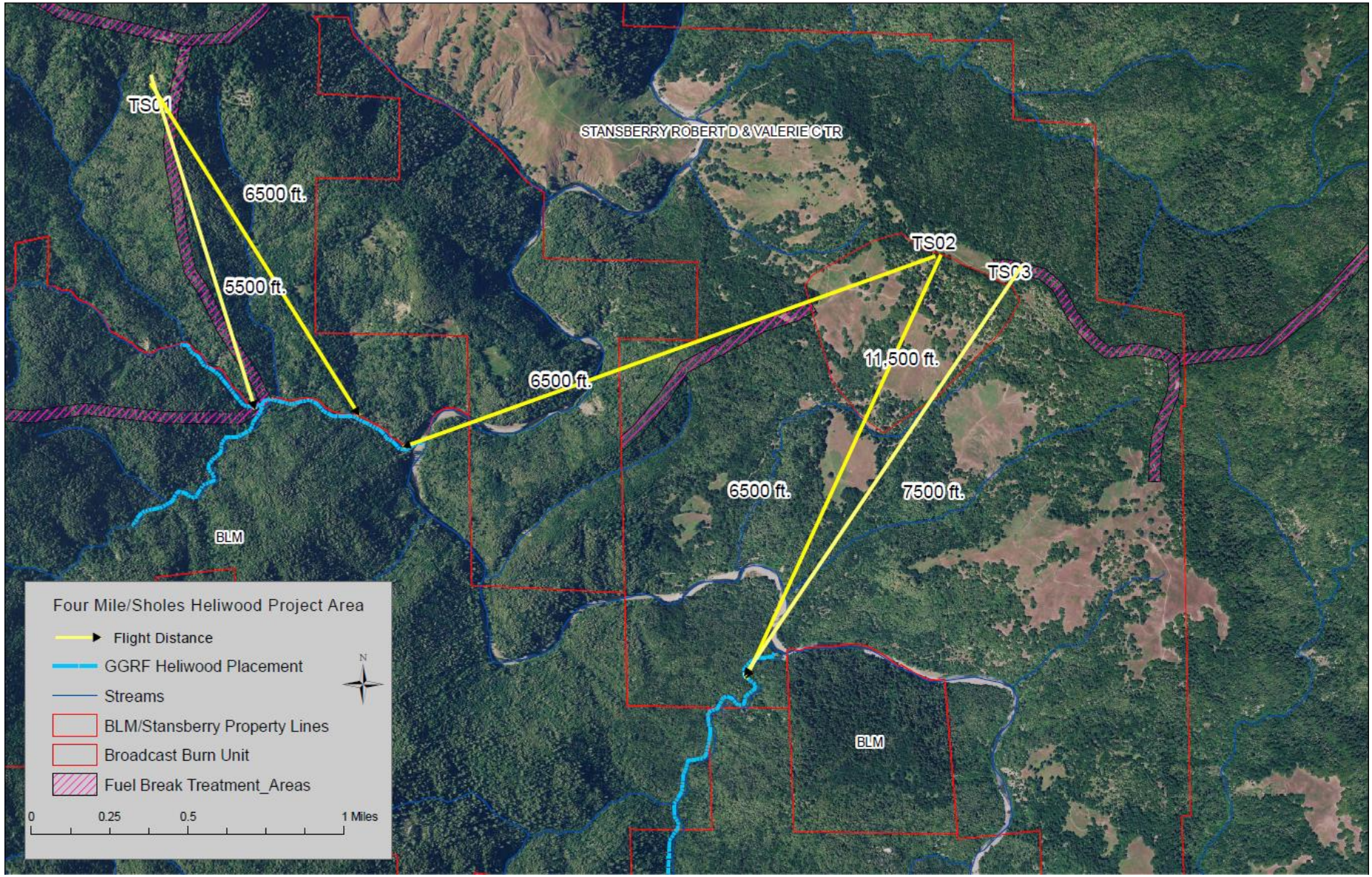


Figure 3. Helicopter flight lines from upslope wood staging areas to instream treatment reaches.

Alternative 1 - No Action Alternative

Forest Management

Under the No Action Alternative, no forest improvement treatments would occur and the wood generated from these treatments would not be placed in adjacent stream channels of Fourmile and Sholes creeks.

Fire and Fuels Management

Under the No Action Alternative, there would be no thinning or pruning of vegetation along the ridgetops in the project area. Current conditions would persist.

Instream Fisheries Actions

Under the No Action Alternative, no woody debris would be placed in Sholes and Fourmile creeks. No helicopter or heavy equipment operations would occur.

3. Affected Environment

Forest Management

Forest vegetation in the proposed project area is generally a mixed coniferous forest. This stand type generally consists of the following dominant tree species; Douglas-fir, tanoak (*Notholithocarpus densiflorus*), madrone (*Arbutus menziesii*), true-oak species (*Quercus* spps.), big leaf maple (*Acer macrophylla*) and red alder (*Alnus rubra*). Also present the mid-layer of the canopy is California Bay (*Umbellularia californica*), and canyon live-oak (*Quercus chrysolepis*). Canopy cover is high, averaging roughly 85% cover. Gilham Butte parcels contain late seral Douglas-fir as large as 72 inches dbh, although most generally range from 12 to 48 inches dbh. The largest trees on the property occur in unlogged areas on the northern boundary of the property in areas with limited access.

As a result of historic timber management activities more accessible areas of the Gilham Butte area consist of younger, more even aged Douglas-fir stands. These homogenous young even aged stands are surrounded by mixed conifer/hardwood stands, with a smaller component of hardwood dominated stands, and to a lesser extent ridge top prairies (which have declined significantly over the last few decades). The proposed project area does include components of mature hardwood dominated stands (madrone, tanoak, and live oak), as well as late successional "Old Growth" Douglas-fir dominated stands.

Fire and Fuels Management Including Air Quality

The coastal areas heavy winter precipitation and moist summer fog contributes to rapid vegetative growth, which can act as a fuel-bed for high intensity wildfires. Another factor that has increased fire size and behavior in the region is the increased fuel-loading that has resulted from the unconditional suppression of wildfires over the last 100 years.

Fuel that would be consumed in successive wildfires accumulates with some fire dependent plant species generating large amounts of highly flammable dead material. There can also be an increased overall density of species as growth of new vegetation that is no longer moderated by

fire. In coniferous species higher population densities and a continual vertical arrangement of fuel creates a ladder effect which can allow a fire to transition from a surface fire into a crown fire. Crown fires are extreme events marked by high flame lengths and rapid rates of spread.

Manual and mechanical reduction of accumulated fuel loads have been proven effective in moderating fire behavior (Graham, 1999). Fuel breaks can improve the safety of firefighters and the public along access corridors in the event of a wildfire. Suppression success can also be improved by providing a safe area from which to conduct backfiring operations. A backfire is a suppression tactic that involves deliberate ignition of fuel along the inner edge of a fuel break to consume the fuel in the path of an approaching wildfire with the goal of containing the fire, and moderating fire effects when implemented proactively.

Fuels within the project area generally consist of early to mid-seral Douglas-fir (50%), tan oak-madrone (30% percent), late-mature Douglas-fir/mixed evergreen forest (10%) percent) and ridgetop prairies (10%). Fuels are generally continuous with occasional jackpots of heavier fuel concentrations, with great variability over the landscape.

A smoke management plan will be developed to address the impact of smoke prior to the use of prescribed fire with North Coast Unified Air Quality Management District.

Vegetation

The majority of the vegetation on BLM lands within the project area consists of mixed coniferous forest following ridgelines, with small pockets of grassland, and riparian forest along creek margins.

Sawyer, Keeler-Wolf and Evans (2009) describe the mixed coniferous forest community as the *Pseudotsuga menziesii* Forest Alliance, which exhibits greater than 50% relative cover of Douglas-fir in the tree canopy. As discussed in the fire and fuels section above, approximately 50% of the Douglas-fir is early to mid-seral, and approximately 10% is late-mature. Other commonly encountered species consistent to the mixed coniferous forest community type are tanoak canyon live oak,and Pacific madrone.

Riparian forest can be found along the margins of Sholes Creek and Four Mile Creek within the proposed action project area. Tree species in riparian forest continue to include Douglas-fir, but the hardwood component exhibits red alder, California bay laurel, and big leaf maple. Other understory species indicative of more mesic conditions are thimbleberry (*Rubus parviflorus*), coltsfoot (*Petasites frigidus*), coastal brookfoam (*Boykinia occidentalis*), giant chainfern (*Woodwardia fimbriata*), and horsetail fern (*Equisetum* spp.).

Grasslands occur in small openings along ridgelines and slopes, having declined in extent due to fire suppression and conifer encroachment over the past several decades. The grasslands are comprised of a mix of non-native, annual and perennial grasses, native, perennial grasses, as well as a combination of native forbs, bracken fern (*Pteridium aquilinum*), bulbs, and non-native forbs. Common examples of annual grasses are annual dogtail (*Cynosurus echinatus*), European hairgrass (*Aira caryophyllea*), soft chess (*Bromus hordeaceous*), velvet grass (*Holcus lanatus*), and slender wild oat (*Avena barbata*). Blue wild rye (*Elymus glaucus*), a native, perennial grass,

is commonly encountered. Native forbs include Ithuriel's spear (*Triteleia laxa*), California poppy (*Eschscholzia California*), and farewell-to-spring (*Clarkia* sp.)

Rare, Threatened, and Endangered Species: Plants

The California Natural Diversity Database (CNDDB) and the California Native Plant Society (CNPS) online inventory of rare plants were queried for special status plants (see Appendix F). Previous surveys in the project area conducted by Mad River Biologist's botanists (Save the Redwoods League 2011) have not observed any rare, threatened, or endangered plants.

No state or federal rare, threatened, or endangered plants are known to occur in the project area. Should any special status plants be observed during additional pre-implementation surveys, conservation measures will be applied that are included in Appendix F.

In the much broader CNDDB query for potential special status plants in adjacent quadrangles, Humboldt milk vetch (*Astragalus agnicidus*) is known to occur in the Miranda quadrangle. The California Department of Fish and Wildlife ranks Humboldt milk vetch as rare. It prefers broadleaved upland forest and openings in disturbed or fairly open, coniferous forest.

Long beard lichen (*Usnea longissima*), a CNPS List 4 and BLM Sensitive species. Long beard lichen is a pendulant, fruticose lichen whose main branches are up to 3 meters long. It occurs in old-growth and late-successional conifer stands, hardwood stands, and riparian areas, particularly in coastal climates or on fog-swept mountains where humidity is high (USDI 2006). It is known to occur within the project vicinity, but has not yet been detected in the Proposed Action area.

The majority of the vegetation in the project area is classified as Douglas-fir forest or Upland Douglas-fir forest, which is considered a sensitive community by the California Department of Fish and Wildlife, with a state rank of 3.1.

Wildlife Including Threatened and Endangered Species

The project is located in designated Critical Habitat for the federally threatened northern spotted owl (NSO, *Strix occidentalis caurina*) and marbled murrelet (MAMU, *Brachyramphus marmoratus*). NSO are state listed as a candidate species and MAMU are a state endangered under the California Endangered Species Act (CESA). Recent surveys for NSO on BLM lands have been negative and barred owls (BAOW, *Strix varia*) were detected in the area. The area was determined to be unoccupied by MAMU during extensive surveys after MAMU was listed as threatened in 1992.

The Pacific fisher (*Pekania pennanti*) is a BLM sensitive species and a California Department of Fish and Wildlife (CDFW) Species of Special Concern (SSC). Recent surveys designed to determine the presence or absence of fisher found no fisher detections in Gilham Butte. Our findings reinforce the extensive survey effort conducted in the early 2000s which did not find fisher in Gilham Butte or the adjacent Humboldt Redwoods State Park. Extensive surveys in the nearby King Range Conservation Area also failed to detect fisher.

There are several amphibian species found in the project area. The foothill yellow-legged frog (*Rana boylii;* BLM-S; CDFW-SSC), Pacific tailed frog (*Ascaphus truei;* CDFW-SSC), northern red-legged frog (*Rana aurora;* CDFW-SSC), and the southern torrent salamander (*Rhyacotriton*

variegatus; CDFW-SSC) spend most of their life in or adjacent to the waters of ponds, streams and rivers (Ashton et al. 2002).

The bat species Yuma myotis (*Myotis yumanensis*; BLM-S), fringed myotis (*Myotis thysanodes*; BLM-S), Townsend's big-eared bat (*Corynorhinus townsendii*; BLM-S, CESA- threatened candidate), as well as other common bat species, may be present at Gilham Butte. These bats have been confirmed in nearby forests and there is suitable habitat in Gilham Butte. Roosting in the forest would occur under sloughing tree bark, deformities or cavities (Western Bat Working Group 2016). Townsend's big-eared bat has been documented to breed in large tree cavities. The bat population within Gilham Butte has not been surveyed or inventoried.

The olive-sided flycatcher (*Contopus cooperi*; CDFW-SSC), and the Vaux's swift (*Chaetura vauxi;* CDFW-SSC) are special status bird species possibly found in Gilham Butte. The olive-sided flycatcher may utilize Gilham Butte for both nesting and foraging. The swift prefers nesting in hollows of large trees. Both species' habitat may be in the proposed treatment area.

The Sonoma tree vole (*Arborimus pomo*; CDFW-SSC) is a special status mammal that may be present in Gilham Butte. Its preferred habitat is old-growth Douglas-fir trees where it spends most of its life in the canopy of the trees (Chinnici et al. 2012).

Terrestrial wildlife that may occur in the project area include the following:

Mammals
raccoon (*Procyon lotor*)
opossum (*Didelphis virginiana*)
brush rabbit (*Sylvilagus bachamni*)
deer mouse (*Peromyscus maniculatus*)
shrew (*Sorex spp*.)
wood rat (*Neotoma spp*.)
Douglas' squirrel (*Tamaiasciurus douglasii*)
chipmunk (*Tamias spp*.)
Sonoma tree vole (*Arborimus pomo*)
voles (*Microtus spp*.)
spotted skunk (*Spilogale gracilis*)
striped skunk (*Mephitis mephitis*)
gray fox (*Urocyon cinereoargenteus*)
bobcat (*Lynx rufus*)
black bear (*Ursus americanus*)
mountain lion (*Puma concolor*)
coyote (*Canis latrans*)
river otter (*Lontra canadensis*)
myotis bats (*myotis spp*.)
big brown bat (*Eptesicus fuscus*)
black-tailed deer (*Odocoileus hemionus columbianus*)
mountain beaver (*Aplodontia rufa*)

Birds
sharp shinned hawk (*Accipiter striatus*)
red-shouldered hawk (*Buteo lineatus*)
red-tailed hawk (*Buteo jamaicensis*)
turkey vulture (*Cathartes aura)*
band-tailed pigeon (*Patagioenas fasciata*)
northern spotted owl (*Strix occidentalis caurina*)
barred owl (*Strix varia*)
northern pygmy owl (*Glaucidium gnoma*)
Anna's hummingbird (*Calypte anna*)
Allen's hummingbird (*Selasphorus sasin*)
downy woodpecker (*Picoides pubescens*)
hairy woodpecker (*Picoides villosus*)
pileated woodpecker (*Dryocopus pileatus*)
northern flicker (*Colaptes auratus*)
Pacific sloped flycatcher (*Empidonax difficilis*)
black phoebe (*Sayomis nigricans*)
Steller's jay (*Cyonocitta stelleri*)
common raven (*Corvus corax*)
tree swallow (*Tachycineta bicolor*)
violet-green swallow (*Tachycineta thalassina*)
barn swallow (*Hirundo rustica*)
chestnut-backed chickadee (*Poecile rufescens*)
brown creeper (*Certhia americana*)
bushtit (*Psaltriparus minimus*)
Pacific wren (*Troglodytes pacificus*)
American dipper (*Cinclus mexicanus*)
golden-crowned kinglet (*Regulus satrapa*)
ruby-crowned kinglet (*Regulus calendula*)
wrentit (*Chamaea fasciata*)
Swainson's thrush (*Catharus ustulatus*)
American robin (*Turdus migratorius*)
varied thrush (*lxoreus naevius*)
Wilson's warbler (*Cardellina pusilla*)
song sparrow (*Melospiza melodia*)
white-crowned sparrow (*Zonotrichia leucophrys*)
dark-eyed junco (*Junco hyemalis*)

Amphibians and Reptiles
western pond turtle (*Emys marmorata*)
southern torrent salamander (*Rhyacotriton variegatus*)
Pacific giant salamander (*Dicampotodon tenebrosus*)
rough-skinned newt (*Taricha granulosa*)
ensatina (*Ensatina spp.*)
wandering salamander (*Aneides vagrans*)
slender salamander (*Batrachoseps spp.*)
Pacific treefrog (*Hyla ragilla*)

Pacific tailed frog (*Ascaphus truei*)
foothills yellow-legged frog (*Rana boylii*)
northern red-legged frog (*Rana aurora*)
rubber boa (*Charina bottoa*)
ring-necked snake (*Diadophis punctatus*)
garter snake (*Thamnophis spp.*)

Fisheries

The Mattole River supports populations of the California Coast Chinook salmon Evolutionarily Significant Unit (ESU), the Southern Oregon/Northern California Coasts coho salmon ESU, and the Northern California steelhead Distinct Population Segment (DPS). All three Pacific salmonids in the Mattole River are listed as "threatened" under the federal Endangered Species Act. Studies of the historical population structure of Pacific salmonids in this region have identified the Mattole River populations as "Functionally Independent" and thus important components for recovery efforts within the ESUs (Bjorkstedt et al. 2005, Williams et al. 2006).

Fourmile and Sholes creeks provide important spawning and rearing habitat for coho salmon, Chinook salmon, and steelhead, and are designated critical habitat for coho salmon and steelhead and essential fish habitat (EFH) for coho and Chinook salmon.

In general, fish habitat quality in Fourmile and Sholes creeks is poor to fair due to legacy timber harvest and road building activities. Summer maximum weekly average temperatures (MWAT) in each creek range from 16-18 °C (MSG unpublished data from 2007-2017), with daily maximum temperatures periodically exceeding 20 °C. These temperatures are suitable for steelhead and marginal for coho salmon. Pool frequency, depth, and shelter ratings in Fourmile and Sholes creeks were determined to be 'unsuitable' by Downie et al. (2002), indicating degraded instream habitat conditions. Downie et al. (2002) also determined riparian canopy cover was 'suitable' in Fourmile Creek and 'fully suitable' in Sholes Creek. The riparian forests have been recovering since 2003; therefore, riparian canopy cover today is improved.

Soils and Geology

Geologically, the project area lies within the coastal belt Franciscan formation (McLaughlin et al. 2000). Rocks in this zone are largely sedimentary (sandstone and argillite) with minor components of igneous and metamorphic rocks. Most pertinent to the proposed action is the pervasive shearing and weathering that has occurred across the area resulting in locally unstable hillslopes. Both shallow and deep-seated landsliding are present in the project area. In addition, the erosive nature of the landscape is prone to delivering deleterious amounts of sediment to area watercourses.

Stream channels in the project area host relatively narrow streamside terraces deposited and reworked during large flood events over the last several decades (*e.g.*, 1964 and 1997 floods). These terraces support generally younger riparian vegetation, reflecting the relatively frequent disturbances that shape the stream corridors. Larger floodplains are absent in the project area.

Cultural Resources

As part of this EA analysis, the BLM archaeologist consulted all known records as well as the narrative and GIS-based sensitivity maps that were created as part of a Class I Archaeological overview in 2016 by Far Western Anthropological Group (King et al. 2016).

Limited cultural resource survey work has been done within the proposed project area that crosses BLM land. One prior archaeological survey (S-2542; Levulett et al. 1980) crosses two segments of one of the proposed work corridors on public land. This 1980 survey was part of the Northwestern California Timber Tracts within Sustained Field Unit 13 Class III Inventory. The report indicates that 188 acres were examined in the Gilham Butte tract, with no archaeological sites found. The crew postulates the negative finding is likely due to survey on difficult terrain.

Three archaeological sites have been documented nearby, but not within, the proposed project corridors. One of these sites is located on public land, the other two sites are located on private property. The archaeological site on public land is located outside of the proposed project work corridors for forest thinning and stream enhancement. It consists of the historic Carr cabin and associated artifactual remains dating from the ca. 1920s (CA-HUM-1886H; Roscoe and Lyell 1996). The two sites documented on private property within the vicinity of the proposed project area consist of the old Holman Homestead site, dating from ca. 1880 to 1890 and the Hunter homestead site that was established in the 1880s (Bramlette, A.G. and S.R. Lyon 1981; Hiney 1998).

The GIS-based predictive model includes surface and subsurface sensitivity models for prehistoric and historic resources. The model suggests that the southwestern-most 1.5 mile work corridor on public land has a high probability for surface prehistoric and historic resources, whereas the northern-most 4.5 mile proposed work corridor has a lower probability for surface prehistoric or historic resources. Both proposed work corridors have a low probability of subsurface prehistoric or historic resources. The woody debris treatment section of Sholes Creek on public land has a low probability of prehistoric or historic surface or subsurface resources.

Native American Religious Concerns

This project lies within the ancestral territory of the Bear River Band of the Rohnerville Rancheria. This federally-recognized tribe was invited to consult on this project via certified letter and email, dated April 29, 2019.

4. Environmental Effects – Direct, Indirect and Cumulative

Forest Management

The upslope forest treatments in the proposed action will reduce understory vegetation in the treatment areas. No dominant or codominant tress will be removed with fuels reduction activities or timber stand improvement activities. In younger stands with higher numbers of trees per acre, the proposed action will lead to reduced competition amongst residual trees and accelerate stand development. Fuels reduction will reduce the risk of catastrophic fire and protect forest stands.

Fire and Fuels Management Including Air Quality

The proposed action is designed to benefit fire and fuels management, including air quality, by reducing hazardous fuels in the project area and creating strategic opportunities for fire suppression in the case of wildfire. Fuel breaks proposed on both the north and southern end of the project will lead to increased access and reduced fire behavior along roads and ridges that may be identified as strategic locations for fire lines and other containment actions in the event of a fire in the Gilham Butte area.

The implementation of fuels reduction activities will generally lead to reduced fire behavior in treated areas. Reducing fuel loadings and flame lengths associated with hazardous fuels will reduce the risk to firefighter and public safety as well as the impacts to vegetation in the treated areas.

While short-term impacts to air quality from prescribed burning may occur, these effects will be minimized by burning under environmental conditions approved through by the North Coast Air Quality Management District. Smoke impacts from prescribed fire will generally by better than those that would occur in the event of a wildfire when air conditions may be stagnant or funneling directly into adjacent communities.

Vegetation

Overall, the fuel break/fuel reduction proposed action could contribute to long-term protection from catastrophic wildfires for mid-late successional Douglas-fir forest.

Short-term impacts to vegetation are largely limited to within the 200-foot wide fuel break swath within the Douglas-fir forest. Trees smaller than 10 inches dbh would be removed and disposed of on-site either by lop and scatter, pile and burn, or chipping or mastication. Common understory plants could be temporarily suppressed beneath mulch in scattered areas.

Trees mature enough to support natural populations of the BLM Sensitive long-beard lichen would very likely not be affected by the Proposed Action. Long beard lichen is associated with late mature trees. Trees proposed for removal under all elements of the Proposed Action are early mature with a dbh of 10 inches or less. Pre-implementation surveys for avoidance are also included as part of the Proposed Action. Improved stand fire-resistance would be beneficial for any long-beard lichen occurring in the project area.

Grassland areas could benefit through removal of encroaching conifers that occur within the 200-foot wide fuel break swath. Removal of conifers would help extend the persistence of these ecologically important areas in the near-term. Grasslands could benefit from chipped or masticated trees as the carbon decomposition would provide a food source for beneficial soil fungi, as well as lead to a nitrogen release for the grassland once the chips are fully decomposed. Chips or masticated material may also contribute to water holding capacity in the grasslands over the short-term.

Common riparian forest vegetation could be disturbed in very limited areas no more than 25 feet from the bank to allow for helicopter delivery of large woody debris to the creek. Some common Douglas-fir may also be felled into the creek to provide additional large woody debris to improve salmonid habitat conditions. Creek areas where large woody material is delivered via heavy

equipment would utilize existing roads to creek areas where the channels are gravelly, and somewhat braided – and vegetation presence is minimal.

Wildlife

Due to the limitation on size class and seasons of the proposed action no immediate effects to NSO are expected. Nesting and roosting habitat will not be altered and the project will occur outside of the breeding season. If the project is successful and there is no catastrophic stand clearing events, this project will improve NSO habitat over the next several decades by accelerating tree growth and promoting mature forest characteristics.

Species that nest and roost in cavities, irregularities, and sluffing bark will benefit from accelerated tree growth. Bat, birds, and amphibians are known to utilize large trees. The project will occur after the nesting season for songbirds.

The shaded fuel break my stop or lower the intensity of a wildfire which will protect the forest. A high intensity wildfire would be highly detrimental to species that depend on mature forest which takes a very long time to replace.

Deer, bear, and other large wildlife species often use fuel breaks as travel corridors in areas that have dense understories. There may be a loss of forage in the project footprint for deer, bear, and other wildlife as the understory is removed within the fuel break. The amount of forage loss will depend on the age, species composition, and density of the vegetation removed.

Some of the more secretive species present on the project site will be disrupted during project implementation and move into nearby areas during work periods. Species such as deer and NSO have been known to habituate to disturbance caused by work with chainsaws and heavy equipment. The wildlife currently in the project area is probably not habituated to human disturbances due to the isolation of the project area and infrequency of interactions.

Cumulative effects of the proposed action will be relatively minor. The logging history of the region left very little intact old-growth and mature forest stands. The proposed action will accelerate mature forest characteristics and add to existing mature forests found in the State Parks and King Range National Conservation Area. It would take several additional decades after the project is complete for the project area to develop into suitable NSO nesting habitat. In addition, much of the project is ridge top which is not ideal for nesting NSO.

Fisheries

The proposed action would take place outside of the spawning and egg/alevin incubation period of salmonids, and no equipment would enter the wetted channel. Therefore, the only possible direct effects to salmonids would be injury or mortality to juveniles during placement of trees in the channel. However, the behavioral tendency of salmonids is to avoid noise and movement from above the water surface (Popper and Carlson 1998), so the noise and movement from project activities should cause fish to seek shelter and avoid the areas where trees are being placed. In addition, fish monitoring from a comparable habitat improvement project in the lower Mattole River documented no injuries or mortalities to salmonids (MSG unpublished data). During tree placement, a small amount of fine sediment may be mobilized into the water column

and cause a brief, temporary plume of turbidity. This impact is would be localized, short in duration, and therefore insignificant.

Very little removal or modification of riparian vegetation is anticipated. Trees that provide overstory shade to streams would not be fallen. Up to six openings in each of the four habitat units would be created to provide clearings for helicopter wood placement. No trees greater than 10" diameter would be felled to create these openings, each site would not exceed 25 feet of bank length, and sites would be chosen to minimize riparian disturbance. All felled trees would be placed into the stream channel to provide instream cover and would continue to provide shade to the stream; therefore, no changes to water temperature are expected.

Use of heavy equipment and helicopters near and in stream channels allows for the possibility that toxic materials such as fuel, lubricants, and hydraulic fluids could leak into a watercourse and degrade water quality. All power equipment would be checked for leaks daily prior to the start of work and would not be used until any leaks are repaired or the leaking equipment is replaced. Absorbent pads would be on site and would be deployed in case any toxic materials are spilled near water. All equipment to be used near streams would be required to have a chemical spill emergency kit to reduce the potential for contamination from accidental spills. The measures described in the proposed action and above are expected to reduce the probability of introduction of chemical contaminants to the point where the probability is negligible. Employing these measures for past projects near and in stream channels has proven to be effective and minimizing the potential for introduction of toxic material into water.

The project is expected to increase the frequency and depth of pools and increase the amount of instream cover for juvenile salmonids in the targeted stream reaches. These habitat improvements may result in increased survival and growth of these species. In summary, the project is not likely to have significant effects on listed salmonids or their critical habitats, and would have minor and short-term adverse effects and long-term positive effects on EFH.

Soils and Geology

The project has the potential for soil disturbance along the ridgetop forest treatment areas and where wood is placed within the stream channels. Soil disturbance is expected to be negligible on the ridgetop forest treatment areas where the activities involve hand crews felling and trimming vegetation. Movement of larger trees on private lands would occur adjacent to existing roads on gentle ridgetop slopes. No watercourses are present in these ridgetop locations, therefore no sediment delivery is expected.

Wood placement in streams will utilize a helicopter and heavy equipment. Most of the wood will be placed with a helicopter where soil disturbance will be negligible as the trees are lowered into place from overhead with a ground crew directing the placement. Heavy equipment placement will access the stream channel at specific access sites along lower Fourmile Creek. Here, disturbances to stream banks and adjacent terraces can be expected with the tracked equipment. A series of Best Management Practices which includes measures such as working during the dry season and mulching any disturbed bare ground will reduce any soil disturbance to negligible levels.

Overall, the project is expected to mitigate the effects of elevated sediment loads in the project area tributaries. Woody debris accumulations provide localized sediment storage and sorting compartments which provide spawing habitat and meter the quantities of sediment transported to downstream reaches.

Cultural Resources

Based on the GIS-based predictive model, it is anticipated that cultural resources may be found. Prior to the implementation of this project, a BLM archaeologist will conduct an intensive pedestrian survey of the proposed forestry thinning corridors that cross BLM land. Any sites that are found will be documented and responsibilities under the NHPA Section 106 process will be completed.

Native American Religious Concerns

The Bear River Band of the Rohnerville Rancheria was invited to consult on this project via certified letter and email, dated April 29, 2019. The tribe's Tribal Historic Preservation Officer (THPO) responded via email that there may be sensitive cultural properties located within the project corridor, and that the tribe would appreciate follow-up information after the survey is completed. It is anticipated that any concerns that are raised after the cultural resources survey is complete can be addressed so that there are no environmental effects to Native American Religious Concerns.

5. Cumulative Effects of Proposed Action

Forest Management

Cumulative effects of the proposed action to forest resources in the project area include environmental effects of forest management activities planned on public lands as well as actions currently occurring on adjacent private lands. Implementation of forest health treatments under the proposed action will lead to an improvement in the health of the forest landscape in the general vicinity of the project area. Forest health treatments and fuels reduction activities, combined with similar efforts being planned and implemented on adjacent private lands, will result in reduced wildfire activity which will reduce the risk of fire across the landscape, including late seral stands in the project area.

Fire and Fuels Management Including Air Quality

The cumulative effects of the proposed action to fire and fuels management will be the development of landscape level opportunities to suppress wildfires with reduced suppression and impacts from catastrophic fire behavior. Because this project has been developed in coordination with adjacent private landowners, and utilizes strategic landscape elements including roads and ridges, the cumulative effects of the proposed action will result in landscape level improvements in fire suppression opportunities. Fuels reduction activities in the project area will build on similar efforts planned for private lands utilizing natural features including grasslands and ridges. In adjacent lands where fuels reduction activities are not taking place, the cumulative effects of the proposed action will result in breaking up the untreated landscape and reducing wildfire risk across the watershed. While prescribed fire activities occurring under the proposed action may combine with activities in surrounding areas to have short term impacts to air quality, all prescribed fire will be conducted in compliance with the NCUAQMD and will have reduced

impacts to air when compared to an eventual wildfire which may occur when smoke dispersal will be more problematic.

Vegetation

Within the Mattole River watershed, the Proposed Action would potentially contribute to conservation of Douglas-fir forest through a reduction of both more fire-susceptible ladder fuels as well as overall risk associated with uncontrolled, stand-replacing wildfire(s).

Actions that contribute to long-term conservation of mid to late-successional forest types also contribute to the conservation of associated vascular and non-vascular plant species that depend upon them, such as long beard lichen (*Usnea longissima*).

The Proposed Action is not expected to result in any adverse cumulative effects to vegetation within the Mattole River watershed.

Wildlife

Mixed hardwood forests in the region were heavily logged in previous decades with some exceptions in State Parks and the King Range National Conservation Area. Projects that improve mature stand characteristics will benefit species that depend on that habitat types such as NSO. The region contains a large percentage of mixed hardwood forest that has received various levels of forest management post-harvest. Some areas were re-planted with Douglas-fir and thinned to allow for healthy re-growth but other areas were left to re-grow without management resulting in a forest that has a much higher proportion of hardwood trees than would occur naturally. These unmanaged stands will not achieve mature forest characteristics for a very long time as young Douglas-fir are shaded out by the hardwood canopy. This process increases the importance forest stands that contain mature forest characteristics or will come online within the next few decades. The proposed action will help some of the forest achieve the desired state sooner than if it was left untreated. Consequently, wildlife dependent on these habitat types will respond sooner under the proposed action.

Fisheries

For the purposes of assessing cumulative effects relative to fisheries, the entire Mattole River watershed is considered. Historic land use practices (e.g., industrial logging and road building) contributed to the demise of aquatic habitat and the listing of California Coast Chinook salmon ESU, Southern Oregon/Northern California Coast coho salmon ESU, and the Northern California steelhead DPS. Prior to major land disturbances, Fourmile and Sholes creeks had complex habitat, cooler summer stream temperatures, and abundant salmonid populations. Currently, lack of available summer and winter rearing habitat for juveniles limits the survival and recovery of the salmonid populations.

Placement of wood in stream channels would only result in short-term behavioral changes in salmonids, and any increases in turbidity would be localized, minor, and short in duration. In summary, the proposed action would promote recovery of Mattole River threatened salmonids by improving habitat conditions and would not result in any adverse cumulative effects to the Mattole River fish populations.

Soils and Geology

For the purposes of assessing cumulative effects relative to soils and geology, the entire Mattole River watershed is considered. In general, the watershed has experienced elevated sediment loads from historic land management activities. Excess sediment has filled channels, altered the structure of the riparian zones and led to increases in stream temperatures as channels have widened and shallowed with a smaller overstory canopy.

The upslope fuel breaks would reduce the risk of catastrophic wildfire over portions of Mattole River watershed. Reduced instances of large fires would also result in lower amounts of post-fire sediment delivery. Placement of wood in stream channels would mitigate the effects of elevated sediment loads to downstream reaches as individual wood accumulations store and sort sediment, providing valuable habitat functions as well.

In summary, the project is not expected to result in any adverse cumulative effects to the Mattole River watershed.

Cultural Resources

There has been little work in this area in the past, with no known sites documented or affected by prior work. Based on the GIS-based predictive model, it is anticipated that cultural resources may be found. Prior to the implementation of this project, a BLM archaeologist will conduct an intensive pedestrian survey of the proposed forestry thinning corridors that cross BLM land. Any sites that are found will be documented and responsibilities under the NHPA Section 106 process will be completed. This means that significant archaeological sites will be avoided, or when necessary an archaeologist may be on hand to monitor the work. Therefore, there will be no cumulative effects to cultural resources.

Native American Religious Concerns

The Bear River Band of the Rohnerville Rancheria was invited to consult on this project via certified letter and email, dated April 29, 2019. To date, there has been no recent project work done in the area, with no Native American Religious Concerns documented. Any concerns that are raised prior to the implementation of the proposed project will be addressed via government-to-government consultation, and it is anticipated that there will be no cumulative effects to Native American Religious Concerns.

6. Environmental Effects and Cumulative Effects of Alternative 1 (No Action Alternative)

Forest Management

Under the no action alternative, no forest management activities would occur in the project area. In older stands, the no action alternative will mean that understory tree density in the proposed treatment areas will not be reduced. In some areas, this will mean that unhealthy stand characteristics will persist as the area has not experienced fire or active management and there will be buildups of unhealthy stand characteristics. In younger stands, the no-action alternative will mean that stand development will continue at an extremely slow pace, in some places stagnated through competition resulting from high tree densities and competition. In the event of wildfire untreated stands will be more likely to experience high tree mortalities.

Fire and Fuels Management Including Air Quality

Under the no action alternative, no fuel reduction activities would occur and a fuel break would not be constructed. As described in the Forest Management section, some areas with high fuel loadings will likely experience increased fire behavior without fuels reduction treatments. The proposed fuel break would provide opportunities for fire suppression personnel to stop a wildfire with reduced risk to firefighters and reduced needs for heavy equipment. In the absence of the fuel break, fires in the proposed project area could end up being larger than they would if the fuel break is constructed. Without reducing fuels and utilizing prescribed burning on favorable burn days, air quality effects from a wildfire may be increased if the fire occurs when smoke dispersal is poor.

Vegetation

Under the No Acton Alternative a fuel reduction/fuel break would not occur, and large woody material would not be placed within Sholes and Four Mile Creeks on BLM land. Short-term direct and indirect impacts would not occur, including removal and on-site disposal of common tree species less than 10 inches dbh.

A long-term, indirect impact of the No Action Alternative could be an increased risk of stand-replacing fire, as well as a greater distribution of uncontrolled wildfire. A stand-replacing fire could have negative impacts upon Douglas-fir forest communities, but could lead to an increase in the distribution of grassland communities.

The No Action Alternative could contribute to adverse cumulative effects to forest vegetation within the Mattole River watershed, however, it may also lead to cumulative efforts to regain grasslands lost to historical conifer encroachment in the event of widely distributed, stand-replacing wildfire(s).

Wildlife

Under the no action alterative the trees in the project area would not be thinned and the understory vegetation would not be removed. As a result of not completing the project the time period needed to achieve mature forests along the fuel break will be extended by several decades or longer in some instances. Additionally there would be no fuel break to lower fire intensity which could contribute to a stand replacing catastrophic wildfire to the detriment of NSO and other mature forest dependent species.

A stand replacing wildfire would benefit species, such as deer, bear, and small animals the browse and graze in grasslands. Predators that feed on the small animals would also benefit from a temporary increase in grasslands and/or brush until the stand regenerates or is replanted.

From a regional perspective, most of the surrounding forests are in need of intensive management to achieve mature forest. Douglas-fir were removed from thousands of acres and the forests left to regenerate on their own. The no action alternative would not be a significant influence on wildlife in the region.

Fisheries
Under the No Action alternative, no habitat restoration would occur and Fourmile and Sholes creeks would continue to have marginal habitat conditions for listed salmonids.

Soils and Geology
Under the No Action Alternative ground disturbance associated with the project would not occur. The lack of fuel breaks could result in a larger, more catastrophic fire, leading to increased sedimentation in area watercourses with adverse cumulative effects occurring over a larger area of the Mattole River watershed and potentially into adjacent watersheds should fire course across the area unchecked. The lack of wood additions would perpetuate the simplified instream aquatic habitat conditions with a gradual improvement in conditions over decadal time scales as streamside trees grow and gradually recruit to the channel through natural processes.

Cultural Resources
Under the No Action Alternative, the forest restoration and stream enhancement project would not occur. There would be no ground disturbance and no cultural resource inventory.

Native American Religious Concerns
Under the No Action Alternative, the forest thinning and woody debris placement in streams would not occur. There would be no ground disturbance, no cultural resource inventory, no knowledge of culturally sensitive areas, and therefore, no Native American Religious Concerns.

7. Tribes, Individuals, Organizations and Agencies Consulted

List of Preparers

Dave Fuller NEPA Coordinator	_____ Signature	_____ Date
Sam Flanagan Geologist	_____ Signature	_____ Date
Zane Ruddy Fish Biologist	_____ Signature	_____ Date
Jesse Irwin Wildlife Biologist	_____ Signature	_____ Date
Sharyl Kinnear-Ferris Archeologist	_____ Signature	_____ Date
Jennifer Wheeler Botany / Range	_____ Signature	_____ Date
Alex Miyagishima Fire/Fuels Management	_____ Signature	_____ Date
Dan Wooden Forestry	_____ Signature	_____ Date

8. References

Association of Environmental Professionals. 2016. California Environmental Quality Act (CEQA) Statute and Guidelines. Palm Desert, CA.

Bjorkstedt, E.P., B.C. Spence, J.C. Garza, D.G. Hankin, D. Fuller, W.E. Jones, J.J. Smith, and R.Macedo. 2005. An analysis of historical population structure for evolutionarily significant units of Chinook salmon, coho salmon, and steelhead in the North-Central California Coast Recovery Domain. U.S. Dept. Commerce, NOAA Tech. Memo. NMFS-SWFSC-382.

Bramlette, A.G. and S.R. Lyon. 1981. Archaeological Survey for Jack Monschke and Sommer et al., CFIP Applications, Humboldt County, California. Historic Archaeological Site Record, CA-HUM-641H.

California Department of Fish and Wildlife, Natural Diversity Database (CNDDB). 2019. *Rarefind 5*. Accessed May 28, 2019. https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data

California Native Plant Society, Rare Plant Program. 2019. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 28 May 2019].

Chinnici, S.J., D. Bigger,and E. Johnson. 2012. Sonoma Tree Vole Habitat on Managed Redwood and Douglas-fir Forestlands in North Coastal California. Gen. Tech. Rep. PSW-GTR-238. Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture. www.fs.fed.us/psw/publications/.../psw_gtr238_389.pdf

Downie, Scott T., C.W. Davenport, E. Dudik, F. Yee, and J. Clements (multi-disciplinary team leads). 2002. Mattole River Watershed Assessment Report. North Coast Watershed Assessment Program, p. 441 plus Appendices. California Resources Agency, and California Environmental Protection Agency, Sacramento, California.

Hiney, William H. 1998. Primary Record, Primary Number P-12-001260. Intensive Survey for preparation of THP, Addendum to Stansberry THP. On file at the BLM Arcata office.

King, Jerome H., William R. Hildenbrandt, and Sharon A. Waechter. 2016. A Class I Cultural Resources Overview and Existing Information Inventory for the Northwest California Integrated Resource Management Plan, Bureau of Land Management Redding and Arcata Field Offices.

Popper, A. N., and T.J. Carlson 1998. Application of the use of sound to control fish behavior. Transactions of the American Fisheries Society. 127:673-707.

Roscoe, James and Mike Lyell. 1996. Archaeological Site Record, CA-HUM-1886H. Intensive Survey of the Carr place Timber Harvest Plan.

Save the Redwoods League. 2011. Baseline Documentation Report Stansberry Exchange Parcels A-E Conservation Easement. Report Prepared by Mad River Biologists for Save the Redwoods League, submitted August 10, 2011.

Sawyer, Keeler-wolf, Evens. 2009. A Manual of California Vegetation, 2nd edition. California Native Plant Society. Sacramento, CA.

Spencer, W.D., P. Beier, K. Penrod, K. Winters, C. Paulman, H. Rustigian-Romsos, J. Strittholt, M. Parisi, and A. Pettler. 2010. California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California. Prepared for California Department of Transportation, California Department of Fish and Game, and Federal Highways Administration. 313 pp.

U.S. Department of Agriculture and U.S. Department of the Interior. 1994. *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl*. Record of Decision, Environmental Impact Statement, Washington, D.C.

U.S. Department of Agriculture and U.S. Department of the Interior. 2001. *Record of Decision for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines in Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl*. January 2001. Portland, OR.

U.S. Department of the Interior Bureau of Land Management. 1996. *Arcata Planning Area Resource Management Plan Amendment and Environmental Assessment Decision Record*. Decision Record, Environmental Assessment. Arcata, CA.

U.S. Department of Agriculture, Forest Service and U.S. Department of Interior Bureau of Land Management. 2001. *Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines*. Portland, Oregon.

U.S. Department of Interior Bureau of Land Management. 2006. Species Fact Sheet. https://www.blm.gov/or/plans/surveyandmanage/files/sfs-li-usnea-longissima-2006.pdf Accessed May 29, 2019.

U.S. Department of Interior Bureau of Land Management. 2011. *List of Survey and Manage Species, Northwest Forest Plan Area*. Portland, Oregon. http://www.blm.gov/or/plans/surveyandmanage/files/02-sm_species_list_categories.xls

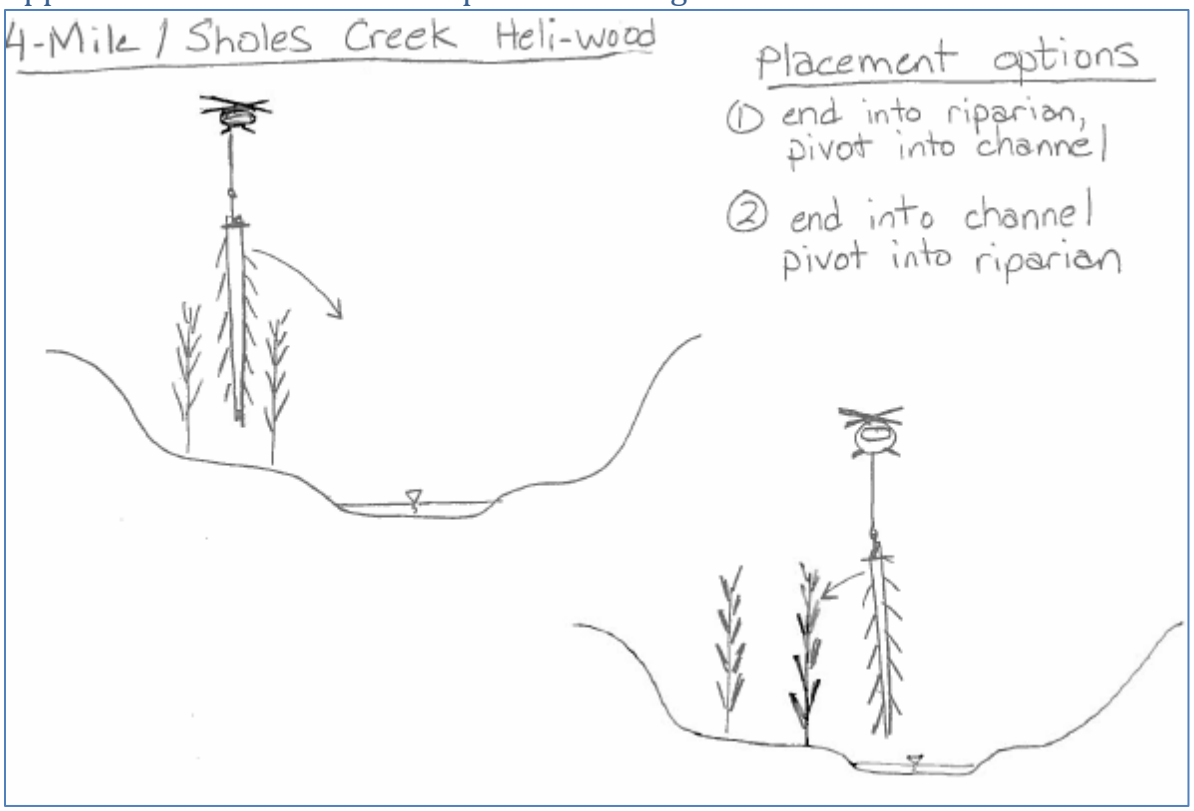
U.S. Department of Interior Bureau of Land Management. 2012. BLM Handbook H-6840-1. Special Status Plant Management. Sacramento, CA.

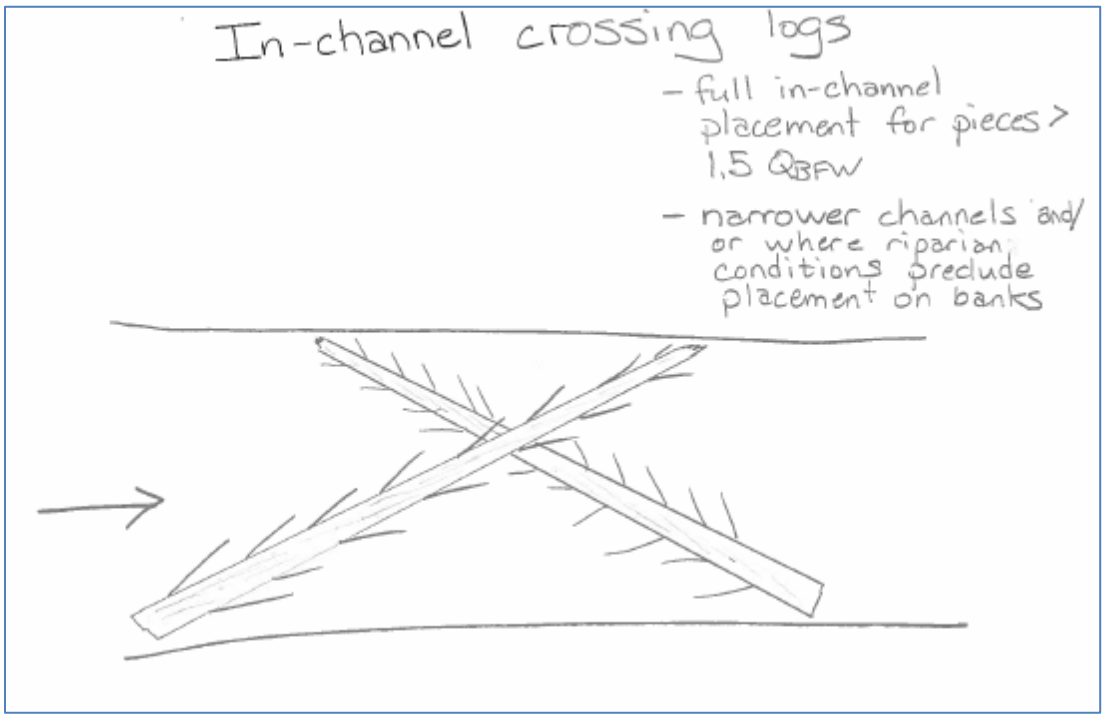
Western Bat Working Group. 2019. http://wbwg.org/western-bat-species/

Williams, T.H., E.P. Bjorkstedt, W.G. Duffy, D. Hillemeier, G. Kautsky, T E. Lisle, M. McCain, M. Rode, R.G. Szerlong, R.S. Schick, M N. Goslin, A. Agrawal. 2005. Historical population structure of coho salmon in the Southern Oregon/Northern California coasts evolutionarily significant unit. U.S. Dept. of Commerce, NOAA Tech. Memo. NOAA-TM-NMFS-SWFSC-390. Washington, D.C.

9. Appendices

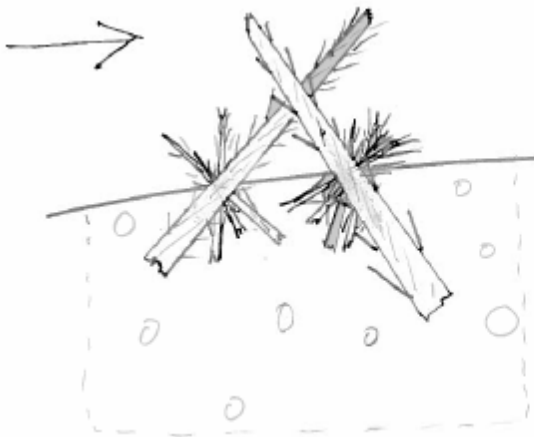
Appendix A. Generalized wood placement diagrams.





Complex bank bundle jam

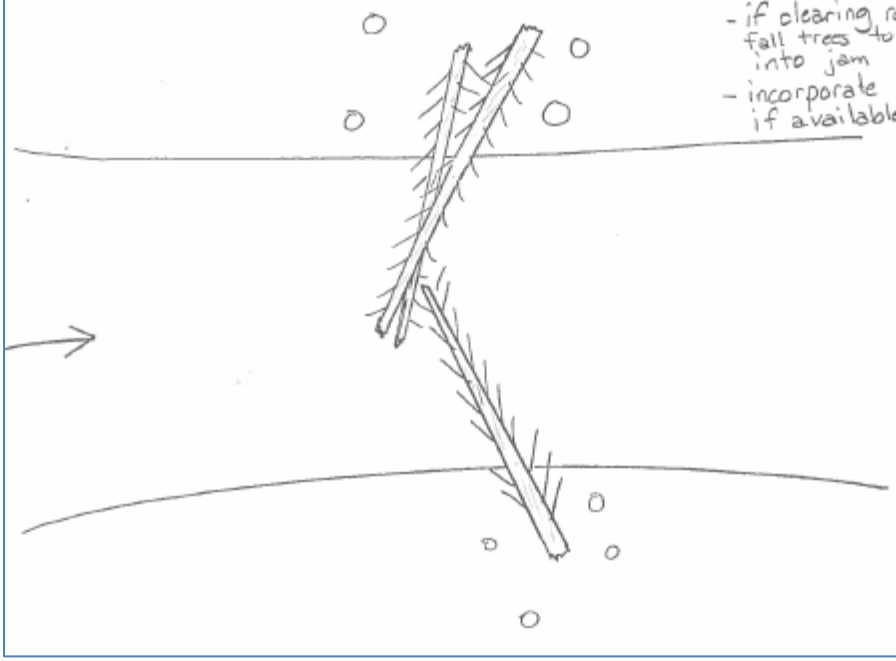
- incorporate "heli-bundles" into larger pieces
- dependent on sequence of delivery from harvest area



- limited clearing of selected riparian canopy to enhance aerial visibility depending on size/complexity of structure

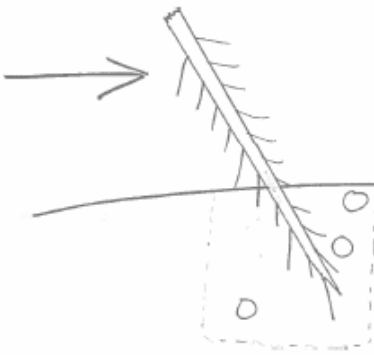
Vortex jam

- piece length > 1.5 BFW
- simple reaches
- if clearing required, fall trees to incorporate into jam
- incorporate heli-bundles if available / suitable



Bank-anchored single

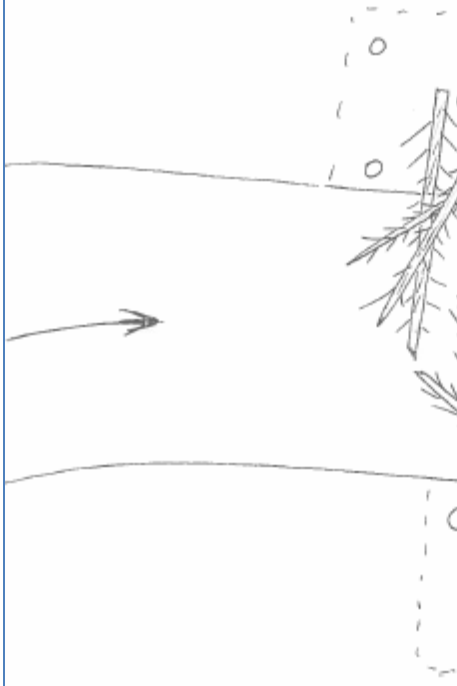
- associated with feature of interest (e.g., pool, constriction, existing LWD)
- for short logs or wide channels
- if clearing required, fall trees to incorporate with piece



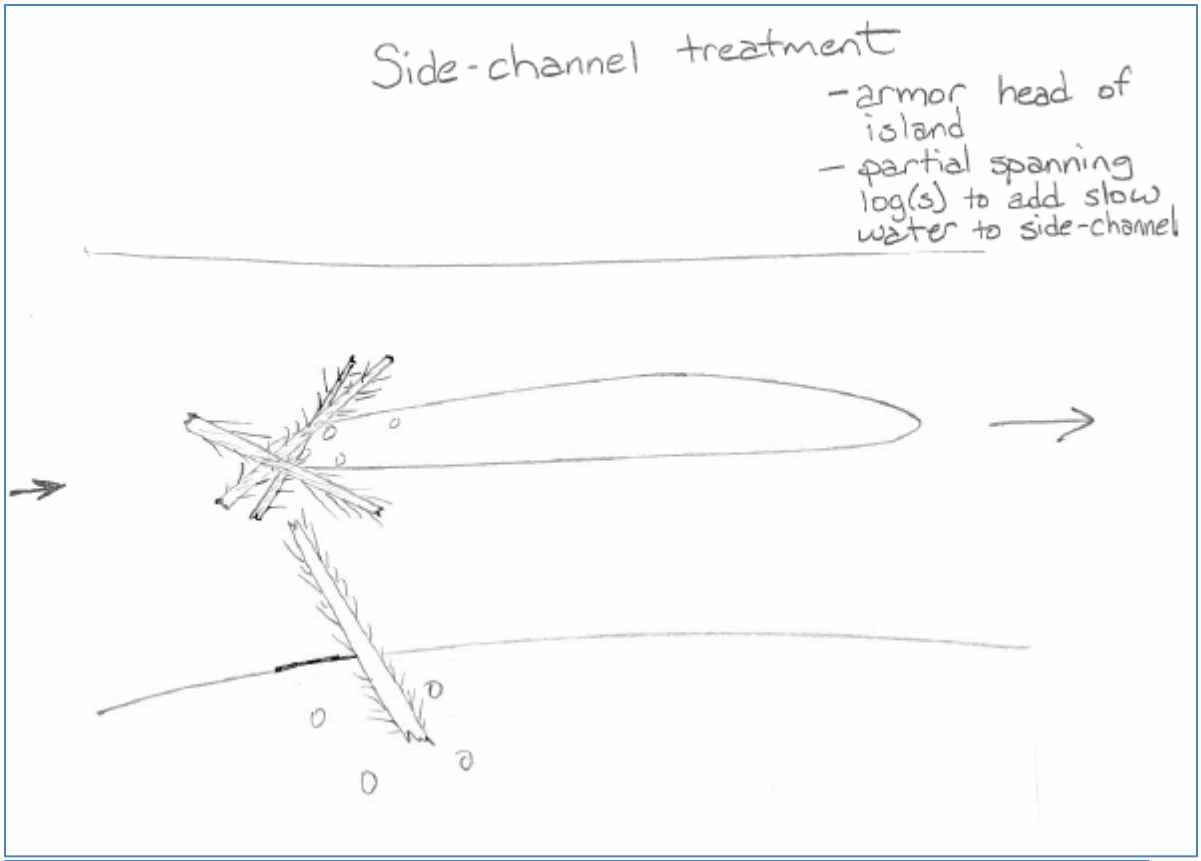
- see figure on bed placement vs. riparian placement then pivot into position

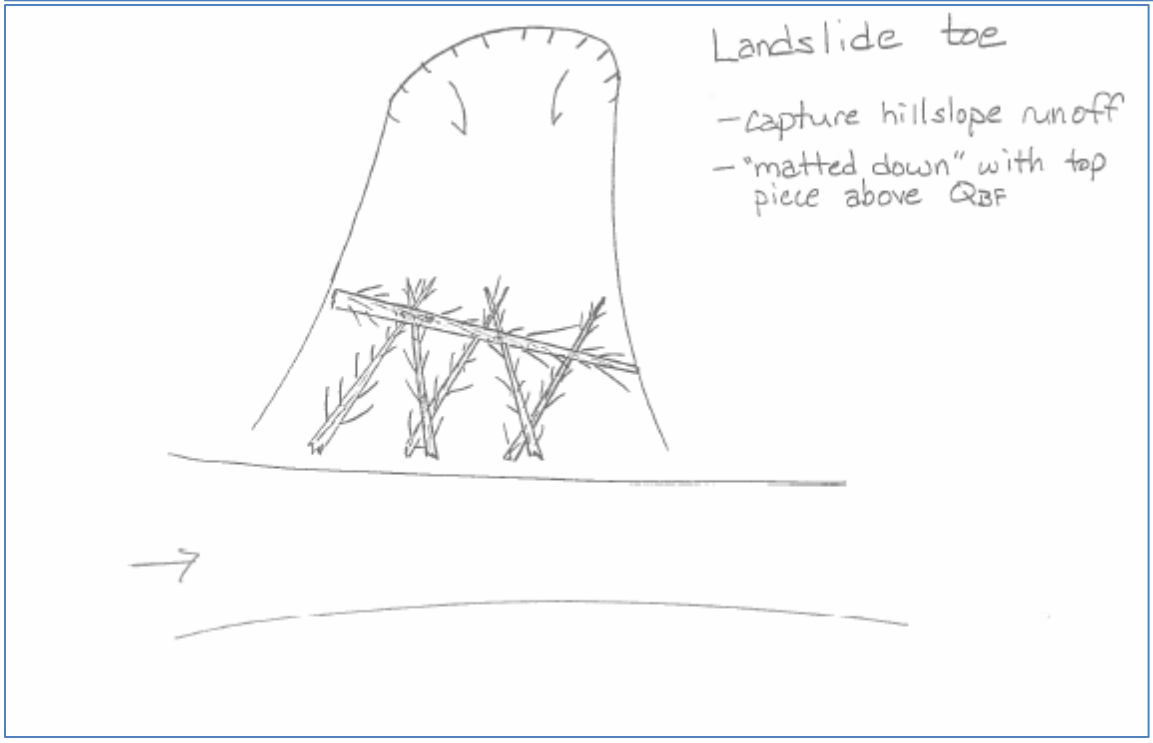
Overlapping jam

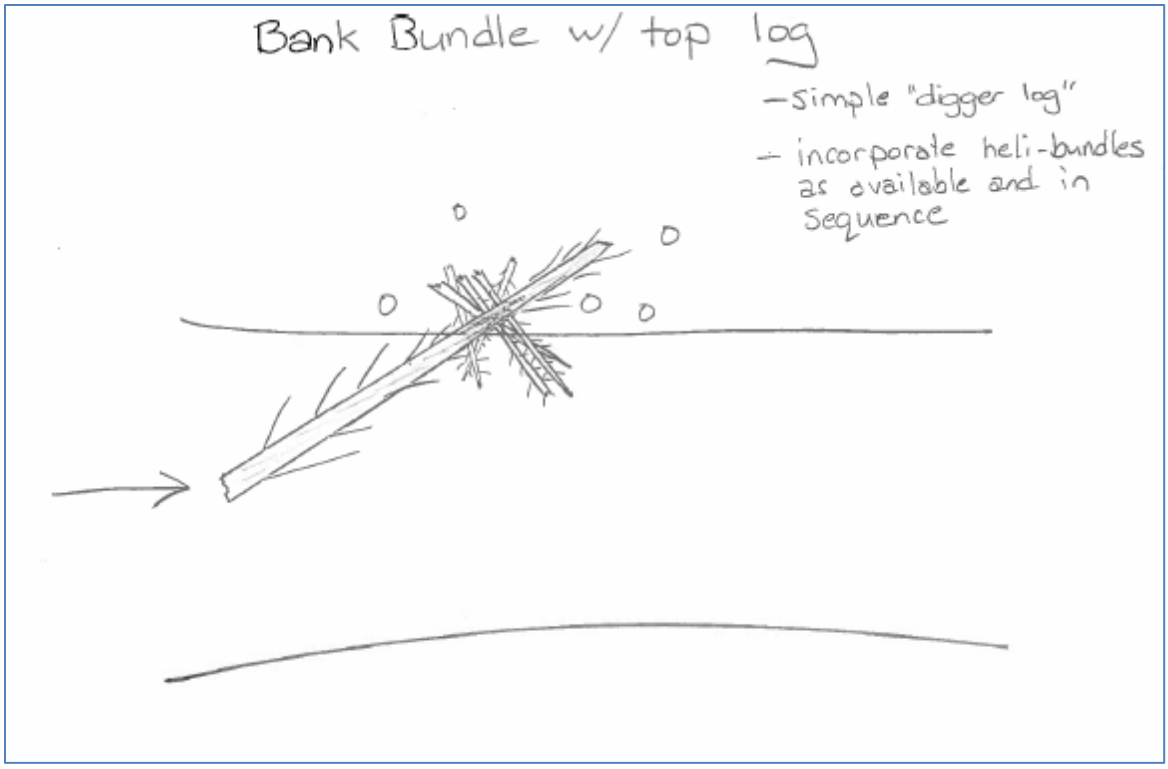
- simple reaches
- attempt in wider reaches if sufficient length to span > 0.5 Q_{BFW}
- if clearing required, fall trees to incorporate into jam
- incorporate heli-bundles if appropriately sequenced - i.e., large pieces on top



- limited felling of of riparian vegetation to allow visibility to pilot - all material remains on site


Side-channel treatment
- armor head of island
- partial spanning log(s) to add slow water to side-channel


Landslide toe
- capture hillslope runoff
- "matted down" with top piece above Q_{BF}


Bank Bundle w/ top log
- simple "digger log"
- incorporate heli-bundles as available and in sequence

Appendix B – Best Management Practices

Introduction

A Best Management Practice (BMP) is a practice or combination of practices that have been determined to be the most eff ective and practicable in preventing or reducing the amount of pollution generated by non-point sources to a level compatible with water quality goals (40 CFR 130.2 [m]). Using of BMPs is required by the Clean Water Act (33 U.S.C 1251 *et seq*.) to reduce nonpoint source pollution to the maximum extent practicable. Nonpoint source pollution is defined as pollutants detected in waterbodies, such as a streams or lakes, which come from the landscape in a dispersed manner. The BMPs are the primary controls for achieving water quality standards pertaining to nonpoint source pollution. Narrative and numeric criteria within water quality standards are designed to protect designated beneficial uses such as salmonid spawning and rearing, resident fish and aquatic life, domestic water supplies, and water-contact recreation.

The BLM is responsible for implementing BMPs on the lands it administers in order to meet the intent of the Clean Water Act and help achieve compliance with the Porter-Cologne Water Quality Control Act and applicable Basin Plans as implemented by the Regional Water Quality Control Boards. As one example, these BMPs are intended to assist in meeting the requirements for obtaining a Waiver of Waste Discharge Requirements for specific projects. Applying these BMPs where feasible and appropriate, combined with monitoring and reporting will help the BLM meet these requirements.

The BMPs described in this appendix are methods, measures, or practices selected based on site-specific conditions to ensure that the BLM would maintain water quality at its highest practicable level to meet water quality standards and TMDL load allocations as set by the Regional Water Quality Control Boards. These site-specific BMPs are a compilation of commonly employed practices developed through professional experience or research, and designed to minimize water quality degradation and loss of soil productivity. The BMPs include, but are not limited to, avoidance, structural and nonstructural treatments, operations, and maintenance procedures. Although normally preventative, BMPs can be applied before, during, and after pollution-producing activities to reduce or eliminate the introduction of pollutants into receiving waters (40 CFR 130.2, EPA Water Quality Standards Regulation). The implementation of these BMPs would be the beginning of an iterative process that includes the monitoring and modification of BMPs, where needed, to achieve water quality goals.

Selection and Application of BMPs

For implementation actions under this Project, BLM will apply the following BMPs. These BMPs are based upon site-specific conditions, locations of the operations, technical feasibility, resource availability, and the water quality of those waterbodies potentially impacted.

Monitoring

The BLM will monitor the application of BMPs through implementation monitoring. Through close coordination with Project partners and frequent site visits, the BLM will ensure that appropriate BMPs are implemented to protect water quality objectives.

BMP Number	Best Management Practices for Fuel Break Development
F 07	Avoid creating piles greater than 16 feet in height or diameter. Pile smaller diameter materials and leave larger > 12" pieces within the unit.
F 08	Prevent mechanical fuel reduction equipment within the Riparian Reserve unless prescribed for restoration. Limit mechanical fuel reduction equipment to slopes less than 35 percent. Restrict non-track mechanized equipment (e.g., feller bunchers and horizontal bar masticators) to slopes less than 20 percent.
F 13	Avoid locating helibases and staging areas in Riparian Reserves.

BMP Number	Best Management Practices for Spill Prevention and Abatement
SP 01	Take precautions to prevent leaks or spills of petroleum products (e.g., fuel, motor oil, and hydraulic fluid) from entering the waters of the State.
SP 02	Take immediate action to stop and contain leaks or spills of chemicals and other petroleum products. Notify the California Department of Fish and Wildlife Office of Spill Prevention and Response, through the office's Hazardous Materials specialist, of any spill that enters the waters of the State.

BMP Number	Best Management Practices for Spill Prevention and Abatement
SP 03	Inspect and clean heavy equipment as necessary prior to moving on to the project site, in order to remove oil and grease, noxious weeds, and excessive soil. Inspect hydraulic fluid and fuel lines on heavy-mechanized equipment for proper working condition. Where possible, maintain and refuel heavy equipment a minimum of 150 feet away from streams and other waterbodies. Refuel small equipment (e.g. chainsaws and water pumps) at least 100 feet from waterbodies (or as far as possible from the waterbody where local site conditions do not allow a 100-foot setback) to prevent direct delivery of contaminants into a waterbody. Refuel small equipment from no more than 5-gallon containers. Use absorbent material or a containment system to prevent spills when re-fueling small equipment within the stream margins or near the edge of waterbodies. In the event of a spill or release, take all reasonable and safe actions to contain the material. Specific actions are dependent on the nature of the material spilled. Have access to booms and other absorbent containment materials. Immediately remove waste or spilled hazardous materials (including but not limited to diesel, oil, hydraulic fluid) and contaminated soils near any stream or other waterbody, and dispose of it/them in accordance with the applicable regulatory standard. Notify the California Department of Fish and Wildlife Office of Spill Prevention and Response of any spill over the material reportable quantities, and any spill not totally cleaned up after 24 hours. Store equipment containing reportable quantities of toxic fluids outside of Riparian Reserve
SP 05	Spill Containment Kit (SCK): All operators shall have a SCK as described in the SPCC plan on-site during any operation with potential for run-off to adjacent waterbodies. The SCK will be appropriate in size and type for the oil or hazardous material carried by the operator.
SP 06	Operators shall be responsible for the clean-up, removal, and proper disposal of contaminated materials from the site.

BMP Number	Best Management Practices for Woody Debris Placement Operations
RST 01	Confine work in the stream channels to the in-water work period defined as June 15 through November 1. Heavy equipment will work from the banks; no heavy equipment will enter the wetted channel.
RST 04	Design access routes for individual work sites to reduce exposure of bare soil and extensive stream bank disturbance.
RST 05	Limit the number and length of equipment access points through Riparian Reserve.

BMP Number	Best Management Practices for Woody Debris Placement Operations
RST 07	Inspect all mechanized equipment daily for leaks and clean as necessary to ensure that toxic materials, such as fuel and hydraulic fluid, do not enter the stream.
RST 08	Locate equipment storage areas at least 100 feet from any water feature, including machinery used in stream channels for more than one day.
RST 09	When using heavy equipment in or adjacent to stream channels during restoration activities, develop and implement an approved spill containment plan that includes having a spill containment kit on-site and at previously identified containment locations.
RST 10	Refuel equipment, including chainsaws and other hand power tools, at least 100 feet from waterbodies (or as far as possible from the waterbody where local site conditions do not allow a 100-foot setback) to prevent direct delivery of contaminants into a waterbody.
RST 11	Use waterbars, barricades, seeding, and mulching to stabilize bare soil areas along project access routes prior to the wet season.
RST 12	Prior to the wet season, stabilize disturbed areas with the potential for sediment delivery to wetlands, and waters of the State. Stabilize using native seed, certified weed-free mulch, slash and/or erosion control matting.

Appendix C. S&M Tracking Form

Survey & Manage Tracking Form:
Botany Species Survey and Site Management Summary

BLM NorCal District – Arcata Field Office
Project Name: Middle Mattole Fuel Break and Fisheries Project
Project Type: Fuel Reduction and large instream wood placement to improve riparian conditions
Location: See Environmental Assessment (EA) File # DOI-BLM-CA-N030-2019-0000

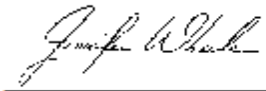
S&M List Date: 2011 Settlement Agreement
Prepared By: Jennifer Wheeler, Botanist
Date: 5/23/19

Does this Project Meet a *Northwest Ecosystem Alliance v. Rey*, Case No.04-844 (W.D. Wash. Oct.10, 2006) Pechman Exemption?
BOLD which one applies:
a. Thinning projects in stands younger than 80 years old:
b. Replacing culverts on roads that are in use and part of the road system, and removing culverts if the road is temporary or to be decommissioned;
c. Riparian and stream improvement projects where the riparian work is riparian planting, obtaining material for placing in-stream, and road or trail decommissioning; and where the stream improvement work is the placement large wood, channel and floodplain reconstruction, or removal of channel diversions; *and*
d. The portions of project involving hazardous fuel treatments where prescribed fire is applied. Any portion of a hazardous fuel treatment project involving commercial logging will remain subject to the survey and management requirements except for thinning of stands younger than 80 years old under subparagraph a. of this paragraph."

Does this project meet 2011 Settlement Agreement *Conservation Northwest v. Sherman* Case No. 08-CV-1067-JCC (W.D. Wash.) Exemption(s) for?
□ *Recreation*
□ *Fish and Wildlife Habitat Restoration Projects*
□ *Weeds and Sudden Oak Death*
□ *Wildland Urban Interface ("WUI")*
□ *Bridges*
■ *Non-Commercial Fuel Treatments*
□ *Restoration Projects that May Involve Commercial Logging*
  □ *Dry Forest (California Klamath Plant Association Group(s) including: Oak woodlands, Douglas-fir mixed with ponderosa or Jeffrey pine, white and grand fir (including ponderosa or Jeffrey pine as a stand component)*

Describe how exemption(s) applies:
Pechman Exemption: (c) Project utilizes larger wood from the non-commercial, fuel reduction/fuel break project and places instream via helicopter for stream improvement work.

2011 Settlement Agreement: Section IV.A.6. "Portions of restoration or hazardous fuels projects where fuel is modified via noncommercial hand treatments, non-commercial mechanical treatments, and/or prescribed fire, are exempt."



Jennifer Wheeler, Botanist
Arcata Field Office

May 23, 2019
Date

Appendix D. Special-Status Plants/Conservation Measures

This section describes special-status plants that have potential to occur or that may occur in the Mid-Mattole Fuel Break and Fisheries Project Area (Project Area) and surrounding vicinity. In additional to pre-project environmental review surveys, conservation measures are included that would be applied as part of the Proposed Action in the event a special status plant or population is encountered before or during project implementation.

Vascular Plants

Special-status plants are plants that are legally protected under ESA, CESA, or other regulations and species that are considered sufficiently rare by the scientific community to qualify for such listing. Special-status plants are species in any of the following categories:

- Plants listed or proposed for listing as threatened or endangered under ESA (50 CFR 17.12 [listed plants] and various notices in the Federal Register [proposed species]);
- Candidates for possible future listing as threatened or endangered under ESA (61 FR 40: 7596-7613, February 28, 1996);
- Listed or proposed for listing by the state as threatened or endangered under CESA (14 CCR 670.5);
- Rare or endangered under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.);
- Those that meet the definitions of rare or endangered under CEQA (State CEQA Guidelines, Section 15380);
- Considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" (lists 1B and 2 described in Skinner and Pavlik 1994);
- Listed by CNPS as species about which more information is needed to determine their status; plants of limited distribution (lists 3 and 4 described in Skinner and Pavlik 1994), which may be included as special-status species on the basis of local significance or recent biological information;
- Designated as Bureau sensitive by BLM. Bureau Sensitive plants are those plant species that are not federally Endangered, Threatened, or Proposed, but are designated by the BLM State Director for special management consideration. In California this includes all plants on BLM lands that are Federal Candidates for listing, all plants that are listed as Endangered, Threatened, or Rare by the State of California, all plants that have a Rare Plant Rank of 1B (plants are native California species, subspecies or varieties that are rare, threatened, or endangered in California and elsewhere) in the most current online version of the California Department of Fish and Wildlife list of Special Vascular Plants, Bryophytes, and Lichens (unless the State Director has determined, on a case-by-case basis, that a particular List 1B plant does not require Sensitive status), and any other plants the State Director has determined to warrant Sensitive status.

A list of special-status plants with potential to occur in the Project Area was developed through a search of the latest version of the California Natural Diversity Data Base, Rarefind 5 (CNDDB 2019) (using Project Area quads: Honeydew and Ettersberg; in addition to surrounding quads in

the vicinity including: Bull Creek, Weott, Shelter Cove, Shubrick Peak, Buckeye Mountain, Briceland, Weott, Myers Flat, Miranda, and Garberville). The CNPS Online Electronic Inventory (2019) was also cross-consulted for all species appearing in the CNDDB queries.

Upon field survey, any new locations of potential or known federal, California, CNPS, or BLM Sensitive special status species are submitted to the CNDDB database in accordance with the special status plant policies described in the BLM California Special Status Plants Handbook, H-6840-1.

Special-status plants that have potential to occur in the Project Area, their listing status, known geographic distribution, ecological information, potential or confirmed occurrence in Project Area, and conservation measures included to avoid significant impacts are summarized below in Table 1.

Table 1. A list of special-status plants with potential to occur in the Project Area. Confirmed species occurring in the Project Area are highlighted in green.

Scientific Name	Common Name	CNPS Rare Plant Rank	State Rank	Global Rank	CESA and/ or FESA	BLM Sensitive	Elev. Range (m)	Geographic Distribution	Ecological Information	Occurs in Project Area	Summary of Measures Proposed to Avoid Significant Impacts (Proposed Action)
Astragalus agnicidus	Humboldt milk vetch	1B.1	S2	G2	SE	BLM Sensitive 1B.1	115-670	NCoRO	Perennial herb, inhabits north coast coniferous forest, broad leafed forest, and disturbed areas by roadsides. Blooms Apr-Sep	No observations; Potentially suitable habitat.	Survey fuel break June/July 2019. If found, flag for site avoidance; count and map population. Ensure micro-site conditions found to be supporting population are maintained. Monitor population for any response following treatment.

Calamagrostis foliosa	Leafy reed grass	4.2	S3	G3	--	BLM Sensitive	0-1220	NCo, KR, NCoRO	Perennial herb, rocky cliffs, coastal bluff scrubs, ocean-facing bluffs. Blooms May-Sep.	No confirmed observations; Minimal potential for suitable habitat along BLM proposed fuel break.	Survey proposed fuel break in June/July 2019 to confirm absence of suitable habitat/population. If found, avoid disturbance to area supporting populations during implementation.
Castilleja affinis ssp. litoralis	Oregon coast paint brush	2B.2	S3	G3	--	--	15-100	n&c NCo, OR	Perennial herb (hemi-parasitic), inhabits coastal bluffs, coastal dunes, coastal scrub. Blooms Jun-July	No confirmed observations; Project area does not contain coastal scrub below 100m.	June/July 2019 surveys confirm absence of habitat.
Clarkia amoena ssp. whitneyi	Whitney's farewell-to-spring	1B.1	S1	G5T1	--	BLM Sensitive	15-100	NCo	Annual herb, coastal bluff scrub, coastal scrub.	No confirmed observations; Project area does not contain	June/July 2019 surveys confirm absence of habitat.

									Blooms Jun-Aug.	coastal scrub below 100m.	
Erigeron biolettii	Stream-side daisy	--	S3?	G3?	--	--	30-1100	KR, NCoRo	Perennial herb, rocky mesic sites, broadleafed upland forests, cismontane woodland, north coast coniferous forest. Blooms Jun-Oct.	No recorded observations in Project Area or adjacent quads. Suitable habitat may be present.	Survey fuel break June 2019. If found, avoid any detected individuals or populations during implementation.
Erythronium oregonum	Giant fawn lily	2B.2	S2	G4G5	--	--	300-1435	NCoRO; SE OR to SW BC.	Bulbuliferous perennial herb, inhabits cismontane woodland, meadows and seeps; openings; sometimes serpentine	No confirmed observations; Suitable habitat may be present.	Survey fuel break June/July 2019. If found, avoid any detected individuals or populations during implementation.

									and rocky sites.		
Erythronium revolutum	Coast fawn lily	2B.2	S3	G4G5	--	--	60-1405	NW CA to So BC	Bulbiferous perennial herb, inhabits wet places in woodlands. Blooms Mar - July.	No confirmed observations; Suitable habitat not likely.	Survey proposed fuel break in June/July 2019 to confirm absence of potential suitable habitat. If found, avoid area or actions that could impact hydrology of site until a May 2020 survey to confirm presence/absence is completed.

Gilia capitata ssp. pacifica	Pacific gilia	1B.2	S2	G5T3	--	BLM Sensitive	5-1345	CA (DNT, HUM, MEN, SON), OR.	Annual herb, generally coastal bluff or scrub. Blooms May - Aug.	No confirmed observations; No suitable habitat in second and old-growth forest in majority of Project Area.	Survey proposed fuel break June 2019. Avoid heavy equipment use for conifer removal in any detected populations within proposed fuel break swath during flowering.
Kopsiopsis hookeri	small ground-cone	2B.3	S1S2	G4?	--	--	120-1325	Northern CA coast, OR, WA, into Southern Canada.	Parasitic rhizomatous herb, generally found in coniferous forests (open woods, shrubby places) on Ericaceous (often salal, Gaultheria shallon) host plants. Blooms in April.	No confirmed observations, Suitable habitat present.	Survey proposed fuel break in June 2019 for fruiting ground cone plants, particularly areas of salal that may be encountered. Avoid disturbance to any discovered individuals or populations during implementation. Maintain existing site conditions.

Lathyrus palustris	Marsh pea	2B.2	S2	G5	--	--	2-140	NCo to AK, across NE US, circumboreal.	Perennial herb, found in bogs and fens; marshes and swamps; coastal prairie and scrub; lower montane coniferous forest and north coast coniferous forest. Blooms Mar-Aug.	No confirmed observations, Suitable habitat unlikely.	Survey proposed fuel break in June/July 2019. If found, avoid area or actions that could impact hydrology of site and/or integrity of habitat.
Lycopodium clavatum	Running-clubmoss	4.1	S3	G5	--	--	40-1225	Northern CA, across USA, global distribution.	Perennial creeping herb, prefers moist to inundated areas.	No confirmed observations, Suitable habitat may be present.	Survey proposed fuel break in June 2019. Avoid disturbance to any observed population and maintain existing site conditions during implementation.

Lasthenia californica ssp. *macrantha*	Perennial goldfields	1B.2	S2	G3T2	--	BLM Sensitive	5-185	NCo, CCo	Perennial herb, found in coastal bluff scrub, coastal dunes, costal scrub. Blooms Jan-Nov.	No confirmed observation, Suitable habitat is unlikely along proposed fuel break.	Survey fuel break in June/July 2019 to confirm absence of individuals or populations. If found, avoid areas or actions that could disturb any populations or individuals and maintain existing site conditions.
Montia howellii	Howell's montia	2B.2	S3	G3G4	--	--	10-1215	CA (HUM, TRI Co.), OR, WA.	Annual herb, inhabits spring-wet sites such as seeps, springs, vernal pools and road ditches. Blooms Feb - May.	No confirmed observations within the Project Area; No suitable habitat is expected for the BLM proposed action area.	Survey fuel break in June/July 2019 to confirm absence of potential suitable habitat. If found, avoid area or actions that could impact hydrology of site until a May 2020 survey to confirm presence/absence is completed.

Packera bolanderi var. *bolanderi*	seacoast ragwort	2B.2	S2S3	G4T4	--	--	30-915	CA (DNT, HUM, MEN), OR, WA.	Perennial rhizomatous herb, inhabits coastal forest/scrub, sometimes roadsides. Blooms Jan - Aug.	No confirmed observations, Limited potential for suitable habitat may exist.	Survey fuel break June/July 2019. Avoid any detected individuals or populations during implementation. Maintain micro-site conditions found to be supporting population.
Piperia candida	white-flowered rein orchid	1B.2	S3	G3	--	BLM Sensitive	20-1615	CA, OR, WA.	Bulbiferous perennial herb, open or shady mixed evergreen forests. Blooms May - Sept.	No confirmed observations, but suitable habitat exists.	Survey fuel break June/July 2019. Avoid any detected individuals or populations during implementation. Maintain micro-site conditions found to be supporting population.

Sidalcea malachroides	maple-leaved checkerbloom	4.2	S3	G3	--	--	4-765	Northern CA, OR.	Perennial herb, often in disturbed sites in woodlands. Blooms Mar - Aug.	No confirmed observations, Minimal chance of suitable habitat along BLM proposed fuel break.	Survey fuel break June/July 2019. Avoid any detected individuals or populations during implementation. Maintain micro-site conditions found to be supporting population.
Sidalcea malviflora ssp. *patula*	Siskiyou checker-bloom	1B.2	S2	G5T2	--	BLM Sensitive	5-1255	CA (DNT, HUM, MEN Co.), OR.	Perennial rhizomatous herb, inhabits open coastal forest and bluffs. Blooms May - Aug.	No confirmed observations, Minimal potential for suitable habitat along BLM proposed fuel break.	Survey fuel break June/July 2019. Avoid any detected individuals or populations during implementation. Maintain micro-site conditions found to be supporting population.

Coptis laciniata	Oregon goldthread	4.2	S3	G4	--		0-1000	NCo, w KR	Perennial rhizomatous herb, inhabits mesic, north coast coniferous forest (streambanks), meadows and seeps. Blooms (Feb) Mar-May (Sept-Nov).	No confirmed observations, No suitable habitat is expected for the BLM proposed action area.	Survey fuel break in June/July 2019 to confirm absence of potential suitable habitat. If found, avoid area or actions that could impact hydrology of site until a May 2020 survey to confirm presence/absence is completed.
Usnea longissima	Long-beard lichen	4.2	S4	G4	--	BLM Sensitive	45-1465		North Coast coniferous forest, broadleaf upland forest. Usually grows on branches of old growth hardwoods and conifers.	Confirmed in the project vicinity. Any trees <10”dbg are highly unlikely to host Us lo.	Survey proposed fuel break in June/July 2019. If observed, map, flag, and avoid removal. Survey riparian zone prior to any felling of trees for large woody creek placement. Flag and avoid felling any tree that hosts Us lo.

Sensitive Natural Communities			
Upland Douglas Fir Forest	G4/S3.1	Old growth conifers mixed with hardwoods.	No trees greater than 10 inches dbh would be removed within proposed fuel break on BLM Project Area.

Appendix E. CEQA Checklist

CEQA Environmental Checklist

PROJECT DESCRIPTION AND BACKGROUND

Project Title:	Mid-Mattole Fuel Break and Instream Wood Placement
Lead agency name and address:	Bureau of Land Management 1695 Heindon Road Arcata, CA 95521
Contact person and phone number:	Zane Ruddy (707) 825-2321
Project Location:	Gilham Butte area of Humboldt County, CA, near the town of Honeydew.
Project sponsor's name and address:	Bureau of Land Management 1695 Heindon Road Arcata, CA 95521
General plan description:	Federal land, Timber, Agriculture
Zoning:	Federal land, Timber, Agriculture
Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation.)	The project proposes to create a series of fuel breaks (15.7 mi. total) on BLM and private lands to reduce the risk of catastrophic wildfire in the "Redwoods to Sea Corridor." Trees produced during the fuels treatment will be transported by helicopter to nearby streams (5.3 mi. total) to provide fish habitat.
Surrounding land uses and setting; briefly describe the project's surroundings:	The proposed project falls within BLM lands and private ranch and timberland owned by a single land owner (Robert Stansberry). Rural residences, ranch land, and timberlands surround the project area.
Other public agencies whose approval is required (e.g., permits, financial approval, or participation agreements):	California Department of Fish and Wildlife, North Coast Regional Water Quality Control Board, U.S. Army Corps of Engineers, NOAA National Marine Fisheries Service.
Tribal Consultation	The project is located within the ancestral territory of the Bear River Band of the Rohnerville Rancheria. The tribe was consulted on a government-to-government basis in the planning process. The consulted tribe requested BLM keep them informed as the project progresses.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, but none of these affects are considered to be Potentially Significant Impacts as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
X Biological Resources	☐ Cultural Resources	X Geology / Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	X Hydrology / Water Quality
☐ Land Use / Planning	☐ Mineral Resources	X Noise
☐ Population / Housing	☐ Public Services	☐ Recreation
☐ Transportation / Traffic	☐ Tribal Cultural Resources	☐ Utilities / Service Systems
☐ Mandatory Findings of Significance		

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

X I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project COULD have a significant effect on the environment, there will not be a significant effect in this case because revisions 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 proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have 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 proposed 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.

Molly Brown — 6/4/19

Signature — Date

Molly Brown, Arcata Field Manager, BLM

Printed Name — For

CEQA Environmental Checklist

This checklist identifies physical, biological, social and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included either following the applicable section of the checklist or is within the body of the environmental document itself. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒
II. AGRICULTURE AND 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 the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
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?	☐	☐	☐	☒
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c) 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒
IV. BIOLOGICAL RESOURCES. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
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 Game or US Fish and Wildlife Service?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
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?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
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?	☐	☐	☐	☒
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
See description above under item a.				
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒
VI. GEOLOGY AND SOILS: Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☒
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?	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
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 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 risks to life or property?	☐	☐	☐	☒
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?	☐	☐	☐	☒
VII. GREENHOUSE GAS EMISSIONS: Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☐	☒
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒
VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
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?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	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?	☐	☐	☐	☒
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 for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒
IX. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) 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?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow	☐	☐	☐	☒
X. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b)Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒
XI. MINERAL RESOURCES: 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
XII. NOISE: Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
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 expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
XIII. POPULATION AND HOUSING: Would the project:				
a) Induce substantial 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)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
XIV. PUBLIC SERVICES:				
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?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XV. RECREATION:				
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
XVI. TRANSPORTATION/TRAFFIC: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XVII. TRIBAL CULTURAL RESOURCES				
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:				
a) 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	☐	☐	☐	☒
b) 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.	☐	☐	☐	☒
XVIII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) 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?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XVIIII. MANDATORY FINDINGS OF SIGNIFICANCE	☐	☐	☒	☐
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially 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?				
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)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒