Tecuya Ridge Shaded Fuelbreak Project

Project Proposal

March 13, 2018

Background

The Tecuya Ridge Shaded Fuelbreak Project (Project) is located within the Mt. Pinos Place Management Area on the Mt. Pinos Ranger District of the Los Padres National Forest (figure 1).

Surface fuel loading levels, trees that are dead and dying due to insect and disease, and natural forest succession make stand-replacing fire an ongoing risk to the landscape. Historically, periodic lower-intensity fire kept surface fuel levels down and thinned the stands, reducing the risk of stand-replacing fire. The current project area has been influenced by historic fire suppression, effectively removing fire as a process on the landscape.

Since 1998, there were 15 wildfires within the Tecuya treatment area~~s~~. About 67 percent of the wildfires were caused by human-related activities. Although wildfires can start throughout the entire year, the majority of wildfires occur in August and September. While all of these wildfires were fully suppressed at less than 10 acres, there have been a number of large high severity wildfires over 1,000 acres within or adjacent to the project area (USGS 2017)[1]. See table 1 for wildfires over 1,000 acres.

Table 1. Fires over 1,000 acres within or adjacent to the project area

Fire Name	Year	Acres
Gorman	2005	2,439
Ridge	2006	2,486
Post	2010	1,454
Grand	2013	4,527

The existing "at-risk" condition of the timbered stands in the Project area is not in line with the goals and desired conditions derived from the 2005 Los Padres Land Management Plan (LMP), Goal 1.1, 1.2, and the National Strategic Plan Goal 1–Reduce the risk from catastrophic wildland fire**.**

On the Mount Pinos Ranger District we have been working with local individuals and groups via efforts such as the Mt. Pinos Communities Wildfire Protection Plan to establish priorities, cooperate on activities, and increase public awareness of and participation in site-specific projects such as the Tecuya Ridge Shaded Fuelbreak Project to meet desired conditions.

The Project consists of approximately 1,626 acres of natural timbered stands and brush fields that were identified by the Mt. Pinos Community Wildfire Protection Plan as priority treatment areas. Forest Service specialists identified forested stands within the project area that currently exhibit stand structures that are conducive to stand-replacing wildfire events. Past fire suppression activities have led to unstable conditions in the mixed conifer and pinyon-juniper stands by allowing widespread accumulation of fuels

[1] References are available at: www.fs.usda.gov/main/lpnf/landmanagement/planning or are on file at the Mt. Pinos Ranger District in Frazier Park, California.

in the form of litter accumulations, coarse woody debris, and understory growth of shrubs and conifer regeneration (Goforth and Minnich 2007). The existing understory, dense crowns, understory fuels ladders, existing fuel loads, and continued periods of drought place the stands at risk from wildfire.

Treatment areas are strategically placed around communities within the wildland-urban intermix: Pine Mountain Club, Pinon Pines Estates, Lake of the Woods and Frazier Park, California. Treatment areas are also in strategic locations that connect to past and future treatment areas on both public and adjacent private lands.

Location

The project is located on the Mount Pinos Ranger District. The project runs along Tecuya Mountain, which overlooks the communities of Lebec, Frazier Park, Lake of the Woods, Pine Mountain Club and Pinon Pine Estates. The western boundary is along the private property line near San Emidgio Canyon, and the eastern boundary is at the Forest boundary just above the community of Lebec near the major transmission lines. The legal description for the project is T9N, R19W, Sections 18, 28, 29, 30, 31, 32, 33 SBM; T9N, R20W, Sections 18, 19, 20, 21, 22, 23, 24, 25, 27, 28, 29 SBM; T9N, R21W, Sections 13, 14, 15, 23, 24 SBM; Kern County, California.

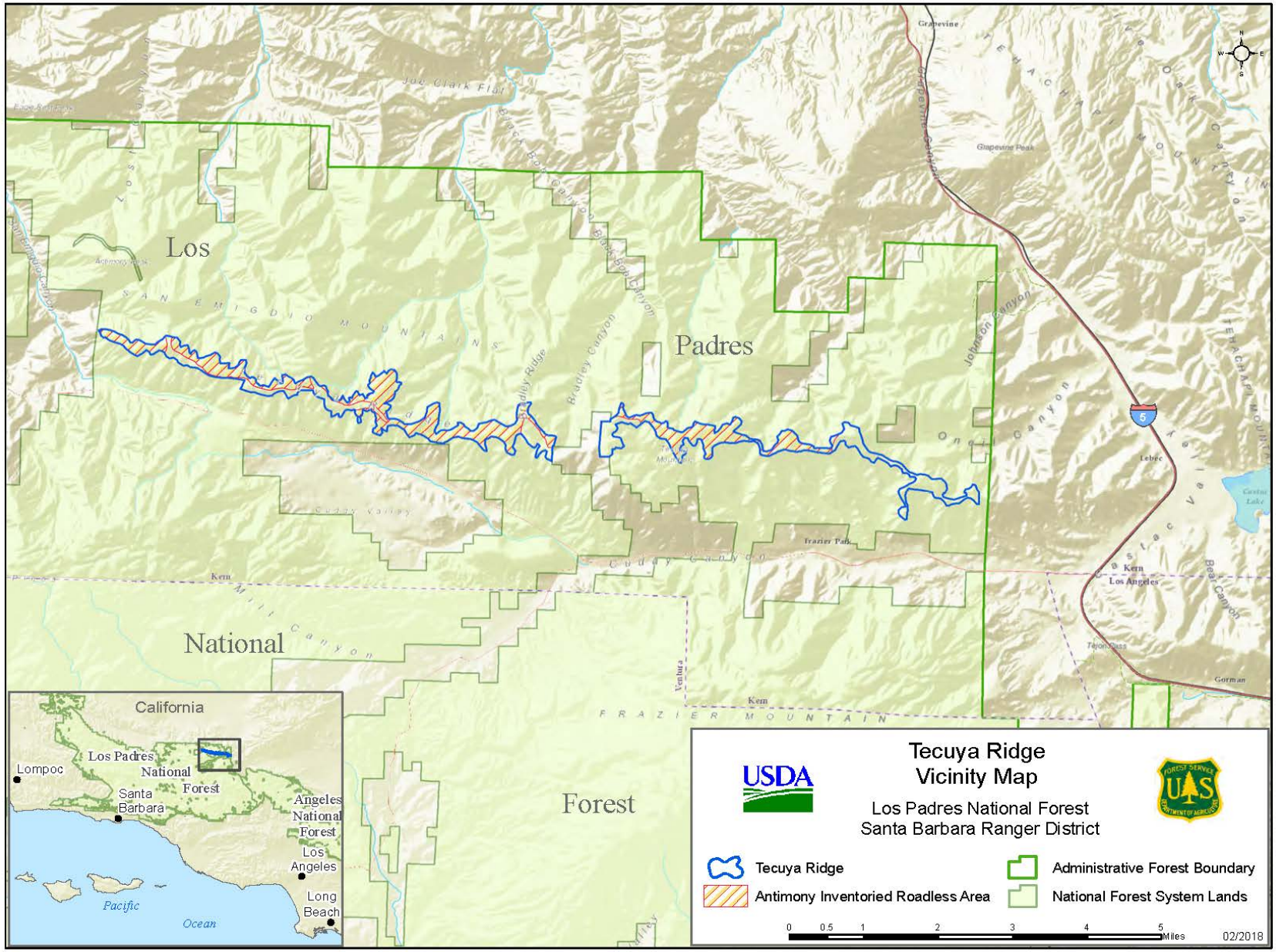

Figure 1. Vicinity Map

Existing Condition (Affected Environment) and Desired Conditions

Existing condition

Stands in the project area were determined to be overstocked and therefore at risk of loss to insects and disease. Stand exams taken in the project area, coupled with walk-throughs by Forest professionals and data from other sources, confirm that existing stand density and structure put the area at risk from insects and disease, as well as from wildfire. Historically, mixed conifer stands in southern California had approximately 93 trees per acre (Minnich et al. 1995). Stand exams show that the project area average mixed conifer stand has 480 trees per acre (five times the historic level). High stocking levels, overlapping crown canopies, and a dense understory, contribute to resource competition, leaving trees in the project area at risk to more insect attack.

The project area contains approximately 1,541 acres of mixed conifer and pinyon-juniper dominated stands. These stands are experiencing elevated levels of bark beetle activity, pinyon ips (*Ips confusus*) and California fivespined ips (*Ips paraconfusus*), and associated increasing tree mortality that has been exacerbated by the ongoing drought. The project area was identified in the National Insect and Disease Forest Risk Assessment of 2012 (NIDFRA) as being at risk from both of these beetles. According to the risk rating models used by the Risk Assessment, the areas proposed for treatment in this project are categorized as high risk for pests that could destroy over 25 percent of basal area due to current forest conditions. This mortality combined with stand structure and drought is increasing the risk of a stand-replacing wildfire.

Additionally, modelling of insect and disease risk for the proposed treatment units using the Forest Vegetation Simulator shows a moderate to high risk of mortality from beetle infestation. According to Oliver (1995), Jeffrey and pinyon pine trees, in stands where basal areas are over 120 square feet of basal area per acre, are at imminent risk of bark beetle-associated mortality. The average existing basal area in our pine and mixed conifer stand is slightly over 120 basal area with many stands well in excess of that threshold. Treatments that reduce stocking or densities below this threshold significantly reduces risk and potentially high mortality if bark beetles invade treated stands. Prevention is not guaranteed, but improves the chances that bark beetles would bypass treated stands in search for more preferable conditions.

Within the project area there are approximately 85 acres of sagebrush-scrub. The extreme drought in recent years has increased the risk to the Project area. Some drought-related mortality in the sagebrush-scrub areas is evident throughout the project area. This drought mortality adds dead fuels to the landscape. The sagebrush-scrub vegetation type has a natural historic fire return interval of 35 to 100 years. However, due to extensive public use, infrastructure, and commuter pass-through, the project area burns more frequently than this. The results of these frequent fires are an inability to support the ecological health of sagebrush-scrub, and an increase of risk to fast-moving wildland fires.

Desired Conditions

In the long-term, the desired condition for the national forest land would be to: (1) create forests more resistant to the effects of drought, insect and disease outbreaks and stand killing crown fires; (2) encourage tree recruitment that contain a species mix more like pre-settlement composition, (*i.e.*, with a higher representation of shade-intolerant species such as ponderosa pine that have declined during the period of fire suppression); (3) recreate stand densities more like those of the pre-suppression era; and (4) encourage a stand structure that emphasizes large-diameter trees.

The Mt. Pinos Community Wildfire Protection Plan is to make communities safer from wildfire. The plan highlights the overall threat and risks of wildfire and provides the basis for pre-suppression strategies to reduce the impacts of a wildfire. The plan identifies zones within the wildland-urban interface. The area where structures are located is called the “defense zone” (area buffered 500 feet from structures). If a fire

occurs or burns into this zone, structure loss is likely without quick aggressive structure protection. The "threat zone" is adjacent to the "defense zone" (area buffered by 0.25-mile buffer around the defense zone). This zone needs specific and intense management and treatments. The Plan recommends establishing and maintaining fuelbreaks and prescribed burning within this zone to reduce the threat to the defense zone (Walsh 2006).

The goals of the 2006 Mt. Pinos Community Wildfire Protection Plan fuel reduction strategies are:

- Design fuel modification to provide a buffer between developed areas and wildlands.
- Design and distribute treatments to increase the efficiency of firefighting efforts and reduce risks to firefighters, the public, facilities, structures, and natural resources.
- Utilize planned prescribed burns as strategically placed area treatments.

Purpose and Need

The purpose of the project is to provide safe and effective locations from which to perform fire suppression operations, to slow the spread of a wildland fire at these strategic fuelbreak locations, and to reduce the potential for the loss of life, property, and natural resources. Additionally, this project would undertake timber stand improvement activities such as thinning to help reduce the existing stand densities. Thinning would help increase the forest's resilience to insects and diseases by lowering the amount of trees that are competing for the limited resources such as water.

The need for the project is based on the high likelihood of wildland fire and a corresponding threat to communities and infrastructure that could occur adjacent to the area where the fuelbreak would be created and maintained under this proposed action. By managing for this need we would also be managing for the health of the forest by reducing competition and returning the stands to a state to where they are less likely to be lost by a stand replacing fire.

- There is a need to reduce surface and ladder fuels, reduce fire intensities and to make the stands more resilient to wildfire. Surface-fuel-loading levels, trees that are dead and dying due to insect and disease, and natural forest succession make stand-replacing fire an ongoing risk to the landscape. Removing standing and down fuels reduces fuel loading and fuel continuity, and increases our ability to directly suppress fire in a safe and efficient manner.

- There is a need to reduce the stocking levels and competing vegetation to more closely resemble historic levels to improve resilience of these stands to insect and drought-related mortality.

- There is a need to strategically place fuel breaks that are cost effective and complement planned and completed treatments on adjacent private lands.

- There is a need to maintain or improve resilient forest conditions so the area can return to prior conditions and function after disturbance (USDA Forest Service 2011). Resilient forests are those that not only accommodate gradual changes related to climate, but tend to return toward a prior condition after disturbance, either naturally or with management assistance (Millar et al. 2007).

- There is a need to maintain fuelbreaks along watershed boundaries to minimize fire size and the number of communities threatened by both fire and flood.

Proposed Action

Reduction in stand density, competing vegetation, and fuels are proposed on an estimated 1,626 acres of National Forest System lands within Mt. Pinos Place Management Area. The project area has been identified within the Mt. Pinos Communities Wildfire Protection Plan and within the Los Padres National Forest Strategic Fuelbreak Assessment as strategic for future wildfire and prescribed fire management.

The proposed action would create a variable-width, shaded fuelbreak, along Tecuya Ridge in order to alter existing stand structure, reduce fuel loading, and protect local communities and provide for firefighter safety. To achieve this, various types of vegetation treatments are proposed. Table 2 displays treatment acres by various stand types:

Table 2. Treatment by stand type

Stand Type	Treatment	Acres
Mixed Conifer	Hand Cut/Hand Pile	467
	Mechanical Treatment	828
Pinyon Juniper	Hand Cut/Hand Pile	54
	Mechanical Treatment	192
Sagebrush-scrub	Mechanical Treatment	85

Treatments would include a combination of mechanical thinning, mastication of brush/smaller trees, and hand treatments such as hand thinning, brush cutting, pruning, and piling of material. Pile burning and jackpot burning will be used to reduce fuel loads after thinning or mastication activities.

Mixed conifer and pinyon juniper stands would be thinned to a range of 40 to 60 square feet basal area per acre. The reduction to this level would promote forest health, and to create an effective shaded fuel break to assist in fire suppression. Trees would be removed throughout all diameter classes and would include the removal of commercial trees. Residual trees would be selected for vigor; however, larger Jeffrey pine would be retained per Forest Plan direction unless they pose a hazard or are infected with dwarf mistletoe. All black oak would be left unless they pose a hazard. Early seral species[2] would be a priority to leave when selecting residual trees. Timbered stands with slopes generally greater than 35 percent would be mostly hand thinned. Activity fuels will be either lopped or scattered or hand piled depending on conditions such as slope. Hand piles would be burned.

Areas of sagebrush-scrub would treated by a combination of mastication and hand treatments such as brush cutting, pruning and piling of material. Slopes generally greater than 35 percent would be hand treated and any piles created would be burned. Up to 85 to 95 percent of this area would be treated as determined by the project manager.

The most cost efficient and effective treatments within each stand or brush field would be chosen based on timing, equipment availability, and post treatment results, but would generally be implemented as follows:

- Stands less than 35 percent slope, with viable amounts of accessible commercial-sized material, would be mechanically harvested using feller bunchers and rubber-tired or track-mounted log skidders to remove whole trees to landings.
- Stands less than 35 percent slope, and that do not have a viable amount of commercial-sized timber, or are not accessible, would be treated by mastication.

[2] Jeffrey and pinyon pine.

- Stands less than 35 percent slope that consist primarily of an over-abundance of smaller trees and shrubs would be masticated.
- Existing and operations-generated slash, small trees, and shrubs would be tractor piled or masticated with a track-mounted masticator. Mastication or tractor piling would occur shortly after thinning is completed. Post-harvest machine piling and burning of piles would occur as necessary to reduce surface fuels to less than 10 tons per acre. Mastication may be substituted for tractor piling where surface fuels can be more effectively treated by this method and where maintaining or increasing soil cover is a higher priority.
- Timbered stands and sage scrub fields with slopes generally greater than 35 percent slope would be either lopped or scattered or hand piled depending on conditions such as slope. Hand piles would be burned.
- Sagebrush-scrub areas less than 35 percent slope would be treated using a masticator. Areas where slopes generally exceed 35 percent slope would be hand treated, piled, and burned.
- The removal of hazard trees (live and dead) of all sizes would occur along utility lines, roads, trails and landings to provide for safety of woods workers and public throughout project implementation, except where restrictions for removal apply.
- A part of the project is within the Antimony Inventoried Roadless Area (IRA). Consistent with the 2001 Roadless Area Conservation Rule, generally only smaller trees (21 inches diameter breast height or less) would be cut or removed within the IRA. Larger trees may be cut or removed within the IRA for safety or operability reasons. No new road construction or re-construction is proposed under this project.

Design Features

Fuels

1. Maintain the existing system of roadside fuelbreaks and fuelbreaks along watershed boundaries to minimize fire size and the number of communities threatened by both fires and floods. When feasible construct new fuelbreaks on land outside of wilderness or other special designations.

2. Consider an opportunistic approach to fuels management. Take advantage of wildland fire occurrence and wherever possible connect wildland fires to forest health and wildlife habitat improvement projects, as well as fuelbreaks to maintain multiple lines of community defense and to minimize future wildland fire patch size.

3. Thinning to reduce canopy cover is generally recommended to minimize crown fire hazard (J. H. Scott and Reinhardt 2001). The reduction in crown fire potential provides for the increased success of fire suppression. This reduces the risk to firefighters and the public in a suppression action. The decrease in crown fire potential also allows fire managers to use more tools in suppression efforts.

4. The reduction in the potential for crown fire reduces the likelihood of reduced forest health. The risk of losing forest structure and continuity is high in large severe burning fires that produce crown fire. Forest diversity is also lost in large landscape fires that burn at high intensity.

5. Lowering flame lengths decreases the likelihood that there would be crown fire initiation. Lowering flame lengths increases the ability to actively suppress fires effectively during a severe fire season. Using hand crews is the most effective way to attack wildfires; hand crews are generally not effective with flame lengths over 4 feet in height. The activities proposed reduce the flame lengths in treatment units, so hand crews can be utilized.

6. To reduce the threat of spotting distance from firebrands (spotting potential), fuels would need to be reduced both near and at some distance from the WUI. Implementation of vegetation treatments would result in decreasing the behavior of a wildland fire and would increase the likelihood that fire suppression efforts would be successful in containing fires at a small size.

7. Create fuelbreaks wide enough to allow fire operations to effectively mitigate the high to extreme fire behavior characteristics in those areas that have medium to high fuel load shrub species.

8. Dead and down material left after treatment should be less than 10 tons per acre in the forested treatment areas where available.

9. Brush species would be reduced by up to 85 to 95 percent and may include feathering of treatment for visual concerns. Feather the edges of the fuelbreak by selectively removing random brush species along the edge to create a mixed vegetative area or zone to soften harsh edges.

10. All prescribed fire activities will occur with approvals from the San Joaquin Valley Air pollution and under conditions established in an approved Prescribed Fire Burn Plan.

Botany and Wildlife

11. LMP- S11: When occupied or suitable habitat for a threatened, endangered, proposed, candidate or sensitive (TEPCS) species is present on an ongoing or proposed project site, consider species guidance documents (see LMP, Part 3, Appendix H) to develop project-specific or activity-specific design criteria. This guidance is intended to provide a range of possible conservation measures that may be selectively applied during site-specific planning to avoid, minimize or mitigate negative long-term effects on threatened, endangered, proposed, candidate or sensitive species and habitat. Involve appropriate resource specialists in the identification of relevant design criteria. Include review of species guidance documents in fire suppression or other emergency actions when and to the extent practicable.

12. LMP- S12: When implementing new projects in areas that provide for threatened, endangered, proposed, and candidate species, use design criteria and conservation practices (see Appendix H) so that discretionary uses and facilities promote the conservation and recovery of these species and their habitats. Accept short-term impacts where long-term effects would provide a net benefit for the species and its habitat where needed to achieve multiple-use objectives.

13. LMP-S24: Mitigate impacts of on-going uses and management activities on threatened, endangered, proposed, and candidate species.

14. LMP-S32: When surveys for species presence/absence are done for threatened, endangered, and proposed species, use established survey protocols, where such protocols exist.

Botany

15. Sensitive plant surveys/monitoring would occur prior to project activities.

Wildlife

16. LMP- S14: Where available and within the capability of the site retain a minimum of six downed logs per acre (minimum 12 inches diameter and 120 total linear feet) and 10 to 15 hard snags per five acres (minimum 16 inches diameter at breast height and 40 feet tall, or next largest available). Exception allowed in Wildland/Urban Interface Defense Zones, fuelbreaks, and where they pose a safety hazard.

17. LMP - S15: Within riparian conservation areas retain snags and downed logs unless they are identified as a threat to life, property, or sustainability of the riparian conservation area.

18. LMP - S17: In areas outside of Wildland/Urban Interface Defense Zones and fuelbreaks, retain soft snags and acorn storage trees unless they are a safety hazard, fire threat, or impediment operability.

19. LMP - S18: Protect known active and inactive raptor nest areas. Extent of protection will be based on proposed management activities, human activities existing at the onset of nesting initiation, species, topography, vegetative cover, and other factors. When appropriate, a no-disturbance buffer around active nest sites will be required from nest-site selection to fledging.

20. LMP- S19: Protect all spotted owl territories identified in the Statewide California Department of Fish and Game database (numbered owl sites) and new sites that meet the state criteria by maintaining or enhancing habitat conditions over the long-term to the greatest extent practicable while protecting life and property. Use management guidelines in the species conservation strategy (or subsequent species guidance document; see Appendix H) to further evaluate protection needs for projects, uses and activities.

21. LMP- S20: Maintain a limited operating period (LOP) prohibiting activities within approximately .25 miles of a California spotted owl nest site, or activity center where nest site is unknown, during the breeding season (February 1 through August 15), unless surveys confirm that the owls are not nesting. Follow the USDA Forest Service (1993, 1994 or subsequent) protocol to determine whether owls are nesting. The LOP does not apply to existing road and trail use and maintenance, use of existing developed recreation sites, or existing special-uses, such as recreation residence tracts. When evaluating the need to implement a limited operating period, site- and project-specific factors need to be considered (use species management strategy or subsequent guidance; see Appendix H).

22. LMP- S28: Avoid or minimize disturbance to breeding and roosting California condors by prohibiting or restricting management activities and human uses within 1.5 miles of active California condor nest sites and within 0.5 miles of active roosts. Refer to California condor species account (or subsequent species guidance document; see Appendix H) for additional guidance.

23. Avoid rocky outcrops with mechanical treatments.

Silviculture

24. In all treatments, all live and dead trees posing a safety hazard to management activities or to the public will be removed within the treated areas.

25. In all units, as soon as possible, and no longer than 24 hours after tree cutting, all activity-created fir and pine tree stumps greater or equal to 16-inches in diameter would be treated with a borax compound (Sporax) to inhibit the spread of annosus root disease.

26. All black oak will be left unless they are deemed a hazard tree or if removal is needed for operations.

Recreation

27. Where there is a safety concern for recreationists, implement temporary closures in the project area. Ensure that sufficient public and internal notice is provided prior to those closures.

28. Throughout the duration of the project, communicate with the recreational staff to coordinate closures and/or consultation for privacy screening or potential OHV trespass during implementation.

Heritage

29. Post-implementation survey of areas with heavy brush cover will occur.

30. All know sites will be flagged prior to implementation, and the project manager will be notified of their location for protection measures.

31. If unanticipated resources are discovered during project implementation, all work will stop in the vicinity until cleared by a professional cultural resources manager.

Soils and Watershed

32. Designate season of use to avoid or restrict road use during periods when use would likely damage the roadway surface or road drainage features. (National BMP Road-4. Road Operations and Maintenance)

33. Use suitable measures to avoid or minimize adverse effects to soil and watershed resources when proposed operations involve use of roads by traffic and during periods for which the road was not designed. (National BMP Road-4. Road Operations and Maintenance)

34. Refueling of equipment and storage of fuel and other hazardous materials will not occur within riparian conservation areas (perennial and seasonal streams, seeps, springs, and meadows). When landings are located within riparian conservation areas, refueling will occur outside riparian conservation areas in an approved refueling area. Storage of any quantity of fuel greater than 100 gallons will require a California Engineer Spill Plan (National BMP Road-10. Equipment Refueling and Servicing)

35. Landing locations should be located outside of riparian conservation areas where possible, unless infeasible due to topography. Landings within riparian conservation areas may occur where there is existing disturbance (instead of constructing a new one); such landings will require special protective measures as specified by an earth scientist or biologist. (National BMP Veg-2. Erosion Prevention and Control)

36. Do not permit use of mechanical equipment on slopes greater than 35 percent or on steeper slopes with short pitches (National BMP Veg-2. Erosion Prevention and Control).

37. Operate equipment when soil compaction, displacement, erosion, and sediment runoff would be minimized. (National BMP Veg-2. Erosion Prevention and Control)

38. Avoid ground equipment operations on unstable, wet, or easily compacted soils unless operation can be conducted without causing excessive rutting, soil puddling, or runoff of sediments directly into waterbodies.

39. Riparian conservation areas will be 100 meters (328 feet) on perennial streams, or 30 meters (98 feet) on intermittent streams, measured as the slope distance from either bank of the channel. Other special aquatic features, such as wetlands, seeps and springs, also have 100-meter riparian conservation areas (National BMP Veg-3. Aquatic Management Zones).

40. No self-propelled ground-skidding equipment is allowed within the riparian conservation areas (exceptions would require input by an earth scientist and/or biologist as described in standard S47 and Appendix E of the Forest Plan).

41. There will be no removal of riparian plant species.

42. Within riparian conservation areas, retain snags and downed logs to the extent possible. Exceptions would be made if snags and logs are identified as a threat to life, property, or sustainability of riparian conservation areas (S15, LMP Part 3, p. 6) (National BMP Veg-3. Aquatic Management Zones).
43. Firelines constructed for project implementation will be rehabilitated following project implementation (prescribed burn). Rehabilitation on the fireline includes: pulling back and spreading out berms, and spreading of bush and ground cover across the fireline. (Fire-2. Use of Prescribed Fire)
44. Water bars or leadout ditches may be constructed in firelines to minimize erosion. Water bars or leadout ditches will be installed according to the following recommended minimum intervals (Fire-2. Use of Prescribed Fire)

Table 3. Recommended minimum interval guidelines for the installation of waters bars.

Fireline Gradient ***(% slope)***	**Distance Between Water-Bars** ***(feet) /(chains)***	
0 to 5	no water-bars needed	no water-bars needed
6 to 15	200	3
16 to 30	100	1.5
31 to 49	75	1
> 50	50	0.5