

**Moonlight Hand Thinning Project**  
**Eagle Lake Ranger District, Lassen National Forest**  
**Lassen County, California**  
**2/15/16**

**Introduction**

The Moonlight Hand Thinning Project area is located on the Eagle Lake Ranger District of the Lassen National Forest. The project area is located approximately 10 miles southwest of Susanville, California. The project is located in all or portions of: T29N, R10E, Sections 13, 20, 21, 24, 25, 28, 29, 32, and 33; T28N, R10E, Sections 1, 3, 4, 10, 15, 22, 23, 27, and 34; and T28N, R11E, Sections 6 and 7; Mount Diablo Meridian (Figure 1, Project Map). The proposed treatments within the project area total approximately 1,528 acres.

**Proposed Action**

The Eagle Lake Ranger District proposes to hand thin conifers and brush, and to hand pile the natural and activity generated surface fuels along designated Forest Service roads for the purpose of removing ladder fuels and increasing canopy base heights within the treated stands. To facilitate internal planning and review, the proposed treatment areas along the designated roads were sectioned into four areas (Figure 1). Design parameters for this proposed action are:

- All trees <6" diameter breast height (dbh) and all brush would be cut within a 500 foot buffer along designated roads outside of California spotted owl and goshawk Protected Activity Centers (PACs), and within a 200 foot buffer along designated roads within owl and goshawk PACs.
- Cut material would be hand pile and burned, or mechanically chipped.
- Remaining conifers within these road buffers would be limbed (pruned) to increase the canopy base height to 5-6 feet high. Cut limbs would be hand piled and burned, or mechanically chipped.
- All piled material would be bucked into 4 foot lengths and smaller.
- All piles would be piled away from the boles (drip line) of the leave trees.
- Fire lines would be constructed for pile burning operations, except where existing roads, skid trails, or natural barriers would serve as control lines.
- Within plantations bisected by the roadside treatment areas in road sections 3 and 4, approximately 110-150 trees per acre would be retained, based on an average spacing of 17 to 20 feet. In addition, pruning leave trees within these plantations would retain 30-40% of the bole in canopy, with limbs cut flush and smooth with the bole. All cut material would be piled outside the drip line of leave trees, and piles would be burned in stages, as needed, to avoid damaging residual trees.

The following Integrated Design Features (IDFs) are resource protection measures that are developed by specialists and incorporated as part of the proposed action for this project. They are in addition to applicable Best Management Practices (BMPs) included within the hydrology report for this project (project record). These IDFs are also included for implementation parameters that would be incorporated into treatments, contracts, or used to guide Forest Service personnel in conducting implementation.

## Fuels

1. Hand pile construction and pile burning would not occur within wet or dry meadow areas, or where graminoid and forb indicator species of a wet site are present.
2. In aspen and cottonwood communities, hand piles would be located either outside of mapped stands, or at least 20 feet from any live tree or sprout greater than three feet tall. Where surface fuels concentrations are low, material can be lopped and scattered within these stands.

## Cultural Resources

3. All historic properties within APEs shall be clearly delineated prior to implementing any associated activities that have the potential to affect historic properties.
  - a) Historic property boundaries shall be delineated with coded flagging and/or other effective marking.
  - b) Historic property location and boundary marking information shall be conveyed to appropriate Forest Service administrators or employees responsible for project implementation so that pertinent information can be incorporated into planning and implementation documents, contracts, and permits (e.g., clauses or stipulations in permits or contracts as needed).
4. All historic properties eligible or potentially eligible for listing on the National Register of Historic Places (i.e., Class I and Class II properties) within the project area would be protected by employing Standard Resource Protection Measures (SRPM) as defined in the Regional Programmatic Agreement. Standard Protection Measures from Regional PA Appendix E section 2.2(b) include,
  - a) For fire, and hazardous fuels and vegetation management projects, HPM[Heritage Program Manager]/DHPS [District Heritage Program Specialist], in conjunction with fuels, vegetation management, or fire specialists as necessary, shall develop treatment measures for at risk historic properties (as defined in SHPO approved Region 5 modules and agreements) designed to eliminate or reduce potential adverse effects to the extent practicable by utilizing methods that minimize surface disturbance, and/or by planning project activities in previously disturbed areas or areas lacking cultural features.
5. The following standard protection measures apply to fire, hazardous fuels, and vegetation management projects:
  - a) Fire crews may monitor sites to provide protection as needed.
  - b) Fire lines or breaks may be constructed off sites to protect at risk historic properties.
  - c) Vegetation may be removed and fire lines or breaks may be constructed within sites using hand tools, so long as ground disturbance is minimized, and features are avoided, as specified by HPMs or qualified Heritage Program staff during fire emergencies (see Stipulation 7.11).
  - d) Trees that may impact at risk historic properties should they fall on site features and smolder can be directionally felled away from properties prior to ignition, or prevented from burning by wrapping in fire shelter fabric or treating with fire retardant or wetting agents.
  - e) Vegetation to be burned shall not be piled within the boundaries of historic properties unless locations (e.g., a previously disturbed area) have been specifically approved by HPMs or qualified Heritage Program staff.

- f) Woody material may be chipped within the boundaries of historic properties so long as the staging of chipping equipment on-site does not affect historic properties and staging areas are specifically approved by HPMS or qualified Heritage Program staff.
- 6. When any changes in proposed activities are necessary to avoid historic properties (e.g., project modifications, redesign, or elimination; removing old or confusing project markings or engineering stakes within site boundaries; or revising maps or changing specifications), these changes shall be completed prior to initiating any project activities. (RPA section 1.4 page E-3)
- 7. If cultural resources are identified during project implementation (unanticipated discovery) all work would cease immediately in that area until the situation is reviewed and an assessment and mitigation plan instituted to insure protection of the site.

## **Wildlife**

- 8. Retain all snags over 10" dbh. Buffer work away from larger diameter snags that implementation crews identify as safety hazards.
- 9. Downed wood retention will be emphasized in the largest size classes (including both diameter and length) and in decay classes 1, 2, and 3. Retention levels will be:
  - a) In eastside pine stands, downed woody material will be retained at 1.5 pieces of downed wood per acre. Of these, one would be in the 24+ inch size class. The 0.5 can be in the 15 to 24 inch size class. As an example: in a 10 acre area, 15 pieces would be retained, 10 of which would be in the 24+ inch size class, 5 could be from the 15 to 24 inch size class.
  - b) In mixed-conifer or fir stands, downed woody material would be retained at 3.0 pieces of downed wood per acre. Of these, two would be in the 24+ inch size class, and one can be in the 15 to 24 inch size class.
- 10. California spotted owl limited operating period: When within spotted owl PACs or within 0.25 miles of a spotted owl nest tree, adhere to a limited operating period (LOP) of March 1 through August 15, unless surveys confirm that spotted owls are not nesting.
- 11. Within the Lights Creek/Willard Hairpin PAC, leave patches and/or scattered small diameter conifers unthinned within a 100 ft. radius of the nest tree location to provide cover for fledgling spotted owls.
- 12. Northern goshawk PAC limited operating period: When within northern goshawk PACs or within 0.25 miles of a northern goshawk nest tree, adhere to a limited operating period (LOP) of February 15 through September 15, unless surveys confirm that northern goshawks are not nesting.

## **Botany - Threatened, Endangered, Sensitive (TES) Plant Species**

- 13. New occurrences of Threatened, Endangered, or Sensitive (TES) plant species discovered before or during ground-disturbing activities would be protected through flag-and-avoid methods.
- 14. No ground-disturbing activities, including construction of hand line, would take place within occurrences of *Penstemon sudans* or *Hackelia amethystina*, including thinning, piling, burning, and chipping.

## Botany - Noxious Weeds

15. All off-road equipment would be weed-free prior to entering the Forest. Staging of equipment would be done in weed-free areas.
16. Known noxious weed infestations would be identified, flagged where possible, and mapped for this project. Identified noxious weed sites within or adjacent to the project area containing isolated patches with small plant numbers would be treated (hand-pulled or dug) prior to project implementation.
17. New small infestations identified during project implementation would be evaluated and treated according to the species present and project constraints and avoided by project activities.
18. Post-project monitoring for implementation and effectiveness of weed treatments and control of new infestations would be conducted as soon as possible and for a period of two years after completion of the project.
19. If project implementation calls for mulches or fills, they would be certified weed-free.
20. No project activities would occur within 20 feet of any occurrence of spotted knapweed (*Centaurea maculosa*).
21. No thinning would occur within 20 feet of any occurrence of dyer's woad (*Isatis tinctoria*) or medusahead (*Taeniatherum caput-medusae*), but piling and burning may be done.
22. No project activities would occur within any occurrence of oxeye daisy (*Leucanthemum vulgare*) or Canada thistle (*Cirsium arvense*).

## Riparian Conservation Areas

23. Riparian Conservation Area (RCA) widths are allocated along all streams, wetlands, wet meadows, and other special aquatic features in accordance with the 2004 Sierra Nevada Forest Plan Amendment (SNFPA) Record of Decision (ROD). Features are as described in the table below, and a map showing hydrologic features in the project vicinity can be found in the hydrology report (project record).

RCA Type	RCA Width	Features within Project Area
Special Aquatic Features (wet meadows, springs)	300 feet from edge of feature or riparian vegetation, whichever width is greater	Small stringer wetlands and meadows associated with streams; seeps and springs
Perennial Streams	300 feet (each side of stream), measured from bankfull edge of stream	Willard Creek, West Fork Willard Creek, Middle Willard Creek, Roxie Peconom Creek
Seasonally Flowing Streams (includes ephemerals with defined stream channel and evidence of scour)	150 feet (each side of stream) measured from bankfull edge of stream	Duffy Creek, unnamed tributaries to: Willard Creek, Goodrich Creek, Mountain Meadows Creek

24. Hand piling of burn piles would not occur within the inner 30 feet of seasonal RCAs or 50 feet of perennial and special aquatic feature RCAs.
25. Hand line construction within the Riparian Conservation Areas (RCA) is acceptable, as long as it is constructed outside the inner 30 foot zone for seasonal RCAs and 50 foot zone for perennial and special aquatic feature RCAs. If needed, wet line would be used.
26. Riparian species (aspen, cottonwood, alder, willow, dogwood, etc.) would not be removed.
27. Chipped material within RCAs may not exceed an average of two inches in depth, with a maximum depth of four inches, and material may not be deposited within stream channels or other waterbodies.
28. Soil conditions must be operable for mechanical equipment to enter RCAs where needed for chipping. Under moist or wet conditions, equipment may not create ruts exceeding two inches in depth and 25 feet in length. No ruts exceeding three inches in depth are allowed, and equipment may not enter when soils are saturated.
29. A 25 foot “no mechanical equipment” buffer would be designated along all stream channels and waterbodies where mechanical chipping operations would occur.

## **Silviculture**

30. Pile all material away from the boles (drip line) of the leave trees along the Douglas-fir tussock moth trap lines in road section 2.
31. Pile all material away from the boles (drip line) of rust resistant sugar pine (RRSP) trees and candidates along road section 2.
32. In plantations along road sections 3 and 4, the 110-150 trees to be retained per acre can be adjusted by as much as 25% to ensure that the species preferred (while also considering the tallest, healthiest trees) are retained.

## **Purpose and Need**

The purpose of this project is to remove ladder fuels and increase canopy base heights within remaining mature-forest habitat to protect spotted owl and goshawk activity centers and habitat elements.

There is a need to protect remaining mature-forest habitat from the potential of a wildland fire adjacent to the Moonlight Fire perimeter for northern goshawk, California spotted owl, and other species. Due to large areas of high intensity fire, the Moonlight Fire resulted in extensive loss of mature-forest habitat. As a result of this loss, maintaining and protecting unburned spotted owl and goshawk habitat adjacent to the Moonlight Fire perimeter is important to insure the long term maintenance of these habitats and species within this area (2004 ROD, p. 45-46, 50-51). Opportunities for mechanical fuels treatments within much of the area adjacent to the Moonlight Fire are limited due to steep slopes, erosive soils, canopy-cover restrictions, and spotted owl and goshawk PACs. Due to these limitations, hand thinning treatments targeting surface and ladder fuels is often the only available method for reducing fuels. This project proposes such hand thinning treatments. These treatments would serve to reduce

fuels and the risk of wildfire, and that would also maintain habitat elements important for spotted owls and goshawks.

There is a need to protect known spotted owl and goshawk activity centers from the risk of wildfire (2004 ROD, p. 45-46, 50-51). Thinning units would be located in an area within four miles of the Moonlight Fire perimeter, a distance equal to the median dispersal distance of spotted owls on the Lassen NF (Blakesely 2003). There is a need to hand thin conifers and hand pile the natural and activity generated surface fuels. Hand thinning the small diameter trees (those <6" dbh) would remove the ladder fuels and increase the canopy base heights within the treated stands without substantively affecting existing canopy closure levels or causing loss of forest structure important to spotted owls and goshawks.

### **Decision to be Made**

The decision to be made is whether to implement this project as proposed, as modified to address public concerns, or not at all.

Figure 1. Project Map:

