

# U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT GRANTS PASS FIELD OFFICE

## Cedar Flat Forest Management Project Environmental Assessment – Draft Chapters 1 & 2 for Public Scoping DOI-BLM-ORWA-M070-2025-0001-EA

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### **CHAPTER 1: INTRODUCTION**

The Bureau of Land Management (BLM), Grants Pass Field Office (GPFO) is proposing the Cedar Flat Forest Management Project (CFFMP), consisting of approximately 2,588 proposed treatment acres<sup>1</sup> within 11,276 acres of BLM-administered lands inside a planning area totaling 17,796 acres (Table 1-1). Within the CFFMP, 100% (11,276 acres) of the BLM-administered lands are Revested Oregon and California Railroad (O&C) lands. These BLM-administered lands are intermixed with private lands, creating a mosaic of ownership patterns across the planning area.

Table 1-1. Land Ownership Summary of the CFFMP Planning Area

Jurisdiction	Acres	Percent
Bureau of Land Management	11,276	63%
Private Land	4,930	28%
Forest Service	1,590	9%
Total	17,796	100%

#### **1.1 Project Location**

The CFFMP is located in Josephine County, Oregon west of I-5, and southwest of the town of Williams, Oregon (Map 1). The planning area lies within three watersheds: Williams Creek, Sucker Creek, and Deer Creek. Table 1-2 displays the legal description of BLM-administered lands within the planning area, with all locations based off the Willamette Meridian.

Table 1-2. Legal Description of BLM-administered Lands Within the Planning Area

Township	Range	Sections
39 South	5 West	7, 17, 19, 21, 22, 27, 28, 29, 30, 31, 32, 33, 34
39 South	6 West	1, 3, 9, 11, 12, 13, 14, 15, 23, 24, 25, 26

<sup>&</sup>lt;sup>1</sup> Acre totals are calculated using the most current GIS data but are approximate given the limited accuracy of GIS systems. Acreage totals in this project have been rounded to the nearest whole acre.



Map 1-1. Cedar Flat Project Location Map

The 2016 Southwest Oregon Record of Decision & Resource Management Plan (2016 ROD/RMP) designated the following Land Use Allocations (LUAs) found in the proposed treatment areas (USDI/BLM 2016b, pp. 43-57): Late-Successional Reserve (LSR)-Dry, LSR-Moist, Riparian Reserve (RR)-Dry, and RR-Moist (Table 1-3).

Land Use Allocation	Acres	Percent
LSR – Dry	1,826	70.6%
RR – Dry	743	28.7%
RR – Moist	11	0.4%
LSR – Moist	8	0.3%
Total	2,588	100%

Table 1-3. BLM-administered Lands by Land Use Allocation in the CFFMP Proposed Treatment Areas

### 1.2 Background

Historical forest management practices, the absence of frequent low severity fire, and prolonged drought have all led to forest stands with higher stem density, reduced fire resistance, and less habitat for late-successional species. Forest stands with a Relative Density (RD)<sup>2</sup> above 35% are at greater risk of stress, making them more susceptible to disturbance e.g., insect outbreak, disease, and high intensity stand-replacing wildfire (McCusker, 2011; Metlan et al., 2017, 2021; Bennett et al., 2023).

Using stand exam data, the BLM identified the stands proposed for treatment as overly dense (>35% RD) in relation to the carrying capacity of the site (North et al., 2022). The proposed treatment area is within lands allocated as LSR and RR. The BLM and U.S. Fish and Wildlife Service (USFWS) have determined that active management of these reserves is needed to develop northern spotted owl (NSO) habitat and to mitigate the potential of losing existing habitat from stand replacing wildfire (USFWS 2011, p. vii).

The BLM receives limited appropriated funds to carry out treatment activities and relies upon economically viable timber sale contracts<sup>3</sup> and stewardship contracts (when the timber value is insufficient to exceed the cost of treatment). Economic viability is a prerequisite for treatments to be offered and implemented as a timber sale contract. If the treatment is not economically viable a stewardship contract would be considered if funding is available.

BLM designed this project using commercial treatments and hazardous fuels reduction (HFR) to promote habitat development and fire resiliency. Commercial treatments are forestry treatments in which at least some of the trees being cut are removed from the stand to be sold as timber. Commercial treatments include activity fuels reduction (created during harvest), and HFR may be implemented within the same treatment footprint as needed to further reduce hazardous fuel loads. Future HFR treatments are planned beyond the proposed treatment area of this project and would be implemented under subsequent NEPA documentation.

 $<sup>^{2}</sup>$  Relative Density (RD) – A means of describing the level of competition among trees or site occupancy in a stand, relative to a theoretical maximum based on tree density, size, and species composition. Relative density percent is calculated by expressing Stand Density Index (SDI) (Reineke 1933) as a percentage of the theoretical maximum SDI, which varies by tree species and range. Stand Density Index (SDI) – Reineke's (1933) stand density index is a function of quadratic mean diameter and number of trees per unit area. SDI can be interpreted as the number of 10-inch trees that would experience approximately the same level of inter-tree competition as the observed number of trees with the observed mean diameter (USDI/BLM 2016b. pp. 311, 314).

<sup>&</sup>lt;sup>3</sup> Timber sale contracts are synonymous with Wood product contracts.

### 1.3 Purpose and Need

Table 1-4. Purpose and Need for the CFFMP

Need	Purpose
Overly dense and uniform stand conditions have reduced the quality and developmental	LSR (Dry & Moist):
trajectory of northern spotted owl (NSO) habitat in LSR.	Utilize Integrated Vegetation Management (IVM) <sup>4</sup> in designing and implementing treatments. Conduct IVM for any of the following reasons (USDI/BLM 2016b, p.72):
	o Promote the development and retention of large, open grown trees and multi-cohort stands. o Increase or maintain vegetative species diversity.
	o Promote or enhance the development of structural complexity and heterogeneity. o Create growing space for hardwood and pine persistence and regeneration.
	o Reduce stand susceptibility to disturbances such as a fire, windstorm, disease, or insect infestation.
	In stands that are not northern spotted owl nesting-roosting habitat, apply silvicultural treatments to speed the development of northern spotted owl nesting-roosting habitat or improve the quality of northern spotted owl nesting-roosting habitat in the stand or in the adjacent stand in the long term. Limit such silvicultural treatments (other than forest pathogen treatments) to those that do not preclude or delay by 20 years or more the development of northern spotted owl nesting-roosting habitat in the stand and in adjacent stands, as compared to development without treatment (USDI/BLM 2016b, p. 72).
	LSR (Dry only):
	Apply selection harvest or commercial thinning treatments to at least 17,000 acres per decade in the Medford District (USDI/BLM 2016b, p.74). <sup>5</sup>

<sup>&</sup>lt;sup>4</sup> Integrated Vegetation Management includes the use of a combination of silvicultural or other vegetation treatments, fire and fuels management activities, harvest methods, and restoration activities. Activities include, but are not limited to, vegetation control, planting, snag creation, prescribed fire, biomass removal, thinning, single tree selection harvest, and group selection harvest (USDI/BLM 2016b. p. 68).

<sup>&</sup>lt;sup>5</sup> As of October 15, 2024, the Medford district has applied such treatments to 1,043 acres, leaving 15,957 more acres to treat between now and the end of fiscal year (FY) 2026.

Need	Purpose
The stands identified for treatment are overly dense, are at risk of stand replacing wildfire, and are less resilient to disturbance.	Common to all (RR-Dry (class I), RR-Moist (class I), LSR-Dry, and LSR-Moist): Treat both management activity fuels and natural hazardous fuels for any of the following reasons (USDI/BLM 2016b, p. 91):
Out of the top 50 communities in the State of Oregon with the highest wildfire risk, 24 of these communities are within the Medford District BLM boundary, and 10 are within a 20-mile radius of the planning area boundary (Scott et al., 2018) (Map 1-2).	<ul> <li>o "Modify the fuel profile"</li> <li>o "Reduce potential fire behavior"</li> <li>o Reduce potential fire severity</li> <li>o Improve effective fire management opportunities within the Wildland Urban Interface or in close proximity to other highly valued resources.</li> <li>Apply thinning or prescribed fire to forest stands as needed to achieve appropriate stocking and density levels (USDI/BLM 2016b, p. 92).</li> <li>Promote the establishment and survival of desirable vegetation through stand maintenance treatments (USDI/BLM 2016b, p. 92).</li> </ul>
	LSR-Dry: Treat fuels to improve, enhance, or maintain landscape and ecosystem resilience. Identify sites for fuels treatments based on risk of large-scale high-intensity/high-severity fire, operationally strategic locations, or proximity to highly valued resources and assets (HVRAs) (USDI/BLM 2016b, p. 74). Apply prescribed fire and mechanical or hand fuels treatments to reduce the potential for uncharacteristic wildfires. Apply maintenance treatments at appropriate intervals to retain or improve fire-resilient conditions (USDI/BLM 2016b, p. 75).



Map 1-2. Communities-at-Risk from Wildfire within 20 miles of the CFFMP Planning Area

### 1.4 List of Issues Identified for Analysis

Issues raised during internal and external scoping for the project's Purpose and Need are considered for detailed analysis. Issues analyzed in detail will be described in Chapter 3.

Table 1-5. Issues Identified for Detailed Analysis

Торіс	Issues Analyzed in Detail
Northern Spotted Owl Habitat	How do the alternatives affect the speed of development, or the quality of, NSO non-nesting and roosting habitat, and would the effects preclude or delay development by 20 years or more, compared to no treatment?
Forestry	How would the alternatives affect landscape scale resiliency in terms of successional class distribution (i.e., distribution of open and closed forest conditions) in the dry forest?
	How would the alternatives affect stand vigor, insect and disease susceptibility, and drought resiliency?
	What would be the economic viability and operational feasibility of commercial treatments for each alternative?
Fire and Fuels	How do the alternatives affect stand level fire resistance (or fire hazard) and wildfire risk to forest health?
	How do the alternatives affect communities at risk and safe and effective wildfire response?

### 1.5 Conformance with Land Use Plan

The BLM signed the 2016 ROD/RMP on August 5, 2016. All alternatives for the CFFMP have been designed to conform with the management direction in the 2016 ROD/RMP, which addresses how the BLM will comply with applicable laws, regulations, and policies in western Oregon including, but not limited to the: Oregon and California Railroad (O&C) Act, Federal Land Policy and Management Act (FLPMA), Endangered Species Act (ESA), National Environmental Policy Act (NEPA)<sup>6</sup>, National Historic Preservation Act (NHPA), Clean Air Act, and Clean Water Act.

### 1.6 Decisions to be Made

The BLM GPFO would decide whether to implement the actions outlined in the alternatives described in Chapter 2. The Authorized Officer would decide whether to offer timber for sale, and if timber is offered for sale, how many commercial sales to offer, and whether to implement other actions, including, hazardous fuel reduction, road construction, road improvement, and road renovation. These decisions would be documented through Decision Record documents that would identify specific approved actions and would be made available to the public.

<sup>&</sup>lt;sup>6</sup> The BLM is aware of the November 12, 2024 decision in Marin Audubon Society v. Federal Aviation Administration, No. 23-1067 (D.C. Cir. Nov. 12, 2024). To the extent that a court may conclude that the Council on Environmental Quality (CEQ) regulations implementing NEPA are not judicially enforceable or binding on this agency action, the BLM has nonetheless elected to follow those regulations at 40 C.F.R. Parts 1500–1508, in addition to the DOI's procedures/regulations implementing NEPA at 43 CFR Part 46, to meet the agency's obligations under NEPA, 42 U.S.C. §§ 4321 et seq.

### **CHAPTER 2: ALTERNATIVES**

The BLM proposes to analyze a No Action Alternative and three action alternatives. In developing the action alternatives, the BLM considered multiple ways to meet the Purpose and Need, including alternatives proposed or suggested by internal and external scoping.

### 2.1 Alternative A: No Action

The No Action Alternative serves as a baseline which represents current conditions and a reference point from which to compare the environmental effects of the action alternatives. Under the No Action Alternative, the following actions would not occur in relation to this project on BLM-managed lands:

- Treatments in LSR to promote the development of NSO habitat
- Contribution to the Medford District's commercial decadal acreage treatment target in LSR
- Treatments in RR
- Hazardous fuels reduction
- Road construction, improvement, and renovation

#### 2.2 Common to All Action Alternatives

Table 2-1. Project Elements Com	mon to All Action Alternatives
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Action	Description
In LSR, maintain nesting and roosting (NR) habitat function at the stand-level	Maintain "structural characteristics such that the stand continues to support the same northern spotted owl life history requirements: nesting-roosting habitat continues to support northern spotted owl nesting-roostingnorthern spotted owl nesting-roosting habitat generally is characterized by conifer stands with a multi-layered, multispecies canopy dominated by large (> 30" Diameter at Breast Height (DBH)) conifer overstory trees, and an understory of shade- tolerant conifers or hardwoods, $\geq 60\%$ canopy cover, substantial decadence in the form of large, live conifer trees with deformities (such as cavities, broken tops, and dwarf mistletoe infections; numerous large snags), ground cover characterized by large accumulations of logs and other woody debris, and a canopy that is open enough to allow northern spotted owls to fly within and beneath it (USDI/BLM 2016b, p. 70)."
In LSR, apply silvicultural treatments which do not preclude or delay by 20 years or more the development of NSO NR habitat	In stands that are not northern spotted owl nesting-roosting habitat, apply silvicultural treatments to speed the development of northern spotted owl nesting-roosting habitat or improve the quality of northern spotted owl nesting-roosting habitat in the stand or in the adjacent stand in the long term. Limit such silvicultural treatments (other than forest pathogen treatments) to those that do not preclude or delay by 20 years or more the development of northern spotted owl nesting-roosting habitat in the stand and in adjacent stands, as compared to development without treatment. Allow silvicultural treatments that do not meet the above criteria if needed to treat infestations or reduce the spread of forest pathogens (USDI/BLM 2016b p. 72).
Thinning in RR Middle and Outer Zones	Commercial thinning, including activity fuel reduction treatments, are proposed. Maintain at least 30% canopy cover and 60 trees per acre (TPA) expressed as an average at the scale of the portion of the harvest unit within the Riparian Reserve (USDI/BLM 2016b. pp. 78-87). For fish-bearing, perennial, and intermittent streams in Class I sub

Action	Description
	watersheds, the Outer Riparian Zone buffer occurs 120 feet from the stream outward to the edge of the RR-Dry and RR-Moist. For intermittent non-fish bearing streams in Class I watersheds, there is an additional Middle Riparian Zone that occurs from 50 to 120 feet (USDI/BLM 2016b, p. 82-83).
Hazard tree management	Hazard trees could be cut and/or removed for operational safety or feasibility, under specific circumstances as described in the RMP (USDI/BLM 2016b, pp. 71, 74-76, 92).
Road renovation, improvement, and hauling	The BLM is proposing road renovation, improvement, and hauling throughout the CFFMP in LSR-Dry, LSR-Moist, RR-Dry, RR-Moist, and DDR-Roads LUAs. The BLM would identify roads available for wet season haul, depending on road surface type and current condition. The BLM would monitor the renovation and improvement of all haul roads to accommodate the safe movement of vehicles and machines in the contractual mechanism used to implement proposed actions (Oregon OSHA 2003 Chapter 437, Division 7, Section F).
Harvest systems	To facilitate forest management treatments, this project would include ground-based, skyline cable, and tethered harvest yarding methods. These harvest operations would utilize landings, skid trails, yarding corridor construction, guy-line anchors, and tail-hold trees in LSR-Dry, LSR-Moist, RR-Dry, and RR-Moist LUAs.
Activity fuels reduction	Following harvest, the BLM would determine the type of treatment needed to reduce the amount or depth of remaining residual activity fuels (e.g., live and dead tree branches and treetops) based on location. In commercial units located adjacent to values such as communities or private property and along access routes and pod lines, activity fuel load would be reduced to result in expected flame lengths less than 4 feet under typical fire weather conditions. Activity fuel loading would be reduced through lop and scatter, hand or machine pile and burn, and/or broadcast burning within 1-2 years following completion of harvest to allow fuels time to cure prior to burning. In commercial units not adjacent to values or access routes, the depth of activity fuels will be reduced to less than 18 inches in height by lop and scatter within one year of harvest.
Hazardous fuels reduction (HFR)	All treatment units could be treated with HFR as needed and as funding becomes available. HFR treatments are designed to treat understory vegetation (less than eight inches DBH) to reduce surface fuels, ladder fuels, and to promote retention tree growth and vigor. Treatments could include slashing, hand piling, hand pile burning, chipping, lop and scatter, and/or understory burning. Tree spacing and species preference would be based on site conditions to effectively reduce ladder fuels. Under-burning would involve the application of fire to understory vegetation and downed woody material when fuel moisture, soil moisture, and weather allows for the fire to be confined to a predetermined area, at a prescribed intensity, to achieve the planned

Action	Description			
	resource objectives. Under-burning would occur within 10 years from the initial or follow-up maintenance fuels reduction treatments.			
No thinning or selection harvest in the RR Inner Zone	No commercial harvest would occur in the Inner Riparian Zone. For fish bearing and perennial streams in both Class I and III sub- watersheds, the Inner Riparian Zone buffer occurs within 120 feet from streams. For intermittent streams in both Class I and III sub- watersheds, the Inner Riparian Zone buffer occurs within 50 feet from the stream. HFR is proposed within the Inner Riparian Zone. These treatments would not occur within 60 feet of perennial and fish-bearing streams (USDI/BLM. 2016b, p. 82 and 86).			
Diameter limits by LUA	LSR-Dry: Retain Douglas-fir and pine trees that are both $\geq$ 36 inches DBH and that the BLM identifies were established prior to 1850 and retain madrone, bigleaf maple, and oak trees $\geq$ 24 inches DBH, except where falling is necessary for safety or operational reasons (USDI/BLM. 2016b, pp. 74).			
	LSR-Moist, RR-Dry, RR-Moist: Retain trees that are both ≥40 inches DBH and that the BLM identifies were established prior to 1850, except where falling is necessary for safety or operational reasons (USDI/BLM. 2016b, pp. 72,76).			
BMPs & PDFs	Best Management Practices (BMPs) are designed to prevent and reduce nonpoint source pollution and maintain water quality at the highest practicable level to meet water quality standards and not to exceed Total Maximum Daily Level (TMDL) loads as set by Oregon Department of Environmental Quality (USDI/BLM 2016b, pp. 163- 164). The BMPs would be monitored and, where necessary, modified to ensure compliance with Oregon Water Quality Standards (USDI/BLM 2016b, p. 165). A recent comprehensive evaluation of scientific literature found that BMPs based on physical principles continue to be effective in reducing non-point source pollution with the passage of time (Cristan et al., 2016).			
	Project Design Features (PDFs) are developed to avoid or reduce the potential for adverse impacts to resources. PDFs include seasonal restrictions on many activities that help minimize erosion and reduce disturbance to wildlife. PDFs also outline protective buffers for sensitive species, mandate the retention of snags, and delineate many measures for protecting streams and wetland features. PDFs are often site-specific applications of principles described in the BMP list. They are standard operating procedures that reflect the Management Objectives and Directions in the RMP. The PDFs would be carried forward and become required specifications in timber harvest contracts. The BLM contract administrators and inspectors monitor operations to ensure that contract specifications are implemented as designed.			

#### 2.3 Alternative B

This alternative would implement commercial thinning and selection harvest treatments in stands with plantation characteristics<sup>7</sup> less than 70 years of age<sup>8</sup>, resulting in 25-35% RD stand average across the treatment area. NR habitat for northern spotted owls would be left un-harvested as skips<sup>9</sup> in the stand. This alternative would not be required to maintain NSO foraging or dispersal-only habitat function. The treatments would retain at least 30% forest canopy cover on average at the stand level. No trees larger than 36 inches in DBH would be cut except as necessary for safety or operational feasibility. This alternative requires a minimum of 10% of stands over 10 acres in size to be variable sized skips and allows for variable sized group selection openings<sup>10</sup> (USDI/BLM 2016b. p. 72) up to 4 acres in size in up to 25% of the stand in stands  $\geq$ 10 acres and up to 2.5 acre in size in stands <10 acres. Alternative B does not include any new road construction.

### 2.4 Alternative C

This alternative includes commercial thinning and selection harvest resulting in 35-45% RD. This alternative would require maintaining NSO NR, foraging, and dispersal-only habitat function. This alternative would retain at least 40% canopy cover on average at the stand level in stands that are not considered nesting, roosting, and foraging (NRF), and at least 60% canopy cover in NRF stands. Conifer trees larger than 24 inches in DBH and hardwoods greater than 16 inches in DBH would not be cut, except as necessary for safety or operational reasons. Skips would vary in size and comprise at least 20% of the stand. Variable sized group selection openings and modified openings (legacy tree culturing including thinning around large or old trees) would be up to 1 acre in size in up to 10% of the stand in stands less than 10 acres. Alternative C does not include any new road construction.

### 2.5 Alternative D

This alternative proposes commercial thinning and selection harvest resulting in a RD of 20-45% depending on prescription type (Table 2-2). Unit prescriptions vary by moist and dry forest types, abiotic factors (such slope and aspect), current NSO habitat conditions, and the potential for development into NR habitat. Within a quarter mile of communities at risk, this alternative would use commercial treatments to thin stands to 35-40% RD. Further than a quarter mile from communities at risk, commercial treatments would vary to create a range of open and closed conditions, depending on topography and potential vegetation type. Treatments would also vary for NSO NR habitat and NSO high Relative Habitat Suitability (RHS) areas. Treatments in NSO NR habitat would maintain functioning habitat conditions. This alternative would not be required to maintain NSO foraging or dispersal-only habitat function. The treatments would retain forest canopy conditions of a minimum of 30% on average at the stand level in stands that are not considered NR, and at least 60% canopy cover in NR stands. No

<sup>&</sup>lt;sup>7</sup> Stands with plantation characteristics – forest stands of even age class and relatively simple structure, generally lacking diverse branching structure and canopy layering. Stands with plantation characteristics may still have remnant dominant trees, hardwoods, patches of low density, and other heterogeneous attributes throughout the stand due to varying past management actions and site conditions.

<sup>&</sup>lt;sup>8</sup> Stand ages are determined using the most current data and have been rounded to the nearest decade. Older trees are often present in younger stands, but the stand age is based on the average age of the trees that form the predominant canopy layer.

<sup>&</sup>lt;sup>9</sup> Skips – Portions of a stand left un-harvested after a commercial thinning or selection harvest. Skips are used to increase variability of forest conditions in the post-harvest stand, and to create desirable ecological conditions (USDI BLM 2016b, p. 313).

<sup>&</sup>lt;sup>10</sup> Group selection openings – are defined as areas with  $\leq 2$  live trees  $\geq 7$ " DBH per acre. Roads, landings, yarding corridors, and skid trails do not count as group selection openings (USDI BLM 2016b, p. 72). The resulting forest condition, which exists after group selection harvesting is employed. An area in the stand with a low level of canopy cover and relatively few remaining overstory trees. Synonymous with 'gap' (USDI BLM 2016b, p. 305).

trees larger than 36 inches in DBH in LSR-Dry and no trees larger than 40 inches in DBH in LSR-Moist, RR-Dry, and RR-Moist would be cut except as necessary for safety or operational feasibility. Alternative D includes group selection openings with skips and gaps (including legacy tree culturing). Variable sized skips would be at least 10% of the stand. Variable sized group selection openings and modified openings (legacy tree culturing) would be up to 2 acres in size in up to 25% of the stand. This alternative includes road construction and requires a minimum of long-term closure/decommissioning of newly constructed roads.

<b>RD</b> Category Description				RD Target Range	Stand Conditions
Near-term NSO				Maintain NR(F)	Closed
Long-term NSO			≥30%	Intermediate	
Fuels Emphasis			35-40%		
Ecosystem Resilience	Ecosystem Resilience				
Potential Vegetation Type (PVT)	Seral	Insolat	tion	RD Target Range	Stand Conditions
Douglas-fir - Dry	PIPO	Warm			
Jeffrey pine	PIJE	Warm			
Tanoak - Douglas-fir - Dry	PSME	Warm			
Tanoak - Douglas-fir - Moist	PSME	Warm		20-30%	Onen
Western hemlock - Hyperdry	PSME	Warm		20-3070	Open
Western hemlock - Moist	PSME	Warm			
White fir - Intermediate	PSME	Warm			
Douglas-fir - Dry	PIPO	Cool			
Douglas-fir - Moist	PIPO	Warm			
Jeffrey pine	PIJE	Cool		30-40%	Intermediate
Tanoak - Douglas-fir - Dry	PSME	Cool			
Tanoak - Douglas-fir - Moist	PSME	Cool			
Western hemlock - Hyperdry	PSME	Cool			
Western hemlock - Moist	PSME	Cool			
White fir - Cool	ABMAS	Warm			
White fir - Intermediate	PSME	Cool			
Douglas-fir - Moist	PIPO	Cool			
Western hemlock - Intermediate	PSME	Cool		40-45%	Closed
Western hemlock - Intermediate	PSME	Warm	0		
White fir - Cool	ABMAS	Cool			

Table 2-2. Relative density (RD) table with RD category description and corresponding RD target range

### 2.6 Comparison of Alternatives

### Table 2-3. Comparison of Alternatives

ACTION	ALTERNATIVES				
	Alt. A	Alternative B	Alternative C	Alternative D	
Commercial Thinning & Selection Harvest	N/A	Thin to 25-35% RD in stands with plantation characteristics that are ≤70 years old. Treat NR habitat as skips. Maintain minimum average stand canopy cover of ≥ 30%. Diameter limit: retain trees larger > 36 inches DBH	Thin stands to 35-45% RD. Maintain all NSO habitat function. In nesting, roosting, foraging (NRF): maintain ≥60% canopy cover. All other locations: maintain ≥ 40% canopy cover. Diameter limit: retain all conifers >24 inches DBH and hardwoods > 16 inches DBH.	Thin stands from 20-45% RD, depending on site conditions (Table 2-2). Maintain all NR NSO habitat function. Elsewhere, use RD table by Prescriptive Theme as follows (Table 2-2): Within ¼ mile of Communities at Risk: Fuels Emphasis, thin stands to 35-40% RD Within high RHS mid-closed (non-NR) habitat: Long- Term NSO. <b>*</b> Everywhere else: Ecosystem Resilience. In NSO NR habitat: maintain ≥60% canopy cover. All other locations: maintain ≥ 30% canopy cover. Diameter limit: retain trees larger > 36 inches DBH in LSR-dry and > 40 inches DBH in LSR-moist and RR LUAs.	
Stand structure (i.e. legacy tree culturing, skips, & gaps) in LSR	N/A	Requires Variable sized Skips: $\geq 10\%$ of stands over 10 acres in size. Allows for Variable sized Group Selection Opening up to 4 acres in size in up to 25% of the stand in stands $\geq 10$ acres and up to 2.5 acre in size in stands <10 acres.	Requires Variable sized skips: >20% of stand. Allows for Variable sized Group Selection Openings and modified openings (legacy tree culturing): up to 1 acre in size (0.5 acres in stands < 10 acres) in up to 10% of stand.	Requires Variable sized Skips: ≥10% of stands over 10 acres in size. Allows for Variable sized Group Selection Opening and modified openings (legacy tree culturing) up to 2 acres in size in up to 25% of the stand.	

ACTION	ALTERNATIVES				
	Alt. A	Alternative B	Alternative C	Alternative D	
Road Construction	N/A	No new road construction.	No new road construction.	Allows new road construction. Decommission newly constructed roads after use (minimum long-term closure/decommission).	

\* High RHS i.e., bottoms and cool mid-slopes

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