

Chapter 1

Purpose and Need

CHAPTER 1 – PURPOSE AND NEED

Introduction

The Forest Service has prepared this draft Environmental Impact Statement (EIS) for a proposal to use prescribed fire, commercial thinning, noncommercial thinning, grapple piling and hand piling in the west half of the Maury Mountains, on the Lookout Mountain Ranger District of the Ochoco National Forest. The purpose of the West Maurys Fuels and Vegetation Management Project is to maintain and increase current and future late and old structure forest habitat, increase forested stands resiliency to insect and disease attack, maintain and increase the acreage of low intensity fire conditions, reduce current fuel loadings to approximate historic levels, and decrease the potential for high-intensity wildfire. This draft EIS addresses the proposed action (Alternative 2) and three alternatives (including the No Action Alternative); the key issues associated with the proposal; and the direct, indirect, and cumulative effects of implementation of any of the alternatives.

Project Location

The West Maurys Project area is located 20 miles southeast of Prineville, Oregon, and covers approximately 37,000 acres. It lies within portions of Township 17 South, Range 18 East, Sections 21, 22, 23, 24, 25, 26, 27, 28, 29, 33, 34, 35 and 36; Township 17 South, Range 19 East, Sections 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, and 36; Township 17 South, Range 20 East, Sections 19, 20, 29, 30, 31 and 32; Township 18 South, Range 18 East, Section 1, 2, 3, 4, 9, 10, 11, 12, 14, and 15; Township 18 South, Range 19 East, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 18; Township 18 South, Range 20 East, 5, 6 and 7; Willamette Meridian. Map 1 Vicinity Map displays the project location.

The West Maurys project area falls within portions of the Bear Creek, Camp Creek and Upper Crooked River Watersheds, which are part of the Upper Crooked River sub-basin and Deschutes River basin. Elevations range from 6,266 feet above sea level on Drake Butte (on the eastern edge of the project area) to 4,026 feet where Sherwood Creek crosses the National Forest boundary.

There are several tracts of private land (approximately 320 acres total) within the project area boundary.

Document Organization

The Forest Service has prepared this draft EIS in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This draft EIS discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives. The document is organized into four chapters:

Chapter 1. Purpose and Need for Action: The chapter includes information on the history of the project proposal, the purpose of and need for the project, and the agency's proposal for achieving that purpose and need. This section details how the Forest Service informed the public of the proposal and includes how the public responded. This section also described the key issues utilized to formulate alternatives.

Chapter 2. Alternatives, including the Proposed Action: This chapter provides a more detailed description of the agency's proposed action as well as alternative methods for achieving the stated purpose. These alternatives were developed based on key issues raised by the public and other agencies. This discussion also includes mitigation measures. Finally, this section provides a summary table of the environmental consequences associated with each alternative.

Chapter 3. Affected Environment and Environmental Consequences: This chapter describes the affected environment, the current conditions of the resources involved, and the environmental effects of implementing the proposed action and other alternatives. This analysis is organized by key issues and environmental topics.

Chapter 4. Consultation and Coordination: This chapter provides a list of preparers and agencies consulted during the development of the environmental impact statement. This section also provides a glossary of terms, literature cited, and index.

Maps: Maps provide spatial information relative to alternative treatments and resource information. All maps are located at the end of Chapter 3 for ease in locating the appropriate map referenced.

Appendices: The appendices provide more detailed information to support the analyses presented in the environmental impact statement. They are located after Chapter 4.

Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record located at the Lookout Mountain Ranger District, Ochoco National Forest.

Background

In 2001, the Ochoco National Forest conducted an analysis of the Maury Mountains, which included an extensive look at forest fuels and vegetation conditions, the relationships between those conditions and changes in fire hazard, insect and disease dynamics, wildlife habitat, and riparian health. Vegetation patterns and occurrence within the analysis area are different now than what existed historically. Changes to the health, structure, composition, distribution, and function of forest stands have altered the natural processes that maintain a viable ecosystem. This has affected vegetative resiliency, wildlife habitat diversity and amount, water quality, visual quality, and fuel loadings and fire behavior.

On July 2, 2002, an initial proposed action and comment letter was sent to the project mailing list. This proposal included reducing fuel loadings only through the use of prescribed fire, mechanical fuels treatments, and noncommercial thinning. Based on the comments received and management recommendations from the Maury Mountains Watershed Analysis, a second proposed action was developed.

On February 6, 2003, a second letter addressing this adjusted proposed action and comment letter was sent to the project mailing list. This new proposed action included the use of prescribed fire and mechanical fuels treatments with noncommercial thinning as in the July 2, 2002, proposed action. It also added the use of commercial thinning to achieve the objectives of altering stand structures to more closely resemble historic conditions and increasing forested stands' health and resiliency to insect and disease attack and to crown fire.

From the comments received during scoping, it was decided to present the analysis of the proposed project in an Environmental Impact Statement (EIS). The Notice of Intent to prepare an EIS was published in the Federal Register on January 16, 2004.

Planning Framework

Current Laws

Development of this EIS follows implementing regulations of the National Forest Management Act (NFMA); Title 36, Code of Federal Regulations, Part 219 (36 CFR 219); Council of Environmental Quality, Title 40; CFR, Parts 1500-1508, National Environmental Policy Act (NEPA).

Many federal and state laws, including the Forest and Rangeland Renewable Resources Act (RPA), Endangered Species Act, Clean Air Act, and Clean Water Act also guide this analysis.

Forest Plan Direction

Ochoco National Forest Land and Resource Management Plan (LRMP)

Guidance for management activities is provided by the Ochoco National Forest Land and Resource Management Plan of 1991 (LRMP) as amended. The LRMP establishes goals, objectives, standards, and guidelines for each specific management area of the National Forest, as well as Forest-wide standards and guidelines. Management Areas and associated standards and guidelines are described in Chapter 4 of the LRMP. This project is tiered to the Final Environmental Impact Statement (FEIS) for the Ochoco National Forest LRMP, as amended by the Revised Continuation of Interim Management Direction Establishing Riparian, Ecosystem, and Wildlife Standards for Timber Sales (Eastside Screens) and the Inland Native Fish Strategy (INFISH).

Management Area Goals and Objectives and Standards and Guidelines (See [Map 2 Management Areas](#) for locations of Management Area allocations)

MA-F6 Old Growth – There are approximately 1,370 acres (4%) of the National Forest System (NFS) lands in the project area within 4 separate sites. Habitat will be provided for wildlife species dependent upon old-growth stands with pileated woodpecker as the major indicator species. The desired conditions for these areas are stands of mixed conifer and ponderosa pine with multi-layered canopy with shaded conditions and a large number of snags. Prescribed fire may be evident if natural fuels accumulate to dangerous levels, threatening the existence of the old growth stand, or where vegetation manipulation is needed to maintain stand structure and species composition (LRMP p. 4-58). Under standards and guidelines for the practice of Habitat Management, vegetative management will not be allowed, until further research is available on the needs of the dependent species (LRMP p. 4-251). Under the standards and guidelines for the practice of Treatment of Natural Fuels, prescribed fire will normally not be applied in old growth, but where it can be supported by research, directives, and desired future condition, it might be utilized following appropriate analysis and NFMA/NEPA procedures (LRMP p. 4-136).

Current conditions - In two of the old growth areas (Friday Creek (OG-D3-09) and Florida Creek (OG-D3-12)), existing high densities of trees in the smaller diameters have created conditions where the mortality in larger trees is threatened because of increased competition among trees. Additionally, surface fuel loadings and ladder fuels create conditions for high fire hazard if a wildfire occurred within or adjacent to the area. During hot, dry, and windy conditions, wildfire would be difficult to stop and could result in mortality of most, if not all, larger trees with a subsequent loss of old growth habitat.

MA-F13 Developed Recreation – There are approximately 371 acres (1%) of the NFS lands in the Project Area in Antelope Reservoir Campground. The objective of this area is to provide safe, healthful, and aesthetic facilities for people to utilize while they are pursuing a variety of recreational experiences within a relatively natural outdoor setting (LRMP p. 4-71).

Current Conditions - The current stand is uneven-aged with scattered overstory ponderosa pine with a mixture of ponderosa pine and western juniper of varying size and age in the understory. Stocking density of both pine and juniper is high considering the low site quality associated with these plant communities. Competition related stress is apparent in shortened needles, lower crown ratios, and very low growth rates. Bark beetles including western pine beetle, mountain pine beetle, and red turpentine beetle are active in the area with recent mortality of the large pine component.

MA-F14 Dispersed Recreation – This management area applies to small dispersed sites (less than 5 acres) located throughout the project area on NFS lands and are to provide and maintain a near-natural setting for people to utilize while pursuing outdoor recreation experiences (LRMP p. 4-72).

Current Condition – There are 54 individual sites in the project area. These dispersed sites generally occur along roads, and many are concentrated near riparian areas and stream courses.

MA-F18 Hammer Creek Wildlife/Recreation Area – There are approximately 2,548 acres (7%) of the NFS lands in the project area. The objective of this area is to provide and maintain habitat diversity for a variety of wildlife species where open road density is minimal. In addition, the area also provides a scenic, semi-natural or natural-appearing setting for nonmotorized recreational opportunities. Riparian areas will be shady and comprise mixed trees and shrubs. Access roads to trailheads will be open. All other roads will be closed to motorized use and rehabilitated after management projects are complete (LRMP p. 4-80).

Current Condition – Existing forested stands are primarily composed of an overstory of large ponderosa pine with an understory of Douglas-fir trees. There are also open vegetation conditions dominated by juniper, mountain mahogany and other upland shrubs. On the periphery of the management area, vegetation management occurred in the 1970s, including overstory removal of many of the large diameter trees.

MA-F21 General Forest Winter Range – There are approximately 6,463 acres (17%) of the NFS lands in the project area. The objective of this area is to manage for timber production with

management activities designed and implemented to recognize big game habitat needs (LRMP p. 4-84).

Current Condition – This area currently has more forest cover than was found historically due to juniper and pine expansion into the shrub and grassland communities. Forage production is also limited by the density of young conifers.

MA-F22 General Forest – There are approximately 23,560 acres (62%) of the NFS lands in the project area. The objective of this area is to produce timber and forage while meeting the Forest-wide standards and guidelines for all resources. In ponderosa pine stands, management will emphasize production of high value (quality) timber (LRMP p. 4-86).

Current Condition – Many stands are currently over stocked, especially in the understory leading to conditions that do not favor long-term vigor and resiliency of desired large diameter trees.

MA-F26 Visual Management Corridors – There are approximately 3,221 acres (8%) of NFS lands in the project area. The objective for this area is to maintain the natural appearing character of the forest along major travel routes where management activities are usually not evident or are visually subordinate to the surrounding landscape. Forest Road 16 and 17 have been allocated as visual management corridors with a visual quality objective of partial retention. The outer boundary of this management area will generally not exceed 600 feet on either side of the road. Vegetation will appear manipulated and reflect a forest setting where stands of trees exist in multiple age classes in both uneven- and even-aged conditions, set in a more subdued background of rock outcrops, aspen clones, and native grass communities. (LRMP p. 4-94).

Current Conditions - All local plant association groups are represented within the visual management corridors. Mixed conifer sites are found on the northern portions of the corridors where these roads are located next to streams. Douglas-fir, ponderosa pine, and western juniper sites form a mosaic in the remaining portions of the corridors. A variety of species compositions and structures are found. Many stands have high tree densities in the understory with increasing competition stress occurring in the large overstory trees. Additionally, conifer encroachment is occurring within aspen stands.

MA-F12 Eagle Roosting Areas - There are approximately 124 acres (less than 1%) of NFS lands in the project area. The objective of this area is to provide winter roosting habitat for migrating bald eagles from December through April. The area will have uneven-aged stands which contain large trees at least 22 inches in diameter and a few trees which are 36-40 inches in diameter. Roost trees are generally 22 inches in diameter and larger with an open structure allowing eagles to land easily. Roost trees in use will be preserved (LRMP p. 4-70).

Current Conditions - Forest cover has expanded and become denser compared to historic conditions on most of the eagle roosting areas. Multiple canopies have developed beneath the large overstory trees located in the draws increasing stand density to levels that impair vigor and health of the large trees. These trees are at increasingly higher risk of mortality due to competition related stress, bark beetles, dwarf mistletoe, and high-intensity fire.

MA-F15 Riparian Areas – There are approximately 3,961 acres (10%) of NFS lands in the project area. The objective of this area is to provide for streamside vegetation and habitat to maintain or improve water quality. The Inland Native Fish Strategy (INFISH) amended the LRMP and provides direction to maintain options by reducing the risk of loss of populations and reducing negative impacts to aquatic habitat. INFISH identified Riparian Habitat Conservation Areas (RHCAs) where the focus of management would be to meet riparian management objectives. RRHCAs on fish-bearing streams extend 300 feet from the edge of the stream’s active channel. RHCAs on non-fish bearing perennial streams extend 150 feet from the edge of the stream’s active channel. On ponds, reservoirs, and wetlands greater than 1 acre, the RHCAs extend 150 feet from the edge of the wetland or max pool elevation. RHCAs extend 50 feet from the edge of intermittent streams, wetlands less than 1 acre, and landslides.

Current Conditions - Current stocking averages 360 trees per acre and ranges to more than 2,000 trees per acre. Stocking levels to maintain healthy stand conditions within RHCAs should be less than 200 trees

per acre. At higher stocking levels, existing large trees are at risk of competition-related mortality factors. Broadleaf shrubs, trees, especially aspen, and ground vegetation are shaded out of the stand.

Forest-wide Standards and Guidelines

Resource – Forest Health

Maintenance of a healthy forest resource is important as it relates to the ability of the forest stands to meet the objectives of each management area. A major factor in the overall health of the forest is the vigor of the trees and other forest vegetation. If the majority of the trees in a given area have reached or exceeded their pathological age, or have densities that result in stagnated stands, they become vulnerable to attack by insects and disease (LRMP p. 4-151).

MA-F6 Old Growth

Generally, insects and diseases will not be controlled or suppressed. Exceptions, may occur when treatment is necessary to prevent unacceptable damage to resources on adjacent lands or to the old growth resource. Acceptable treatments are prescribed burning based on site-specific environmental analysis.

MA-F18 Hammer Creek Wildlife / Recreation Area

Generally, treatment of insect and disease conditions will not be a high priority, except when the ability of the forest resource to meet the area objectives is threatened. Treatments to prevent or control bark beetles and root diseases may be emphasized to meet visual objectives.

MA-F12 Eagle Roosting Areas

Meet the area objectives for providing roosting habitat for bald eagles. Emphasize reducing the risk of bark beetle infestation, through stocking level control, to maintain large diameter trees.

MA-F13 Developed Recreation

Prevent or suppress insect and disease outbreaks. Emphasize detection and prevention of bark beetle and root disease occurrences as these relate to providing a safe environment.

MA-F14 Dispersed Sites

Prevent or suppress insect and disease outbreaks. Emphasize detection and prevention of bark beetle and root disease occurrences as these relate to providing a safe environment.

MA-F21 General Forest Winter Range

Utilize all methods to prevent or suppress insect and disease outbreaks.

MA-F22 General Forest

Emphasis will be on the prevention of stand and fuels conditions that will provide favorable habitat conditions for pests to increase above endemic levels.

MA-F26 Visual Management Corridors

Treatment of bark beetles and root diseases are emphasized with strategies to improve aesthetics and safety also considered.

Eastside Screens

The Revised Continuation of Interim Management Direction Establishing Riparian, Ecosystem, and Wildlife Standards for Timber Sales amended the Ochoco National Forest Land and Resource Management Plan in 1995. The direction only applies to the design and preparation of timber sales on eastside Forests and is often referred to as “Regional Forester’s Forest Plan Amendment #2” or as the “Eastside Screens.” The Eastside Screens contain guidelines for management of timber sales in late and old structured stands relative to the historical range of variability (ecosystem screen), wildlife corridors, snags, coarse woody debris, and goshawk management. All other noncommercial vegetative management treatments are exempt from the Eastside Screens. The riparian management guidelines were amended by the Inland Native Fish Strategy (1995). On June 11, 2003, the Regional Forester issued supplemental guidance for implementing Eastside Screens. The Regional Forester encouraged the consideration of Land and Resource Management Plan amendments in cases where the proposed treatments would move landscape conditions towards historic range of variability and provide single story late and old structure in the drier ponderosa pine and larch stands.

Inland Native Fish Strategy (INFISH)

The Inland Native Fish Strategy was intended to be interim direction to protect habitat and populations of resident native fish and to provide for options for management. The INFISH delineated RHCAs where riparian-dependent resources receive primary emphasis. These RHCAs include traditional riparian corridors, wetlands, intermittent streams, and other areas that help maintain the integrity of aquatic ecosystems. These areas will be managed to maintain or restore water quality, stream channel integrity, channel processes, sediment regimes, instream flows, diversity and productivity of plant communities in riparian zones, and riparian and aquatic habitats to foster unique genetic fish stocks that evolved within the specific region. RHCAs run through and are overlaid on other allocations. RHCAs are shown on [Map 13 RHCA and Springs](#).

Local Assessments

Maury Mountains Watershed Analysis

In 2001, the Lookout Mountain Ranger District completed the Maurys Watershed Analysis. The West Maurys Fuels and Vegetation Management project falls within the west half of the watershed analysis area. The analysis compares existing resource conditions with the desired future conditions. Additionally, the watershed analysis provides recommendations for treatments to meet desired conditions.

West Maurys Roads Analysis

According to the Forest Service Road Management Policy published January 12, 2001, all NEPA decisions signed after January 12, 2002, which involve certain changes in the transportation system, must be informed by a roads analysis. A project-level roads analysis was completed for the West Maurys Fuels and Vegetation Management Project area. The roads analysis is an interdisciplinary process that provides the decision-maker with information on the needs, opportunities, and priorities for the road system. The report supports the need for an increased transportation system for accessing portions of the project area and identifies roads for closure and decommissioning which are no longer needed.

Purpose and Need for Action

The purpose and need is derived from evaluating current planning direction identified in LRMP Management Area goals and objectives and Forest-wide standards and guidelines which identify desired future conditions and comparing them against current conditions in the environment. This includes the desire to manage vegetative conditions to reduce stand densities and fuel loadings that prevent favorable conditions for insect and disease attack and reduce wildfire damage to the timber resource. In addition, the Maury Mountains Watershed Analysis and the West Maurys Roads Analysis identified vegetation and road current conditions, desired conditions, and opportunities to move conditions towards desired future conditions. Because of the emphasis in reducing the risk of stand loss due to overly dense stands coupled with the increased risk of stand replacement fire events, two areas have been identified as needing corrective measures; vegetation and fuels. An additional purpose and need is to provide wood products and opportunities for jobs as a byproduct of vegetation management in accordance with forest-wide standards and guidelines and management area goals and objectives in the Ochoco LRMP. The following describes in more detail the elements needing change.

Vegetation

- 1. There is a need to move the seral and structural conditions of forest stands towards their historic ranges of variability, maintaining and increasing broadleaf and shrub communities, maintaining and increasing late and old structured stands, and increasing the resistance of forest stands to insects, disease, and high-intensity wildfire.**

The following is a specific description of the elements of the vegetation purpose and need.

- Move seral structural conditions towards the historic range of variability.
- Reduce excess stocking in stands dominated by trees less than 21 inches in diameter to promote growth and development of large trees.
- Restore historic acreages of trees dominated by large trees.
- Reduce the levels of mortality of existing limited large diameter trees within current late and old structured stands by thinning understory trees.
- Maintain and restore broadleaf and shrub communities where they existed historically.
- Reduce insect and disease susceptibility and mortality in forested stands by thinning.
- Manage stocking within RHCA's to increase the number of large trees and shrub communities to promote long-term shading and channel stability.

According to the Maury Mountains Watershed Analysis, forested stands that occurred historically were more resilient to insects, disease, and wildfire on a landscape basis. Stands on drier sites tended to develop in clumps or groups of same age trees creating a mosaic of different age classes and canopy layers. The dominant disturbance factor was frequent, low-intensity fire that curtailed the survival of the majority of seedlings and saplings. Currently, more of the project area is covered by dense stands of smaller trees than was present historically. Stands dominated by large trees are fewer than were present historically. Species composition of forest stands has shifted from early seral (fire-resistant ponderosa pine and western larch) to late seral (grand fir and Douglas-fir). Upland slopes once covered by shrub and grass communities have converted to western juniper.

The vegetative conditions in the West Maurys project area was characterized with the Viable Ecosystems Model (Simpson et al. 1994) and used to compare seral structural conditions to the historic range of variability (HRV). The model focuses on relationships between combinations of vegetation structure and species composition, and habitat requirements for animals, insects, and plants. The Viable Ecosystems model stratifies the environmental gradient using plant associations. Excess stages include stands dominated by trees from 5 to 20.9 inches in diameter, often with dense stocking in the understory. These stands need to have the smaller diameter trees removed to reduce competition between trees and to increase the vigor of the existing large diameter trees. This will move these stages towards the development of deficient stages dominated by large trees. The historic amount of area dominated by large trees is estimated to have ranged from 10,500 acres to 19,600 acres (amounts do not include western juniper plant associations). At present, there are approximately 800 acres dominated by late and old structure. Treatment of existing acres dominated by large trees is needed to reduce competition among trees to increase the health and vigor of remaining trees, changing multi-canopied (multi-strata) stands to single canopied (single-strata) stands. This would lead to maintaining these stands longer into the future.

Thinning Needed to Reduce Density Near Large Trees



Treatment in ponderosa pine communities with in-growth of fir would reduce the amount of shade-tolerant species to move stands towards early-seral species conditions.

A major factor of the overall health of the forest is the vigor of the trees and other forest vegetation. If the majority of the trees in a given area have densities that result in stagnated stands, they become vulnerable to insects and disease. Competition from intermediate and suppressed trees in

ponderosa pine stands reduces growth of dominant and codominant trees (Cochran 1993). This is important given the existing low amount of large trees and the time and growth needed to develop large structure.

While many vegetative conditions occur within RHCAs at this time, many have high stocking levels with multiple canopies and/or aspen or other deciduous vegetation at risk of replacement by conifers. Current stocking averages 360 trees per acre and ranges to more than 2,000 trees per acre. Stocking levels to maintain healthy stand conditions within RHCAs should be less than 200 trees per acre. At higher stocking levels, existing large trees are at risk of competition-related mortality factors. Broadleaf shrubs, trees, and ground vegetation are shaded out of the stand and there is a need to restore riparian plant community diversity. This would result in maintaining vegetation, shade, and large wood to support riparian management objectives. See Map 18 Plant Association Groups and LOS for locations of the different plant associations and late and old structure within those plant associations.

Fuels

- 2. There is a need to move the distribution of fire regimes towards their historic ranges of variability, decreasing the amount of high-intensity fire conditions and increasing the amount of low-intensity fire conditions, and a need to maintain low-intensity fire conditions where they already exist.**

The following is a specific description of the elements of the fuels purpose and need.

- Move the distribution of fire regimes towards the historic range of variability.
- Decrease the area with conditions susceptible to high-intensity fire.
- Increase the area meeting conditions for low-intensity fire.
- Maintain existing areas with low-intensity fire conditions.
- Provide fuel breaks around stands and areas maintained with high fire intensity conditions.
- Provide fuel breaks to disconnect continuous areas of high fuel loadings.
- Reduction of fire risk to wood in RHCAs.

Historically, the dominant fire regime in the Maury Mountains was a regime of low-intensity fire with an average fire return interval of less than 25 years. This was typical of the low-elevation, semi-arid, ponderosa pine-dominated forests of the American west. The frequent return interval of fire kept forest stands open and surface fuels light. In the absence of frequent, low-intensity fires, forested stands have developed multi-canopy conditions, increased stocking levels, increased ladder fuels, increased surface fuels, and have resulted in an increased abundance of fire-intolerant and shade-tolerant species. These changes in historic conditions have resulted in more forested stands being susceptible to high-intensity wildfire, increasing the potential for an unwanted loss of trees, soil productivity, wildlife habitat, property and other forest resources. High-intensity fire conditions also limit the suppression options available to firefighters, often forcing firefighters to employ suppression tactics with increased costs and lower success rates.

The desired condition for low-intensity fire regime ranges from approximately 14,791 to 27,655 acres with the existing

Smaller diameter ladder fuels



condition at approximately 8,400 acres. There is a need to increase the amount of acres with the condition of low-intensity fire regimes by reducing the surface and standing fuel loadings in fire adapted plant associations such as ponderosa pine. The desired condition for mixed-intensity fire regimes ranges from approximately 3,900 to 13,850 acres with the existing condition at approximately 14,105 acres. There is a need to reduce the amount of mixed intensity fire regimes by reducing surface and ladder fuels. The desired condition for high intensity fire regimes ranges from approximately 1,004 acres to 10,500 acres with the existing condition at approximately 4,200 acres. While high-intensity fire regimes are within the historical range of variability, there still is a need to reduce the risk across the landscape.

Also, forested stands that currently have low-intensity fire conditions require periodic treatment to maintain those conditions. Without treatment, surface fuels accumulate, multiple canopy layers develop, fire-intolerant species become more abundant, and the potential for high-intensity fires increases.

Fire regimes in RHCAs are currently not at historic levels and contain higher fuel loadings that could lead to unintended high intensity fire within RHCAs. There is a need to reduce fuel loadings to a level and distribution to allow fire to function as a natural disturbance at historic levels while maintaining vegetation, shade, and large wood to support riparian management objectives. See [Map 14 Fire Regimes – Current Condition](#) for the locations of different fire regimes within the project area.

It is not the purpose of this project to reduce the possibility of wildfire occurring in the West Maurys (this is not possible). It is the purpose of this project to decrease the possibility of high-intensity wildfire occurring across the West Maurys landscape.

Forest wood products and seasonal jobs

- 3. There is a need to provide wood products to contribute to the health of the local and regional economies (Ochoco National Forest LRMP, pp. 4-31 to 4-32) consistent with Management Area and Forest-wide standards and guidelines and to provide opportunities for employment and income.**

The Multiple-Use Sustained Yield Act as amended by the NFMA directs the Forest Service to develop and administer the renewable surface resources of the National Forests for multiple use and sustained yield of products and services. Through the implementation of the Ochoco LRMP, management area allocations have been identified where the primary emphasis is to produce wood products for the local and regional economies. These management area allocations within the project area are General Forest (23,560 acres) and General Forest Winter Range (6,463 acres) and constitute approximately 30,000 acres of the 37,000 acre project area. In addition, other management area allocations, when meeting applicable standards and guidelines, can also produce wood products as a secondary result to meeting other objectives such as wildlife or scenic resources. Seasonal jobs associated with timber harvest would be supported through the sale of merchantable material consistent with General Forest and General Forest Winter Range goals and objectives. Noncommercial vegetation management needs can also produce the need for service contracts which produce seasonal jobs in the service contract sector.

Proposed Action

The West Maurys Fuels and Vegetation Management project proposes to manipulate vegetation to increase the amount of late and old structured stands by removing understory smaller diameter trees, reduce stand densities in overstocked stands to increase the residual stands' resiliency to insect and diseases, and to focus treatments with the objective to move conditions towards earlier seral or fire climax species such as ponderosa pine. Stands with high components of small-diameter, shade-tolerant species or ponderosa pine that would not normally be found in fire-adapted stands would receive high priority for treatment and would remove a portion of the smaller diameter trees. In addition, vegetation management would occur within RHCAs to promote the growth and development of desired deciduous vegetation to enhance shading and riparian dependent species habitat. Fuels treatments would be done to reduce hazardous conditions that if a wildfire occurred, would cause the unwanted loss of trees, soils, habitat, property and other forest resources. Fuels treatments would be targeted in areas where low-intensity fire regimes would historically

be found and in areas where the amount of fuel loadings present a hazard to residual stands. A byproduct of the proposed vegetation management activities would be timber sale(s) for larger diameter thinned trees and would support jobs associated with timber sale contracts. Seasonal jobs would also be supported by service contracts for the treatment of smaller diameter thinning and fuels treatment operations. The West Maurys project would utilize a variety of tools to accomplish the tree density, species composition, and fuels management objectives and are described as follows:

Commercial Thinning: Approximately 7,763 acres of commercial thinning is proposed to allow increased growth of the residual trees, enhance forest health by removing trees damaged by insect or disease, and recover potential mortality resulting from inter-tree competition. Thinning would increase or maintain the dominance of ponderosa pine and western larch by removing shade-tolerant species. The trees to be removed are large enough to have economic value and would be sold to a timber purchaser. Trees larger than 21 inches in diameter would not be cut, either live or dead unless the tree is a safety hazard to operations or needed to be removed for road construction activities. Thinning would reduce the risk of mortality for the remaining large trees and speed the development of additional large trees, increasing the rate of development of late and old structured conditions. In a few selected cases, commercial thinning would occur within some RHCAs in order to maintain or enhance the growth of riparian hardwood species by reducing competition from conifers. In addition, thinning would remove smaller diameter trees under late and old structure trees essentially removing the ladder fuels and providing greater protection in the event of a wildfire. There are three types of commercial thinning proposed with this project: individual tree selection, commercial thinning and improvement cutting.

Prescribed Fire: Approximately 13,974 acres of prescribed fire is proposed to reduce accumulations of forest fuels. This would include underburning to reduce fuels from commercial and noncommercial thinning (activity fuels), and underburning unthinned stands to reduce naturally occurring fuels (natural fuels). This would reduce the potential intensity, suppression cost, and resistance to control of future wildfires. Prescribed fire would also be used to reduce seedling and sapling density; regenerate grass, forbs, and shrubs; and reduce the encroachment of grand fir, Douglas-fir, and western juniper into pine stands. Additionally, prescribed fire (thinning with fire) would be utilized in juniper stands to reduce the numbers of young junipers and restore the grass, forb and shrub communities. The use of prescribed fire



would also contribute to the return of more natural fire regimes found historically in the project area. Prescribed fire would occur within some RHCAs in order to reduce fuel loadings to approximate historic levels and to maintain or enhance the growth of riparian hardwood species by reducing competition from conifers. Hand line or natural features would be used to keep prescribed fire within treatment units. No heavy equipment will be used to construct firelines. Prescribed burning would only be initiated when environmental factors are conducive to meeting burning and resource management objectives.

Noncommercial Thinning: Approximately 11,728 acres of noncommercial thinning is proposed to reduce the density of understory trees generally less than 9 inches in diameter, in order to increase the growth and vigor of the remaining trees, reduce the risk of insects and disease, and lower the risk of high-intensity crown fire. Thinning would maintain or increase the dominance of ponderosa pine and western larch. Thinning would occur within selected RHCAs in order to maintain or enhance the growth of riparian hardwood species by reducing competition from conifers. Part of this treatment includes juniper thinning. Approximately 2,688 of the 11,728 acres of this thinning would be in juniper stands. This prescription has been prescribed for dry ponderosa pine, western juniper woodland and steppe sites to reduce the amount of post-1900 juniper

stocking. All younger trees would be cut and larger diameter junipers would be retained. This usually results in a return to the grass and shrub stage or maintains the large structural component but in more open stages. Juniper cutting increases the growth and development of grass and shrub cover.

Thinning with Fire, timber stand improvement : Approximately 2,114 acres of thinning with fire is proposed to reduce seedling and sapling conifer density. This is identified for stands with a large component of seedlings and saplings under a canopy of much larger trees. The purpose is to reduce stocking of seedlings and saplings to maintain earlier seral species and reduce future density problems. This prescription works best when mid-story canopies are open with few ladder fuels present in the stand.

Aspen Treatments: Silvicultural prescriptions would be adjusted where aspen occurs to enhance aspen maintenance and regeneration. Quaking aspen provide unique and special habitats. The project area contains numerous small aspen stands usually associated with riparian areas but sometimes also located in upland areas. Aspen develop as clones where individual trees are short-lived and replaced by sprouts from the root system. Aspen is sensitive to conifer encroachment; high-stand density; over-browsing by livestock, deer, and elk; and reduced water tables. Treating these stands would move conditions closer to historic characteristics normally found in aspen stands. In general, conifers younger than the mature aspen (100 years) would be cut within 50 feet of any aspen, including sprouts. Upland thinning treatments would benefit aspen by increasing moisture and light availability. The clones would respond by producing more sprouts and expanding in area which will strengthen overall clone health.

Aspen Stand within a Conifer Stand



Grapple Piling and Hand Piling: Approximately 3,833 acres of grapple piling is proposed to reduce concentrations of heavy surface fuels in commercial and noncommercial thinning units where prescribed fire alone is not feasible. Grapple piling is using a machine such as an excavator, with a grapple on an articulating arm, to pile forest fuels. Grapple pilers would operate on existing skid trails and not create new soil disturbance. Grapple piling allows fuels to be treated immediately after thinning, would reduce the impact of smoke from future underburns, and would reduce the duration of the short-term hazard that exists after thinning. No grapple piling would occur within RHCAs. Hand piling would normally be done in areas where heavy equipment use is not desirable. Hand piling is the use of manual labor to pile slash resulting from management actions. Piles are normally 4-6 feet high and 5-10 feet in diameter. Piles would normally be burned in the fall. Handpiling would occur on approximately 79 acres.

Connected Actions

Road Management Activities: Implementation of the proposed action would require the construction of approximately 6.6 miles of new permanent roads and the construction of 5.2 miles of new temporary roads as supported by the West Maurys Roads Analysis. Approximately 37.4 miles of existing roads would be reconstructed to restore the road for timber hauling. This includes, but is not limited, to spot rocking, brush clearing within the road prism, and erosion control work. Decommissioning of existing roads within or accessing treatment units would be done on approximately 10.2 miles of roads. Decommissioning is defined as roads that are hydrologically stabilized, blocked from motorized traffic, and removed from the road system. These roads are not needed for future use and are no longer managed or maintained for motorized use. The road management needs in the project area were identified in the West Maurys Roads Analysis. By removing these roads from the system, they are meant to reduce the impacts of specified and

temporary road construction and associated potential increases in sedimentation from roads. In addition, road densities would be reduced through decommissioning to move towards meeting LRMP standards and guidelines. All roads identified for decommissioning access units proposed for treatments and are connected to the vegetative treatment actions. Temporary roads are short spurs that are within individual harvest units and are decommissioned at the completion of activities within the unit. Newly constructed temporary roads would not normally cross stream channels or other sensitive features. Newly constructed permanent roads would be used to access treatment units and would be closed after timber harvest and post-harvest activities were completed. These roads would be kept in the system to provide future access to the area.

Logging Systems: Three types of logging systems would be utilized to remove commercial timber from harvest units. Ground based tractor logging would be done on areas of less than 35 percent slopes. Skyline systems would be done in areas with more than 35 percent slopes or where riparian protection measures are needed. Light system such as horse or mobile yarders would be limited to areas where additional resource protection measures are needed such as less ground disturbance or riparian habitat protection.

Maps have been developed to aid in the spatial location of proposed treatments. Map 3 Alternative 2 Commercial Treatments Only displays the locations and types of commercial harvest. Map 4 Alternative 2 All Treatments displays the commercial treatments and the types and locations of noncommercial and fuels treatments. Map 5 Alternative 2 Logging Systems Commercial Treatments displays the locations of the types of logging systems utilized to remove commercial timber and Map 6 Roads Alternative 2 displays the locations of the road management activities.

The proposed action and its associated connected actions would be expected to be initiated and completed with the next 10 years.

LRMP Amendments – During the evaluation of the proposed action against current management direction, it was found that certain areas and treatments were not consistent with LRMP direction. The following is a discussion of the direction, the treatments considered inconsistent, the description and rationale for three amendments.

1 - Eastside Screens – The Eastside Screens include standards that when LOS is currently below the historic range of variability, then commercial harvest is not permitted. Because commercial harvest treatment is proposed in LOS stands when below the historical range of variability, an LRMP amendment is needed to implement these actions. The Eastside Screens were intended to maintain options for future management of LOS and only apply to timber sales. The proposed commercial thinning treatments are designed to reduce tree density and improve growth of the residual trees, enhance forest health, or recover potential mortality resulting from inter-tree competition. Thinning would more quickly restore historic seral/structural stage conditions and improve growing conditions for larger trees than either no action or prescribed fire alone. Thinning contributes to the primary purposes of fuel treatment: decreasing the probability of crown fires, decreasing the severity of the impacts, enhancing effectiveness and safety, and reducing costs. While there may be short-term decreases in stand densities and wildlife species dependent on those higher density stands would have reduced habitat, the longer-term maintenance of LOS into the future is desirable. Habitat for those species that are dependent on more open forest canopy conditions would be improved. No trees over 21 inches in diameter would be cut and removed in any area except in isolated cases for safety reasons or for road construction.

There would be 157 acres of LOS treated with commercial harvest, with individual tree selection harvest. All LOS treated, would remain LOS after treatment though the majority of acres treated would change from multi-strata to single-strata conditions and these stands would continue to have an uneven-aged (uneven-sized) structure. There are currently 737 acres of LOS in 5- acre or larger patches.

2 – Eastside Screens – The Eastside Screens include standards that when all the criteria for connective corridor habitat cannot be met then timber harvest should be deferred in connective corridors. Currently not all stands in connective corridors meet the canopy closure requirements and not all corridors meet the minimum width of 400 feet. Corridors do represent the best connections given the existing conditions resulting from physical restrictions such as ridges, meadows, and previous harvest practices. Timber harvest treatments in Alternative 2 in stands with canopy closures greater than 50 percent are designed to maintain existing large trees and promote development of additional large trees. Stand densities in the understory layers would be reduced to increase the health and vigor of remaining trees. Noncommercial activities are allowed in connective corridors under Eastside Screens.

There would be 232 acres of connective corridor treatment with commercial thinning and individual tree selection. Canopy closures in these stands would be reduced to below 50 percent but would still function as connective corridor habitat for species associated with more open conditions. Those species selecting for more dense conditions would be more affected by treatment. There are approximately 800 acres of connective corridors identified in the project area.

3 - Ochoco LRMP – Current LRMP direction is contradictory. The LRMP describes that prescribed fire will normally not be applied in old growth, but where it can be supported by research, directives and desired condition, it can be utilized following appropriate environmental analysis (LRMP p. 4-136). Additionally, when unacceptable damage to resources on adjacent lands or to the old growth resource could occur from insects or diseases, prescribed fire may be used to reduce stand densities and competition that will increase the resiliency of residual large diameter trees (LRMP p. 4-152). However, under habitat management, the LRMP states that vegetation management would not be allowed until further research is available on the needs of the dependent species (LRMP p. 4-251).

In two of the old-growth areas (Friday Creek (OG-D3-09) and Florida Creek (OG-D3-12), existing high densities of trees in the smaller diameters has created conditions where the mortality in larger trees is threatened because of increased competition among trees. Additionally, surface fuel loadings and ladder fuels create conditions for high fire hazard if a wildfire occurred within or adjacent to the area. During hot, dry, and windy conditions, wildfire would be difficult to stop and could result in stand replacement with a loss of old-growth habitat.

Prescribed fire would be utilized to reduce surface and ladder fuels and reduce seedling and sapling densities in Friday Creek and Florida Creek in the Old Growth Management Areas. This would result in 521 acres being treated. There are approximately 1,370 acres of allocated Old Growth Management Area within the project area.

Further information on these non-significant LRMP amendments can be found in Chapters 2 and 3 of this document.

Scope of Project and Decision Framework

The scope of the project and the decision to make are limited to: commercial thinning; noncommercial treatments; fuels reduction treatments; road management actions; aspen treatments associated with treatment units; mitigation measures to be employed; and monitoring within the project area. Chapter 2 details the designs of these actions. The project is limited to National Forest System lands within the project area.

The Responsible Official for this proposal is the Forest Supervisor of the Ochoco National Forest. After completion of the Draft EIS, there will be a 45-day public comment period. Based on response to this draft

EIS and the analysis disclosed in the Final EIS, the Responsible Official will make a decision and document it in a Record of Decision (ROD). The Responsible Official can decide to:

- Select the proposed action, or
- Select an action alternative that has been considered in detail, or
- Modify an action alternative, or
- Select the no-action alternative, and
- Identify what mitigation measures and monitoring will apply.

The decision regarding which combination of actions to implement will be determined by comparing how each factor of the project purpose and need is met by each of the alternatives and the manner in which each alternative responds to the key issues. The alternative which provides the best mix of prospective results in regard to the purpose and need, the issues, types and levels of effects and public comments, will be selected for implementation. In addition, the Responsible Official may consider other factors such as:

- 1) Would the density and species composition of forested stands be modified towards a balance of seral/structural stages as described by the historic range of variability? Would forested stands shift toward dominance by fire-tolerant species such as ponderosa pine and western larch?
- 2) Would the overall amount of Late and Old Structure (LOS) be maintained? Would the amount of single-strata LOS be increased? Would stand density be reduced to remove competitive stress on large trees? Would the management activities result in more large trees being maintained over time, as well as encourage the development of additional large trees?
- 3) Would stand densities, species composition, and structure be reduced to decrease the susceptibility to stand replacement (high intensity) wildfire? Would the amount of fuel loading be reduced? Would the number of acres that support non-lethal (low intensity) fire be increased? Would the number of acres of high risk to insect and disease infestation be reduced?
- 4) Would the proposed management activities contribute to meeting Riparian Management Objectives (RMOs) contained in the Inland Native Fish Strategy (INFISH 1995)? Would the proposed management activities in RHCAs increase or maintain shade, accelerate development of large woody debris (LWD), and reestablish and rehabilitate aspen stands? Would road inactivation and decommissioning reduce the potential for surface erosion and sediment delivery?
- 5) Would the selected alternative provide economic benefits to communities such as jobs? Would commercial wood products be provided?

Scoping and Public Involvement

The complete record of the public involvement process to date is available for review in the project file.

July 2, 2002 - Proposed Action

The West Maurys Fuels and Vegetation Management Project was initially presented to the public in a letter dated July 2, 2002, that was sent to the project scoping mailing list. The letter described the purpose and need and the proposed action at the time. This proposed action only identified treatments for fuels reduction activities to be implemented through the use of prescribed fire, noncommercial thinning, and mechanical piling with the use of a grapple machine. Treatment acreages included 20,400 acres of prescribed fire, 10,630 acres of noncommercial thinning, 4,020 acres of juniper thinning and 2,080 acres of grapple piling within the noncommercial thinning units. Comments received from this initial public scoping included a concern that the use of prescribed fire would have unintended effects on the residual stands, especially on trees identified to be left after treatment, because existing stand densities were too high. They expressed a concern that commercial thinning should also be considered as a tool to reduce stand densities and alter stand structures to a level where prescribed fire would not cause undesired damage to leave trees.

During this initial analysis of current conditions in the project area and reviewing the Maurys Watershed Analysis, a second proposed action was developed. The Maurys Watershed Analysis identified desired vegetative conditions that provided for stand resiliency to insect and disease attacks, reduced risk of high intensity wildland fire, increased the amount of late and old structured stands by altering stand structures, reduced fuel hazards and reintroduced fire as a disturbance agent into fire adapted vegetative types. To achieve these desired conditions, commercial thinning was identified as a tool to remove larger diameter (9 to 21 inches in diameter) trees in stands that are overly dense. These trees provide competition for resources and stress desirable large diameter trees. These smaller trees also contribute to fuel hazard by acting as a fire ladder from the ground into the larger diameter tree canopy.

February 6, 2003 - Proposed Action

For these reasons, a second proposed action was developed and sent to the public on February 6, 2003. The purpose and need remained the same as the July 2, 2002, proposal and the proposed action was adjusted to include commercial thinning treatments as well as the original prescribed fire, noncommercial thinning and mechanical fuels treatments. Treatment acreages included 15,504 acres of prescribed fire, 6,396 acres of noncommercial thinning, 3,067 acres of juniper thinning, 3,751 acres of grapple piling within the commercial and noncommercial thinning units, and 8,413 acres of commercial thinning.

Six letters, two e-mails, and one telephone call were received.

- Several responders commended the commercial thinning activities proposed as a way to restore forest health and revitalize the local economy. Having a local source of ponderosa pine offsets freight costs, augments quality control, affords jobs, and creates market opportunities. It is one commenter's view that foreign producers are undercutting American pricing on raw materials and finished products.
- Other respondents lauded proposals to reduce the risk of catastrophic wildfires. Others stated the arbitrary constraint to retain all trees greater than 21" counters the goal to improve forest health.
- One commenter indicated that diseased and insect-damaged trees should be removed regardless of their diameter.
- Some citizens urged that a greater number of roads be decommissioned or closed than proposed. These people stated it was unclear to them what purpose the roads served. Conversely, others pointed out roads and their use as entry points to future management activities such as fire suppression and recreation.
- One respondent recommended more extensive management in the RHCA's.
- One commenter indicated that fuel reduction activities should be performed in conjunction with the harvesting operation.
- Another reiterated that healthy forests and healthy communities are equated.
- One person opposed commercial harvest for any purpose.
- One commenter urged that the timber harvest be economically viable.

During the analysis of this second proposed action and in response to public comments, it was not known if there would be significant impacts from the proposed action. A determination was made by the Responsible Official to prepare an EIS to assess the effects of the proposed action.

January 16, 2004 - Proposed Action and Notice of Intent to Prepare an Environmental Impact Statement

On January 16, 2004, a Notice of Intent to Prepare an Environmental Impact Statement was published in the Federal Register (Vol. 69, No.11). This notice provided the public with a description of the proposed action, issues identified to date, and a description of Alternative 3 as developed to date. Comments were due by February 16, 2004.

February 4, 2004 - Revised Notice of Intent to Prepare an Environmental Impact Statement

The original notice of intent published on January 16, 2004, stated that there would be 7,650 acres of fuels treatments. This Federal Register Notice corrected that amount to 17,890 acres of prescribed fire for fuels treatments and thinning and adjusted the comment period to end on March 1, 2004.

Comments received include:

- One person was opposed to all aspects of the project except the proposed road decommissioning. This person felt that prescribed fire activities were harmful to the human environment, caused air pollution and damage to the soil resources, such as unwanted erosion. The person was also against commercial thinning and was more supportive of letting nature direct the course on public lands in the west.
- American Forest Resource Council supported the proposal, especially the use of commercial thinning to treat stands within the project area. They urged that commercial thinning be economical and that the use of helicopter logging be minimized and that no restrictions on diameter limits be implemented. They encouraged that an amendment (as referenced in the June 11, 2003, letter from the Region 6, Regional Forester) to the Eastside Screens be considered that would include the removal of trees 21 inches in diameter and greater to better meet late and old structured stand objectives.
- Oregon Natural Resources Council provided many comments including those related to thinning in Late-Successional Reserves and in Matrix lands. These land allocations pertain to the Northwest Forest Plan which does not have jurisdiction over the Ochoco National Forest; therefore, these comments are outside the scope of the West Maurys project area. Additionally, they recommend focusing treatments in areas where the natural fire regime included frequent fire and in areas where several fire intervals have been missed due to fire suppression and forest fuels have accumulated unnaturally. They requested protection of mature and old growth forests, including large, old, and fire resistant trees that provide shade and cool, moist conditions that help reduce fire danger. They advised environmental safeguards such as retaining key wildlife habitat features such as snags and large logs, protecting roadless areas, and avoidance of road building because logging roads cause water pollution and increase ignition risks.
- Ochoco Lumber Company supported the purpose and need to thin crowded stands to reduce mortality caused by insects and disease. They also supported the need to treat excessive forest fuels with thinning and slash abatement. They had concerns with the large amount of noncommercial thinning and the resultant slash created from the operations. They felt that the slash could provide a food source for insects and create a heavy fuel load unless treated. They supported the need for commercial thinning to promote large trees and reduce competition. They disagreed with the diameter limit of 21 inches in diameter and felt it is a poor way to manage stands. They referenced the June 11, 2003, Region 6, Regional Forester letter that provided guidance for considering amendments to the Eastside Screens to better meet late and old structure objectives. They also felt it was extremely important to keep commercial vegetation management projects in the black. With no manufacturing facilities in Prineville, they felt that socio / economic factors need to be considered highly in the development of alternatives. They felt that logging and slash disposal methods needed to be kept simple and cost effective. They also felt that roads should only be decommissioned when they are in poor locations or contributing to excessive erosion or water quality problems, otherwise roads should be left open for administrative, recreational, and firefighting purposes.

Quarterly Schedule of Projects

The project was listed in the *Schedule of Projects for the Deschutes and Ochoco National Forests and the Prineville District of the BLM* Summer 2002, Fall 2002, Winter 2003, Spring 2003, Summer 2003, Fall 2003 and Winter 2004.

Identification of Issues

Issues are points of discussion, debate, or dispute about environmental effects that may occur as a result of the proposed action. Issues provide focus and influence alternative development, including development of

mitigation measures to address potential environmental effects, particularly potential negative effects. Issues are also used to display differing effects between the proposed action and the alternatives regarding a specific resource element.

The ID Team sorted the comments received during initial scoping into categories to help issue tracking and response. The issues are categorized as follows:

- **Key issues:** Issues used to develop alternatives and design elements. These are issues that cannot be resolved without some consideration of the trade-offs involved. Trade-offs can be more clearly understood by developing alternatives and displaying the relative impacts of these alternatives.
- **Analysis issues:** In addition to the key issues, other environmental components will be considered in the analysis in Chapter 3, though they did not result in differing design elements between alternatives but may have resulted in the development of mitigation measures. These issues are important for providing the Responsible Official with complete information about the effects of the project.
- **Issues not address in detail:** The Council on Environmental Quality (CEQ) NEPA regulations explain this delineation in Sec. 1501.7, "...identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3)...."
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Key Issues

The key issues are specific to the proposed action and the project area. Attributes and measures for each issue will help to evaluate how each of the alternatives addresses issues.

• *Key Issue 1: Effects to Wildlife Habitat*

Issue Statement: Vegetative treatments, including prescribed fire, may impact habitat effectiveness for a variety of wildlife species and / or habitat within the West Maurys Project area. Those habitats are associated with goshawk, pileated woodpecker, elk, and late and old structured habitat dependent species.

Issue 1A. Late and Old Structure - There is a concern that all types of treatments within currently mapped late and old structured stands (LOS) would result in a change in structure and amounts of LOS across the landscape.

Current Condition

The planning area is currently below the historic range of variability for late and old structured stands in both single canopy and multi-canopied stands. The Eastside Screens stipulate that timber harvest may not occur within late and old structured stands if conditions are below historic range of variability. Other treatments, such as noncommercial thinning and fuels reduction treatments are not covered under the Eastside Screens and may proceed in late and old structured stands. Many stands are overly dense with shade tolerant, smaller diameter, and relatively young trees resulting from years of fire suppression. These trees and stand densities are not normally found in fire dominated ecosystems and present potential fuel hazards threatening the long-term existence of the LOS stands. Proposed treatments to reduce stand densities, increase resiliency and vigor of remaining stands and promote long-term late and old structured conditions may alter conditions such that the LOS no longer functions. Table 1.1 displays the current levels of LOS by plant association group (PAG) compared with the Historic Range of Variability (HRV). All plant association groups are below (HRV) for all LOS categories except for juniper steppe and dry pine multi-strata which have a minimal range of zero percent. There are approximately 737 acres of LOS in 5-acre or larger patches within the project area. [Map 18 Plant Association Groups and LOS](#) display the locations of the PAG and LOS within the project area.

Table 1.1 Comparison of Plant Association Group with Historic Range of Variability of LOS

Plant Association Group	Time Period	LOS Type	Current Condition	HRV
Dry Grand Fir	Current Level	Multi-Strata	1.4%	8-15%
		Single-Strata	2.8%	18-38%
		Total	4.1%	26-53%
Douglas-Fir	Current Level	Multi-Strata	1.1%	11-19%
		Single-Strata	3.3%	33-54%
		Total	4.4%	44-73%
Moist Pine	Current Level	Multi-Strata	1.1%	0-9%
		Single-Strata	3.3%	50-86%
		Total	4.4%	50-95%
Dry Pine	Current Level	Multi-Strata	0.5%	0-7%
		Single-Strata	1.1%	25-59%
		Total	1.6%	25-66%
Juniper woodland	Current Level	Multi-Strata	0.3%	0%
		Single-Strata	0.4%	5-12%
		Total	0.7%	5-12%
Juniper Steppe	Current Level	Multi-Strata	0.0%	0%
		Single-Strata	0.2%	5-12%
		Total	0.2%	5-12%

Measuring Factor

The measuring factor would be the number of LOS acres treated and the resulting structural conditions after treatment.

Issues 1B. Connective Corridors - There is a concern that the commercial harvest treatments within the connectivity corridors between the Old Growth Management Areas (MA) as prescribed by the Eastside Screens would result in reduced canopy closure in dense stands within the corridors. This may not promote habitat conditions that would facilitate species movement between areas and would make species vulnerable to predation and/or exposure or block movement of species with limited mobility because of reduced densities of stands.

Current Condition

Connectivity corridors are defined as stands in which medium or larger diameter trees are common, and canopy closures are within the top one-third of site potential, approximately 50 percent canopy closure. Stands with more than three trees per acre over 21 inches in diameter also provide needed structure for species dependent on these corridors. Corridor widths should be at least 400 feet wide at their narrowest point. The only exception to stand width is when it is impossible to meet 400 feet with current vegetation structure, and these “narrower stands” are the only connections available. There is currently poor connectivity between Old Growth MAs and late and old structured stands and is a function of deficient LOS, extensive overstory removal and physical restrictions such as ridges, meadows and other environmental conditions that result in major plant association changes. Harvesting within connectivity corridors under Eastside Screens is permitted only if all of the above conditions can be met and some amount of understory is left in patches or scattered to assist in supporting stand density and cover. Some understory removal, stocking control, or salvage may be possible activities, depending on the site. There are currently approximately 800 acres identified in connective corridors within the project area. Map 16 Wildlife Emphasis displays the locations of the connective corridors.

Measuring Factor:

The measuring factor would be the total amount of commercial harvest treated acres within the connectivity corridors and the resultant condition after treatment.

Issue 1C. Goshawk Habitat Treatments – There is a concern that treatment activities that reduce stand densities will affect goshawk post-fledging habitat. Commercial thinning treatments would reduce stand densities and these desired characteristics.

Current condition

The Eastside Screens stipulate that no timber harvest may occur within the 30-acre nest core areas. In post fledging areas, harvest activities may occur but treatments should focus on retaining LOS stands and enhancing young stands toward LOS conditions. Goshawk core nest areas and post-fledging areas (PFA) are approximately 30 and 400 acres in size respectively. There are 14 nest core and post-fledging areas within the West Maurys project area. Of these nesting territories, six had confirmed nesting records during the period 2001 to 2003, six were confirmed as active nests in 1998 or 1999, and two were last confirmed as active nests during, or prior to, 1990. Nest core areas provide security for incubating and raising nestlings. No harvest is proposed within core nest areas and will not be discussed further. Post fledging areas provide security for young birds to mature, learn hunting techniques from the adult, and eventually disperse to other areas outside of the home range. Preferred stand structures include intermingled crowns in 12 inch diameter and larger trees with patchy clumps of more dense stands, less dense stands, and small openings scattered throughout the stands. There are currently 5,396 acres of post-fledging habitat within the project area. Map 16 Wildlife Emphasis displays the locations of the goshawk habitat.

Measuring Factor

The measuring factor would be the number of acres of goshawk post-fledging habitat treated by treatment type and the resulting description of stand structure and composition.

Issues 1D. Elk Security Habitat, Cover and Calving Habitat - There is a concern that commercial harvest, thinning, and fuels reduction activities would have a detrimental impact on elk habitat, including security, cover, and calving habitat within the project area.

Current condition

Satisfactory thermal cover is limited within the West Maurys project area and is defined as at least 70 percent canopy closure on 40 foot tall trees. The majority of the cover in this project area is marginal cover, defined as 40 percent canopy closure. Total cover amount is higher than considered optimal which is defined as 60 percent of the area as forage to 40 percent of the area as cover, but quality of cover is less than optimal. Big Game habitat is assessed through the use of the Habitat Effectiveness Index model which incorporates quantity and quality of cover, and open road densities to determine the effectiveness of habitat over time. Elk security habitat is defined as areas having a road density of less than 2 miles of open road per square mile and is also limited in the project area. Elk calving habitat has been mapped and includes a mosaic of forest types intermingled with meadows and riparian woodlands. There are currently 3,410 acres of elk security habitat within the project area. There are 3,599 acres of mapped elk calving areas within the project. There are 15,441 acres of marginal and 3,098 acres of satisfactory cover in the project area. Map 16 Wildlife Emphasis displays the locations of elk calving areas.

Measuring Factors:

- Habitat Effectiveness Index (HEI) for selected Management Areas.
- Amount of satisfactory and marginal cover treated and resultant condition.
- Amount of elk calving areas treated and resultant condition.
- Amount of elk security habitat treated and resultant condition.

Issue 1E. Old Growth Management Areas (MA-F6) – Fuels Reduction Treatments (prescribed fire) activities within the Old Growth Management Area (2 areas) and all types of treatments in adjacent pileated woodpecker feeding areas reduce stand densities and impact the effectiveness of the old growth management area and the adjacent pileated woodpecker feeding areas.

Current conditions

Pileated woodpeckers have been established as the management indicator species for the Old Growth Management Area on the Ochoco National Forest. Pileated woodpeckers prefer closed canopy, late to old growth fir-dominated habitat. They prefer stands with grand fir, abundant snags and down logs and with a canopy closure of at least 60 percent but will forage in areas with less canopy closure. The abundance of snags greater than 20” diameter at breast height (dbh) is a good predictor of pileated woodpecker habitat. Pileated woodpeckers favor Douglas-fir and western larch, but use other species in proportion to their availability as foraging substrate, and snags at least 15 inches in diameter are preferred. Pileated woodpeckers also forage on down logs. These birds also glean insects from live Douglas-fir and grand fir in June and July (late instar budworms) and from live western larch from November to January (carpenter ants). Pileated woodpeckers select large, live grand fir trees for night roosting, though they will also use live larch and snags of ponderosa pine, grand fir, larch and Englemann spruce. Hollow interiors of trees or snags resulting from decay rather than excavation, and the presence of Indian paint fungus conks are prevalent in roost trees. The average diameter of roost trees is approximately 28 inches in diameter at breast height. For nesting, pileated woodpeckers select large snags with heart rot, especially ponderosa pine or western larch. Snags at least 20 inches in diameter, broken off at 30 feet or higher, are considered to be the minimum size suitable as nest snags for this species, though studies have shown that most nest trees are greater than 24 inches in diameter and 60 feet tall or more.

There are four Old Growth Management Areas within the West Maurys project area totaling 1,370 acres and range from 283 acres to 509 acres in size. The pileated woodpecker has been identified as the indicator species for the Old Growth Management Area in the Ochoco Land and Resource Management Plan, page 4-243. In addition, there are “pileated woodpecker feeding areas” of approximately 300 acres located adjacent to each of the old growth areas. In combination, these two systems comprise a “habitat area”. There is a total of 1,234 acres designated as pileated woodpecker feeding areas associated with the four Old Growth Management Areas. A multi-layered canopy with shaded conditions and a large number of dead snags per acre is considered “optimum” for old growth habitat. The feeding areas provide supplemental snags at relatively high levels, about 90 percent.

Fuel loadings within the Old Growth Management Area could be managed to reduce the loss of current stands from wildfire. Proposed treatments would reduce stand densities below levels needed for pileated woodpecker habitat. One Old Growth Management Area (Friday Creek) currently does not have the site capability of supporting habitat for pileated woodpeckers.

Within the project area, records of pileated woodpeckers use is limited. To date all pileated woodpeckers observed in the Maurys have been on north facing aspects on grand fir sites. [Map 16 Wildlife Emphasis](#) displays the locations the Old Growth Management Areas and their associated pileated woodpecker feeding areas.

Measuring Factors:

- The number of acres of Old Growth Management Area with prescribed fire treatments and the resultant condition.
- The acres of adjacent pileated woodpecker feeding area treated and the resulting description of stand structure and composition.

• *Key Issue 2: Effects on Water Yield*

Issue 2: Water Yield - Vegetation management would affect water yield by increasing the rate of water delivery to streams. Since peak flows now occur earlier than they did historically, water flow from higher elevations is “flashier” and can coincide with peak flows from lower elevations. Timber harvest and noncommercial vegetation treatment decreases leaf area index and can lead to increased water yields and changes in the timing of flows.

Current conditions

Drainages in the planning area normally have peak annual flows in March through April as a result of snowmelt. Peak annual flows as a result of rain on snow events in early winter have produced some of the highest flows in the planning area over the last 50 years. Peak annual floods can also result from intensive convective thunderstorms that cause flash floods during the spring and summer. The probability of having a flash flood increases as the elevation and precipitation decrease primarily as a response to vegetation and ground cover. Forest canopy tends to buffer the intensity of thunderstorms at higher elevations. Peak flows are probably higher than historically due to loss of floodplain storage due to entrenched channels and soil loss, compaction, timber harvest, and road construction which cause flashier responses. This has been offset somewhat by increased understory canopy cover.

Equivalent Harvest Area (EHA) model – EHA will be used to evaluate the risk to water quality and stream bank stability. The LRMP (1989) assigned an EHA threshold of 35 percent to watersheds that flowed into the Crooked River between the Bowman Dam on Prineville Reservoir and the North Fork Crooked River. The threshold value identifies the upper limit that is compatible with watershed sensitivity, without incurring damage in a major storm event. The assigned threshold of 35 percent indicates low sensitivity. However, the high incidence of headcuts in some streams in the planning area indicates that the watersheds are more sensitive and a threshold of 25 percent is more appropriate. The EHA threshold should not be interpreted as a point above which detrimental impacts will occur but as a point above which detrimental impacts may occur, should a 10-year or greater storm or melt event take place (Anderson 1989).

Newsome and Gibson Creek drainages currently have a high percentage of headcuts indicating that the hydrologic system is not functioning properly. This is probably due to the loss of deciduous streamside vegetation from grazing and past timber harvest with little stream buffering. Reduced vegetative cover in RHCAs leads to increased bank instability and in conjunction with an intense rain event, stream headcutting would occur. Any increase in water yield in these drainages would increase the amount and rate of headcutting. A value of 20 EHA would indicate little to no potential increase in water yield.

Measuring Factors:

Effects to water yield will be measured by EHA percentages in all watersheds and in Newsome Creek and Gibson Creek drainages.

Analysis Issues

Other issues and concerns were raised during scoping, both internally and externally, that did not result in different alternatives, but were considered during the analysis process and drive the development of mitigation measures or are discussed in Chapter 3, environmental consequences. These issues are generally less focused on the elements of Purpose and Need, than are the Key Issues.

Wildlife – In addition to the wildlife key issues, the following items will be analyzed and compared by alternative:

- Treatment impacts on Management Indicator Species' habitats;
- Treatment impacts on Threatened, Endangered, Candidate, and Sensitive Species impacts;
- Treatment impacts on Resident and Migratory birds including nesting habitat;
- Treatments within the Bald Eagle Management Area may alter the quality or longevity of bald eagle habitat, or result in disturbance to nesting eagles;
- Treatments within bald eagle winter roosting habitat may alter the quality or longevity of bald eagle habitat, or result in disturbance to roosting eagles.

Noxious Weeds – Proposed management activities have the potential to introduce or spread existing populations of noxious weeds and invader species.

Air Quality – Proposed activities have the potential to reduce air quality within the project area and airsheds for adjacent communities.

Soils – Proposed activities have the potential to detrimentally impact soils through either compaction or surface disturbance.

Cultural Resources – Proposed activities may have an effect on cultural resources. Proposed ground-disturbing activities such as commercial thinning, noncommercial thinning, prescribed fire, and mechanical fuels treatments have the potential to disturb sites and compromise the recovery of information.

Recreation – Antelope Reservoir campground (Developed Recreation MA-F13) contains densities of vegetation that does not promote longevity of large diameter trees consistent with LRMP direction for this management area.

Economic and Social Analysis – Comments have been received regarding designing alternatives to be economically viable and limiting the amount of costly logging systems.

Grazing impacts – The proposed activities may have an effect on available forage or animal behavior within allotments.

Issues not analyzed in detail

Other issues were raised by the public that did not have relevance to the project or the project was not within the jurisdiction of a plan that they referenced.

PACFISH issues – since the project area is not within the jurisdiction of this decision, no direction or standards and guidelines pertaining to PACFISH were utilized.

Northwest Forest Plan – several comments were raised regarding management within Late Successional Reservers and matrix and adhering to standards and guidelines within the Northwest Forest Plan. The entire Ochoco National Forest is outside of the jurisdiction of the Northwest Forest Plan so all references to this project and adhering of managing within land allocations of the Northwest Forest Plan were irrelevant.

Wildland Urban Interface - Issues relative to prioritizing treatments within or near homes was not analyzed in detail because of the small amount of rural interface within or adjacent to the project area. No wildland urban interface occurs within the project area.

Inventoried Roadless Areas – any issues regarding management within Inventoried Roadless Areas was not relevant to the project because there are no Inventoried Roadless Areas within or adjacent to the project area. The nearest Inventoried Roadless area is approximately 20 miles to the northeast of the project area.

Municipal watersheds – any concerns regarding treatments within municipal watersheds are not relevant to this project because there are no municipal watersheds within or adjacent to the project area.

