

Chapter 1

Purpose and Need

Chapter 1

Introduction

This environmental assessment (EA) documents the analysis and discloses the potential site-specific effects of the proposed Wildcat project. This environmental analysis is tiered to and supplements the analysis in the final environmental impact statement prepared for the Umatilla National Forest Land and Resource Management Plan (1990), hereafter referred to as the Forest Plan. The Forest Plan guides management of the Umatilla National Forest.

Project Area

The Wildcat project area is located in the eastern portion of the Heppner Ranger District in Morrow and Grant counties, Oregon, about 15 miles south of the town of Heppner. You can access the project area from Highway 207 at Anson Wright Memorial Park by County Road 670/Forest Road 22 and County Road 847/Forest Road 21 or from Cutsforth Park on County Road 678/Forest Road 53 onto Forest Road 21. A legal description of the area is T.5S., R.27E., Sections 13, 22-28, 33-36; T.5S., R.28E., Sections 18-20, 28-32; T.6S., R.27E., Sections 1-4, 8-17, 21-27, 35-36; and T.6S., R.28E., Sections 5-9, 16-21, Willamette Meridian (Figure 1-1).

The project area comprises about 25,450 acres within the National Forest boundary in the Little Wall Creek-Skookum Creek and Swale Creek subwatersheds (170702020803 and 170702020801) located within the Wall Creek Watershed which drains into the North Fork John Day River. The topography is generally a south aspect with 10 to 20% slopes. The elevation ranges between 3600 feet and 5280 feet. There is 4,150 acres of the Monument Big Game Winter Range in the southern portion of the project area. There are no inventoried roadless areas, no wilderness areas and no wild and scenic rivers within the project area.

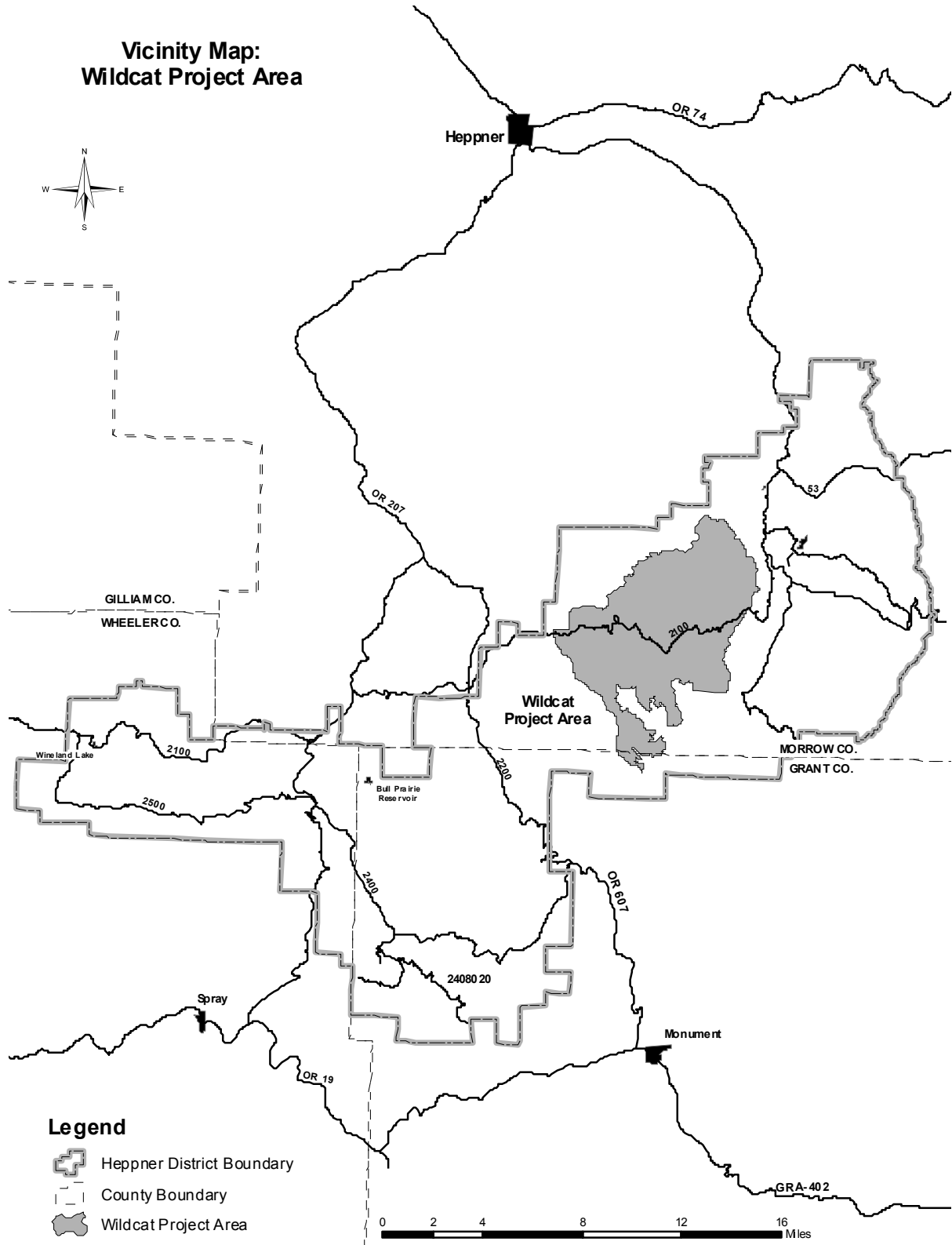


Figure 1-1: Location of the Wildcat Fuels Reduction and Vegetation Management Project Area

stand loss due to stand density coupled with the increased risk of stand replacement fire events, two areas have been identified as needing corrective measures: vegetation and fuels. There is a need to reduce stand densities, develop specific stand structures, alter species composition and reduce fuel loadings in order to reduce conditions favorable to insect and disease outbreaks and wildfire damage. An additional purpose and need is to provide for production and sustained yield of wood fiber and insofar as possible meet projected production levels consistent with various resource objectives, standards and guidelines, and cost efficiency (Forest Plan p. 4-2) while providing jobs to area residents. The following describes in more detail the elements needing change.

Vegetation

There is a need to move the seral and structural conditions of forest stands toward their historic ranges of variability through: increasing the amount of old forest single strata in the dry upland forest in the short and long term, increasing the resistance of forest stands to large scale insect and disease through species and stocking density control, and decrease the risk to resources from large scale wildfires through reduction of vertical and horizontal fuels.

- Move structural conditions toward the historic range of variability.
- Reduce stocking in stands dominated by trees less than 21 inches in diameter at breast height to promote growth and development of large trees.
- Restore historic amount of stands dominated by large trees.
- Reduce the levels of mortality of existing large diameter trees within the late and old structured stands by reducing understory competition.
- Protect and enhance the vegetative conditions of aspen by increasing the vigor of existing stands.
- Reduce insect and disease susceptibility and mortality in forested stands by reducing competition between trees.

Current historical range of variability analysis within the dry upland forest type demonstrates that there is an over representation of multi-layer old forest and stem exclusion closed canopy. These structural classes reveal an increase in multi-layer closed canopy structural stages that have changed from what occurred in this forest type historically. We attribute this change to fire suppression, selective harvest of large overstory trees with no further management to direct the development of the stand, and the increased area affected from insect and disease outbreaks and resulting tree mortality.

The *Wall Ecosystem Analysis* describes historical conditions within the watershed and the project area that were dominated by multi-aged ponderosa pine open park-like stands (with a component of western larch on the moister sites) that were maintained by ground fires. This analysis identified a need for actions in the Wildcat project area as a high concern for vegetation sustainability and recommends actions to improve sustainability. Specifically, portions of the subwatershed were recommended as high priorities for treatment to move middle structure classes toward late/old structure classes.

An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basin (Interior Columbia Basin Ecosystem Management Project) made similar findings in dry upland forests. This analysis found a decline in old forest single story structure by 15% while old forest multi-story structure has increased 4 % from historical conditions of the 1850 to 1900 (Quigley et al., 1997).

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 codominate trees (Cochran 1993). This is important given the existing low number of large trees and the time and growth needed to develop large structure. Many of the dry upland forested stands contain two to three times the basal area and stands in the cold and moist upland forest are near the upper end of the stocking level recommended in the Suggested Stocking Levels for Forest Stands in Northeastern Oregon and Southeastern Washington: An Implementation Guide for the Umatilla National Forest (Powell, 1999).

The dry upland forest sites have progressed along the successional spectrum due to changes in the natural disturbance regime and are now dominated by shade tolerant climax species like grand fir. Stands that were once dominated by open ponderosa pine are now multi-storied stands with grand fir and Douglas-fir in both the understory and overstory. Aspen stands were historically maintained through periodic fire. In recent years: fire suppression, grazing and browsing, and conifer encroachment has altered aspen habitat.

Fire Regime Condition Class

There is a need to reduce the forest's susceptibility to moderate and high severity fires and bring the area's fuels closer to levels expected under natural fire disturbance regimes by lowering stand densities, increasing the relative abundance of fire tolerant species, treating existing fuels, and re-introducing fire into the watershed.

- Reduce ladder fuels to reduce risk of fire spread into the upper canopy.
- Reduce ground fuel that would contribute to wildfire intensity and resource damage.
- Reduce fuel densities to allow for the reintroduction of prescribed fire on a historical occurrence level.

Due to past management activities, dry and moist upland forests within fire regimes 1 & 3¹ show the highest degree of departure in condition class and will be affected the most from wildfires. These areas have missed several fire return intervals and are now composed of multilayered, overstocked, fire intolerant species which create ladder fuels that carry fire into the dominant desired overstory. Today, fires in the dry and moist forests would have moderate to severe effects characterized by high fire severity and intensity on landscapes that historically displayed low to moderate severity. The risk of losing key ecosystem components would be high. Ignitions today would not function as a natural disturbance process within their historical range of variability pertaining to fire size, frequency, intensity, severity, or landscape patterns.

Without treatment, the Wildcat project area will continue to transition toward a Condition Class 3, where the risk of losing key ecosystem components will increase². There is a need to maintain or shift forest

¹ Fire Regime 1: 0-35 years, Low severity - Typical climax plant communities include ponderosa pine, eastside/dry Douglas-fir, pine-oak woodlands, Jeffery pine on serpentine soils, oak woodlands, and very dry white fir. Large stand-replacing fire can occur under certain weather conditions, but are rare events (i.e. every 200+ years).

Fire Regime 3: 35-100+ years, Mixed severity - This regime usually results in heterogeneous landscapes. Large, high severity fires may occur but are usually rare events. Such high severity fires may "reset" large areas (10,000-100,000 acres) but subsequent mixed severity fires are important for creating the landscape heterogeneity. Within these landscapes a mix of stand ages and size classes are important characteristics; generally the landscape is not dominated by one or two age classes.

² Condition classes (fire regime condition class) measure the degree of departure from reference conditions, resulting in changes to key ecosystem components, such as vegetation characteristics (composition, structure, age distribution, canopy closure, or degree of mosaic), fuel composition, fire frequency, severity and pattern, and other associated disturbances (insect, disease, and windthrow).

structures toward a Condition Class 1.

Forest Plan Amendments

Habitat Effectiveness Index

A Forest Plan Amendment to change the Habitat Effectiveness Index from the Forest Plan standard of 70 to the existing HEI of 68 is required for individual projects within the C3 Management Area for those action alternatives that convert satisfactory or marginal cover to lower quality cover or forage habitat.

The existing habitat effectiveness index for the Monument winter range is 68. Implementation of the Wildcat proposed action or alternative actions would result in a habitat effectiveness index of 68 across the winter range. The Forest Plan (page 4-152) currently reads:

“Elk habitat will be managed on designated big game winter ranges to achieve a habitat effectiveness index of no less than 70, including discounts for open roads to motorized vehicular traffic, as described in Wildlife Habitats in Managed Forests (Thomas and others 1979). The habitat effectiveness standard will be measured on an individual winter range basis”.

The method prescribed for the calculation of Habitat Effectiveness Indices is described in Appendix C of the Forest Plan.

Although there is no anticipated change in habitat effectiveness index, an index of no less than 70 would not be achieved as described for the C3-Big Game Winter Range management area (Forest Plan, page 4-152).

21 Inch Conifer Removal in Aspen Stands

A Forest Plan amendment would be needed for those action alternatives that propose to remove conifers larger than 21 inch diameter at breast height within designated aspen stands for the duration of the project. The Forest Plan (Eastside Screens, Appendix B, page 10) currently reads:

“Scenario A: Outside of LOS, many types of timber sale activities are allowed. Intent is still to maintain and/or enhance LOS components in stands subject to timber harvest such as possible, by adhering to the following standards: a) Maintain all remnant late and old seral and/or structural live trees >21 inches dbh that currently exist within stands proposed for harvest activities.”

Conifer encroachment and overstory conifers continue to remove water, minerals, and light needed for aspen survival within enclaves of aspen in the Wildcat project area. Continued competition between conifers and aspen will result in the further decline and loss of aspen habitat in the project area.

Summary of Purpose and Need

There is a need to shift dry upland forests to a more historic species composition as identified in Potential Natural Vegetation of the Umatilla National Forest (Powell 1998), and Potential Vegetation, Disturbance, Plant Succession, and Other Aspects of Forest Ecology (Powell 2000).

There is a need to reduce species competition within aspen stands in order to restore aspen habitat.

There is a need to increase the amount of old forest with a predominance of large trees in a single story structure.

There is a need to reduce stand densities in dry upland forest to levels established in Suggested Stocking

direction for the Forest, including the Wildcat project area. The Forest Plan does this by allocating parts of the Forest to different resource emphasis or “management areas”, and prescribing the type and intensity of management that may occur within each allocation. Relevant portions of the Forest Plan are summarized below and compliance with applicable Standards and Guidelines will be discussed in Chapter 3.

Forest Plan Amendment #2, Continuation of Interim Management Direction Establishing Riparian, Ecosystem, and Wildlife Standards for Timber Sales (Eastside Screens) dated 1995. The Eastside Screens established additional management direction regarding area buffers, structural diversity, connectivity of late/old structure, retention of snags and downed wood, and goshawk nest-sites.

Forest Plan Amendment #10, The Interim Strategies for Managing Anadromous Fish-Producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California (PACFISH) dated February 24, 1995. PACFISH provided further protection for fish habitat, particularly regarding activities within riparian areas.

The Managing Competing and Unwanted Vegetation FEIS and its Mediated Agreement and Record of Decision (ROD) dated October 8, 1988. This EIS provides direction for implementation, mitigation, and monitoring of projects that propose to manage competing and/or unwanted vegetation through the use of herbicides, mechanical methods, or prescribed fire.

- *R6 FEIS: Pacific Northwest Region Invasive Plant Program Final Environmental Impact Statement, 2005.* Publication R6-NR-FHP-PR-02-05, USDA Forest Service, Pacific Northwest Region, Portland, Oregon. This EIS amended the *Umatilla National Forest Land and Resource Management Plan* by adding management direction relative to invasive plants. This project is intended to comply with the new management direction.

This EA also incorporates by reference the following:

- Umatilla National Forest Interim Snag Guidance letter dated April, 1993 (which provides direction on the number and distribution of snags to retain in harvest units);
- *Environmental Assessment for the Management of Noxious Weeds* and its *Decision Notice* dated May 24, 1995 (which identifies prevention and appropriate treatment methods for known noxious weed populations);
- *Environmental Assessment for the Motorized Access and Travel Management Plan, Heppner Ranger District*, dated July 1992 (which provides District-wide direction on the management of roads and off highway vehicle trails, both open and closed);
- *Wall Ecosystem Analysis* dated September 1995 (which is a watershed-level ecosystem analysis of current and reference conditions, along with recommendations for restoration);
- The Biological Assessment for Mid-Columbia steelhead trout and Steelhead trout critical habitat has been prepared and submitted to the regulatory agency (NOAA Fisheries). The consultation process will be completed before the project decision is finalized.
- National Fire Plan (August 2000) (developed with the intent of responding to severe wildland fires and their impacts to communities while addressing five key points: Firefighting, Rehabilitation, Hazardous Fuels Reduction, Community Assistance, and Accountability);
- Other sources of information cited in this EA and its analysis file, such as specialist reports, published studies, and books. The analysis file is available for review at the Heppner Ranger

met.

Goals and Desired Future Conditions

A4 – Viewshed 2

(Forest Plan, pages 4-105 through 4-110): the goal is to: manage the areas seen from a travel route....where some forest visitors have a major concern for the scenic qualities (Sensitivity Level 2) as a natural appearing to slightly altered landscape.

Desired future condition: Management activities will be done with sensitivity to people's concern for scenic quality (Level 2), with vegetative manipulation conducted so that forest management activities remain visually subordinate in foregrounds of selected travel routes and sites. Management activities will be obvious in the middleground and background viewing area, but designed to compliment their surroundings. Forest stands will occasionally be logged in order to maintain long-term health and vigor, and to encourage a park-like, near natural appearance with big trees in the immediate foreground. Recreation opportunities will be mostly road oriented.

C1 – Dedicated Old-Growth

(Forest Plan, pages 4-144 through 4-146): the goal is to provide and protect sufficient suitable habitat for wildlife species dependent upon mature and/or overmature forest stands, and promote a diversity of vegetative conditions for such species.

Desired future condition: Old-growth areas will be characterized by stands of naturally appearing overmature trees. Stands of mature trees may be included in the old growth category to provide a better distribution of this habitat type throughout the forest. Trees in these stands are relatively large (with many trees greater than 21 inches dbh); past the point of rapid growth, and some have visible evidence of decay and decline including mycorrhizal fungi and other microorganisms. Stands will be dispersed in quantities and sizes which meet the needs of dependant wildlife. These stands will contribute toward the forest diversity and aesthetic values.

C2 – Managed Old-Growth

(Forest Plan, pages 4-147 through 4-150): the goal is to provide and protect sufficient suitable habitat for wildlife species dependent upon mature and/or overmature forest stands, and promote a diversity of vegetative conditions for such species.

Desired future condition: Old-growth areas will be characterized by stands of naturally appearing overmature trees. Stands of mature trees may be included in the old growth category to provide a better distribution of this habitat type throughout the forest. Trees in these stands are relatively large (with many trees greater than 21 inches dbh); past the point of rapid growth, and some have visible evidence of decay and decline including mycorrhizal fungi and other microorganisms. Stands will be dispersed in quantities and sizes which meet the needs of dependant wildlife. These stands will contribute toward the forest diversity and aesthetic values.

C3 – Big Game Winter Range

(Forest Plan, pages 4-151 through 4-154): The goal is to: "Manage big game winter range to provide high levels of potential habitat effectiveness and high quality forage for big game species.

Desired future condition: Big game winter ranges will appear as a mosaic of managed forests, brush

patches, and large grasslands. Forested areas will contain a mix of harvested even-aged, uneven-aged, and natural stands, creating patterns of cover patches and forage areas for big game. Areas of early spring green-up and other forage changes due to prescribed fires and other means will occur in a mosaic pattern over the winter ranges; quality forage will be abundant because of management.

C4 – Wildlife Habitat

(Forest Plan, pages 4-158 through 4-162): The goal is to provide high levels of potential habitat effectiveness for big game and other wildlife species with emphasis on size and distribution of habitat components (forage and cover for elk, and snags and dead and down materials for all cavity users). Unique wildlife habitats and key use areas will be retained or protected.

Desired future condition: The forest will be a mosaic of even-aged and uneven-aged stands dispersed in a manner to create a pattern of forage, and marginal and satisfactory cover for big game.

C5 – Riparian (Fish and Wildlife)

(Forest Plan, pages 4-163 through 4-166): the goal is to maintain or enhance water quality and produce a high level of potential habitat capability for all species of fish and wildlife within the designated riparian habitat areas while providing for a high level of habitat effectiveness for big game.

Desired future condition: A near natural setting will predominate adjacent to the stream, with a wide variety of plant communities of various species, sizes, and age classes. In forested riparian zones, a continuous high tree canopy layer will be present and the forest will appear denser than in the surrounding land. Upper and mid-level conifer and hardwood canopy structure and lower shrub level will provide desired levels of stream surface shading, streambank stability, and satisfactory cover for big game.

C8 – Grass-Tree Mosaic

(Forest Plan, pages 4-171 through 4-174): The goal is to provide high levels of potential habitat effectiveness, high quality forage for big game wildlife species, visual diversity, and protect erosive soils.

Desired future condition: Generally remain natural appearing with the predominant view being made up of patches of stringers of timber. Many forest stands will appear as mature timber with some having multi-layered canopies. Some stands will be more open as the result of management activities designed to improve big game habitat.

E1 – Timber and Forage

(Forest Plan, pages 4-178 through 4-181): The goal is to manage forest lands to emphasize production of wood fiber (timber) and encourage production of forage.

Desired future condition: Intensive management of forest for timber production and other commodity products will be apparent. The forest will primarily be a diverse mosaic of even-aged stands of many age classes, with trees somewhat uniformly spaced and well stocked. Regenerated stands will generally range from 20-40 acres. Stands managed using uneven-aged principles will also be apparent, particularly in the ponderosa pine types. A diversity of species will be present in plantations, but seral, more pest free species such as ponderosa pine, western larch, and lodgepole pine will be most evident. Accumulated fuels will generally be light, and large destructive fire will seldom occur; prescribed fire will be an important management tool.

Major Issues

Big Game Habitat

- Winter Range

Comments received during scoping expressed concerns about recent projects on the Heppner Ranger District that have amended the Forest Plan in order to treat vegetation within the Monument Winter Range. The Forest Plan sets a standard of habitat effectiveness (HEI) at 70 within the C3 management area. The Monument winter range is currently below Forest Plan standards for elk habitat effectiveness (HEI). Although the project would maintain HEI and satisfactory cover at the current level, the proposed action would reduce marginal cover.

- Summer Range

Comments received during scoping expressed concerns about treatment within summer range habitat on the Heppner Ranger District. Some of these concerns include increased vulnerability along open forest roads and reduction in cover. Treatment of marginal cover within the C4 and E2 management areas has the potential to impact HEI and the quality of elk habitat. Although the proposed action would not treat satisfactory cover the treatment of marginal cover would modify the development of future satisfactory cover.

Indicators: HEI (Road density, % total cover, % forage, % satisfactory cover, % marginal cover)

Sedimentation

There are three streams within the project area that are listed on the State of Oregon's 303(d) list for sediment. Without mitigation the proposed activities may lead to direct and cumulative effects of sediment reaching one or more of these streams. Forwarding and use of roads in Riparian Habitat Conservation Areas, landscape burning, and forwarding across intermittent or ephemeral stream channels has the potential to increase sediment amounts in streams.

Indicators: Road density and riparian road density

Other Issues

Issues that were not considered major, but which relate to existing regulations or which help to better understand the consequences of the proposed activities were considered other issues and will be tracked throughout this document. These other issues are generally of high interest or concern to the public or are necessary to understand the full extent of the alternatives.

Recreation

This area is a popular hunting ground for big game. User conflict may increase in areas where harvest and burning activities overlap during increased recreation use, in particular big game hunting season.

Roadless Areas and Areas without Roads

A concern was expressed about thinning and mechanical treatment units that were partially in roadless areas or undeveloped areas. No thinning or prescribed burning is proposed in this project within the Inventoried Roadless Areas. Thinning and burning are planned throughout the project area, including areas identified by Oregon Wild as unroaded areas.

Dead Wood Habitat: Snags

Proposed treatment activities would affect snags and downed wood density in mechanical fuels reduction units, affecting primary cavity excavator habitat. The primary concern is ensuring that an adequate level of dead standing wood is available into the future to provide downed wood and standing dead wood in varying stages of decay and densities for the range of species requiring these habitat features.

Late and Old Structure Habitat

Treatment of late and old structure stands has the potential to affect habitat quantity and quality for a number of wildlife species associated with mature forest stands.

Neotropical Migratory Birds

The proposed activities, including harvest, fuels treatments, and landscape underburning could directly or indirectly affect neotropical migratory birds and their habitat. Of particular interest is the Dry Forest habitat type.

Stream Temperature

There are two streams within the project area that are listed on the State of Oregon's 303(d) list for temperature. Existing shade is below Pacfish riparian management objectives on several streams. Proposed thinning and burning activities may impact shade on these streams.

Fish Habitat

Forwarding and use of roads in Riparian Habitat Conservation Areas, landscape burning, and forwarding across intermittent or ephemeral stream channels will likely increase sediment amounts in stream impacting fish habitat and spawning.

Air Quality

Local residents have expressed concerns about prescribed burning contributing to short term degradation to air quality and visibility. The Clean Air Act and Oregon Smoke Management Program establish the standard for smoke emissions that may be released during a prescribed burn that can affect air quality and visibility to local communities and the surrounding area.

Soils

Soil disturbance would occur with the proposed activities that require ground based equipment, particularly where mechanical fuels treatment follows mechanical thinning. Disturbance could include compaction, displacement, rutting, and exposure of the mineral surface to erosion due to removal of ground cover.

Noxious and Invasive Plants

Soil exposure from project activities may provide habitat for noxious and invasive plants. There is the potential for the spreading of existing noxious and invasive plant sites by harvest equipment.

Viability of Timber Harvest

The viability of timber harvest can vary from one alternative to another based upon the costs and revenues associated with the alternative. For example, a requirement to use a more expensive logging system or a prescription that harvests a lower volume of timber per acre can reduce the viability of a harvest proposal. Conversely, a less expensive logging system or a higher harvest volume per acre can increase the viability of a harvest proposal.

Chapter 3 – Environmental Consequences

This chapter summarizes the physical, biological, social, and economic environments of the affected project area and the potential changes to those environments due to the implementation of the alternatives discussed in Chapter 2. It also presents the scientific and analytical basis for the comparison of alternatives presented.

Chapter 4 – Consultation and Coordination

This chapter lists the scoping letters that were sent out to what organizations or concerned citizens and responses received. It also lists the members of the Interdisciplinary Team and other consultants that prepared this environmental assessment.

Bibliography

List of reference material cited by each specialist in writing their reports and this environmental assessment.

Appendices

This section contains description of best management practices, unit data, Forest Plan SCREENS compliance, roads analysis, soils data by unit, descriptions of past present and reasonably foreseeable future projects considered in cumulative effects analysis, and definitions and descriptions used in analysis.