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Final Environmental Impact Statement

Rimrock Ecosystem Restoration Projects

Heppner Ranger District, Umatilla National Forest
Grant, Morrow, and Wheeler counties, Oregon

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Final Environmental Impact Statement
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ABSTRACT

This project was initiated in response to the Wall Ecosystem Analysis (1995). The Rimrock project area is located on the Umatilla National Forest, Heppner Ranger District, in the Wall Watershed, located near the town of Monument, Oregon. The Wall watershed is a 200 square mile watershed within the North Fork John Day River system.

A Draft Environmental Impact Statement (DEIS) was released for public comment September 1, 2000. Changes have been made to the DEIS based on response to comments and new information. An additional alternative was added in response to a Douglas-fir tussock moth outbreak that occurred in 2001.

The Final Environmental Impact Statement (FEIS) discloses the potential impacts of timber removal through; commercial thinning and precommercial thinning, manipulating aspen stands, underburning through prescribed fire, maintaining in-stream fish structures, obliterating roads, decommissioning roads, improving road closures, and other road work required for timber removal. A no action and four action alternatives were considered in detail. These alternatives are consistent with the Forest Plan and amendments.

Alternative 1 is the no action alternative. Alternative 2 begins the process of changing stand composition to tree species and age classes that more closely represent historic conditions to enhance long-term sustainability and ecosystem health. Harvest is accomplished with multiple system types and fuel loads would be reduced through prescribed fire. Fish habitat would be altered through road work, in-stream habitat structure maintenance and aspen stand rehabilitation. Alternative 3 reduces possible effects on fish habitat through changes in various harvest methods and alternative road use during harvest activities. Alternative 4 reduces logging cost by omitting low value harvest units and using more cost efficient harvest methods. Alternative 5 is similar to alternative 3 with an alternate harvest prescription in the area most affected by Douglas-fir tussock moth.

Alternative 5 is the agencies preferred alternative.

Summary

Introduction

The following summary is a brief overview of the Rimrock Ecosystem Restoration Final Environmental Impact Statement (FEIS). For complete information, please review the entire document. This summary is not meant to present all the information contained in the complete FEIS.

Over View of the Area

The Rimrock project area contains approximately 41,800 acres within the Umatilla National Forest in Grant, Morrow, and Wheeler counties, and lies about 25 miles southwest of Heppner, Oregon. It is within the boundary of the Wall watershed, and includes Lower, Middle, and Upper Big Wall; Porter; Lower and Upper Wilson; and Indian subwatersheds.

Wall watershed, located near the town of Monument, Oregon is a 200 square mile watershed in the North Fork of the John Day River (NFJD) subbasin, and comprises approximately 8 percent of the land base in the North Fork John Day River system. The confluence of Wall Creek is 22.5 stream miles upstream from the confluence of the North Fork with the main John Day River. Wall watershed arises at an elevation of 4,600 feet and flows east to south to the confluence with the NFJD River at an elevation of 2,060 feet. Major streams draining the Wall watershed include Big Wall, Wilson, Little Wall, Skookum, and Swale Creeks.

The Wall Ecosystem Analysis was completed in September 1995. This document characterized the physical and biological conditions within the three main tributary systems, Wall (24), Little Wall (25), and Skookum (26). In addition, the document lists issues and key questions; compares current resource conditions to reference conditions, and identifies resource protection and restoration measures to be used by the Heppner Ranger District to set short and long-term ecosystem management priorities.

The Rimrock project was initiated to address some of the issues and restoration priorities identified in the Wall Ecosystem Analysis. Rimrock is one of many projects designed to address those issues.

Purpose of and Need for Action

The purpose of this project is to develop and analyze a mix of actions that respond to needs identified in the Wall Ecosystem Analysis (September 1995). The needs focus on the implementation of ecosystem management projects that are designed to promote long-term resilient and sustainable watershed conditions. In addition, one of the resource management goals for the Umatilla National Forest 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 (Land and Resource Management Plan, p. 4-2). Rimrock provides an opportunity to contribute to meeting that objective by using commercial timber sales to attain forest vegetation management objectives. Rimrock also provides an opportunity to use Governor Kitzhaber's 11-point strategy for restoring ecosystem health in Eastern Oregon (Regional Forester Letter, 7/03/1997) and to address the Chief's Natural Resource Agenda that promotes watershed health and restoration, sustainable forest ecosystem management, recreation, and management of forest roads. The current condition of each resource is briefly addressed (see Chapter 3 for more specifics) with specific objectives identified following each heading.

Forest Vegetation

Greater than ninety percent of the Rimrock analysis area consists of dry-forest sites where the plant association group is ponderosa pine or warm dry grand fir/Douglas-fir. Historically, the majority of these dry-forest sites were characterized by stands where open, park-like conditions dominated. Large, widely spaced ponderosa pines growing above dense undergrowth of tall grasses with scattered pockets of pine regeneration were typical across the landscape.

The last twenty years have seen a period of rapid change for thousands of forested acres in the Rimrock analysis area. Much of that change is related to abnormally high levels of insect and disease infestations. Outbreaks of mountain pine beetle (*Dendroctonus ponderosae*) in the late 1970's and early 1980's, western spruce budworm (*Choristoneura occidentalis*) between 1944-1958 and 1980-1992, and Douglas-fir beetle (*Dendroctonus pseudotsugae*) and fir engraver (*Scolytus ventralis*) during the late 1980's and early 1990's exacerbated those insect attacks by reducing tree vigor and lowering stand resistance to insect damage (Gast et al 1991).

Currently, field examinations reveal high levels of spruce budworm defoliation that occurred from the mid 1980's to 1992. Many stands contain high stocking levels (tree densities) and multiple-storied mixed conifer species. These conditions are highly favorable for future budworm epidemics. Additionally, budworm defoliation predisposes grand fir and Douglas-fir to bark beetle invasion following an outbreak. Eighty percent of the Rimrock analysis area is rated at a high risk for future budworm defoliation (Wall Ecosystem Analysis 1995). Other insects identified at moderate to high frequencies within the project area include mountain pine beetle, fir engraver beetle, pine engraver beetle (*Ips pini*), and western pine beetle (*Dendroctonus brevicomis*) (Scott 1997, Schmitt 1998).

A severe Douglas-fir tussock moth (*Orgyia pseudotsuga*) outbreak occurred in the planning area in 2000 and 2001 (Scott 2002). During the first year of the outbreak, tussock moth larvae defoliated an area of approximately 1,000 acres: roughly 95% of the area received light defoliation, and the remainder received moderate defoliation. In 2001, the second year of the outbreak, an area of between 4,000 and 5,000 acres, plus additional scattered variable-sized patches of tussock moth host trees, were defoliated over a range of defoliation classes. Within defoliated stands, an area of approximately 500 contiguous acres of host trees was nearly 100% defoliated within the Indian Creek drainage.

A variety of diseases also exist within the analysis area. Severe Douglas-fir dwarf mistletoe (*Arceuthobium douglasii*) infestations are present throughout most of the project area and the Wall Ecosystem Analysis (1995) identified 71% of the Rimrock area at moderate to high risk of infection (Schmitt 1998). Additional disease agents identified in the Rimrock area include: 81% moderate to high risk of infection from western dwarf mistletoe (*Arceuthobium campylopodum*) in ponderosa pine; 93% moderate to high risk of infection from mixed conifer root diseases (*Armillaria*, *Phellinus*, and *Annosus*); and 81% risk of infection from Schweinitzii root and butt rot (Wall Ecosystem Analysis 1995). Ponderosa pine heavily infected with dwarf mistletoe have lowered growth rates than uninfected trees, and may be sufficiently weakened that they are killed outright, or they may be predisposed to mortality caused by other insect agents (Schmitt 1996).

As a result of these conditions, there is a need to:

- Reduce stocking densities and favor seral species within warm dry Douglas-fir/grand fir ecological settings to promote the sustainability and vitality of current and future forest stands by reducing stocking densities to the levels recommended for the Umatilla National Forest
- Use landscape prescribed underburning as a periodic, low-intensity tool to reduce fuel loadings and the risk of large stand replacing wildfires
- Promote tree species composition and age classes more representative of the Historical Range of Variability (HRV)

Bull Prairie Campground Recreation

The Bull Prairie area is mixed conifer stand types made up of components of ponderosa pine, western larch, Douglas-fir, and grand fir in poor condition. The oldest trees in the area include large, mature, or over mature, ponderosa pine with fewer scattered large western larch and even fewer large Douglas-fir. There is a well-developed understory of shade tolerant Douglas-fir and grand fir that have become established since the exclusion of periodic fire. While these trees provide screening, they are not natural to the site at the current density, and the high stocking density is stressing some overstory pines. Some of the large pine trees have died and others are declining (Schmitt and Scott 1998).

There is evidence of bark beetles, dwarf mistletoe, and Indian paint fungus decay. Trees exhibiting advanced evidence of these insects and diseases pose extreme hazards for users of this recreation site due to breakage and falling of unsound limbs and trees.

As a result of these conditions, there is a need to:

- Manage hazard trees for the safety of site users
- Reduce stocking densities to maintain the vigor and viability of the large overstory trees and the current forest stand

Soil, Water, and Fish Habitat

Wall and Wilson Creeks were listed as water quality limited for water temperature, habitat modification, and sediment in Oregon's 1994/1996 List of Water Quality Limited Water Bodies. High water temperatures are primarily related to the relatively low elevation of the watershed, and, normally associated high air temperatures and low stream flow during the summer months. Streamside shade also influences water temperature. Riparian vegetation has been reduced by past management practices such as timber harvest, road construction, and livestock grazing.

Baseline data for Wall Watershed finds water temperature, pool frequency/quality, off-channel habitat, refugia, sediment, large woody debris, and road/density/location to be functioning at unacceptable risk. The majority of the indicators within the watershed are functioning at risk, which is physical barriers, substrate embeddedness, large pools, width/depth ratio, disturbance history, stream bank condition, and riparian conservation areas. The only indicator functioning appropriately is chemical contamination/nutrients. Working with all the indicators, the Wall Watershed baseline is functioning at risk.

Currently there are unhardened fords across Wall Creek (two on Road 23 and one on Road 23-100). Traffic across Wall Creek disturbs the streambed material causing short-term increases in turbidity. There is also the possibility that steelhead may get killed by vehicular traffic crossing Wall Creek.

As a result of these conditions, there is a need to:

- Improve pool habitat during summer low flows in Big Wall and Wilson Creeks to provide rearing habitat for Threatened and Sensitive fish species
- Reduce the amount of sediment contributed from open roads to improve water quality within the watershed
- Remove vehicle traffic from the streambed of Big Wall Creek and Little Wilson Creek at the four water crossings along Forest Road 23 and 2300100 to eliminate disturbance to fish habitat and reduce sediment contribution to the stream to improve water quality
- Improve effectiveness of road closures and decommission roads from the network system to increase infiltration, reduce sediment contributions, and promote revegetation of riparian areas (stream shade).

Aspen

Aspen clones that once covered larger areas have been reduced to small, disconnected stands or individuals. Inventories on the Heppner Ranger District have identified aspen stands to be in decline and at risk of extirpation. The identified stands are exhibiting 3 to 4 of the risk factors associated with serious aspen decline: conifer encroachment is moderate to severe, aspen canopy cover is less than 40 percent, and stands are at an advanced age (>100 years old) with little to no reproduction occurring. Viable aspen regeneration (5-15 feet tall) in these stands is commonly less than 10 stems per acre due primarily to grazing pressure from wild and domestic ungulates (e.g. deer, cattle, and elk).

As a result of these conditions, there is a need to:

- Increase reproduction, reduce browse damage, and remove conifer competition to promote stand age diversity and occupancy in identified aspen stands

Proposed Action

In response to the purpose and need, the Heppner Ranger District of the Umatilla National Forest proposes the following actions within the Rimrock project area:

Forest Vegetation

- Commercial thinning of approximately 4,615 acres resulting in an estimated 37,009 ccf (19,300 mbf) of wood products. Stand densities would be reduced to stocking levels appropriate for the plant association. All stands would remain fully stocked upon completion of harvest activities. Proposed units would be harvested using tractor, harvester/forwarder, animal, and helicopter logging systems. Access for harvest would require reconstruction (hardening, resurfacing, improvement of cross-drains) of about 17 miles of existing roads and construction of approximately 11.3 miles of temporary roads. The temporary roads would be closed and obliterated upon completion of harvest activities. Activities occurring concurrently or in association with timber harvest include subsoiling of landings and temporary roads to mitigate soil compaction, water barring, seeding of skid trails and landings for noxious weed control, and burning of created slash.
- Precommercial thinning of approximately 374 acres. Saplings (generally up to 6 inch dbh) would be thinned to promote growth, restore and maintain a more sustainable species composition, and improve visual quality as well as improve winter safety along Hwy 207 by providing more sunlight that would melt snow on the highway.
- Precommercial thinning of approximately 500 acres within the proposed commercial thinning harvest units to occur within five years following commercial harvest. This would treat the patches of overstocked sapling regeneration present in the understory.
- Control and prevention of noxious weeds. Control of any new sites would include manual treatment only.

Bull Prairie Campground Recreation

- Included within the 4,615 acres of harvest are 29 acres (three harvest units) located within the Bull Prairie Campground recreation site (the site is 207 acres in size). Harvest within these units would be accomplished by animal logging and would consist of removal of diseased, decaying, or dead trees (these present a hazard to site users) and commercial thinning to reduce stocking densities to maintain the vigor and viability of the current forest stand. Hazard trees over 21 inches in diameter could be removed from the Bull Prairie site.

Soil, Water, and Fish Habitat

- Maintenance and restoration of 51 in-channel fish structures on Big Wall Creek and 104 in-channel fish structures on Wilson Creek. These structures are in need of repair or removal because they are causing damage to the stream channel. Activities may include pool deepening, boulder placement, rebuilding of outside wings, total structure rebuild, or removal of structures. Heavy equipment may be used to repair some structures.
- In addition to the roadwork associated with harvest, 27 miles of open forest system roads (Forest Roads 23, 24) would be resurfaced. Resurfacing may include blading, placement of 4-6" deep aggregate, and maintenance of drainage structures such as drain relief culverts. This road maintenance would reduce the contribution of sediment into streams resulting from road surface erosion.
- Decommission 4 miles of unneeded closed roads by removing culverts and opening filled in draws. Obliterate 10 miles of unneeded closed roads by recontouring fill/cut slopes. Improve closures on 22 roads. Restoring natural drainage patterns would reduce sediment contributions to streams.
- Improve four low-water fords with structures designed for fish passage (large gradation crushed aggregate approaches with a suspended cattle guard type grates). The improvements would reduce sediment in Wall Creek, and protect fish from moving vehicles. The work on the Wall Creek ford at milepost 11.39, Forest Road 23, and the Little Wilson Creek ford at milepost 10.01, Forest Road 23, would be associated with the timber harvest. The work on the Wall Creek fords at milepost 9.85, Forest Road 23, and on Forest Road 2300100 at its junction with Forest Road 23 would be done as funds become available.
- Close two roads that are currently open. The Access and Travel Management Plan shows road 2309020 (2.08 miles) as open, although it has been physically closed and inaccessible to vehicle traffic. Road 2300101 (0.50 miles) was originally open to allow access to a dispersed campsite. The campsite has not been used in several years and is very close to Wall Creek.

Aspen

- Girdling of encroaching conifers or cutting of encroaching conifers up to 21 inches dbh (trees would be left on site), construction of ungulate-proof fences, prescribed burning, mechanical root stimulation, and planting in 12 identified aspen stands (24 acres).

Issues

Issues are derived from review of the proposed action that was developed in response to the identified purpose and need for the project. Issues are the basis for the project analysis, project design features, alternatives, and disclosure of information. Three issues relative to the proposed action are considered significant issues from which to develop alternatives.

Key Issue 1: Vegetation Removal

The principal plant associations within the proposed treatment units in the Rimrock project are warm grand fir, Douglas-fir, and ponderosa pine associations in lesser degrees (grand fir/pine grass), (grand fir/elk sedge), (Douglas-fir/elk sedge), (Douglas-fir/pine grass). Typically, major disturbances in these plant associations are fairly infrequent. The fire regime associated with these groups is one of low intensity and short return interval (Hall 1991). Historically, these warmer sites consisted principally of ponderosa pine. Periodic low intensity surface fires help thin the smaller established regeneration and maintain an open forest structure. Douglas-fir and other fire intolerant species may be able to occupy the cooler, moist northerly sites but are usually unable to tolerate the frequent fire intervals. Within the Rimrock project area, the practice of past

fire exclusion, while well intentioned at the time, failed to consider the impact of a major shift in species composition and has resulted in fir establishment and invasion outside its historic range.

Measurements used to compare the results of each alternative in response to this issue include:

- Treated acres moving stands toward desired late/old structural characteristics and to meet desired seral species composition

Key Issue 2: Water Quality/Fish Habitat/Threatened, Endangered and Sensitive Fish Species

Baseline data for the Big Wall Watershed finds water temperature, sediment, large woody debris, pool frequency/quality, off-channel habitat, refugia, and road/density/location to be “functioning at unacceptable risk”. Indicators within the watershed “functioning at risk” are: substrate embeddedness, large pools, width/depth ratio, stream bank condition, physical barriers, and riparian conservation areas. Indicators “functioning appropriately” are chemical contamination/nutrients and disturbance history. Working with all the indicators, the Big Wall Watershed baseline is functioning at risk.

Measurements used to compare the results of each alternative in response to this issue include:

- Number of pools improved or maintained
- Percentage of fish structures functioning properly
- Miles of road improvements where a reduction in sediment contributions occurs
- Miles of road decommissioned or obliterated
- Miles of temporary road constructed
- Miles of closed road reopened for haul use (relates to miles of stream where shade may be reduced which correlates to stream temperature)
- Acres of treatment that could mobilize sediment
- Modeled change in sediment yield (% baseline)

Key Issue 3: Economic Viability of Timber Sales

Timber harvest activity cost can exceed sale receipts. Within the Rimrock project many non-harvest related activities would occur (see alternative 2 for description) along with harvest related activities. Timber harvesting and associated activities could affect the local communities and contribute to the National Treasury.

The measurement used to compare the results of each alternative in response to this issue is:

- Estimated advertised bid rates per hundred cubic feet

Other Issues Considered

Issues that were not considered key issues, but were determined to be important or required to be disclosed, were considered as “other” or “non-key”. These other issues are generally of high interest or concern to the public, or are necessary to understand the full extent of the alternatives. “Other” issues provide additional information for the analysis but do not drive the formulation of alternatives.

Long-term Soil Productivity

The proposed action includes some activities that can affect the long-term productivity of the soil. For example, timber harvest and associated activities can cause compaction and displacement of soils and can increase potential for soil erosion. Fire can reduce surface litter, duff, and soil organic matter; and expose soils to a greater risk of erosion. Intense fire can change the

chemistry and texture of the upper layer of the soil and can greatly increase the risk of erosion. Standards and guidelines for the Umatilla National Forest “are designed to maintain a minimum of 80 percent of a project area (or cutting unit) in a non-detrimental soil condition with respect to the effects of compaction, displacement, and erosion” (Forest Plan, 4-43).

Aspen

Aspen stands within the analysis area are displaying low vigor and poor reproduction. The general poor condition and lack of regeneration is the result of a combination of factors including fire suppression, conifer encroachment, and grazing of sprouts. There is concern that we need to protect the stands that have been identified and implement aggressive management techniques or risk loss of this vegetative component.

Air Quality

The Clean Air Act dictates consideration of the effects of prescribed burning on air quality and the surrounding communities. Particulate emissions, timing and duration of prescribed burning are items of importance. Concerns have been expressed related to prescribed fire causing short-term degradation to air quality and visibility in the local area.

Heritage Resources

Historic and prehistoric sites exist within the project area, as identified from past cultural heritage surveys. Ground disturbing activities related to harvest and fish structure maintenance would have the potential to disturb these sites that could require avoidance or mitigation.

Recreation

The Bull Prairie Campground is very popular during the summer and fall months and is often at overfull capacity on the summer holiday weekends and during big game hunting season. Proposed harvest units within this developed recreation site raise concerns about safety, access to facilities, and visual quality.

The analysis area is a popular place to hunt and experiences heavy use during hunting seasons. There are approximately 38 dispersed campsites within the analysis area, many near proposed harvest units. Harvest activities, logging traffic, and prescribed burning could change the use of these sites.

Transportation

The District Motorized Access and Travel Management (ATM) Plan (1992) identified the desired open or closed status for each road on the District. During the ATM planning process it was realized that on the ground changes would be required and would be documented through the NEPA process for site specific projects. Two changes to the ATM are proposed in the Rimrock area. Road 2309020 (2.08 miles) would change from open to closed. This road has an earth barricade and has not been accessible to vehicle traffic. Road 2300101 (0.50 miles) would also change from open to closed. During ATM planning this road was left open to allow access to a dispersed campsite. The campsite has not been used for several years and is very close to Wall Creek. In addition to the road closures, 22 existing barricades would be improved. The proposed closures would not change the roaded status of the area.

Noxious Weeds

There are six inventoried, high priority noxious weed species within the Rimrock analysis area. These species are Scotch Broom (*Cytisus scoparius*), diffuse knapweed (*Centaurea diffusa*), hounds tongue (*Cynoglossum officinale*), tansy ragwort (*Senecio jacobaea*), Klamath weed (*Hypericum perforatum*), and scotch thistle (*Onopordum acanthium*). These weeds are

considered noxious because they displace native vegetation and are rated as high priority because they are invasive, persistent, and prolific reproducers.

Threatened, Endangered Proposed and Sensitive Species – Plants

The project area has been completely covered by botanical surveys. These surveys show that no presently listed TEPS plant species occur within the project area.

Threatened, Endangered and Sensitive Species – Wildlife

The only threatened species (under the Endangered Species Act) known to occur in the analysis area is the bald eagle (listed 1978). An active nest was found in May 1994. This nest is located approximately 2 miles outside of the analysis area. Foraging habitat, associated with the nesting eagle, occurs within the analysis area.

Regional Forester's Sensitive species considered in the analysis area include the California wolverine. Surveys for furbearers have been conducted in the analysis area since 1991, and this species has not been documented. Potential natal denning habitat for wolverine does not exist in the analysis or adjacent areas.

Threatened, Endangered and Sensitive Species – Fish

Within the Big Wall Watershed there is occupied habitat for one federally listed fish species and one species designated as sensitive by the Regional Forester. The middle Columbia River steelhead was listed as threatened on March 16, 1999. Redband trout are designated as sensitive. Wall watershed also falls within the proposed designated critical habitat for Snake River Fall Chinook salmon.

Management Indicator Species

The Forest Management Indicator Species: steelhead, rainbow trout, Rocky Mountain elk, northern three-toed woodpecker, pileated woodpecker, and a guild of primary cavity excavators inhabit the Rimrock analysis area. Another indicator species, the pine martin, is believed to be absent from the area because historical records do not indicate its presence and there have been no documented sightings.

Species of Interest

The northern goshawk, white-headed woodpecker, spotted frog, bald eagle, mid-Columbia steelhead, bull trout, Canada lynx, pale western big-eared bat, pacific western big-eared bat, spotted bat, California wolverine, small-footed myotis, long-eared myotis, long-legged myotis, Yuma myotis, olive-sided flycatcher, northern sagebrush lizard, pacific lamprey, interior redband trout, Blue Mountains cryptochian caddisfly, Washington monkeyflower, little mouseling, and arrow-leaf thelypoda are addressed in this analysis because of public interest at the local or regional level, or because they are identified as listed species, proposed species, candidate species or species of concern by the Fish and Wildlife Service (updated Federal Register 1997 list).

Alternatives Considered in Detail

No Action (Alternative 1) Theme: Allow current biological and ecosystem processes to continue with the associated risks and benefits and to provide a baseline for comparison with other alternatives

Proposed Action (Alternative 2) Theme: Begin the process of changing stand composition to tree species and age classes that more closely represent historic conditions to enhance long-term

sustainability and ecosystem health. Reduce fuel loads and stocking levels that would support future re-introduction of low intensity fire and reduce stand densities to levels recommended for the Umatilla National Forest.

Alternative 3 Theme: This alternative emphasizes minimum impacts to water quality, fish habitat, and fish populations, while still addressing all the elements of the purpose and need. The focus is to minimize sedimentation and degradation of riparian conditions. This alternative addresses issues about water quality and fish habitat, while still achieving some wood fiber production and other ecosystem objectives. Alternative 3 was developed in direct response to Key Issue 2: Water Quality/Fish Habitat/Threatened, Endangered and Sensitive Fish Species.

Alternative 4 Theme: This alternative was designed to improve economic efficiency by eliminating units with very high logging or transportation costs relative to the value of the timber to be harvested. Alternative 4 was developed in direct response to Key Issue 3: Economic Viability of Timber Sales.

Alternative 5 Theme: This alternative emphasizes minimum impacts to water quality, fish habitat, and fish populations, while still addressing all the elements of the purpose and need. This alternative is the same as alternative 3 with an increased focus on stand health, addressing the area most affected by the Douglas-fir tussock moth outbreak of 2001.

Decisions to be Made

This Environmental Impact Statement documents results of the environmental analysis conducted for the proposed action and its alternatives. The Heppner District Ranger will determine which alternative best implements the Forest Plan at this time. Specific determinations to be made are:

- Whether harvest and associated activities should occur and, if so, how much, using which logging systems, and where.
- Whether restoration activities are needed and, if so which ones and where.
- Which mitigation measures are necessary?
- What monitoring measures should be taken?

Affected Environment and Consequences

Forest Vegetation: Alternative 1 would allow the areas identified for treatment at this time to progress through natural successional patterns at their own rate with no outside manipulation. Untreated, the proposed areas would remain at high risk from insect infestations. The current Douglas-fir dwarf mistletoe infestations in the areas would continue. Existing levels of western dwarf mistletoe in the ponderosa pine would also proliferate.

All action alternatives include precommercial and commercial thinning. Stocking levels would be reduced to promote a more vigorous and sustainable stand of trees. The thinnings would discriminate against shade tolerant, invading climax species such as Douglas-fir and grand fir, where it is determined they are outside their historical range, and favor seral species that are more resistant to fire, drought stress, and insect attacks. Fuel loadings would be reduced, lessening the potential threat of a high intensity wildfire that could destroy most of the remaining live trees.

Soil Productivity: Timber harvest and related activities can contribute to compaction, displacement, and erosion of soils. The most severe compaction and displacement would occur on temporary roads and landings constructed for the timber harvest operations.

The fewest acres of detrimental compaction occur in alternatives 3 and 5 due to the higher percentage of helicopter and forwarder logging systems. The fewest acres disturbed that are highly susceptible to displacement would occur under alternatives 3 and 5. Alternatives 3 and 5 would have the least impact on soils with high susceptibility to erosion.

Prescribed burning, temporary road construction, road reconstruction, road closures, road maintenance, and in-stream fish structures would also have impacts on soil attributes. All alternatives would be able to meet the Forest Plan standard of maintaining a minimum of 80% of the soils in the proposed harvest units in an acceptable productivity level.

Recreation: Bull Prairie Campground is a 35 acre recreation complex consisting of an overnight camping area, day use area, a 28.6 acre man-made reservoir, and a 1.14 mile handicap accessible trail around the lake. There are several problems with tree health throughout the campground. Tree regeneration is rather dense. Alternative 1 would continue to maintain the campground at present levels. All action alternatives (Alternative 2-5) would have the same affect on the vegetation within the Bull Prairie Recreation Site. The disturbance to visitors of harvest activities and fuel reduction would be minimal by using appropriate harvest methods (animal based logging) and appropriate timing of harvest and burning periods. Portions of the recreation area would be closed during some management activities.

Dispersed camping, fishing, big game hunting, upland bird hunting and off-road vehicle recreation are some of the popular activities that occur within the Rimrock area. Under the no action alternative, stand decline could have several negative affects on recreation users. Wildfire would become a concern during high use periods and a stand replacing wildfire would have a long-term affect on potential visitors. All action alternatives would affect visitors in the short term. Many dispersed recreation activities would be restricted in the immediate area during the proposed management activities. Overall and in the long-term, dispersed recreation opportunities would not be expected to change significantly with the proposed action alternatives.

Areas Without Roads: No inventoried roadless areas or "contiguous unroaded areas" are located within the Rimrock project area. There is one irregularly shaped area over 1,000 acres in size that contains no classified roads and several irregularly shaped smaller areas without classified roads.

Under alternative 1 no changes in road density or road locations would occur. No roadless area characteristics would change. Under all action alternatives no new road construction is planned in any of the undeveloped areas, in most cases harvest is confined to ridge tops, and all units are located along or near existing roads. The major difference between Alternatives 2, 3 and 5 versus Alternative 4 is the thinning of 68 acres along the edge of the largest unroaded area.

Visual Quality: The Forest Plan has designated management areas within the Rimrock Project where viewsheds will be managed primarily to meet visual quality objectives of retention and partial retention. These management areas are along Highway 207, Forest Road 2039, and 247 acres east of Bull Prairie Recreation Area.

Under alternative 1 these viewshed areas would not be managed to improve visuals within the foreground. Present viewsheds and their Visual Quality Objectives would not be altered by management activities; changes would be shaped by natural events. Scenic character would be subject to cyclical, natural disturbance processes such as insect and disease, fire, wind, drought, and vegetation succession. With the action alternatives, (alternatives 2-5), precommercial

thinning would occur along Highway 207 and commercial thinning would occur on 25 to 28 acres along the Highway 207 viewshed. Commercial thinning occurring in the Bull Prairie Recreation Area Viewshed would reduce dense and or unhealthy characteristics of several areas. All other management areas within Rimrock allow for a complete range of visual quality objectives with various resources being the driving force behind the management strategy.

Fish and Aquatic Habitat: The planning area contains 365 miles of streams, of which 33 miles are class 1 (anadromous fish bearing), 3 miles are class 2 (resident fish bearing), 47 miles are class 3 (perennial, non-fish bearing), and 282 miles are class 4 (seasonally intermittent). Fish species present in these streams include: **Middle Columbia steelhead** (*Oncorhynchus mykiss*); **Columbia redband trout** (*Oncorhynchus mykiss gibbsi*); speckled dace (*Rhinichthys osculus*); sculpin (*Cottus* spp.); and sucker (*Catostomus* spp.). Fish are found in 36 miles (10% of the total stream miles) of the 83 miles of perennial streams (class 1 & 2) in the Rimrock planning area.

Alternative 1 would have no impact on individual steelhead or redband trout and presently occupied habitat. However, because long-term benefits from in-channel fish structure improvements, fish passage improvements, and road stabilization would not be realized, sediment from these sources would continue to enter streams. Alternative 2, 3, 4, and 5 would have varied effects on fish and aquatic habitat. In the short-term, habitat would be altered by increased sediment contribution from harvest activities, increased road use, and stream structure maintenance. The long-term benefit would create a reduction in stream sediment and increased habitat availability.

Water Resources: The analysis area of 62,272 acres encompasses all subwatersheds within the Wall Creek Watershed (24). The entire analysis is within the North Fork John Day Sub-Basin. Analysis of effects was done at the watershed and subwatershed scale (fifth and sixth level HUC).

Under the no action alternative no short-term adverse effects to the stream system or to beneficial uses from sedimentation, shade removal, or canopy reduction would result from implementation of this alternative. Over the long term, riparian conditions would remain unchanged or decline slightly because restoration and enhancement projects would not be implemented. Roads in poor condition and poorly located roads would continue to supply sediment to the stream system, as would deteriorating fish habitat structures.

Under all action alternatives, there would be a low level of adverse effect to the stream system because of soil disturbance from harvesting, burning, and road activities. Over the long term, the stream system would improve because of road reconstruction, resurfacing, and reduced risk of catastrophic wildfire. As described in the action alternatives, alternatives 3 and 5 focus on reducing the effects to the stream systems.

Aspen: Aspen clones once covered larger areas are now disconnected stands or individuals. These stands are in decline and at risk of extirpation. Twelve identified stands are exhibiting 3 to 4 of the risk factors associated with serious aspen decline: conifer encroachment is moderate to severe, aspen canopy cover is less than 40 percent, and stands are at an advanced age (>100 years old) with little to no reproduction occurring. Viable aspen regeneration (5-15 feet tall) in these stands is commonly less than 10 stems per acre due primarily to grazing pressure from wild and domestic ungulates (e.g. deer, cattle, and elk).

Under the no action alternative, aspen stands would continue to decline from the pressures of competition and known risk factors. With all action alternatives, 24 acres of aspen would be treated to stimulate growth, reduce conifer competition and construct ungulate proof fencing.

Fuels/Air Quality: The stands within the Rimrock area will no longer support historical

frequent light fires due to the buildup of fuels. Without treatment, most fires in these stands will be of a high severity, resulting in the loss of the majority of the trees through root, cambium, and foliage scorching or burning. Under Alternative 1, fuel loads would continue to build, with grand fir and Douglas-fir continuing to invade previously open stands and contributing to an increase in ladder fuels. Under all action alternatives, large areas would be prescribed burned to reduce hazardous fuel loads. Selected stands would be thinned from below and the slash treated. The treatments of prescribed fire and thinning would serve to open the crowns, reduce ladder fuels, and allow more sunlight on the forest floor. The harvest treatments in combination with prescribed burning would move the area toward a desired future condition of more open, park-like stands.

Heritage Resources: 83 heritage properties have been identified within the current project area. Twenty-six of these sites are prehistoric, 16 are historic, and 41 are isolated occurrences. Forty-two archaeological properties identified are considered potentially eligible to the National Register of Historic Places and require protection from any ground disturbing activities until a determination of eligibility has been reached.

Transportation: The roads in the Rimrock planning area are in place and no new roads would be constructed. The majority of the roads are adequate for timber haul with just road maintenance needed. Road 23 fords Wall Creek in two locations and is a source of sediment into the creek. Under all action alternatives two stream crossing structures would be constructed prior to harvest activities and an additional two structures would be constructed as funds become available. Temporary roads constructed to access harvest units would be obliterated after harvest is complete so open road densities would not increase as a result of constructing temporary roads. Two currently open roads (2.58 miles) would be closed.

Non-Forest Vegetation: (includes noxious weeds and threatened, endangered, and sensitive species) Transportation corridors and recreation sites appear to be the focal points of noxious weed infestations on the Heppner Ranger District. Primary mechanisms of dispersal appear to be: road vehicles, bird excrement, recreationists, wind, logging equipment and water. Mitigation measures described under Prevention Strategies in Appendix E of the Umatilla National Forest Management of Noxious Weeds EA and in the Noxious Weed Plan for Rimrock would reduce the possibility of noxious weed establishment and spread under alternatives 2-5. Post-project surveys would be used to determine if existing infestations spread as a result of project activities or if new infestations become established.

Wildlife Habitat: Insect, disease, selective harvest and lack of natural fire have changed wildlife habitat structure in the Rimrock area. The proposed commercial and pre-commercial thinning activities under alternatives 2-5 would improve the forage components and allow forested areas to reach maturity sooner. Stands would reach the late structural stages sooner, thus increasing suitable habitat for species associated with older and larger trees.

Management Indicator Species (MIS) Rocky Mountain elk, northern three-toed woodpecker, and several primary cavity excavators inhabit the Rimrock Planning Area.

Rocky Mountain Elk was not in the planning area until the late 1960's and early 1970's. The analysis area is important for elk calving and rearing. Proposed activities would maintain or improve foraging habitat. Commercial thinning would reduce the quality of cover for elk.

Northern three-toed woodpecker is believed to occur in the analysis area because of available habitat. However, no observation records of its presence exist. Proposed activities would have no impact. Currently the only habitat in the analysis area is Dedicated Old Growth and no activities are scheduled for these areas.

Primary cavity excavators refer to several woodpecker species that use dead and down tree habitat. The following species occur in the analysis area: black-backed woodpecker, hairy woodpecker, downy woodpecker, red-naped sapsucker, Williamson's sapsucker, Lewis' woodpecker, white-headed woodpecker and the northern flicker. There would be no impact to primary cavity excavators or their habitat. Snag retention would be 100% plus population potential.

Neotropical Migratory Birds (NTMB) account for nearly half of the avian species diversity in the watershed, and occupy a wide variety of habitats. Most birds in eastern Oregon ponderosa pine forest are "foliage-gleaners". With alternative 1 the development of a "large tree, single-layered canopy with an open, park-like understory dominated by herbaceous cover, scattered shrub cover and pine regeneration" would be delayed. Area NTMB species that are associated with this habitat will remain stable or decline until more of this type of habitat develops over time. All action alternatives will promote the development of these open, park-like stands.

Threatened and Endangered Species:

Northern bald eagle is present in the analysis area, an active bald eagle nest was found May 1994 south of the Ant Hill Lookout. This is approximately one mile outside the analysis area boundary. Bull Prairie Lake and the North Fork John Day River could provide feeding and nesting habitat for eagles. Northern bald eagles have not been observed in the majority of the analysis area during their breeding season, thus conflicts should not occur.

Canada lynx have not been documented and have had no reported sightings in the analysis area. Analysis done during the winter of 2000 shows no Lynx Analysis Units in the Rimrock analysis area.

Region 6 Sensitive Species (Terrestrial): Pacific western big-eared bat, Preble's shrew, California wolverine, and peregrine falcon were not included due to the lack of species presents or habitat.

The **northern goshawk** and the **white-headed woodpecker** are known to occur in the analysis area (Heppner Ranger District Wildlife Database) and the **spotted frog** is suspected to occur. Proposed activities would maintain or improve potential habitat for the northern goshawk, white-headed woodpecker and the spotted frog.

Economic and Social: Many of the communities within the impact zone of the Umatilla National Forest are closely tied to the forest in both work activities and recreation. Comparisons of viability of harvestable timber, employment supported by the alternatives and the economic efficiency for relative comparison between alternatives were assessed in this document.

Viability of the harvest was determined by comparing advertised bid rates. Bid rates vary dependant on harvest type methods. Those alternatives using the highest quantity of tractor logging systems and the lowest quantity of helicopter units produce the highest bid rate (alternative 2). Employment figures were compiled including direct, indirect and induced employment. Using IMPLAN it was determined that alternative 5 would produce the highest amount of employment. Economic efficiency analysis was completed that focused on identifiable and quantifiable ecosystem benefits and costs for each alternative in terms of the present net value to assess which alternative comes nearest maximizing net public benefits. Through this analysis process it was determined that alternative 4 would have the greatest present net value of the action alternatives due primarily to the highest timber value resulting from lower associated logging system costs.

Preferred Alternative

- Alternative 5 has been selected as the preferred alternative. Alternative 5 would restore health of forests that are overstocked or diseased including 122 acres of forest that has been defoliated by the Douglas-fir Tussock Moth, reduce fuel loads through out the Rimrock area, use low impact logging systems and mitigation to offset harvest-related increases in erosion or sedimentation, and reduce erosion and sedimentation through active restoration of roads and in-stream fish structures. The primary features of this alternative are:
- Commercially thins 4,448 acres through the use of harvester/forwarder, animal, and helicopter logging systems
- Harvests 122 acres through a shelterwood regeneration harvest in stands severely defoliated by Douglas-fir tussock moth
- Reconstructs 14 miles of roads for log haul
- Constructs 13.5 miles of temporary roads for log haul
- Obliterates 10 miles of closed roads
- Decommissions 4 miles of closed roads by removing drainage structures
- Closes 3 miles of open roads
- Treats 12 aspens stands (24 acres)
- Precommercially thins 874 acres
- Continue treating known noxious weed infestations and any new ones that are identified.
- Prescribe burns 34,570 acres to reduce fuel loads
- Maintains 155 in-channel fish structures on Big Wall Creek and Wilson Creek
- Resurfaces 27 miles of Forest Roads 23 and 24
- Improves 4 low water fords on Forest Roads 23 and 2300100.
- Improves 22 existing road closures.
- Alternative 5 would address Key Issue 1 by restoring health of forests that are overstocked or diseased including 122 acres of forest that has been defoliated by the Douglas-fir tussock moth, and reduce fuel loads through underburning and burning of harvest slash. Key Issue 2 would be addressed by use of low impact logging systems and mitigation to offset harvest-related increases in erosion or sedimentation and reduce erosion and sedimentation through active restoration. Alternative 5 addresses Key Issue 3 by using economically feasible harvest system as best appropriate.

Rimrock Alternative Comparison

Activity		Alternative			
		2	3	4	5
Thinning	Commercial harvest acres	4,615	4,570	4,115	4,570
	Precommercial thin acres	874	874	874	874
Logging Systems	Helicopter	932	1,019	458	1,019
	Tractor	1,424	0	1,426	0
	Forwarder	2,230	3,522	2,202	3,522
	Animal	29	29	29	29
Roads	Reconstruction Miles	17	14	18	14
	Resurface Miles	27	27	27	27
	Miles of Roads Reopened	37	33	37	33
	Road Closure Improvements	22	22	22	22
	Decommission Miles	4	4	4	4
	Obliteration Miles	10	10	10	10
	Low Water Ford Improvements	4	4	4	4
	Temporary Road Construction	11.3	13.5	11.3	13.5
Volume	Thousand board feet (mbf)	20,700	19,600	18,300	20,500
	Hundred cubic feet (ccf)	39,900	37,700	35,200	39,500
Rimrock TS	Commercial thin acres	2,765	2,765	2,496	2,643
	Shelterwood acres	0	0	0	122
	Thousand board feet (mbf)	11,600	12,100	11,700	13,100
	Hundred cubic feet (ccf)	22,309	23,300	18,300	25,100
	Helicopter	578	630	317	630
	Forwarder	1,507	2,135	1,479	2,135
	Tractor	680	-	700	-
PCT	197	197	197	197	
Wild Horse TS	Commercial thin acres	1,330	1,285	1,312	1,285
	Thousand board feet (mbf)	5,200	5,000	5,100	5,000
	Hundred cubic feet (ccf)	10,000	9,600	9,800	9,600
	Helicopter	-	-	-	-
	Forwarder	602	1,256	602	1,256
	Tractor	699	-	681	-
	Horse	29	29	29	29
PCT	177	177	177	177	
Kingbolt TS	Commercial thin acres	520	520	307	520
	Thousand board feet (mbf)	2,500	2,500	1,400	2,500
	Hundred cubic feet (ccf)	4,700	4,700	2,800	4,700
	Helicopter	354	388	141	388
	Tractor	45	-	45	-
Prescribed Burning	Slash	4,615	4,570	4,115	4,570
	Natural Fuels	30,000	30,000	30,000	30,000
Fish Structures		155	155	155	155
Aspen Treatments (acres)		24	24	24	24

