

**DECISION NOTICE
AND
FINDING OF NO SIGNIFICANT IMPACT**

South Bend Hazardous Fuels Reduction Project

USDA Forest Service, Bend/Fort Rock Ranger District, Deschutes National Forest

Legal: T18S, R11E, Sections 26-28 and 33-35; T18S, R12E, Sections 26-29 and 32-36; T19S, R11E, Sections 1-4, 8-17, and 22-24; T19S, R12E, Sections 2-8, Willamette Meridian, Deschutes County, Oregon.

Introduction

With this Decision Notice, I am documenting my decision to approve the proposed action described in the South Bend Hazardous Fuels Reduction Project Environmental Assessment. The EA was prepared under the authorities contained in the Healthy Forests Restoration Act of 2003. Only one action alternative (Alternative 2) was considered (EA pages 25-40) as part of this project because it meets the criteria for WUI, and all treatment is within 1.5 miles of an at-risk community. This project is designed to reduce hazardous fuels in the South Bend wildland-urban interface (WUI) on the Bend /Fort Rock Ranger District of the Deschutes National Forest. The project area is located outside of the range of the northern spotted owl.

The majority of the forested stands within the project area were previously harvested and clear-cut in the early 1900s when the land was owned by the Shevlin-Hixon and Brooks-Scanlon logging companies. The lands came under federal ownership in the 1940s and 1950s with most of the merchantable volume having been already removed from the land. The majority of the areas proposed for treatment are second growth ponderosa pine stands with trees averaging 12” dbh and 75 years old. Most stands have been thinned in the last 20 years. Trees have increased in growth rates and are now approaching canopy closure levels that can contribute to sustainable crown fires during certain weather conditions. Understories consist of a continuous coverage of shrubs, including bitterbrush and manzanita, along with seedlings and saplings that contribute to surface and ladder fuel loadings that are well above desirable levels. There are no streams or other surface water sources within or adjacent to the project area (EA page 12).

The project area is located within a portion of the lands that comprise the Greater Bend Community Wildfire Protection Plan (CWPP). These are Federal lands that have conditions conducive to large-scale wildfire disturbance events which pose a substantial threat to both human life and property.

This project will reduce fuels adjacent to Deschutes River Woods, Lost Tracks golf course, Woodside Ranch, and other private lands. Other activities will reduce fuels that are adjacent to a portion of Highway 97 (a major highway that runs north/south), Forest Road 18 (China Hat Road), and power and gas utility corridors. Other areas will have fuels continuity broken up to reduce fire intensity and allow firefighters the opportunity to fight fire safely, depending on fire conditions.

Decision

My decision involves the following specific actions: Approximately 3,021 acres will be treated to reduce crown, ladder, and ground fuels as shown in Table DN-1 and DN-2.

Table DN-1. Selected Alternative Treatments and Acres

Unit	Treatment	Acres	
		Gross Treatment	Net Thinning
107	Thin/Hand pile/Mow	10	9
110	Thin/Prune/Hand pile/Mow	66	59
113	Thin/Machine pile/Mow	61	55
114	Thin/Hand pile/Mow	47	42
115	Thin/Hand pile/Mow	65	58
116	Mow	28	---
119	Thin	70	63
120	Thin	36	32
131	Thin/Prune/Hand pile/Mow	37	33
132	Thin/Hand pile/Mow/Underburn	94	85
133	Mow/Underburn	63	---
134	Mow/Underburn	231	---
135	Mow/Underburn	110	---
136	Mow/Underburn	213	---
137	Mow/Underburn	239	---
138	Mow/Underburn	113	---
139	Mow/Underburn	224	---
141	Mow/Underburn	193	---
153	Underburn	44	---
221	Thin/Prune/Hand pile/Mow	16	14
222	Prune/Mow	61	---
251	Mow/Underburn	38	---
252	Underburn	34	---
254	Thin/Prune/Hand pile/Mow/Underburn	49	44
255	Underburn	99	---
411	Mow/Underburn	75	---
412	Thin/Hand pile/Mow	25	22
430	Thin/Hand pile/Mow	100	90
446	Thin/Mow/Underburn	121	97
447	Thin/Mow	95	86
452	Mow	36	---
453	Mow	151	---
454	Thin/Hand pile/Mow	100	90
455	Thin/Hand pile/Mow	35	32
456	Mow/Underburn	42	---
TOTAL		3,021	911

The table on the following page summarizes the treatment combinations by Forest Plan Management areas.

Table DN-2. Selected Alternative Summary and Management Allocations

Treatment Combination	Deer Habitat	Scenic Views		Total
Thin	70	36	---	106
Thin, mow	---	514	24	538
Thin, mow, underburn	215	---	---	215
Thin, prune, mow	37	39	43	119
Thin, prune, mow, underburn	49	---	---	49
Mow	---	215	136	351
Underburn or Mow/Underburn	1,643	---	---	1,643
Total	2,014	804	203	3,021

* The net treatment acres is the gross treatment acres minus retention areas.

Thinning trees up to 21 inches diameter at breast height (dbh) will occur on approximately 911 acres after accounting for the retention areas, which are 10% of each unit and 20% of unit 446. Pruning of lower limbs on larger leaf trees will increase the distance between surface and crown fuels. The removal of merchantable material will provide approximately 2.9 MMBF (6,125 CCF) of timber. My decision includes an adjustment to the basal area objective, so that a range of 50-90 square feet per acre, averaging 70 square feet per acre is left.

Mechanical shrub treatment (mowing) focuses on reducing ground and ladder fuels such as shrubs and small trees. In addition to shrubs and small trees, prescribed underburning focuses on reducing forest litter, needles, and small limbs. In areas proposed for either mowing or underburning, or both, 30 percent of each unit will be retained in an untreated condition.

Thinning and pruning slash will be reduced by whole tree yarding, hand or machine piling, underburning, and/or mechanical shrub treatment. In areas of low fuel loadings, slash could be scattered. There is the potential that the resulting slash could be removed as biomass.

Fuel treatments in units 221 and 222 will be priority for implementation. Thinning and pruning in unit 221 and pruning in unit 222 will require slash piling and burning. Disposal of the slash piles through burning will occur within one year of treatments and will occur when snow is on the ground.

Connected Actions

No permanent road construction will occur. Approximately 1.1 miles of temporary road will be constructed to access units 113 and 119.

Approximately 9.3 mile of Forest Roads will be closed or decommissioned following project activities as follows. Decommission: 1800-022, 1800-050, 1801-390, 1801-850, 9701-170. Close: 1800-030, 1800-063, 1801-440, 1815-236, 1815-640, 1815-643.

Project Design Features

A variety of standard mitigation measures and best management practices are included to minimize or eliminate any adverse effects and to ensure consistency with the Forest Plan. My decision

includes the implementation of the project design features described in Chapter 2 of the EA and attached to the end of this Decision Notice.

Reasons for the Decision

The selected alternative addresses the purpose and need:

I have chosen to implement Alternative 2 (Proposed Action) because the integrated fuels reduction treatments will reduce the risk of uncharacteristic wildfire by decreasing canopy density, tree density, and surface and ladder fuels. Alternative 2 takes a landscape level approach to fuels reduction while managing dry pine sites within the vicinity of and contiguous to housing and recreational developments to reduce fire risk. Treatments will increase firefighter safety during wildland fire by helping to keep fire on the ground and by providing for evacuation and access routes for the public and firefighters. This project will reduce existing fuels within the vicinity of homes, structures and infrastructure and also provide for reduced ember production in the WUI. The analysis has clearly shown that this action is needed to reduce the wildfire and beetle mortality risk to present and future forest values while protecting private and public property values and safety.

The selected alternative provides a combination of resource protection and benefits. I am confident that the resource protection measures will allow the reduction of fire hazard in the WUI while preventing unwanted adverse effects.

My conclusion is based on a review of the project record, which shows the analysis of effects was based on relevant scientific information (EA Chapter 3) and a consideration of literature brought up in scoping and comments (EA pp. 18-22).

The selected alternative is responsive to the issues and public concerns:

The EA describes concerns and issues that arose during the planning of this project (pp. 9-11). The proposed action was adjusted throughout the scoping process to address some of these issues. For example, project design features were added to reduce the potential for project activities to be seen from major travel routes and underburning was eliminated from units 430 and 447 because of some individuals' concerns with smoke and health problems.

The public wanted to see us minimize impacts to wildlife species. The selected alternative includes several actions and provisions that will do that. Each unit will have a retention area identified in order to provide big game hiding and thermal cover and to provide a seed source for shrub re-establishment, habitat for shrub-nesting songbirds, bat prey (moths), chipmunk and ground squirrels, and to retain mule deer forage. The 9.3 miles of road closures and decommissioning will benefit wildlife in the area by reducing disturbance (EA p. 142), and will help to move the area to a lower road density. I have also included a seasonal restriction on mowing and burning in order to reduce impacts to nesting landbirds during their breeding season.

Several other design issues were addressed throughout the process, including during the objection period. Several public meetings and field trips have taken place and I am confident that the selected alternative adequately addresses the concerns raised by the public while ensuring that important fuels reduction work will occur in the wildland-urban interface.

Public Involvement

Community Wildfire Protection Plan: The Greater Bend Community Wildfire Protection Plan was completed in 2006 through a collaborative process which was led by Deschutes County. Subsequently, this project was developed to implement the CWPP in collaboration with interested individuals, organizations and agencies. The initial notification process for this project began in the winter of 2007 with publication in the Schedule of Projects.

Scoping, Collaboration, and Public Involvement: On February 16, 2007, a letter was sent to interested citizens, including adjacent landowners offering an opportunity to attend an Open House on February 28, 2007 to obtain information on the project and to provide comments and suggestions for changes, support, or objections to this initial proposal.

The Bulletin and local radio stations ran and broadcast articles on the project the week before the public meeting and included contact information and the date and time of the February 28 meeting. During the Open House, Z21 provided TV coverage of the meeting and additional coverage to the local area of the fuels reduction proposals. A total of 29 people attended the public meeting. No negative comments on the proposed action were received from any of the attendees.

On April 27, 2007, the proposed action was sent to those on the District mailing list, adjacent landowners for the project and all those that expressed interest at the February 28, 2007 Open House. Written comment letters were received from 7 agencies, organizations, and individuals. All were generally supportive of the project but did express specific concerns regarding timber harvest, temporary road construction and resource protection measures. See the EA pages 9 – 11 for a list of scoping efforts.

Tribal Consultation: The project area is within the areas of interest to the Klamath Tribes, the Confederated Tribes of the Warm Springs Reservation and the Burns Paiute Tribe. All three tribes were consulted by both a government-to-government and staff-to-staff basis prior to and during project scoping. None of the Tribal governments raised any issues with the proposed project.

Objection Period: A pre-decisional objection opportunity was offered on this project under 36 CFR 218 from August 27, 2008 to September 26, 2008. Three objections were submitted by those with standing as defined in 218.6(a), as well as others that wished to submit objections but did not have official standing as defined in 218.8(3). During the objection resolution period, a public meeting was held October 18, 2008 in the project area to discuss the issues raised in objections. Mr. Hover and Mr. Kerber objected to the commercial thinning of Unit 411 and associated log haul through Deschutes River Woods. Mr. Riverwind of the Sierra Club also objected to the thinning of Unit 411, as well the limited basal area for variable thinning; he also wanted the project to include guidelines for retaining trees with old growth characteristics and providing extra protection to ground nesting/breeding birds. Following discussions with the reviewing officer (pursuant to 36 CFR 218.11), these objections have been withdrawn.

FINDING OF NO SIGNIFICANT IMPACT

I have determined through the South Bend Hazardous Fuels Reduction Project Environmental Assessment that this is not a major federal action individually or cumulatively that will significantly affect the quality of the human environment; therefore, an Environmental Impact Statement is not

needed. This determination is based on the mitigation measures designed into the selected alternative and the following factors:

- (1) Beneficial and adverse direct, indirect and cumulative environmental impacts discussed in the Environmental Assessment have been disclosed within the appropriate context and intensity. No significant effects on the human environment have been identified (EA, pages 44-214 for the full discussion of beneficial and adverse effects).
- (2) No significant adverse effects to public health or safety have been identified. There will be no significant adverse effects on public health and safety. State regulations provide the guidance for air quality. Smoke management will minimize the flow of smoke, and associated particulate matter (PM-10), from pile burning to avoid high density human habitation or other sensitive areas of use to not significantly affect human health (EA Chapter 2, Mitigation Measures, pages 37). This project will improve egress during wildfires for both the public and for wildland firefighters with the reduction of stand density and fuels adjacent to identified defensible space adjacent to Forest roadways (EA pp. 69). Hazard trees are to be felled in accordance with regulations. Implementing Alternative 2 would have a beneficial effect on public health and safety (EA page 213).
- (3) There will be no significant effects on unique characteristics or ecologically critical areas. There are no wetlands, floodplains, or wild and scenic rivers within or adjacent to the project area (EA pages 194 and 195). There are no fish runs or essential fish habitat (Magnuson-Stevens Act) which could be affected by any of the alternatives and no consultation was required (EA pages 194). There are no park lands, prime farm lands, old growth forests, or prime forest land within the project area (EA page 212). The selected alternative manages areas allocated to Deer Habitat and Scenic Views (EA page 14).
- (4) The effects of implementation of this decision are not highly controversial and there has been no scientifically backed information that indicates substantial controversy about the effects disclosed in the South Bend Hazardous Fuels Reduction Project Environmental Assessment (EA page 213).
- (5) Based on previous similar actions in the area and the experience of resource professionals that worked on this project, the probable effects of this decision on the human environment, as described in the Environmental Assessment, do not involve unique or unknown risks. Activities approved in this decision notice are routine projects similar to those that have been implemented under the Deschutes National Forest Land and Resource Management Plan over the past 18 years (EA page 213).
- (6) This action does not establish a precedent for future actions with significant effects, nor does it represent a decision in principle about a future consideration. Any future management within the project area would be evaluated to determine significance; future projects would require site-specific analysis and decisions.
- (7) This decision is made with consideration of past, present and reasonably foreseeable future actions on National Forest land and other ownerships within potentially affected areas which could have a cumulatively significant effect on the quality of the human environment. Discussions on the cumulative effects to resources are included in the EA Chapter 3 (EA pp. 40-213).

(8) Based on the pre-disturbance survey and record search, the project undertaking will have “no effect” (36 CFR 800.4 (a)-(c)) on any listed or eligible historic or cultural resources. The Forest Archaeologist has certified that the project complies with Section 106 of the National Historic Preservation Act, under the consultation terms of the 2004 Programmatic Agreement (PA) between the Advisory Council on Historic Preservation (ACHP), the State Historic Preservation Officer (SHPO) and USFS Region 6. This has resulted in a finding by the Forest Specialist of Avoided determination under Section 106 of the National Historic Preservation Act (EA page 187).

(9) The effects on endangered or threatened species and their habitats are discussed in the Biological Assessments located in the EA on pages 109 and 113-116. There would be no effect/impact on any endangered, threatened, candidate or sensitive species that may inhabit the project area. Should any new information about endangered or threatened species become available they will receive full protection under the Endangered Species Act and consultation with the United States Fish and Wildlife Service will commence immediately, if necessary.

(10) This decision is in compliance with relevant federal, state and local laws, regulations and requirements designed for the protection of the environment. Effects from this action meet or exceed state water and air quality standards (EA, pages 63, 64, 70, 74, 75-79, 194-196, 229).

Other Findings

This decision is consistent with the goals, objectives and direction contained in the Deschutes National Forest Land and Resource Management Plan (Forest Plan) and accompanying final environmental impact statement dated August 27, 1990 as amended by the Regional Forester's Forest Plan Amendment #2 and Inland Native Fish Strategy (EA pages 14-15, 44, 75, 106-108, 109-168, 172-173, 182, 189, 190, 194-196, 199, 203).

The Deschutes National Forest Land and Resource Management Plan was developed and approved in 1990 using the provisions of the planning rule in effect prior to November 9, 2000 (the 1982 planning rule). The Forest Service now has a new planning rule (36 CFR 219, published in the Federal Register on April 21, 2008) referred to as the 2008 planning rule. The 2008 rule specifically states at 36 CFR 219.14(b)(4) that, for plans developed under the 1982 rule, the 1982 planning rule is without effect. There remain no obligations from that regulation, except those that are specifically in the plan. The only requirement specifically provided in the 2008 rule related to projects is at 36 CFR 219.8(e), requiring that projects and activities must be consistent with the applicable plan components. As required by 36 CFR 219.8(e), I have found that this project is consistent with the Deschutes National Forest Land and Resource Management Plan.

This decision is in compliance with Executive Order 12989 “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.” No minority or low-income populations would be disproportionately affected under any alternatives (EA page 210).

NEPA requires consideration of the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity (40 CFR 1502.16). As declared by Congress, this includes using all practicable means and measures to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans (NEPA Section 101). This project will protect the long-term objective of the project area through the use of specific Forest plan Standards and Guidelines, mitigation

measures, and BMPs (EA page 211).

NEPA requires that environmental analysis include identification of “. . . any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.” Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the use of these resources have on future generations. No significant irreversible or irretrievable commitment of resources would occur under Alternative 2 (Proposed Action) or Alternative 3 (EA page 212).

The selected alternative is designed to be consistent with the Clean Air Act and the State of Oregon. All burning is coordinated with the DEQ through the State of Oregon smoke management program. All burning authorized by this decision will be conducted in compliance with the State of Oregon Smoke Management System and meet smoke management objectives for total emissions.

Administrative Review Opportunity

Pursuant to 36 CFR 218.3, this project is not subject to the notice, comment, and appeal provisions set forth in 36 CFR Section 215. Implementation of this project can begin immediately.

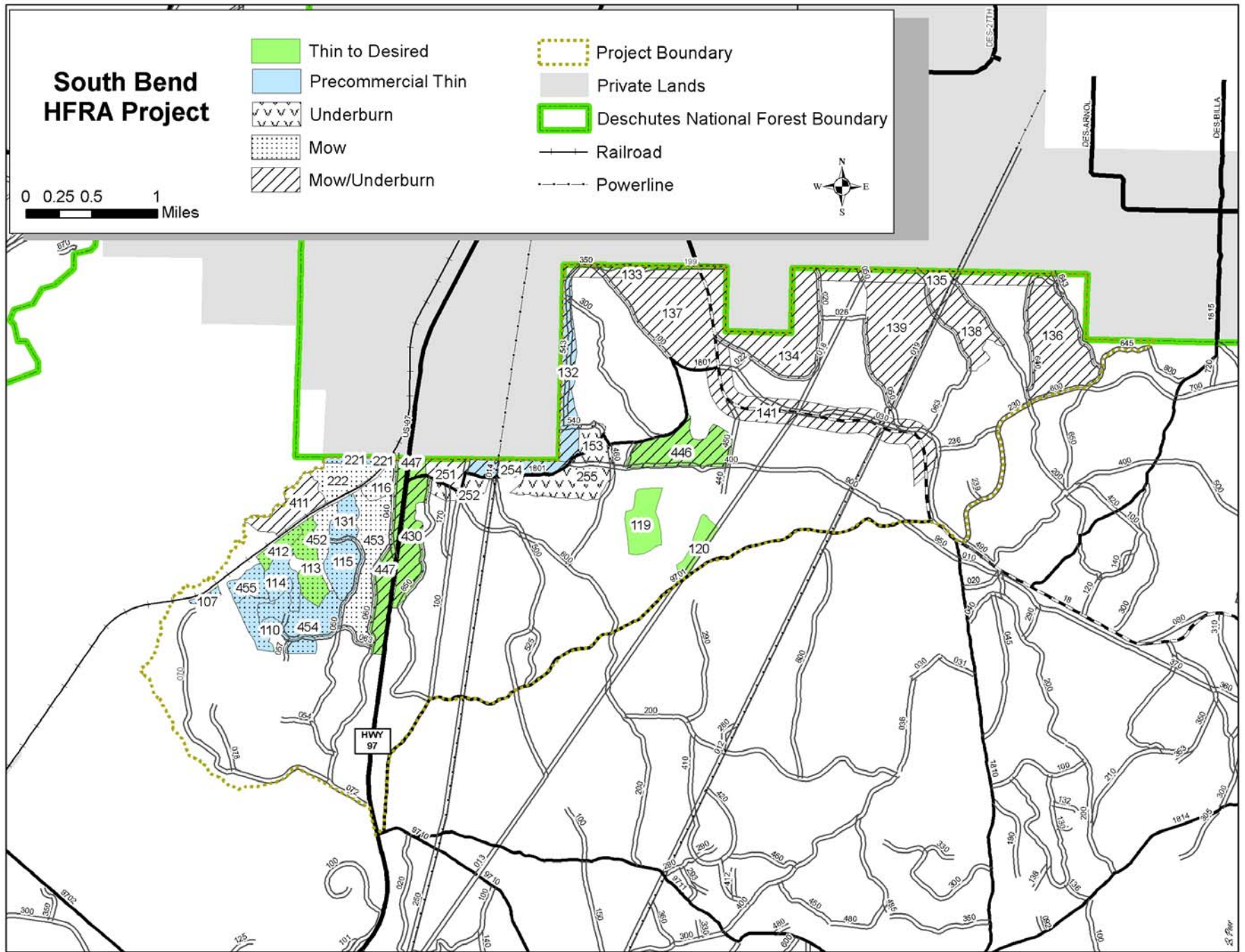
Contact Person

For further information, contact David Frantz, Bend/Fort Rock Ranger District, 1230 NE Third, Bend, Oregon, 97701, (phone 541-383-4721) or Beth Peer (phone 541-383-4769). An electronic version of the final EA can be accessed and viewed on the Deschutes National Forest website at: http://www.fs.fed.us/r6/centraloregon/projects/units/bendrock/sobend_hazardfuel/index.shtml

/s/ A. Shane Jeffries

Date: 11-3-08

A. SHANE JEFFRIES
District Ranger
Bend/Ft. Rock Ranger District
Deschutes National Forest



MITIGATION MEASURES / PROJECT DESIGN FEATURES

General

1. Marking guides, burn plans and / or contracts to be coordinated between resource specialists prior to implementation.
2. Maintain trees that exhibit old growth characteristics, regardless of diameter. These types of trees display qualities such as large limbs, larger diameters, furrowed bark, and are generally more fire resistant.

Wildlife

1. **Nest-1:** In the event that raptor nests are discovered during project preparation or implementation, active nest sites would be protected from disturbing activities within ¼ mile (1 mile for use of explosives) of the nest by restricting operations during the nestling period (Forest Plan WL-3). No known nest sites are currently present within proposed units.

March 1 - August 31: red-tailed hawk & northern goshawk

February 1 – July 31: golden eagle

April 15 – August 31: Cooper’s hawk & sharp-shinned hawk

2. **Migratory 1:** To minimize effects on nesting landbirds and air quality in Bend there would be no prescribed burning or mowing of shrubs from May 20 to July 5.
3. **Snag-1:** Retain all existing snags (including soft) as wildlife trees for roosting and foraging except where impractical because of human safety in all units, *Wildlife Tree and Log Implementation Strategy, LRMP WL-38, Eastside Screens*
4. **BG-1:** To provide stand diversity and big game hiding and thermal cover, all commercial harvest treatments would retain at least 10 percent of the unit treatment area in untreated clumps. Untreated clumps should be 0.5 to 6 acres, be the densest available, and distributed throughout the unit. As a general rule, untreated clumps would be located greater than 200 feet from open roads and be distributed approximately 600 to 1,200 feet apart (WL-59, M7-10, M7-15).

Units 113, 119, 120, 412, 413, 430, 447

Unit 446 – the above description applies except leave 20 percent retained for big game hiding and thermal cover.
5. **BG-2:** To provide a seed source for shrub re-establishment, habitat for shrub-nesting songbirds, bat prey (moths), chipmunk and ground squirrels, and to retain mule deer forage, 30 percent of the unit acreage would not be treated in prescribed burning and/or mechanically treated fuels units. The untreated acreage would be distributed in a mosaic of islands of untreated shrubs, varying size from 0.5 to 6 acres. Logs and rock outcrops should be included in untreated areas, such that these features retain treatment buffers of at least 25 to 30 feet (WL-74 & WL-75). Where thinning and fuels treatments occur in the same unit, the 10% or 20% (Unit 446) retention untreated with commercial harvest shall overlap with the 30% untreated with fuels treatments so that no more than 30% remains untreated in any unit. Applies to all units with mechanical shrub treatment and underburning.
6. **CWM-1:** Retain all existing logs (greater than 9 inches dbh at the large end) where practical for denning and foraging except where impractical because of human safety, or where removal is necessary for fuels reduction needs because of excessive concentrations. Within all commercial harvest and fuels treatment units develop harvest and fuels treatment prescriptions to retain at least the existing CWM in the following quantities as indicated by Eastside Screens minimum standards. More may be left if not presenting an excessive fuel hazard. *Wildlife Tree and Log Implementation Strategy, LRMP WL-38.*

7. **CWM-2:** Develop prescribed burn prescriptions to minimize charring of logs (LRMP WL-72). During prescribed burn operations, avoid direct ignition of CWM that is greater than 12 inches in diameter and 6 feet in length and snags. Fire prescription parameters would ensure that consumption would not exceed 3 inches total (1.5 inches per side) of diameter reduction in featured logs. Applies to prescribed burning units. *Eastside Screens*

Soils and Hydrology

Mitigations 1 through 9 apply to Units 107, 110, 113, 114, 115, 119, 120, 131, 132, 221, 254, 412, 430, 446, 447, 454, 455.

1. In all proposed activity areas, locations for new yarding and transportation systems would be designated prior to the logging operations. This includes temporary roads, spur roads, log landings, and primary (main) skid trail networks. Use existing log landings and skid trail networks whenever possible (LRMP SL-1 & SL-3; Timber Management BMP T-11, T-14 & T-16).
2. All temporary roads and skid trails will have water control structures (water bars) installed and maintained during management activities where concentrated water flows can occur. Access will be closed immediately following harvest operations. (Forest Plan SL-1); (Timber Management BMP T-16)
3. Avoid operations during periods of excessive soil moisture or transitional thawing during winter harvest activities, as evidenced when deep rutting from machine tracks or tires occurs. Winter activities should operate equipment over frozen ground or a sufficient amount of compacted snow to protect mineral soil. Equipment operations should be discontinued when frozen ground begins to thaw or when there is too little compacted snow and equipment begins to cause rutting damage.
4. Limit sharp turning and multiple passes during the mowing operation, to the extent possible, in order to minimize soil displacement.
5. Restrict grapple skidders to designated areas (such as, roads, landings, designated skid trails) at all times, and limit the amount of traffic from other specialized equipment off designated areas. The use of harvester machines will make no more than two (2) equipment passes on any site-specific area to cut or accumulate materials.
6. Restrict operation of machinery used for piling to skid trails and landings created or used by harvest and yarding operations.
7. Prevent additional soil impacts between skid trails and away from landings by machine piling and burning logging slash on existing log landings and skid trails that already have detrimental soil conditions (LRMP Standards and Guidelines (SL-1 and SL-3); Timber Management BMPs T-2, T-4, T-9, T-11 and T-12; Forest Service Soil and Water Conservation Practices Handbook (FSH 2509.22).
8. Maintain spacing of 100 to 150 feet for all primary (main) skid trail routes, except where converging at landings, in order to minimize the extent of detrimental soil disturbance and achieve soil management objectives. The Timber Sale Administrator must approve closer spacing due to complex terrain or the use of harvester/forwarding machinery in advance.
9. Reclaim all log landings, and approximately 500 feet of all primary (main) skid trails that lead into log landings in units measured to exceed LRMP soil standards following harvest and fuels activities. Appropriate soil mitigation treatments to restore the hydrologic function and productivity on these disturbed sites include the use of subsoiling equipment to loosen compacted soils, redistribution of organic matter and topsoil in areas of displaced soil, and placement of available slash and woody materials over the treated surfaces. Forest Plan Standards and Guidelines for Soil, Water and Riparian Resources (SL-1 and SL-4); Watershed Management BMP W-1).
10. Conduct regular preventive maintenance of haul roads during operations to avoid deterioration of the road surfaces and minimize the effects of erosion (Road BMP R-18, R-19).
11. Maintain duff layer: Strive to maintain existing sources of unburned or partially consumed, fine organic matter (organic materials less than 3 inches in diameter; commonly referred to as the duff layer),

wherever possible, within planned activity areas. (LRMP SL-6; Fuels Management BMP F-2; Timber Management BMP T-13). Units 132, 133, 134, 135, 136, 137, 138, 139, 141, 153, 251, 252, 254, 255, 446

12. Include sensitive soil areas represented by SRI Landtypes 14 and 6G, or steep rocky pitches greater than 30 percent, in wildlife retention areas where possible, in order to minimize equipment impacts to soils in these areas. Utilize directional hand felling of trees toward skid trails and /or line pulling to yard trees if treatment is necessary in these areas. Units 135, 137 and 141.
13. Reclaim all temporary roads with appropriate soil restoration treatments following use for harvest and fuels activities. Treatments to restore the hydrologic function and productivity on these disturbed sites include the use of subsoiling equipment to loosen compacted soils, redistribution of organic matter and topsoil in areas of displaced soil, and placement of available slash and woody materials over the treated surfaces. Forest Plan Standards and Guidelines for Soil, Water and Riparian Resources (SL-1 and SL-4); Watershed Management BMP W-1). Units 113 and 119.

Botany – Invasive Plants

1. The district botanist or representative would flag out the known weed populations (in or adjacent to units 221, 222, 116, 131, 452, 113, 412, 455, 447, 430, 252, 133, 137, 134, 141, 139, and 136) prior to project operations and they would be posted out of the units if they are harvest units.
2. All sites (almost all are dalmatian toadflax) located within the previously mentioned units would be avoided during mowing operations, but they would be mowed immediately adjacent to them so as to create a lower-intensity buffer, should underburning be also used in those units. Buffer width would be left up to the judgment of the mower, but with the objective of keeping fire at a low intensity within the weed site. The mower would be guided by the flagging (yellow with black stripes) that the district botanist or her representative uses to indicate a weed site is present. Maps of the units with the known weed sites would be made available to project implementers.
3. Clean all equipment before entering *and after leaving* National Forest System lands. Remove mud, dirt, and plant parts from project equipment before moving it into the project area and before proceeding to the next project.
4. The district botanist or representative would inspect any gravel or fill material before it is brought into the project for the presence of noxious weeds.
5. No landings, skid trails, or temporary roads would be placed on the known weed sites.
6. These units adjacent to Highway 97 would not have machinery in them within 30' of the edge of the road shoulder: 447, 430, and 251. This is to prevent the heavily weed-laden seedbank from entering newly-disturbed forest.
7. To prevent the spread of spotted knapweed from entering unit 411 the district botanist would evaluate whether additional preventative measures are necessary, especially the use of native plants at the site after the work is done. (The spotted knapweed site(s) along the road on the east side of the unit would be treated prior to project implementation).
8. Implementers need to consult with the district botanist to ensure that all weed populations are known to them. This is because there are numerous new sites found every year in this area of the district.
9. All weed sites present within units that do not have biocontrols present would be treated prior to project implementation. Sites with biocontrols would not be treated because treatment would eliminate the insects that were placed there to decimate the plants (Units 135 and 137).
10. Monitor the area for noxious weeds annually, if possible, after the project ends. If any noxious weeds are found they should be treated.
11. As far as is practicable, vehicles would not park at the flagged-out weed sites.

Forest Vegetation – Trees

1. **VEG-1:** To reduce potential for long-term growth loss and bark beetle induced mortality of ponderosa pine following proposed prescribed burning, conduct burns in a manner that would result in retention of at least 40 percent live crown ratio on dominant and co-dominant trees. This should generally result in crown scorch less than 50 percent. Measures will include: 1) initiating burns outside the time of ponderosa pine bud elongation (between mid-May to early June depending on weather conditions), 2) initiating burns when weather and fuel moisture conditions are favorable for meeting fuel reduction objectives and minimizing damage, and 3) utilizing lighting techniques expected to meet fuel reduction objectives while minimizing damage to residual trees. LRMP S&G TM-36.

In developing burn prescriptions that will minimize damage to residual trees, recognize that portions of the following units were reforested between the years 1977 and 1987: Units 132, 133, 134, 137, 139, 141, 153, 254, and 446. Within reforested portions, dominant and codominant trees can consist of primarily immature, relatively full-crowned trees. Develop burn plans for these units in coordination with silviculturist and wildlife biologist (General Mitigation Measure #1) to assure fuel reduction objectives and other resource objectives, such as the protection of residual trees, can be acceptably met.

2. **VEG-2:** Scorching would be limited to the lower 1/3 of the forest canopy in scenic views management area (Units 251, 252). (Deschutes LRMP S&G M9-90)

Range

1. Range fences should be protected to the extent segmenting, burial, bending of posts and dragging of components should be avoided as these activities would make removal and salvage more difficult (Units 132-136, 141, 153, 255, 446, and 456).

Cultural

Where proposed activities may impact eligible or unevaluated heritage resources, the following avoidance procedures will avert potential effects to either or both historic and prehistoric properties. The Oregon State Historic Preservation Office has agreed that with these avoidance measures, this project will have no effect on significant or potentially significant heritage resources.

1. In units to be underburned, avoid burning in eligible and unevaluated sites; and do not construct fireline or implement other ground disturbing activities in all eligible and unevaluated sites.
2. Do not locate slash piles for burning within either eligible or unevaluated sites.
3. Avoid mowing (MST) in eligible and unevaluated historic sites and minimize turning and maneuvering of the equipment in all eligible and unevaluated sites.
4. Mechanical thinning and machine piling should avoid all eligible and unevaluated sites.
5. Commercial thinning should avoid all eligible and unevaluated sites within treatment units, landings, temporary roads, and skid trails
6. Proposed road closure and decommissioning, or conversion to trails would avoid subsoiling, water barring, or other ground disturbance methods within the boundaries of eligible and unevaluated sites.

Scenic Resource

1. Flush cut stump to within 6 inches above the ground within 100 feet (minimum) of road corridor within Foreground Scenic View.
Retention foreground units (SV1): 110, 113, 114, 115, 116, 131, 251, 252, 430, 447, 452, 453, 454, 455

2. Paint on backsides of all leave trees (within 100 feet from road right-of-way). When possible, use cut tree marking to minimize painted trees left behind. Remove ribbons and other markers following completion of the project.
3. Slash treatment would be completed within one year for Retention.
4. Minimize ground disturbance within the foreground viewing areas to reduce soil contrast. Design and locate skid trail and landing area at least 300 feet away from primary travel corridors if possible.
5. Avoid fire scorch above $2/3$ of live tree crown within the foreground landscape.

Retention foreground units (SV1): 110, 113, 114, 115, 116, 131, 251, 252, 430, 447, 452, 453, 454, 455

Retention middleground units (SV3): 107, 110, 113, 114, 221, 222, 412

Air Quality

1. Warning signs would be posted at prominent road junctions to inform the public of prescribed burning operations, and would remain in place until there is no visible smoke. If feasible, roads may be temporarily closed for the protection of public safety.
2. As part of the plan to inform the public, notify local businesses prior to the burning season and on the day of planned prescribed burning operations. Also, notify adjacent landowners of burning operations conducted in units within $1/4$ mile of their property.

Monitoring

1. Identification of areas where live crowns have either been reduced below 40 percent or have been reduced by 50 percent from pre-burn conditions, and monitoring survival trees with greater than 50 percent crown scorch or less than 40 percent live crown for two years after burn. Details in Silviculture Report, page 8.
2. Monitoring the area for invasive weeds annually, if possible, after the project ends. If any noxious weeds are found they should be removed or identified for additional environmental analysis if necessary.