

Knox Resource Management Project Proposed Action

July 25, 2005

1 Introduction

The USDA Forest Service is proposing to conduct land management activities to reduce fuels and improve resource conditions in the Knox Creek area. Timber harvest and prescribed burning activities are proposed to reduce risks from wildfire and improve the health and vigor of ponderosa pine, Douglas-fir, and aspen stands. Road decommissioning and relocation is proposed to reduce impacts to riparian areas and to make a more efficient road network.

2 Location

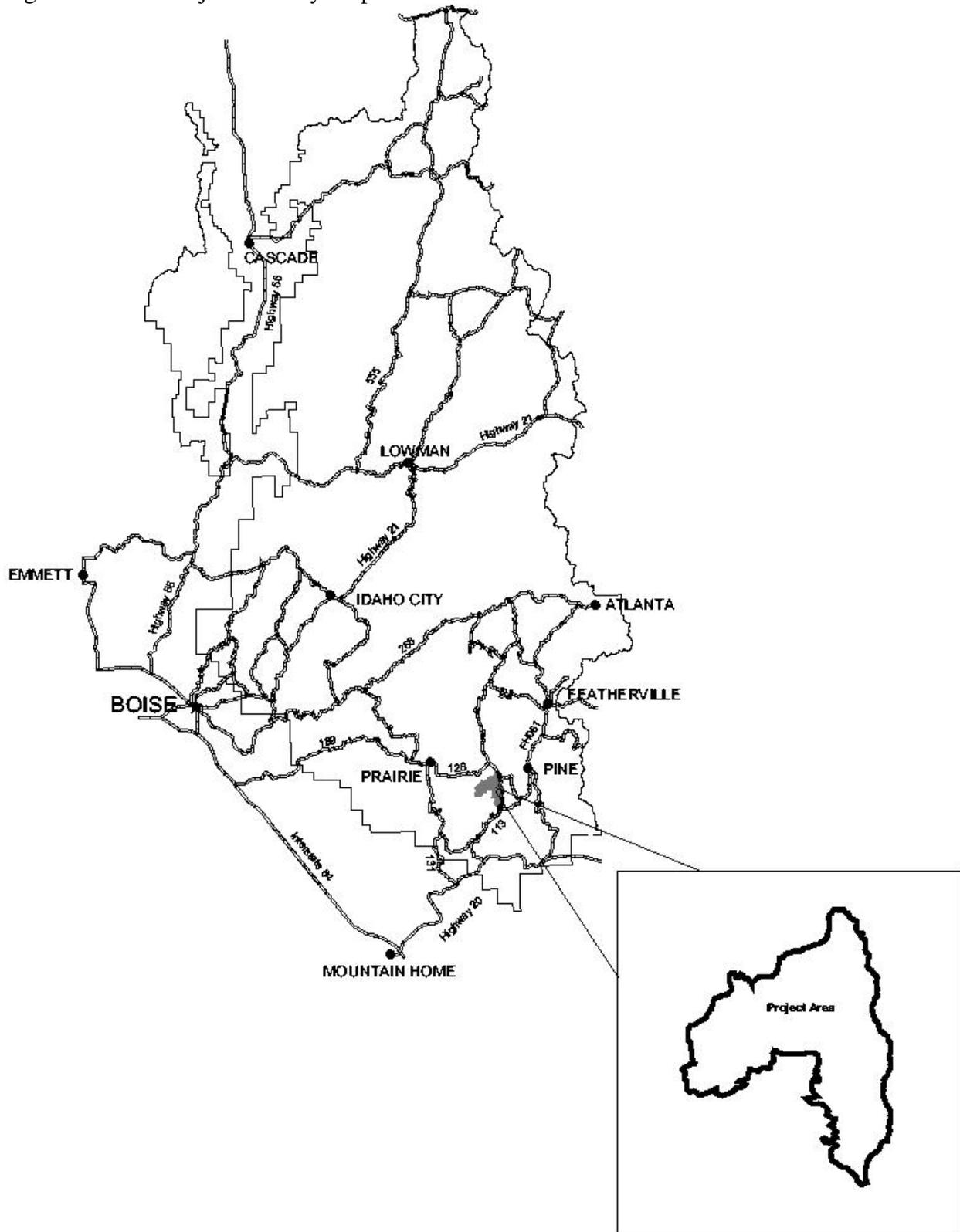
The Knox project area is located approximately 5 miles west of Pine, Idaho (see Figure 1 on page 2). The project area is located in the Fall Creek watershed. The principal access route is from the south via Highway 20 to National Forest System (NFS) Roads 134 to 113 to 123. Access is also possible from Pine by way of NFS Roads 128 to 123. The legal description of the project area is T1N, R8E, Sections 1 and 12; T1N, R9E, Sections 4-9, 16 and 17; T2N, R8E, Section 36; and T2N, R9E, Sections 28-33; Boise Meridian, Boise County, Idaho. The project area consists of 4,430 acres of National Forest System land administered by the Mountain Home Ranger District of the Boise National Forest. There are 1,200 acres of private land inholdings on the east side of the project area. Private land also abuts the project area in the vicinity of Fall Creek. The project area is adjacent to the House Mountain Inventoried Roadless Area.

3 History of the Project Area

Prior vegetation management has occurred throughout more than 90 percent of the project area, including 960 acres of land acquired by the Forest Service in 1996 from the State of Idaho. Forested areas on private inholdings have been recently treated, as well. Portions of the upper elevations have also been managed through regeneration harvest activities. The resulting plantations range from about 15 to 30 years of age. Most of the prior vegetation management consisted of thinning of ponderosa pine in the lower elevation and Douglas-fir in the higher elevation.

An extensive road system was developed in conjunction with the previous management activities. The majority of these roads are well located, in good condition, and causing no adverse environmental problems. On lands acquired from the State of Idaho there are some drainage bottom roads that are causing some environmental concerns.

Figure 1. Knox Project Vicinity Map



4 Forest Plan Direction

The Boise National Forest Land and Resource Management Plan (revised July 2003) contains direction for the management of the Knox project area. The proposed action was designed to be consistent with the Forest Plan. About three-quarters of the project area lie in Management Area 2, Rattlesnake Creek/Feather River, and one-quarter lies in Management Area 1, Lower South Fork Boise River. The project area lies within the Lower Fall Creek and Anderson Ranch Reservoir subwatersheds, which are considered wildland-urban interface areas due to private development adjacent to the Forest.

Over three-quarters of the of the Knox project area is in Management Prescription Category 5.2 - Commodity Production Emphasis within Forested Landscapes. This prescription applies to lands that are predominantly forested. The emphasis is on achieving sustainable resource conditions that support commodity outputs, particularly timber production in forested settings. Management activities are also designed to maintain and restore forest ecosystem health to reduce potential for long-term impacts from uncharacteristic disturbance events. Goods and services are provided within the productive capacity of the land, and may or may not fully meet demand. Mitigation activities are an important element of project design. Forested landscapes range in appearance from near natural to altered where management activities are evident.

A little less than a quarter of the project area is in Management Prescription Category 4.2 – Roaded Recreation Emphasis. This prescription applies to lands where dispersed and developed recreation uses are the primary emphasis. A wide range of recreational activities and developments occurs. Facilities are maintained, and both motorized and non-motorized recreation opportunities may be provided. Multiple uses such as timber harvest and grazing are allowed to the extent that they do not compromise recreation resource objectives. Human use and presence are generally obvious. The area has a predominantly natural-appearing environment, with moderate evidence of the sights and sounds of people. Generally, a mix of mechanical and fire activities are used to treat vegetation to achieve desired conditions for recreation settings and developments, and to reduce the risk of uncharacteristic vegetative damage or loss from insects, diseases, and fire.

Fuel reduction/vegetation management (harvest, precommercial thinning, and fuels treatments) would contribute toward meeting Forest Plan vegetation, timberland, and fire management objectives. These activities would help restore large tree components and early seral species (Objectives 0227, 0132). These activities would also contribute toward Objectives 0158 and 0251 to use prescribed fire and mechanical treatments within and adjacent to wildland urban interface areas to manage fuel loadings to reduce wildfire hazards. Aspen treatments would contribute toward meeting Objectives 0131 and 0228 to restore decadent aspen stands where they currently exist by stimulating regeneration and reducing conifer density. The road management activities (road decommissioning, relocation, and closures) would contribute toward meeting Forest Plan soil, water and road objectives. These activities would reduce road-related effects on soil productivity, water quality, and aquatic/riparian species and their habitats (Objective SWOB18). The project development process identified roads not needed for land and resource management and evaluated them for decommissioning (Objective FROB06).

5 National Fire Plan Direction and Healthy Forest Restoration Act

The project is consistent with the National Fire Plan and Healthy Forest Restoration Act (HFRA). The activities would contribute toward the goals in the National Wildland Fire and Restoration Strategy, specifically to reduce hazardous fuels and restore fire-adapted ecosystems. Criteria for projects to be authorized HFRA include condition class, location to communities at risk (Federal Register, January 4, 2001, Vol. 66, No. 3, p. 751-777), and collaboration. The Knox Resource Management Project meets the criteria for an authorized project under HFRA and is located within an identified Wildland Urban Interface identified in the Elmore County Wildland-Urban Interface Wildfire Mitigation Plan.

The Elmore County Wildland-Urban Interface Wildfire Mitigation Plan was completed in May 2004 by a planning team consisting of representatives of County, State, and Federal Governmental agencies, as well as local home-owners' associations, and county residents and land owners. The purpose of the plan is "to make Elmore County residents, communities, state agencies, local governments, and businesses less vulnerable to the negative effects of wildland fires through the effective administration of wildfire hazard mitigation grant programs, hazard risk assessments, wise and efficient fuels treatments, and a coordinated approach to mitigation policy through federal, state, regional and local planning efforts." This plan includes a number of possible fire mitigation activities that could be implemented by local agencies or homeowners. In addition it identifies fuel reduction projects, including the Knox Resource Management Project, and Wildland/Urban Interface and Infrastructure Components at-risk in Elmore County.

6 Watershed Analysis and Proposal Development

The majority of this project area was initially evaluated under the Fall Creek Watershed Analysis, completed in 2002. The watershed analysis was an exercise in analyzing existing data and development of specific management recommendations for vegetation, wildlife, fishery, soils, and hydrologic resources within the watershed analysis area. About one-quarter of the project area is outside the watershed analysis area. Prior to the development of the proposed action, an interdisciplinary team of resource specialists reviewed the watershed analysis and completed more detailed field reconnaissance of the project area. Subsequently, the interdisciplinary team compared their conclusions to both the Forest-wide management direction and management area specific direction contained in the Forest Plan. Further, the project area provides an important geographic tie with other vegetation management projects in the general vicinity. The Knox Project area is basically situated between the Myrtle, Camp Creek, Lester, and the White Flat treatment areas, all of which are either recently completed or are in various stages of implementation. These projects all reduce fuels through a variety of vegetation management treatment activities. The site-specific reconnaissance combined with direction in the Forest Plan and recommendations in the watershed analysis led to identification of the following purpose and need.

7 Purpose and Need

The purpose and need for this project follows.

The primary purpose of this project is to reduce risk to resources and nearby private property from wildfire.

The purpose and need may be achieved by vegetation management prescriptions that integrate mechanical treatments, such as thinning, and prescribed fire activities designed to reduce hazardous fuels and benefit other resources where opportunities exist.

The Knox project area abuts a Wildland Urban Intermix corridor for several miles along the Fall Creek drainage. A Wildland Urban Interface community exists where humans and their development meet or intermix with wildland fuel. The Fall Creek area from Andersen Ranch Reservoir to Ice Springs Campground and then east for approximately 1.5 miles is considered an Intermix Community due to the structures scattered in the a wildland area and the continuous fuels throughout much of the corridor. Of particular concern in the Fall Creek area is that the prevailing up canyon afternoon winds could push a fire quickly up the heavily forested, steep narrow canyon for several miles and through mixed ownership lands containing scattered structures and other developments. The north aspect slopes in the Fall Creek canyon bottom area pose the highest risk due to the dense tree canopy and steep slopes. The southern aspect slopes immediately north of Fall Creek (outside the project area) pose much less risk due to the presence lava rock and more widely spaced trees.

Historical fire records for the Boise National Forest show that approximately 17 fire starts were recorded within the project area within the past 95 years. All of these fires were successfully suppressed while small (one acre or less), but any of them had the potential to develop into large fires under the right conditions and burn across mixed ownership lands threatening or destroying developments and other values. In addition, based on historical large fire spread on the Boise National Forest, fires typically progress in a northeastern direction and a fire start southwest of the Knox Project area that escapes initial attack efforts could burn an extensive area as it advances toward the Fall Creek area.

There is a need to conduct vegetation management activities that reduce fuels and lowers the risk to wildfire in the intermixed Wildland Urban Interface area. This is particularly true where private land and structures occur adjacent to National Forest System lands as shown in the project area photo to the right. The photo shows the eastern side of the project area near Fall Creek. Other structures exist immediately along Fall Creek and vicinity where approximately 60 private land ownerships exist.



Reducing fuels in such contiguously forested areas requires an intensive silvicultural treatment of both the overstory and understory vegetation integrating tree density management and prescribed fire in order to offer better protection from wildfire. Shaded fuel breaks would provide fire managers with a strategically located area in which wildland fuels have been reduced sufficiently to cause a potential crown fire to more likely become a ground fire where it can be more easily and safely suppressed thereby reducing risks to private land, structures, and other developments.

The risk to wildfire is due to decades of fire suppression and the high numbers of trees and the interconnected canopy that often exists. Many stands have ladder fuels, as well. Dense small-diameter trees and shrubs leave the stands vulnerable to wildfire moving from the ground up into the tree crowns. Crown fires are much more difficult to control, pose risks to adjacent private lands, and puts entire tree stands at high risk to mortality. Since some of these stands are within Management Prescription Category 5.2 – Commodity Production, fires that lead to anything more than light tree mortality are considered undesirable. Mechanical thinning is necessary in advance of prescribed fire to avoid excessive tree mortality that would otherwise occur given use of fire alone in dense stands.

Existing conditions within the project area can be grouped as described below.

Mixed Ponderosa Pine and Douglas-fir Areas

There are approximately 490 acres of dense mixed ponderosa pine and Douglas-fir stands where crowded conditions pose a continuum of fuels where wildfire can readily spread to the crown and between crowns thereby posing risk to adjacent areas and nearby private land.

The crowded stand conditions also lead to stress and reduced tree health, vigor, and growth. The high tree density further leaves the stands susceptible to bark beetles and pathogens such as dwarf mistletoe disease.

Sapling Areas

Approximately 100 acres of plantations and natural stands composed of sapling and pole size trees are densely stocked. These trees are all of similar size and have interconnected canopies that pose a continuum of fuels that typically burn from crown to crown resulting in nearly complete mortality to the stand.

The existing high tree density is also limiting the growth potential of the stands and predisposing them to bark beetle infestations.

High Elevation Douglas-fir/Pathogen Areas

Approximately 730 acres of Douglas-fir-dominated stands have moderate-to-high levels of Douglas-fir dwarf mistletoe infection. Most of these stands have infection in individual trees or scattered patches about 2 acres in size or smaller. An additional 40 acres are densely stocked and so heavily infected that the only effective way to abate the infection would be to remove all of the Douglas-fir trees through salvage harvest, reduce natural and activity generated fuels by prescribed burning, and reforest with non-susceptible and more resilient ponderosa pine.

The southwest end of the project area consists mainly of high elevation Douglas-fir interspersed with areas of brush. Douglas-fir in this area consists of a mosaic or patchwork of mature trees infected with dwarf mistletoe and areas of smaller immature trees. The highly flammable vertical fuel profile created by low live crowns and mistletoe brooms from infected trees produce a torching effect when confronted by wildfire. The torching in turn produces fire spotting that compounds fire suppression efforts. A strategically placed salvage/sanitation activity in this area would alter fire behavior by eliminating much of the torching potential and reducing the potential for fire spotting, especially from a fire progressing northeast as most large fires typically do on the Forest.

Dwarf mistletoe is a parasitic plant that reduces the growth, vigor, and wood quality of the host trees. It spreads readily, particularly to small trees in the understory. The dense brooms created by this pathogen pose considerable ladder fuels where fire readily spreads to the crown. Salvage plus sanitation treatment would also reduce the spread of the infection, improve vigor, recover the value of dead/dying trees, and reduce risk to fire in the longer-term as stand health and vigor improves.

Aspen Areas

Approximately 240 acres of scattered aspen occur within the project area. These aspen stands are deteriorating, and nearly all of them have one or more signs that they are declining and at risk of being lost and replaced with other vegetation. Most aspen stands in the project area are heavily encroached by conifers or are sparse with tree crowns rarely touching. Project area aspen stands generally have only one or two age classes with some mature trees dying out. The stands have little suckering to replace the overstory mortality. Aspen stands are an important element of vegetative diversity that is diminishing in the project area and in other areas on the Mountain Home District. A trend in declining aspen and conversion to conifers exists. Healthy aspen stands tend to serve as natural fuel breaks since they occupy moist sites, have a high water content, and are much less likely to burn than other vegetation in the project area. Maintaining existing aspen areas is important to vegetative diversity and the overall ecology of the area including the natural barrier to fire that they provide.

Previous Treatment Areas

Previously treated stands on approximately 1,540 acres contain variable amounts of natural fuels, including some fuels remaining for previous management activities, distributed in a scattered or jackpot manner. These ground fuels pose little threat themselves to sustaining a wildfire from an ignition within, but they would sustain a fire front originating elsewhere as well as and providing connectivity to adjacent areas of higher fuels. This area also abuts about 1,000 acres of private land that has recently been logged and contains extensive flashy type fuels (largely from grass establishment) that would quickly carry a wildfire during dry and windy conditions. There is a need to reduce concentrations of fuels to reduce the likelihood of a fire progressing to adjacent areas.

There is also an opportunity through stand improvement treatment to remove trees that have been damaged or that have not exhibited release in response to previous thinning, reduce

latent infections, and improve overall stand conditions. The previous treatment areas contain small quantities of suppressed and/or damaged trees, including latent dwarf mistletoe infection. Some clumps of Douglas-fir occur on areas better suited to ponderosa pine and opportunities exist to increase relative amounts of more fire tolerant ponderosa pine on these areas.

Other Management Opportunities

There is an opportunity in conjunction with this project to improve watershed conditions in Knox Creek and Castle Creek and provide road access necessary for land management activities and public recreation. Segments of National Forest System (NFS) Roads 136A, 107, 107B and associated spur roads encroach upon the riparian zones of Castle Creek and Knox Creek and its tributaries. Approximately 2.6 miles of these roads were determined to be unnecessary for future management. Roads typically are major contributors to sediment entering streams and generally the closer the road is to the stream, the more likely it is to deliver sediment.

The remaining segment of NFS Road 107B would not provide through access due to a gate on the private land near the NFS Road 130 junction. National Forest System Road 101 is not passable along the mid-portion between the NFS Road 101F and NFS Road 130 junctions. Left open, these road segments would likely cause frustration or confusion for Forest visitors.

8 Proposed Action

Once the purpose and need for action was clearly defined, the interdisciplinary team developed the following proposed action, designed to meet and/or establish a trend toward the project objectives listed in section 7.

8.1 Fuels Reduction/Vegetation Management Activities

Approximately 3,490 acres (79 percent) of the National Forest System (NFS) land in the project area would be managed through a variety of silvicultural practices, logging systems, and fuel management methods. Since mechanical treatments must precede use of prescribed fire due to stand conditions, these treatments are described first. Management techniques would include approximately 490 acres of commercial thinning, 1,540 acres of stand improvement harvest, 730 acres of salvage/sanitation harvest, 40 acres of clearcut with reserve trees, 100 acres of precommercial thinning, and 240 acres of aspen treatment. About 350 acres of recently thinned stands would also be treated with prescribed fire only. There are in addition within the project area approximately 440 acres of non-forest land and 500 acres of timber stands having no identified treatment needs at this time. Common to all vegetation management activities where commercial tree harvest occurs, is that understory trees (those under about 8 inches diameter) would also be thinned where needed to reduce fuels as well as to benefit other resources where opportunities exist. No commercial tree harvest (trees 8 inches diameter and larger) is proposed within Riparian Conservation Areas.

Fuel treatments would include about 200 acres of broadcast burning, 1,390 acres of understory burning, 900 acres of lop and scatter, 940 acres of jackpot burning and 60 acres of piling and burning of small trees.

A shaded fuel break about 250 feet in width would be established along National Forest System lands that abut private land containing structures and along the lower slopes of Fall Creek including Riparian Conservation Areas. Specifically, the fuel break along Fall Creek would consist of a corridor area immediately upslope from Forest Road 123 and west of Fall Creek. Only understory trees, those under about 8 inches diameter, would be thinned where needed to reduce ladder fuels and provide crown separation. No larger trees would be cut within the fuel break area. Some rocky areas deemed unsafe for hand thinning operations would be excluded. No treatment would occur down slope from Forest Road 123 towards the stream (Fall Creek). Slash generated from the fuel break areas would be hand piled and burned.

Helicopter yarding would be used on about 1,650 acres and tractor systems on about 1,390 acres. Up to six helicopter landings would be constructed on broad flats or ridgetop locations. Landings would be revegetated. Approximately 0.8 mile of road would be constructed and 0.5 mile would be reconstructed.

Table 1 below shows a breakdown of vegetation treatments and associated logging systems and fuels treatments.

Table 1. Vegetation Treatments and Associated Logging Systems and Fuels Treatments

Vegetation Treatment	Logging System	Fuels Treatment
Commercial Thinning 490 acres	Helicopter 430 acres, Tractor Jammer 60 acres	Understory Burning 430 acres, Lop and Scatter Slash 60 acres
Improvement Treatment 1,540 acres. Includes Shaded Fuel Break near structures and Fall Creek.	Helicopter 510 acres, Tractor Jammer 1,030 acres	Whole Tree Yarding and Jackpot Burning on Tractor Jammer 940 acres, Understory Burning 530 acres, Lop and Scatter Slash 70 acres
Salvage/Sanitation Treatment 730 acres. Spot plant conifers.	Helicopter 600 acres, Tractor Jammer 130 acres	Lop and Scatter Slash 730 acres. Jackpot burn concentrations of natural fuels and slash where feasible. Pile slash and burn piles in T/J area.
Clearcut with Reserve Trees 40 acres. Plant ponderosa pine.	Tractor Jammer 40 acres	Broadcast Burning 40 acres
Precommercial Thinning 100 acres	NA	Hand Piling and Burning 60 acres, Lop and Scatter Slash 40 acres
Aspen Treatment (Conifer Removal) 240 acres	Helicopter 110 acres, Tractor Jammer 130 acres	Broadcast Burning 160 acres, Understory Burning 80 acres
Underburning Only 350 acres	NA	Understory Burning 350 acres

Activity maps are at the end of the document. Figure 6 is a map of timber stand treatments and logging systems. Figure 7 is a map of fuels treatments. Figure 8 shows road management activities. Detailed descriptions of stand treatments follow.

Commercial Thinning Treatment (490 acres, 11 percent of project area NFS land)

Commercial thinning would reduce the density of timber stands so that trees would be spaced apart, reducing the risk of crown fires and allowing trees to grow more openly. Douglas-fir would be removed so ponderosa pine would be more common following treatment. Small trees may be felled (thinned) and slash burned following timber harvest. Prescribed burning would reduce concentrations of natural fuels as well as slash from mechanical thinning.

Stand structure would be modified from the current dense conditions (Figure 2). Treatment would remove small trees and retain larger diameter ponderosa pine (Figure 3). The long term goal is to develop large ponderosa pine structure that is more resilient to wildfire (Figure 4).



Figure 2. Dense, untreated stand

Figure 3. Commercially thinned stand

Figure 4. Stand with multiple treatments

Improvement Treatment (1,540 acres, 35 percent of project area NFS land)

In previously thinned stands, stand improvement would remove about 10 percent of the trees above 8 inches diameter. Improvement treatment would target removal of suppressed trees that have not exhibited improved growth and vigor since initial thinning. Trees that were damaged during from past activities or other agents would be removed where warranted. Patches of Douglas-fir that were left on sites best suited to more fire resilient ponderosa pine would be removed. Smaller trees may be felled (thinned) and the slash burned. Concentrations of logging slash and ladder fuels would be treated by jackpot burnings, lopping and scattering slash and understory burning. Whole tree yarding would also occur where tractor/jammer logging is planned to help facilitate fuel reduction in close proximity to private land.



Figure 5. Trees having low live crowns and brooms from dwarf mistletoe infections create conditions prone to a crowning fire.

Salvage Plus Sanitation Treatment (730 acres, 16 percent of project area NFS land)

Salvage/sanitation treatment would remove about 20 percent of trees at the stand level above 8 inches diameter. Douglas-fir trees infected with dwarf mistletoe (example in Figure 5) would be removed as individuals or in patches up to 2 acres depending on distribution of infection so as to eliminate the highly flammable vertical fuel profile condition. Trees infected with other pathogens, infested with bark beetles, merchantable dead, or otherwise damaged would be removed as well. Jackpot burning would occur where slash and natural fuels are concentrated where feasible. Treated areas where existing natural regeneration is lacking, or not anticipated to establish, would be spot treated by either prescribed burning or hand scarification to provided planting spot access. Conifer seedlings would be planted and where needed gophers baited to protect seedlings.

Clearcut with Reserve Trees (40 acres, 1 percent of project area NFS land)

Clearcut harvest and reforestation was determined by resource specialists to be the optimum treatment method since it is the only effective way to abate the extensive dwarf mistletoe infection by removing infected Douglas-fir through salvage treatment and reforesting with non-susceptible ponderosa pine. Ponderosa pine trees where present would be retained as a seed source for natural regeneration. Logging slash would be treated by whole tree yarding and prescribed fire. Burning would remove natural fuels and slash generated from tree harvest. Where needed, conifer seedlings would be planted and gophers would be baited to protect seedlings.

Precommercial Thinning (100 acres, 2 percent of project area NFS land)

In plantations and natural stands of small trees, precommercial thinning would thin saplings to about 25 feet apart to provide for separation between crowns thereby breaking up the continuity of the fuels and reducing the risk of crown fire. Douglas-fir would be preferentially thinned so that the more fire resilient ponderosa pine would be more common following treatment. Fuel loads from cut saplings would be treated by hand piling and burning or lopping and scattering depending upon conditions.

Aspen Restoration (240 acres, 5 percent of project area NFS land)

Aspen restoration would involve harvesting competing conifers from aspen stands and stimulating aspen regeneration to help maintain the aspen ecological component within the project area that serves as a natural fire or fuel break. Aspen also contributes as an important element to vegetation diversity. Following timber harvest, sapling and pole-size conifers would be felled and/or burned. Aspen clones would be burned or disturbed mechanically to stimulate root suckering. In addition, there is an unquantified amount of aspen that occurs as a minor

component of larger conifer stands throughout other proposed treatment activity areas that would be treated similarly where opportunities permit.

Underburning Only (350 acres, 8 percent of project area NFS land)

There are about 350 acres in the northeast tip of the project area where tree thinning was recently completed under the Myrtle Resource Management Project. Subsequent underburning, consisting of a staged design, is necessary to reduce fuels associated with dense understory vegetation. Reduction of dense understory vegetation would reduce ladder fuels and keep a fire from spreading to the overstory.

8.2 Road Management Activities

Watershed Improvement

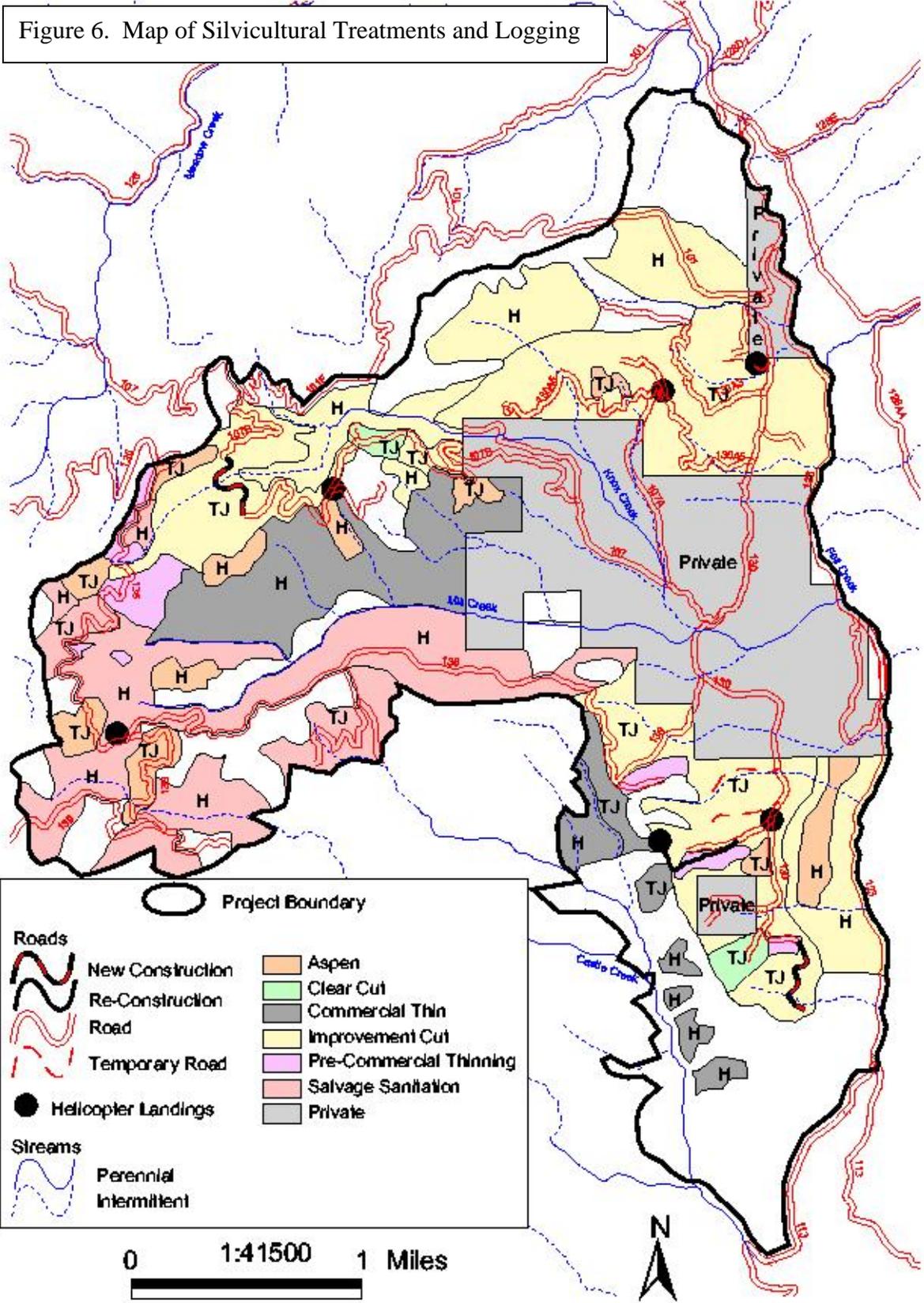
Approximately 2.6 miles of NFS Roads 136A, 107 and 107B would be decommissioned. Decommissioning includes: 1) Closure via a combination of earthen barricades, restoration of the natural contour, and gates. 2) Treatment of portions in particularly poor conditions via a combination of ripping, seeding, waterbar construction, culvert removal, and restoration of the natural contour. 3) Removal of the segments from the Forest road inventory. The through portion of NFS Road 107B would be relocated (i.e. constructed) in an upper slope position far removed from riparian zones to the extent practicable and become part of the Forest road inventory. The locations of roads to be decommissioned are shown on Figure 8.

Access Management

Barricades or gates would be installed on NFS Road 101 at the junctions with NFS Roads 101F and 130 to prevent public access to an impassable segment of the road. A barricade or gate would be installed on NFS Road 107B at its junction with NFS Road 107 to prevent public access. National Forest System Road 107B is not a through road. These gates or barricades would eliminate frustration and confusion to Forest visitors. Gate/barricade locations are shown on Figure 8.

9 Further Information

For further information on the proposal and how to submit comments, please contact Frank Marsh, Project Leader, Mountain Home District Ranger at 208-587-7961 or email fmarsh@fs.fed.us.



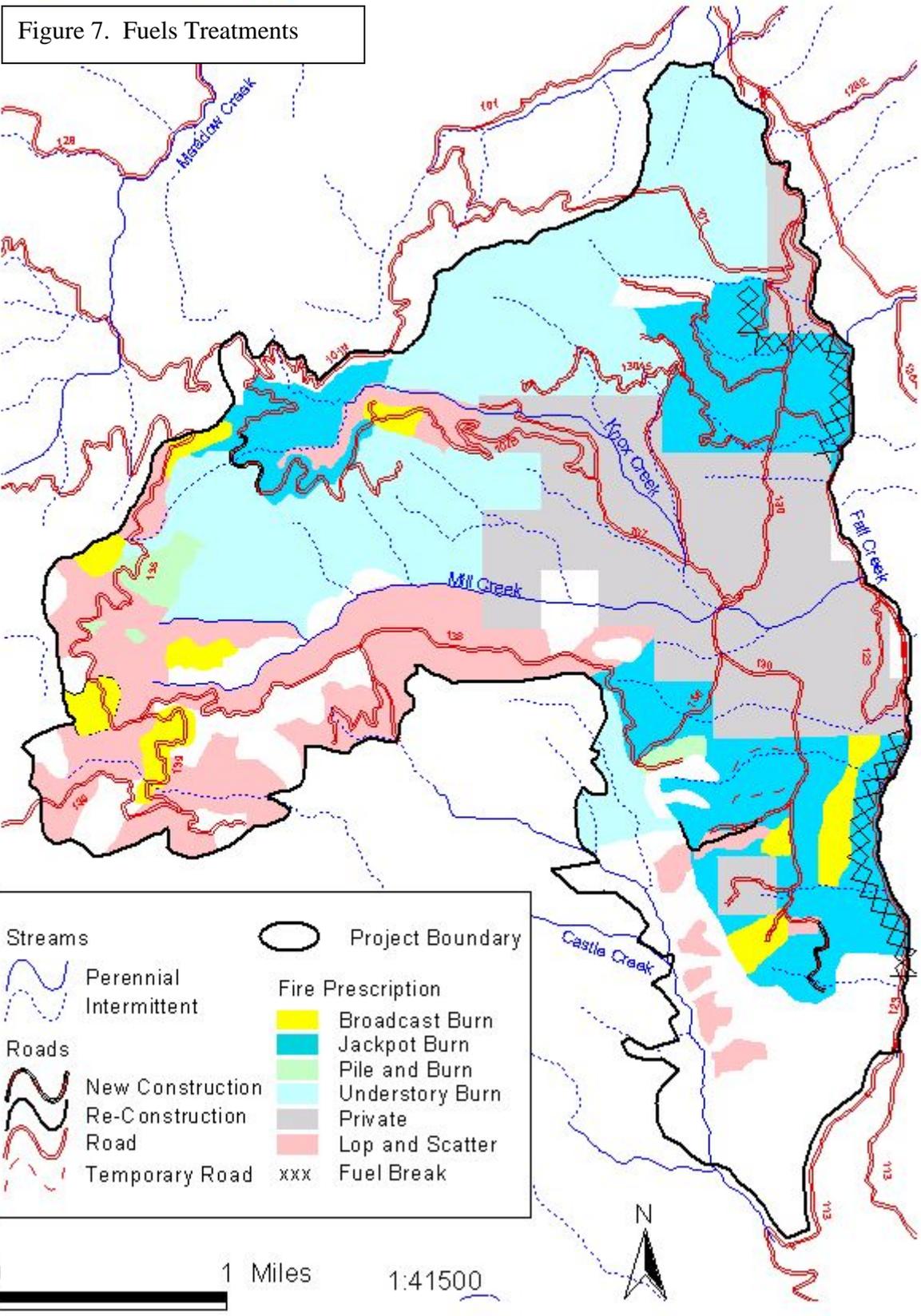


Figure 8. Travel Management

