U.S. Department of the Interior
Bureau of Land Management

Environmental Assessment MT- (*070-07-20*)

January 9, 2008

Scratchgravel Hills WUI Fuels Reduction Project

Location: Principal Meridian Montana
T. 11 N., R.4 W., P.M.M., Sections 26,27,28,29,33,34,35, and 36; and
T.10 N, R.4 W., P.M.M., Sections 3 and 4; in Lewis and Clark County.

U.S. Department of the Interior
Bureau of Land Management
Butte Field Office
106 North Parkmont
Butte, Montana 59701
Phone: 406-533-7600
FAX: 406-533-7660

CHAPTER 1
INTRODUCTION AND NEED FOR THE PROPOSED ACTION

INTRODUCTION

In August 2000, the President directed the Secretaries of Agriculture and Interior to develop a response to severe wildland fires, reduce fire impacts on rural communities, and assure sufficient firefighting capacity in the future. The resulting *National Fire Plan* identified hazardous fuel reduction as a key point to "address dense forest vegetation resulting from decades of wildland fire suppression and fire exclusion on Federal lands. Activities are to focus on lands within the wildland urban interface adjacent to Communities at Risk." Another key point of the National Fire Plan addresses "Restoration of healthy, diverse, and resilient ecological systems to minimize uncharacteristically intense fires. Methods would include removal of excessive vegetation and dead fuels through thinning, prescribed fire, and other treatment methods." The Bureau of Land Management (BLM) is mandated to manage its federal lands to comply with the above direction.

The BLM is proposing a combination of vegetation treatment projects, which may include mechanical slashing and thinning, and prescribed fire treatments. These fuel modifications are intended to reduce the potential for wildfire within one to two miles of private ground and structures. High fuel concentrations within the proposed management areas pose a high risk of large, catastrophic fires that could threaten human health and safety and private property adjacent to the project areas.

This environmental assessment includes a project area located on the northwestern edge of Helena Montana. The National Fire Plan designates Helena as a community at risk from the devastating effects of wildfire.

Legal Location: T. 11 N., R.4 W., P.M.M., Sections 26, 27, 28, 29, 33, 34, 35, and 36; and T. 10 N. R. 4 W. Sections 3 and 4; in Lewis and Clark County.

PURPOSE AND NEED FOR THE PROPOSED ACTION

High fuel loadings and vegetative composition and structures existing in the proposed management area pose a high risk of stand-replacement fire. Wildland fire would threaten human health and safety as well as private property surrounding the proposed projects.

The purpose of this project is to lessen the fuels hazards in the Wildland Urban Interface (WUI) for firefighter and public safety. The wildland-urban interface is defined as a line, area or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. Substantial residential development in the Scratchgravel Hills area over the last 30 years has resulted in a wildland-urban interface situation. A risk assessment was performed on the Helena valley in 2002 and 2003. Findings from that assessment, Wildland-Urban Interface Communities-At-Risk Hazard Assessment (January 2004), show that 14 of 27 forested areas rated "high" and ten out of 27 forested areas rated "medium" for hazardous fuels conditions in the Scratchgravel Hills.

The project area consists of stands of ponderosa pine and Douglas-fir. These stands are overstocked with almost continuous pine and fir canopy. Subdivisions of homes are adjacent to, or within one mile of the project areas. With the existing fuel conditions in the forested and open

areas, theses subdivisions could be indefensible in the event of a natural or human caused wildfire. Firefighter safety during suppression activities with the existing conditions would be a significant concern.

The objectives of the project include the following:

- Reduce the hazard associated with wildfire.
- Provide for increased public and firefighter safety.

CONFORMANCE WITH BLM LAND USE PLAN(S)

The Proposed Action identified in the EA conforms to the *Headwaters Resource Area Resource Management Plan/Environmental Impact Statement*, Butte District November 1983, approved 1984 and the Fire/Fuels Management Plan Environmental Assessment/ Plan Amendment for Montana and The Dakotas July 2003, approved September 2003.

RELATIONSHIPS TO STATUTES, REGULATIONS AND OTHER PLANS

- The Federal Land Policy and Management Act (FLPMA) of 1976 established policy and guidelines for the administration, management, protection, development, and enhancement of public lands (43 U.S.C 1701 et seq.: 90 Stat. 2743; P.L.94-579).
- Archeological Resource Protection Act of 1974
- National Historic Preservation Act of 1966 as Amended (1980)
- National Environmental Policy Act of 1969, as Amended (42 U.S.C. 4321 *et seq.*)
- 1973 Endangered Species Act, as amended
- Migratory Bird Act of 1918 [16 U.S.C. 703711
- Clean Air Act of 1977, as amended, U.S.C. 7401 *et seq.*
- The proposed actions are in conformance with the National Fire Plan, Hazardous Fuel Reduction and Community Assistance guidance.
- Proposed management is also consistent with the guidance provided by the 1995 Review and Update of the Federal Wildland Fire Management Policy and the 2001 Amendment.
- Tri-county Fire Working Group Regional Community Wildfire Protection Plan 2005.

CHAPTER 2
DESCRIPTION OF ALTERNATIVES

INTRODUCTION

This EA focuses and analyzes two alternatives: the Proposed Action and the No Action. The alternatives will be analyzed based on how they meet the objectives of the project and what impacts they may have on the environmental critical elements. The No Action alternative is considered and analyzed to provide a baseline for comparison of the impacts of the proposed action. This chapter summarizes the objectives that the BLM intends to reach if the proposed action alternative is implemented and describes the steps that would be taken to minimize unnecessary environmental degradation.

ISSUES

Key Issues for the project were identified through public and internal scoping. The following issues (excluding the critical elements) were determined to be key and within the scope of the project. These issues are addressed within the EA.

- Weeds
- Fire Management
- Recreation
- Soils
- Vegetation
- Visual Resource Management (VRM)
- Wildlife

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

Broadcast Burn Alternative

A broadcast burn treatment was discussed but eliminated from detailed study due to public comment. The consequences and risks of an escaped prescribed fire would be too high to implement a broadcast burn in the project area at this time.

NO ACTION

Hazardous fuel reduction would not occur in the project areas. Essentially no treatment would occur for hazardous fuels on these areas. The hazard that exists for catastrophic wildfire would not be mitigated and fires would be difficult to control under most conditions, especially during hot, dry fire seasons. Creation and/or expansion of wildland fire defensible spaces would not occur, and the risk to firefighter and public safety would not be reduced. Mandates from the National Fire Plan would not be met.

Ponderosa pine and Douglas-fir would continue to dominate the forested understory, maintaining and increasing the ladder fuels for fire to climb into the overstory. Tree stocking densities would continue to spread into the open sage/grasslands resulting in a greater loss of this valuable habitat type and natural break in the continuity of fuels.

PROPOSED ACTION

BLM proposes to mechanically thin high-density conifer stands and mechanically remove trees from the grassland/shrubland areas to lesson the hazard associated with fire behavior to increased public and firefighter safety. Proposed treatments will occur on approximately 1160 acres in the Scratchgravel Hills Project Area. Prescriptions vary according to habitat type, current stocking levels and stand condition, topography, and accessibility of the forest stand.

Treatments in Douglas-fir habitat types (approximately 350 acres) will reduce stand basal area (B.A.) per acre to between 60 and 90 B.A. (see Table 2.1). Basal area is defined as the cross-sectional area (in square feet at diameter base height) of all stems, expressed on a per acre basis (Avery and Burkhart 1994). Removal of trees will occur throughout all size classes, with an emphasis of leaving large trees with patches of all size classes left for stand structural diversity and recruitment. Species preference for leave trees is ponderosa pine, but some Douglas-fir will be left to provide for species diversity. Leave tree distribution will be a clumpy, mosaic pattern.

Table 2.1Douglas-fir Habitat Type Prescriptions Comparison

Tree Species	Tree Diameter	Current Trees per Acre	60 Basal area Treatment Trees per Acre Left	90 Basal area Treatment Trees per Acre Left
PP	< 1.0"	2588	0	0
PP	1" - 2.9"	262	28	46
PP	3." - 6.9"	401	134	351
PP	7." - 11.9"	54	54	54
PP	12." - 20.9"	6	6	6
PP	21." - 29.9"	1	1	1
DF	< 1.0"	656	0	0
DF	1" - 2.9"	281	0	0
DF	3." - 6.9"	19	0	0
DF	7." - 11.9"	5	0	0
DF	12." - 20.9"	0	0	0
DF	21." - 29.9"	0	0	0
Total		4272	223	458

Treatment in ponderosa pine habitat types (approximately 300 acres) will reduce stand basal area to between 50 and 80 B.A. (see Table 2.2). Removal of trees will occur through all size classes, with an emphasis of leaving large trees, with patches of all size classes left for stand recruitment. Species preference for leave trees is ponderosa pine, but some Douglas-fir will be left to provide for species diversity. Leave tree distribution will be a clumpy, mosaic pattern.

Table 2.2. Ponderosa Pine Habitat Type Prescriptions Comparison

Tree Species	Tree Diameter	Current Trees per Acre	50 Basal area Treatment Trees per Acre	80 Basal area Treatment Trees per Acre
PP	< 1.0"	1100	92	165
PP	1" - 2.9"	0	0	0
PP	3." - 6.9"	52	27	45
PP	7." - 11.9"	177	16	26
PP	12." - 20.9"	49	24	40
PP	21." - 29.9"	1	1	1
DF	< 1.0"	150	0	0
DF	1" - 2.9"	0	0	0
DF	3." - 6.9"	0	0	0
DF	7." - 11.9"	0	0	0
DF	12." - 20.9"	0	0	0
DF	21." - 29.9"	0	0	0
Total		1529	160	277

Treatments in the grassland/ shrubland habitat (approximately 510 acres) for all units will remove conifer encroachment to restore an open grass/sage savannah, where wildland fire would be limited to a surface fire. Conifers over 1foot in height and up to 19.9 inches DBH will be removed, chipped or masticated on site. The remaining tree distribution will be a mosaic of large trees, similar to a savannah under a natural fire regime.

Unit 1 forested stands: Approximately 200 acres of Douglas-fir habitat type will be mechanically treated with a comprehensive basal area treatment discussed above for the forest stand. In the grasslands/ shrublands, conifers over one foot in height and up to 19.9 inches DBH would be

removed. The emphasis for unit 1 is to create safer ingress and egress and to establish breaks in the fuel continuity along the existing road system. Trees will be thinned approximately 300 ft on both sides of the road system (see Figure Z). In the areas of grassland /shrubland (approximately 130 acres), the distance may be greater than 300 ft to eliminate encroachment over the larger historic opening.

Unit 2 forested stands: Approximately 70 acres of Douglas-fir habitat type will be mechanically treated with a comprehensive basal area treatment discussed above for the forest stand. In the grasslands/ shrublands, (approximately 30 acres) conifers over one foot in height and up to 19.9 inches DBH would be removed. The emphasis for unit 2 is to establish breaks in the continuity of fuels along the boundary between BLM administered property and private property. Treatments will create conditions conducive to a ground fire rather than a crown fire, in the event of an unwanted wildfire.

Unit 3 forested stands: Approximately 170 acres of ponderosa pine habitat type will be mechanically treated with a comprehensive basal area treatment discussed above for the forest stand. In the grasslands/ shrublands, (approximately 70 acres) conifers over one foot in height and up to 19.9 inches DBH would be removed. The emphasis for unit 3 is to establish breaks in the continuity of fuels along the boundary between BLM administered property and private property. Treatments will create conditions conducive to a ground fire rather than a crown fire, in the event of an unwanted wildfire.

Forested stands in Units 4 and 5: Approximately 80 acres of Douglas-fir habitat type will be mechanically treated with a comprehensive basal area treatment discussed above for the forest stand. These units have more grassland/ shrubland than forested habitat (approximately 200 acres) and are highly visible. Conifers over one foot in height and up to 19.9 inches DBH would be removed but clumps of trees would remain in the drainages. These two areas have a high concentration of weeds and will require pretreatment before mechanical work is implemented. The emphasis for units 4 and 5 is to establish breaks in the continuity of fuels along the boundary between BLM administered property and private property. Treatments will create conditions conducive to a ground fire rather than a crown fire, in the event of an unwanted wildfire.

Unit 6 forested stands: Approximately 130 acres of ponderosa pine habitat type will be mechanically treated with a comprehensive basal area treatment discussed above for the forest stand. In the grasslands/ shrublands (approximately 80 acres) conifers over one foot in height and up to 19.9 inches DBH would be removed. The emphasis for unit 6 is to establish breaks in the continuity of fuels along the boundary between BLM administered property and private property. Treatments will create conditions conducive to a ground fire rather than a crown fire, in the event of an unwanted wildfire.

Across the project area, priority will be to remove and utilize (if possible) all cut trees three inches DBH and larger. All trees less than three inches DBH may be chipped, masticated, or burned in an air curtain burner. In areas that have no public access (Units 2 and 6), or utilization of products is not feasible, trees up to seven inches DBH may be treated by chipping, masticating and/or burning in an air curtain burner. Mechanically reduced material would remain on site; however, the site would still meet the basal area prescription for the forest habitat type.
No new permanent roads will be built within this project. Emphasis will be placed on utilizing the current road system in the project area. Up to 6.6 miles of the current road system may need to be improved and/or temporarily upgraded. The roads will be improved to minimal standards necessary, and any constructed portions will be removed/rehabilitated upon project completion. Improved skid trails will be the main type of transportation system constructed. Trees will be

skidded to landings adjacent or close to the main road system. Skid trails and temporary roads will be closed using a variety of techniques, including ripping of the road bed, reseeding with native vegetation, re-contouring, and pulling material across the road bed upon completion of the project.

Design features that will be incorporated into the proposed action include the following:

- The *Montana/Idaho Airshed Group Operating Guide* would be followed.
- Slash burning on site, if utilized, will utilize an air curtain burner to dispose of the slash and adhere to Ambient Air Quality Standards.
- All actions for fuels reduction activities would contain guidance for protection of any cultural remains and/or Native American Religious Concerns discovered during the survey process.
- Monitor (pre and post treatment) for invasive, non-native species. If monitoring shows a increase the treatment of invasive, non-native species would occur as outlined by *Final Vegetation Treatments Using Herbicides Programmatic Environmental Impact Statement* (September 2007).
- Treatment areas would be surveyed for places with excessive mechanical disturbance. Large areas of one acre or more would be seeded with native grasses.
- Contracts would include a requirement to pressure wash all off-road equipment before entering the project areas and/or moving from unit to unit.
- Flag and avoid BLM sensitive plant species populations within the unit.
- Mechanized equipment would be limited to operating on those areas within the treatment area that are 40 percent, or less, slope and are outside any designated streamside management zone.
- Operation of the mechanized equipment should only be permitted when the soils are dry, frozen or sufficiently covered by snow to reduce soil impacts and disturbances.
- Priority will be to utilize stewardship contracting authorities (if possible) to complete the project.
- All existing improvements (i.e. cattle guards, fences and the main road) will be maintained during the course of the operation.
- Road maintenance, heavy equipment use, fuels removal practices and slash disposal will follow all the applicable State of Montana Streamside Management Zone (SMZ) laws as well as Best Management Practices (BMPs).
- Any bank-rooted tree in a cut or gully would be left uncut for stabilization.
- Any determined user-created roads within the units may be decommissioned.
- Prescription design will take into account designated trail system and the need for shade along trails if possible, while still meeting fuels objectives.

CHAPTER 3
AFFECTED ENVIRONMENT/ENVIRONMENTAL IMPACTS

INTRODUCTION AND GENERAL SETTING

This chapter summarizes current conditions and provides a baseline against which to measure the features of the alternatives. It also describes how conditions might be affected under each of the alternatives.

The Scratchgravel Hills rise a thousand feet above the west Helena Valley in Lewis and Clark County. The Scratchgravel Hills consists of BLM administered and private properties which are partially forested, with ponderosa pine and Douglas fir capping the higher ridges in the central, southern and southeastern portion of the hills. The northern portion of the hills consists primarily of open slopes with native grasses and sagebrush. Grazing exclusion and fire suppression have resulted in a large amount of ponderosa pine and Douglas fir regeneration in forest openings and encroachment into adjacent rangeland, resulting in multi-storied forest stands. Ladder fuels are generally continuous throughout the forested areas except where mitigation measures have been implemented.

Pockets of residential development surround the Scratch Gravel Hills. There are over 1,000+ homes surrounding the Scratch Gravel Hills of which 192+ are in the wildland urban interface adjacent to BLM-administered land as documented in the Wildland-Urban Interface Communities-At-Risk Hazard Assessment (January 2004)

Table 3.1 CRITICAL ELEMENTS		
Determination*	**Resource**	**Rationale for Determination**
PI	Air Quality	Air quality in the area is generally very good. It could be affected by the proposed action from dustand or smoke being raised during mechanical activities and/or the burning of shalsh. Any effects would be minimal, highly localized, and short-term. As soon as the activity is completed, it would quickly clear up. The requirement of an air curtain burner for any slash burning as well as following The Montana/Idaho Airshed Group Operating Guide will reduce smoke emissions and meet any EPA regulations
NP	Areas of Critical Environmental Concern	There are no ACEC in the project area.
PI	Cultural Resources	See below
NP	Environmental Justice	No alternative considered in the course of this analysis resulted in any identifiable effects or issues specific to any minority or low income population or community as defined in Executive Order 12898. The agency has considered all input from persons or groups regardless of age, race, income status, or other social and economic characteristics.
NP	Farmlands (Prime or Unique)	Not present in the area impacted by the proposed or alternative actions.
NP	Floodplains	Not present in the area impacted by the proposed or alternative actions.
PI	Invasive, Non-native Species	Weed inventories of the proposed project area show that it contains a number of noxious weed species.
NP	Native American Religious Concerns	Surveys turned up no evidence of prehistoric sites.
PI	Threatened, Endangered or Candidate Plant or Animal Species	See below
NP	Wastes (hazardous or solid)	Not present in the area impacted by the proposed or alternative actions.
NI	Water Quality (drinking/ground)	
NP	Wetlands/Riparian Zones	No treatments are planned in the Iowa Gulch area, therefore no impacts would occur.
NP	Wild and Scenic Rivers	Not present in the area impacted by the proposed or alternative actions.
NP	Wilderness	Not present in the area impacted by the proposed or alternative actions.

*Possible determinations:
NP = not present in the area impacted by the proposed or alternative actions
NI = present, but not affected to a degree that detailed analysis is required
PI = present and may be impacted to some degree. Will be analyzed in affected environment and environmental impacts. (NOTE: PI does not mean impacts are likely to be significant in any way).

Cultural Resources/ Native American Religious Concerns

Affected Environment

Cultural resource inventory data has failed to yield any information about the prehistory of the Scratchgravel Hills. Prehistoric site types that may be present include stone features, cairns and blinds, fasting beds, tipi rings and wheels, lithic scatters and open campsites. The age range for prehistoric sites in the area can be expected to be as old as any in Montana. Some sites along Prickly Pear Creek have yielded dates as old as 11,000 years. Chronologies for the area include sites older than those known in the Helena area, so the potential for even older sites certainly exists.

Most chronologies for western Montana group stone tool types into phases which are characterized by a number of factors that reflect changes in stone tool technology. The Paleoindian phase begins with the Clovis period, characterized by highly specialized lithic tools strongly associated with mega-fauna utilization.-.mammoths, mastadons and archaic species of bison. The earliest known sites of the Paleoindian period are typically dated to about 12,500 – 12,000 years old.

At approximately 8,500 yrs ago, the Great Plains area experienced a very strong drought trend, known as the Altithermal; and this change is reflected in the stone tools left behind. The materials used to make the tools become localized, and the variety of types of tools increases. The level of artistry decreases, suggesting that subsistence patterns changed dramatically, extending the focus beyond an emphasis on hunting to a more broad-based hunting and gathering economy.

The following phase is referred to as the "Archaic," and most chronologies separate the phase into two groups – early and late. It is characterized by a cooler, wetter climate (more like the previous Paleoindian period), but the subsistence economies remained broad-based. Approximately 5,000 years ago, projectile points begin to show use of the atl-atl or throwing stick. This marked a positive and profound change in hunting efficacy, but the subsistence economy remained a broad-based one.

The Late Prehistoric phase began approximately 1,500 years ago and is marked by the introduction of the bow and arrow. This technological change further increased hunting efficacy and remained the preferred weapon until European contact.

The final stage is known as proto-Historic, marked by the introduction of the horse. This phase is characterized by a mixed group of artifacts that can include metal point tips, trade goods such as beads, and horse gear.

Early European contact focused on the beaver trade and is poorly represented in the archeological record. Later, the involvement of the military and forced relocation to reservations closes the Native American component of the archeological record outside of designated reservations.

All of these site types are vulnerable to ground disturbing activities. While many of them have buried components, many prehistoric and later Native American sites have surface components. These surface components, as well as some subsurface components, would be damaged by heavy equipment activity of all types. Road-building, clearing for staging equipment and slash piles and skidding trees all stir up the upper portions of the soils in areas where these features are needed. Lighter fuels treatments do not necessarily have the same effect on prehistoric/Native American sites.

Known European sites in the Scratchgravel Hills are (to date) exclusively mining-related. Mining sites of all sorts compose the largest site type in the area and are largely the result of unsuccessful prospecting. The Montana Department of Environmental Quality's Abandoned Mine Reclamation Bureau's historical narrative for the Scratchgravel Hills states that the name "Scratchgravel Hills" comes from a farmer in the southern half of the hills who claimed to have uncovered a 27 ounce nugget from his field. Others tried their luck at this, and the name stuck.

Placer mining, the retrieval of gold or silver from stream gravels, was used through the 1860's, while lode mining (underground) began in the 1870's and continued off-and-on through World War II. Some mines were quite profitable, attracting such notable mining speculators as Tom Cruse, who owned the fabulously wealthy Drumlummon mine at Marysville.

Historic mining sites are characterized by the large waste rock piles that cascade down a hillslope, but they actually contain a wide variety of features. Haul roads, ditches, dams, terraces and retaining walls are some of the rock-based features that are often found at larger lode operations. Wooden structures, mostly in ruins, are most often portals (openings) into the underground workings but could also be bunkhouses, privies, mess halls, assay shacks and/or hoist housing. The most vulnerable component of historic mine sites are the trash dumps. Most historic garbage is still recognizable; and if the dump does not have visible bottles, usually suffers from disturbance because the contents do not appear "valuable."

The most frequently occurring features in the Scratchgravel Hills are prospecting pits and trenches. It is nearly impossible to associate these features with any given mine, as they were almost never recorded with the mineral surveys or any other documentation. Most of the time, associating these features with a given mine site is done for the sake of convenience.

The remnants of many of those large mines are quite visible today and present the largest site class affected by this undertaking. Wooden components of those sites would be vulnerable to burning, should that treatment be used. Fuel reduction activities that employ heavy equipment could damage some mining sites, but the size of these site types makes them easy to mark for avoidance during the planning stage.

Impacts of No Action

There would be no impacts associated with the "No Action" alternative.

Impacts of Proposed Action

The proposed action would have a "no adverse effect" as defined by 36 CFR 800.5(b). Those properties determined to be "eligible" as per the interagency Programmatic Agreement Regarding the Management of Historic Placer and Lode Mining Properties in Montana will be marked on the ground for avoidance by all activities. Those properties determined to be "not eligible" will not require protection from those same activities.

Fire Management

Affected Environment

The project area consists of stands of ponderosa pine, Douglas-fir and grass/sagebrush land encroached by conifers. These stands are overstocked with almost continuous pine and fir canopy.

Subdivisions of homes are adjacent to, or within one mile of the project areas. The Fire/Fuels Management Plan Environmental Assessment/ Plan Amendment for Montana and the Dakotas defines the wildland urban interface (WUI) as "The line, area or zone where structures and other human developments meet or intermingle with undeveloped wildland or vegetative fuels." The Scratchgravel Hills fits that definition of WUI.

The project area was evaluated for crowning potential and crowning index to determine fire hazard as, associated with public and firefighter safety and to set a base line to evaluate the alternative treatment. Crowing potential was determined using stand data, specifically Basal Area BA. In A Strategic Assessment of Fire Hazard in Montana (Fiedler et al. 2001), Table 4 suggests that a ponderosa pine forest type with a BA of greater than 40 correlates with low crown fire potential, BA between 40 and 75 is moderate crown fire potential, and greater than 75 BA is high crown fire potential. Douglas fir forest types with a BA of Less than 80 correlates with low crown fire potential, BA between 80 and 130 is moderate crown fire potential and greater than130 BA is high crown fire potential. The paper also states fire Hazard can be quantified in terms of crowning index which is "the wind speed necessary to sustain a crown fire once a fire has reached the main canopy." Crowning index values less than 25 miles per hour (mph) are rated high hazard, 25-50 mph as moderate hazard, and greater than 50 mph as low hazard.

The forested area in the project area have a BA range from 83 to 300 based on forest inventory data collected in 2002 for the Wildland Urban Interface Communities-At-Risk Hazard Assessment (2004). With the BA ranging in the Douglas fir stands from 83 to 130 and 94 to 300 in the ponderosa pine stands, all the forested stands within the project areas would have a moderate to high crown fire potential according to Fiedler et al. (2001).

The Webofire program and stand inventory data were used to estimate crown index for the forested area with the project area. The crowning index ranged from nine to 31 miles per hour, which would put the project area between high and moderate rating for crowning index according to Fiedler et al. (2001).

Impacts of No Action

With the no action alternative, fuels reduction treatment would not take place. Forested stands would remain overstocked, with the trends continuing toward higher basal area per acre and more encroachment into the grass/shrub lands. This would equate to lower crowning index values and higher risk of crown fire in these areas, all making the risk to public and firefighter safety greater.

Impacts of Proposed Action

With the proposed action high density stands of Douglas fir and ponderosa pine would be thinned down to 60- 90 BA and 50 - 80 BA, respectively. Thinning of the stands would reduce the crown fire potential from moderate to high crown fire potential to low to moderate in these areas according to Fiedler et al. (2001). Results would be a decreased risk to the public and firefighters, in the event of a wildland fire.

The "Webofire" program shows that the treated stands would have a crowning index ranging from 33 to 90. According to Fiedler et al. (2001), this would rate the hazard of the stand between moderate and low, reducing the risk to the public and firefighter safety, in the event of a wildland fire.

Invasive, Non-Native Species

Affected Environment

For purposes of this document, noxious weeds are defined as plants that are not native to this region and have the capacity to invade and eventually dominate certain portions of the landscape. Noxious weeds found in the Scratchgravel Hills project area include the following: Canada thistle, spotted knapweed, leafy spurge, Dalmatian toadflax, whitetop, and houndstongue.

Noxious weeds are scattered across the landscape. Their existing populations and the rate at which these weeds are expanding are of concern to public land managing agencies, wildlife agencies, private landowners, recreationists, and grazing permittees. These noxious weeds are of concern because of their tendency to out-compete native plants for scarce water, soil nutrients, and sunshine. Left unchecked, these weed populations would eventually out compete and crowd out native vegetation. The weeds do not bind the soil as effectively as native grasses, so areas can become susceptible to increased erosion. Cattle and wildlife depend on these native plants for forage, but for the most part do not eat the weed species; therefore, forage available for grazing animals and wildlife is reduced as the weed populations expand. The loss of these native plants in turn results in a reduction of suitable habitat or homes for a variety of small mammals and birds.

Most of the weeds in the project area originated from Europe or Asia, but how they arrived on the landscape is unclear. What is clear, however, is that they can generally become well established in open ponderosa forest areas. Although the BLM has no long-term weed management records, it is likely that the spotted knapweed and thistles have been present on the landscape for decades. In general, the spurge, toadflax and sulphur cinquefoil have not been a serious problem in this part of Montana until the last decade or so. Spotted knapweed and Dalmatian toadflax are the two most prevalent noxious weeds growing in the project area. Leafy spurge is present throughout the area, with the highest densities found in draws. Dalmatian toadflax infestations are spreading primarily throughout the southern edge of the area but are located in other sites also. Whitetop, spotted knapweed, houndstongue, Canada thistle and other undesired species are found in small scattered infestations.

Spotted knapweed is a biennial or short-lived perennial which grows and produces a large number of seeds for several years. Where knapweed becomes established in rangeland it slowly expands from the point where it initially took root. It spreads by seed dispersal and can gain a toehold in disturbed and undisturbed areas. Knapweed is a prolific seed producer and the seeds stay viable in the soil for over ten years. This makes herbicide treatment a continuous long-term effort, but one where results can be seen. Effective initial herbicide treatments would reduce future efforts to a maintenance level strategy, requiring periodic spot applications in future years. Spotted knapweed thrives on drier soil types.

Dalmatian toadflax is a perennial plant that is widely established over the project area, including areas not necessarily having been disturbed. Once established, Dalmatian toadflax does not respond readily to herbicide treatment as it has a deep and extensive root system which makes the

plant less vulnerable to herbicide control. Dalmatian toadflax spreads through an extensive root system, as well as by seed dispersal; and it is known to expand rapidly once established.

Current BLM efforts to reduce non-native invasive species include chemical control along roads and special areas and through contracts with Lewis and Clark County subject to the availability of appropriated funds. Use of biological control agents in this area is also being promoted as agents are developed and become available.

Impacts of No Action

The no-action alternative would have limited impact. The invasive, non-native species would continue to increase across the Scratchgavel Hills without any treatment. There would not be increased weed treatment and monitoring through the implementation of the proposed project

Impacts of Proposed Action

Any land disturbing activity has the potential to increase weed populations by making soil more hospitable to weed germination and establishment. The proposed action will increase weed herbicide application and monitoring in this area.

This alternative would be beneficial to the area. Opening the space between the trees should allow grasses to increase and provide a better habitat for the biological agents that have been released on the leafy spurge in the area. Dalmation toadflax is increasing on the site. The access the fuels work would create would also improve treatment access for weed control.

Range/ Grazing

Affected Environment

One unit of the proposed project area occurs in the southern portion of the Iron Siding allotment. This allotment is permitted for cattle grazing during the summer months, and its use is alternated with the Iowa Gulch allotment to the west.

Impacts of No Action

The conifer colonization in units 4 and 5 would continue. The forage production in these units would continue to slowly be reduced.

Impacts of Proposed Action

Reduction of some conifers in Units 4 and 5 would restore a small amount of grasslands. The quantity and quality of forage would be improved in these two small areas.

Recreation

Affected Environment

There are no existing or potential National Designations within this area. The Scratchgravel Hills Special Recreation Management Area totals about 5,500 acres and is located immediately northwest of Helena. The area provides numerous day-use recreation opportunities. A cooperative management agreement exists with Lewis and Clark County to provide support services in the area. Residents of Helena and subdivisions around the Scratchgravel Hills area are the primary users of this community-based SRMA. This area is accessible via five improved roads that extend into the area. Trailheads have been established at all legal access points in order to provide parking, maps and area information. These access roads and trailheads are as follows from east to west:

- John G. Mine Trailhead.
- Norris Road
- Tumbleweed Trailhead.
- Head Lane Trailhead.
- Echo Lane

The BLM Butte Office is currently developing a motorized travel plan for this area as part of the on-going Resource Management Planning effort. This plan, once completed, will guide the availability and standard of motorized routes and trailheads within the area.

Recreational use in the Scratchgravel Hills is well established. There is an extensive network of dirt roads and trails that are frequently used yearlong for hiking, jogging, horseback riding, mountain biking and OHV riding. Other activities include disc golf or folfing, paintball outings and limited fall hunting due to low big-game and upland bird populations. The combination of rapid urbanization and increased recreational use has led to increased conflicts between area residents and recreation users. The majority of conflict stems between non-motorized and motorized recreational use activities. Many area residents deliberately located near the Scratchgravel Hills to pursue dispersed recreational uses.

Residential housing has continued to grow, with over 1,000 residential homes currently located in and around this area (U.S. Census Bureau 2000). Two additional residential developments (Big Silver Creek and Cornerstone Village) are being planned. Big Silver Creek development will be located near the northwest corner of Scratchgravel Hills adjacent to Big Silver Creek road. If approved, 82 residential units will be constructed on approximately 1,500 acres. The Cornerstone Village development will be located southeast of the Scratchgravel Hills, bordered by Franklin Mine Road on the north and Head Lane on the west. If approved, Cornerstone Village will consist of over 800 single family dwellings located on 284 total acres of land. The development will also include a 300 person school occupying 30 acres. These developments will create additional use pressures on the area which is rapidly transforming a rural setting to that of residential neighborhood park.

Impacts of No Action

Under this alternative, no fuel reduction projects would occur and existing vegetative conditions would continue to be at high risk for catastrophic fire events. Should such a fire event take place, major impacts would occur, to the natural settings of the area and the visitors experience level. Trails users (hikers, joggers, mountain bikers, horseback riders and OHV riders) would be impacted by blackened landscapes, increased trail bed erosion, reduced shading, higher wind exposures and much less screening from other users due to vegetative losses. Similar negative effects would also be more likely to occur to the existing trail head locations and the popular folfing area associated with the Tumbleweed Drive Trailhead.

Impacts of Proposed Action

Temporary impacts to recreation opportunities and user experiences will occur during active treatment periods. These activities will be scheduled primarily during the winter months when ground conditions are frozen and less vulnerable to undue disturbances. This timing is advantageous to recreationists given that it is the lowest use period. Trail users will be temporarily impacted during active periods due to the sights and sounds of treatment activity and

materials. It is also anticipated that some users of the roads and trails will be impacted by equipment operation and the removal of vegetative products.

Impacts to the natural settings along trail corridors will be less evident given that basal area retention will be greater. This mitigation will provide more shading and screening qualities than other areas which will help lessen impacts to user experiences. Impacts to disc golfers should be minimal given that treatment prescriptions will be developed within their course area prior to any project work. Some removal of trees within established trailheads will be beneficial since it will provide opportunities for improving safety conditions. Finally, this project should have minimal effects on the on-going travel management plan, given that all altered roads and trails will be returned to previous conditions or allowed to remain, provided they are in conformance with planning guidance.

Soils

Affected Environment

Grassland soils in the eastern project areas have alluvial parent materials and are found on the alluvial fans. These soils are generally deep and well drained. Soil textures are mostly sandy loams. Forested soils in the eastern project areas formed on colluvium derived from granite. Soil textures are mostly loams with 20 to 40 percent rock fragments. Forested soils in the west project areas formed in limestone bedrock and are therefore calcareous (contain lime). Soil textures are mostly loams with 35 to 80 percent rock fragments making them very droughty. Grassland soils in the west project areas are mostly loams with a high percentage of rock fragments as well. Like the forest soils, these soils are droughty.

Impacts of No Action

The no action alternative would have a neutral impact on the soil resource in the short term. Soil erosion from water would not be increased under this alternative in the short term. If fuels were allowed to build and a hot summer wildfire was to occur in any of the three proposed project areas, long-term effects of this alternative could be very significant. If this wildfire event occurred and the protective vegetative cover was completely removed, potentially large amounts of soil could be eroded from these sites, thereby reducing soil productivity for hundreds of years.

Impacts of Proposed Action

Units 1, 2, 3 and 6 treatments would almost entirely occur on channery loam soils with some soils shallow to bedrock that generally range from 8 to 45% slopes. These soils have moderate off-road equipment hazard ratings primarily due to slope and the potential erodibility of the soil. The design features of the proposed action would reduce or eliminate potential soil erosion. Impacts to soils are unlikely in these treatment units. There may be sections of the existing roads that will require the installation and maintenance of water bars or rolling dips to reduce potential erosion.

Units 4 and 5 mostly occur on grassland sandy loam soils that range from 2 to 8% slope. These soils have slight off-road equipment hazard ratings, meaning potential erosion is unlikely under normal climatic conditions.

Vegetation/ Threatened, Endangered, and Sensitive Species (Plants)

Shrub/grasslands Affected Environment

Grassland soils are typically dominated by bluebunch wheatgrass and needle-and-thread. In some areas, big sagebrush co-dominates with bluebunch wheatgrass. Other common species in these areas are prairie junegrass, Hood's phlox, and fringed sagewort. Conifer species such as Rocky

Mountain juniper, ponderosa pine and Douglas fir are colonizing into adjacent grass and shrublands due to a lack of natural fires in the Scratchgravel Hills.

No threatened or endangered plant species are known to occur in the project area proposed for treatment (see appendix C). Two BLM sensitive plant species—linearleaf fleabane and lesser rushy milkvetch—have been documented in or near the proposed project area. Linear-leaf fleabane occurs in dry, often rocky soil from the foothills up to moderate elevations, frequently with sagebrush. Dominant species in its habitat include bluebunch wheatgrass and mountain big sagebrush. Associated species and habitats vary widely. In the Scratchgravel Hills near Helena, it occupies two distinct habitats one a midslope opening on a steep, east-facing timbered hillside and the other a gently southwest-facing lower slope in open rolling plains. Leafy spurge and spotted knapweed threaten populations in the Scratchgravel Hills.

Lesser Rushy Milkvetch is a slender herbaceous perennial that grows in grasslands and open ponderosa pine woodlands in the valley and foothills. Rough fescue, Idaho fescue and bluebunch wheatgrass are common bunchgrass associates. Several colonies of this species grow in the Scratchgravel Hills. The grassland habitats this species occupies are also being invaded by several noxious weeds, particularly in the Helena vicinity.

Impacts of No Action

Conifer colonization would continue to occur on 510 acres of grassland/shrubland habitat. The conifer encroachment would likely continue until a fire burns through the area.

Potential disturbance to plant populations would not occur. Conifer encroachment in grassland areas would continue to degrade lesser rushy milkvetch habitat.

Impacts of Proposed Action

Reduction of conifers in grassland soils would somewhat mimic the role of natural fire in these areas. Approximately 510 acres of conifer colonized grassland/shrubland habitat would be restored to a grassland/shrubland type or open savannah.

BLM sensitive plant populations would be flagged and avoided, or treatments in those areas would be conducted by hand. This would minimize surface disturbance, and plant populations would be maintained. Removing conifer encroachment in grassland areas would enhance habitat for lesser rushy milkvetch by removing the tree overstory.

Forestry Affected Environment

Forest stands in the Scratchgravel Hills are composed mainly of interior ponderosa pine (*Pinus ponderosa var. scopulorum***)** and rocky mountain Douglas-fir (*Pseudotsuga menziesii var. glauca*). Limber pine (*Pinus flexilis*) and rocky mountain juniper (*Juniperus scopulorum*) also exist within stands as common overstory associates. Stand ages in the Scratchgravels vary from approximately 125 years to 190 years old, with most overstory trees exhibiting extremely low growth rates. Most stands within the project area are experiencing heavy competition for moisture and nutrients, as well as an overall decrease in productivity and vigor. This is especially true in the oldest age class of pines which is experiencing increased mortality. Additionally, these conditions leave forested stands in the Scratchgravels at increased risk of insect and disease infestation.

The ecological changes that have occurred in dry conifer forests, such as those in the Scratchgravel Hills, over the last century have been well documented by a number of researchers

(Arno et al. 1995, Fule et al. 1997, and Scott and Fletcher 1998). Frequent, light-severity surface fires historically thinned small trees, especially the less fire-resistant Douglas-fir. These fires maintained open stands of ponderosa pine, as well as grasslands interspersed throughout the stands. The combined effects of 60 to 80 years of fire exclusion, logging that removed many overstory pines, heavy livestock grazing, and climate change have created closed-canopy stands with dense understories and ladder fuels (Covington et al. 1997 and Fule et al. 1997). Recent drought has also resulted in single tree, drought-induced mortality in stands thrugghout the project area. These changes have been documented throughout interior ponderosa pine's range and have also occurred in ponderosa pine/Douglas-fir types (Covington 1996 and Stein 1988).

Units 1, 2, 4, and 5 are classified as Douglas-fir/ bluebunch wheatgrass (*Agropyron spicatum*) forest habitat type with a Douglas-fir/ rough fescue (*festuca scabrella*) component as well (Pfister et al. 1977). Both habitat types consist of a ponderosa pine overstory with a Douglas-fir understory. This understory has developed into“dog-hair” thickets during the fire-free period resulting from fire suppression. Juniper is also a minor component in these stands, with an occasional limber pine as well. Understory species present in these habitat types in the Scratchgravels are kinnikinnick (*Arctostaphylos uva-ursi*), pussytoes (*Antennaria rosea*) common juniper (*Juniperus communis*), creeping juniper (*juniperus horizontalis*), snowberry (*Symphoricarpus albus*), and buffalo berry (*Sherpardia canadensis*).

Units 3 and 6 are classified as ponderosa pine/ bluebunch wheatgrass forest habitat types (Pfister et al. 1977). These types are the driest of ponderosa pine forest sites, often exhibiting low productivity. Moisture stress is a critical factor in these areas for plant growth, especially during summer months. Understory species are very limited due to the dryness of these sites. In the Scratchgravels, creeping juniper and rough fescue are the main understory species associated with this habitat type. Successful fire control in these sites has undoubtedly affected the stands. A primary effect is the increased presence of two-storied stands in the Scratchgravel Hills, where the understory is a dense stand of pole-sized or larger trees (Fischer and Clayton 1983). On open sites with favorable moisture conditions, interior ponderosa pine seedlings often establish in large numbers. Dense seedlings develop into "dog-hair" sapling thickets if stands are not thinned by fire or other means.

Impacts of No Action

The no action alternative, would not mechanically remove any trees from forested stands. Under the continued absence of fire, ponderosa pine would continue to expand its range into surrounding plant communities, and structural and vegetative diversity would continue to decline. Douglas-fir would continue to regenerate in the understory, carpeting ponderosa pine stands with a thicket of ladder fuels. Forests would continue to become denser resulting in more trees per acre that are of smaller diameters. Wildfire could burn a large portion of the project area and produce an even-aged plant community, resulting in less diversity and more weeds than currently on the landscape. This type of damage can be attributed to increased fire intensities characteristic of heavy fuels.

Impacts of Proposed Action

The proposed action would mechanically thin high density conifer stands, resulting in fewer trees per acre in all treated forested stands. Treatments would reduce the basal area of ponderosa pine and Douglas-fir, which should result in increased diameter growth rates of residual trees. Stands will consist predominately of ponderosa pine, arranged in a mosaic of open savannah structure, interspersed with thickets of seedlings and saplings. Patches of doghair thicket will be situated such that they do not provide ladder fuel structure to the overstory. Douglas-fir would remain as a minor component in stands, providing species diversity. Less overstory canopy coverage will

allow more sunlight to reach the forest floor, encouraging the growth of grasses, forbs, and shrubs. Diversity may increase with the addition of these species types. Individual tree productivity will increase as fewer trees will be competing for water, sunlight, and nutrients. Tree growth and vigor will increase, enhancing stand resistance to insect and disease infestations. Restoration of meadow openings in the ponderosa pine ecosystem will also increase structural diversity across the forested landscape. Removing pine encroachment from meadow openings will also decrease the forested acreage within the project area. Treatments applied over the life of the project would create a mosaic of early, mid, and late seral plant communities across the landscape.

Visual Resource Management

Affected Environment

The entire Scratchgravel Hills is managed as a VRM Class III area. Although the scenic quality of the immediate area is not rated high, the Hills are highly visible from the city of Helena and sensitivity levels are very important with most residents. The most visible and prominent formations are the higher hills and ridges known as the Scratchgravel Hills which exist within the central portion. The second most sensitive ridge lies between Echo and Head Lanes in the south-central portion.

The objective of VRM Class III management is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape. Known observation points (KOP) that will be used to assess visual impacts from this project are the State Capital, the Intersection of Custer and I-15, the Fort Harrison area on Birdseye Road and the Intersection of Lincoln Road and I-15.

Impacts of No Action

The potential for large scale fire events in the Scratchgravel Hills would continue to be high under current management, given the high vegetative fuel loads and the absence of treatments. A catastrophic fire would have major mid-to-long-term impacts to the visual qualities of the area from the identified KOPs due to the high sensitivity levels. The prominent vegetated formations (central hills and southern ridgeline west of Head Lane) are highly visible and most vulnerable to high intensity fires.

Impacts of Proposed Action

The proposed fuel reduction efforts would conform to the VRM Class III management guidelines as changes to the characteristic landscape as seen from identified KOPs would not be dominant. Visual impacts are expected to be low to moderate, given that numerous areas would not be visible and where view sheds are sensitive treatments would be limited to partial removal of overstory trees or irregularly, low contrast open parks. Visual impacts to recreationists within the area would be apparent but are not projected to be high given the mitigation measures in place. of mechanical equipment and cut vegetative materials. Major roads would be improved to accommodate log hauling, and secondary roads and some trails may be temporarily impacted due to mechanical travel and skidding. Trail impacts will be reclaimed to their former conditions to the greatest extent possible. Residual tree stumps and small litter will be noticeable, and trail segments that are currently within full canopies will become partially enclosed or shaded. Trailheads would be minimally affected given that most are located in open areas. The two areas that are within overstory settings will be mitigated so that existing canopies are partially retained.

Opportunities also exist to improve parking conditions at some of these locations in conjunction with this project.

Overall this proposed action should have long-term beneficial effects on the visual resources of the area since the potential for catastrophic fire events will be greatly reduced in the future, provided secondary maintenance projects to remove ladder fuels are undertaken.

Wildlife/ Threatened, Endangered, and Sensitive Species (Wildlife)

Affected Environment

The proposed project is within the Scratchgravel Hills, an isolated small mountain range approximately four miles north of Helena. The Scratchgravels is surrounded by subdivisions, ranches, Fort Harrison and other developments that have resulted in a substantial loss of wildlife habitat and has created long-term disturbance. The Scratchgravel Hills is an island of undeveloped hills surrounded by an area experiencing steady residential growth and provides some refuge for various wildlife species.

The Scratchgravels are characterized by gently rolling to moderately steep terrain varying in elevation from 3,700 to 5,200 feet. Vegetation at lower elevations includes grasses, forbs, and scattered shrubs with occasional juniper and ponderosa pine woodlands, with carpet-like areas of pine/fir colonization commonly occurring. Higher elevations and north facing slopes are dominated by ponderosa pine forest with a bunchgrass or fescue understory that commonly contains stagnant, old Douglas-fir seedlings.

Wildlife habitat within the Scratchgravel Hills is dominated by grasslands of bluebunch wheatgrass with a sagebrush component and dry forests with a mature ponderosa pine overstory and a Douglas fir or grass understory. Approximately 3,100 acres within the Scratchgravel Hills is grassland/shrubland and 2,300 acres is dry forest habitat. There are no live streams in this area, and riparian habitat is extremely rare but can be found at occasional springs and seeps.

Within the six units proposed for treatments, roughly 490 acres are grassland/shrubland with 25-80 percent encroachment by Douglas fir and/or ponderosa pine (Table 3.2). Approximately 600 acres within these units are dry forest habitats dominated by mature ponderosa pine with an understory of Douglas fir, ponderosa pine and/or grasses (bluebunch wheatgrass, Idaho fescue and pine grass) (Table 3.2).

Table 3.2 – Wildlife habitat by unit.

Unit	Size	Grassland Acres	Percent Grassland Encroachment	Forest Acres	Percent Forest Canopy
1	324	129	25-80	195	30-70
2	90	30	30	60	70-80
3	223	69	30	154	60-75
4	169	103	30	66	40-80
5	98	86	60-70	12	40
Area 3	200	74	20-70	126	40-80
Total	**1,104**	**491**		**613**	

Historically, habitat within the Scratchgravel Hills would have been an open savannah with a low density of trees (although this would have varied across the landscape) in a mosaic of grasslands and shrublands. Changes in land management have created dry forest with significantly more trees per acre and fewer understory species. Roughly half of grassland/shrubland habitat within this isolated range is experiencing a decline in quality and quantity due to the invasion of ponderosa pine and Douglas fir into these sites. Large, homogenous areas of dense young ponderosa pine provide low-quality habitat for wildlife.

Even though mining activities in the Scratchgravel Hills would have removed many trees, the proposed units and surrounding area lack stumps, snags, down wood or other evidence to suggest that the area was historically heavily forested. Currently, the preponderance of large diameter trees (>18" DBH) is found in drainages.

Standing dead trees (snags) and down woody material plays a critical role in habitat for numerous wildlife species. Before fire suppression, the warm, dry habitat types found in the Scratchgravel Hills would have had a frequent understory fire return interval. This fire regime would have maintained an open savannah of uneven age ponderosa pine with a few Douglas-fir and large old trees. It is expected that there would have been very low densities of large ponderosa pine and Douglas-fir snags but that these snags would have persisted for long periods of time. Mortality would have occurred sporadically and produced a low density of snags. Scarring and pitch buildup in ponderosa pines are common due to repeated low intensity fires, so when the tree dies, the high pitch content in the butt log resists rot. Snags in this habitat type can occur as individuals or in small groups or patches depending on the pattern and intensity of fire and snags can persist for decades. The history of mining in the area, fire suppression and firewood collection have, most likely, caused a loss and decline of snag habitat in the Scratchgravel Hills and proposed project area. There are very few standing dead trees in the project area.

Historically, the Scratchgravel Hills would have provided habitat for a wide variety of wildlife species. Due to adjacent development and changes in land management, this small isolated range provides less habitat than it once did. The Scratchgravels, including the proposed treatment units, however, do provide a refuge and remnants of habitat for various wildlife species. Species found or likely to occur in the Scratchgravels and proposed treatment units include; mule deer, pronghorn antelope, badger, coyote, red fox, striped skunk, mountain cottontail, whitetail jackrabbit, ground squirrels, marmot, red squirrel and other small mammals. Other species that may be found or occasional seen in the area include; bobcat, cougar, black bear and mountain lion.

Critical fawning and foraging habitat for pronghorn antelope was historically located in the southwest section of the Scratchgravel Hills. Although portions of the Helena area still provide limited pronghorn habitat, due to the extensive amount of development, the area no longer provides high quality habitat for this species. The Scratchgravel Hills provides some of the remaining habitat for this species.

The area provides summer habitat for mule deer and may also provide some limited winter habitat. Due to adjacent disturbance, the Scratchgravel Hills no longer provides suitable habitat for elk although an occasional elk may be seen in the area.
The density of forest stands provides hiding and security cover for mule deer and adjacent grassland/shrublands provide forage habitat. The quality and quantity of forage in the proposed project area is being lost due to conifer encroachment of grasslands/shrublands as well as from an increase in density of trees within the forested stands. The Scratchgravel Hills, however, is heavily roaded (4.8 miles per square mile) and motorized use is likely to cause a significant

amount of disturbance to big game and other wildlife species. Open road density within the proposed units is also extremely high with roughly 7.5 miles of road per square mile, although Unit 2 has no open roads. The lack of snow in the area allows for nearly year-round motorized use of the Scratchgravel Hills, reducing the quality of potential mule deer winter range in the area.

Due to adjacent development and the amount of motorized use in the Scratchgravel Hills, the area is not considered "core or subcore habitat" and is not within important wildlife movement corridors. Core areas are large enough for wildlife (especially animals with large home ranges including carnivores) to forage and reproduce, and sub-core areas could act as stepping stones for wildlife as they move through the region. Wildlife corridors are areas of predicted movement between core and sub-core areas where habitat quality may be high but not as high or contiguous as the core and sub-core areas.

The Scratchgravels and proposed treatment units provide habitat for numerous forest and grassland bird species including but not limited to the following: hairy and downy woodpeckers, Cooper's hawk, sharp-shinned hawk, red-tailed hawk, blue grouse, dusky flycatcher, pine siskin, western tanager, black-capped chickadee, red-breasted nuthatch, ruby-crowned kinglet, yellow-rumped warbler, mountain bluebird, chipping sparrow, savannah sparrow, vesper sparrow, Townsend's solitaire, dark-eyed junco, Cassin's finch, red crossbill, western meadowlark, horned lark and mountain bluebird.

Within the proposed project area, encroachment of Douglas fir and ponderosa pine into grassland/shrublands is reducing nesting sites for avian species that depend on this type of habitat. Conifer encroachment is also causing a decline in foraging opportunities for raptors and other species that hunt within grasslands and shrublands. Habitat for those avian species that depend on or prefer open savannah type habitat is also being lost due to an increase in the density of conifers. The Scratchgravel Hills and proposed project area provide a large amount of nesting and foraging opportunities for forest species that prefer dense stands of dry forest.

The project area and adjacent Scratchgravel Hills does not provide suitable habitat for any species listed as threatened, endangered or proposed under the Endangered Species Act (Canada lynx, grizzly bear and gray wolf). No threatened, endangered or proposed species have been observed in the Scratchgravel Hills.

The Scratchgravel Hills and proposed treatment units provide habitat for several BLM sensitive species including the following: golden eagle, flammulated owl, Brewer's sparrow and long-eared bat.

Brewer's Sparrow

Brewer's sparrows are considered to be near sagebrush obligates and are found in sagebrush dominated sites. Brewer's sparrows tend to nest in sagebrush averaging 16 inches high and the cover (concealment) for the nest provided by sagebrush is very important. The diet of the Brewer's sparrow is predominately insect (70-80 percent), but grass seeds will also be used. Statewide, the species nests from mid-June to mid-July.

The project provides a small amount of nesting and foraging habitat in Units 4 and 5 (approximately 100 acres) for the Brewer's sparrow. All other units provide some sagebrush habitat; but due to conifer encroachment, these units most likely do not provide suitable habitat for the Brewer's sparrow.

Flammulated Owl

Flammulated owls are associated with mature stands of ponderosa pine, Douglas-fir or mixtures of the two in landscapes with low to moderate canopy closure. The species, however, shows a strong preference for ponderosa pine. These owls prefer mature forest with more open canopies and tend to avoid dense young stands. Flammulated owls may, however, roost in older, dense vegetation and thickets that provide shade and protection from predators; and they often roost close to trunks in fir or pine trees, or in cavities.

Flammulated owls forage in ponderosa pine and/or Douglas-fir, and these forest types apparently support a particular abundance of favored lepidopteron prey. The species may focus foraging in a few "intensive foraging areas" within a home range. Flammulated owls hunt exclusively at night and feed on various insects (e.g., moths, beetles, grasshoppers, crickets, caterpillars). Moths (especially Noctuidae and Geometridae) and beetles are especially important but they may occasionally eat small mammals or birds. These owls may forage along the interface between forest or woodland and grassland.

Flammulated owls may occupy the same breeding territory in successive years and territory sizes range from 5.2 to 24 square kilometers. Territories occupied by breeding pairs often contain a large portion of mature forest (more than 75 percent), whereas territories occupied by unpaired males often contain less (30 to 70 percent) mature forest. The nest site is usually within an old woodpecker hole or other type of natural cavity.

The lack of snags would limit the amount of suitable nesting habitat in the proposed project units. The amount of suitable foraging habitat may also be limited due to an increase in stand density. Adjacent to Unit 1, roughly 150 acres was thinned in 2002. The number of trees per acre was reduced up to 80 percent in the understory trees (less than or equal to 8” DBH), including seedlings and sapling. This thinning improved the quality and quantity of foraging habitat for the flammulated owl and other species that prefer open, dry forest habitat.

Golden Eagle

Golden eagles nest on cliffs and in large trees (occasionally on power poles) and hunt over grasslands, shrublands, prairies and open woodlands. Cliff nests are often selected for south or east aspect, less than 200inches snowfall, low elevation and availability of sagebrush/grassland hunting areas.

In Montana, golden eagles eat primarily jackrabbits, ground squirrels and carrion. They occasionally prey on deer and antelope (mostly fawns), waterfowl, grouse, weasels, skunks and other animals. Golden eagles rarely prey on livestock, but when they do, losses usually occur in areas where migrating eagles congregate.
Due to the amount of encroachment on grasslands and shrublands and the density of forest habitat, the project area provides very limited hunting opportunities for the golden eagle and, most likely, very little potential nesting habitat. Units 3, 4 and 5 and Area 3, 5 provide roughly 220 acres of habitat for the golden eagle.

Bats

The long history of mining in the Scratchgravel Hills has created habitat for bats and surveys have been conducted to determine bat use of the area. Eighteen abandoned mines were surveyed in 2002 and 2003 in the Scratchgravel Hills. Bat species identified during these surveys included the following: western small-footed myotis, long-legged myotis, hoary bat, big brown bat and several unknown myotis species. As a result of surveys, five abandoned mines were closed with

bat gates. None of these bat gates are located in the proposed project units. The three bat species that may be found in the proposed units are the hoary bat, silver-haired bat, long-eared myotis and western small-footed myotis. The long-eared myotis is a BLM sensitive species.

The long-eared myotis is found in forested areas, river valleys and drainages where rock outcrops provide shelter and suitable habitat. Roost sites are located typically in rocky areas in a variety of habitats such as subalpine, semiarid, shrublands, chaparral, and sagebrush. Day roosts for this species are located under loose bark, in hollow trees, buildings and rock crevices. Night roosts can include caves and mines. The long-eared myotis forages between treetops and over woodland ponds and streams. This species is adapted for foraging in vegetatively dense habitats. It gleans insects from leaves and bark and locates them by listening for the sound of fluttering wings.

Impacts of No Action

The no action alternative, would not remove any trees in the proposed project area. No habitat for any threatened, endangered, proposed or BLM sensitive species would be directly removed. There would be no direct or indirect effects on threatened, endangered or proposed wildlife or aquatic species under the no action alternative.

The no action alternative would not impact individuals or alter habitat for the grizzly bear, gray wolf or lynx and these species would have a “No Effect” determination under the No Action Alternative.

The no action alternative would not remove habitat for any BLM sensitive species that depend on upland forests, grasslands or shrublands. All BLM sensitive species would have a “No Impact” determination from implementation of this project. The long-term loss of mature ponderosa pine due to over-stocked stands, however, could result in a loss of habitat for the flammulated owl and various bat species. In addition, the loss of grassland/shrubland habitats due to conifer encroachment could also result in a decline of habitat for the Brewer’s sparrow and golden eagle.

The no action alternative would maintain hiding cover for mule deer but the decline of grassland and shrubland habitats could cause a decline in forage for big game as well as a loss of forage and nesting habitat for grassland and shrubland dependant species. The decline of grassland and shrubland habitats could result in continued loss of habitat available for pronghorn antelope.

Under the no action alternative, forests would continue to become denser resulting in more trees per acre that are of smaller diameter. This could result in a reduction of nesting habitat for raptors and owls as well as other avian species that prefer larger diameter trees in more open stands.

Impacts of Proposed Action

The proposed action would mechanically thin high density conifer stands as well as mechanically remove trees from grassland and shrubland habitats.

Approximately 490 acres of grassland and shrubland habitat would be improved and restored by the removal of conifers (predominately ponderosa pine) that have invaded these sites. Alternative 2 also proposed thinning roughly 600 acres of dense, dry forest habitats to create a more savannah type habitat.

The removal of conifer encroachment from grasslands/shrublands and the thinning of dry forest habitats would not impact individuals and would have no impacts on habitat for the grizzly bear,

gray wolf or lynx. These species would have a "No Effect" determination under the action alternative. There would be no direct or indirect effects on threatened, endangered or proposed wildlife or aquatic species under the proposed action alternative.

The proposed action would improve and restore habitat for BLM sensitive species potentially found in the project area that depend on grasslands, shrublands or forest habitat (golden eagle, Brewer's sparrow, flammulated owl and various bat species). There may be short-term disturbance to these species during project implementation and a small amount of suitable habitat could be impacted or removed. The long-term effects to these species, however, would be beneficial. These species would have a "May Impact Individuals or Habitat, but Would Not Result in a Trend Toward Federal Listing or Reduced Viability for the Population or Species." Although habitat for flammulated owls and various bat species does occur in the project and analysis areas, these species have not been verified.

Although the objective of the project is to reduce fuels in the Scratchgravel Hills, the thinning of dry forests would create a more "historic" savannah type habitat with larger diameter trees and an increase in understory grasses, forbs and shrubs. The reduction of overstory canopy and subsequent increase in understory species would increase forage and nesting opportunities for a variety of species that prefer dry forest habitats. A diversity of habitats would be provided by maintaining patches of different age classes throughout the project area. This would provide hiding cover for various species as well as patches of nesting habitat for those species that use dense patches of forest. The thinning of forest stands and the removal of dense conifer encroachment from grassland/shrublands, however, would reduce the amount of functional hiding cover for mule deer, especially hiding cover along roads. BLM land covers roughly 5,400 acres of the Scratchgravel Hills. Of this 5,400 acres, approximately 2,000 acres (37 percent) provide some degree of hiding cover for big game. The proposed project would reduce the amount of functional hiding cover in the analysis area to no less than 1,400 acres (26 percent).

Habitat for pronghorn antelope would be improved through the removal of conifers in grassland and shrubland habitats. Approximately 490 acres of antelope habitat would be enhanced under the proposed action. There could be short-term disturbance to big game and other wildlife species during project implementation.

The proposed action would reduce the basal area of ponderosa pine and Douglas fir which should result in an increase in the growth rate of residual pine. Larger size classes of ponderosa pine would result in an increase of habitat for species that require larger diameter ponderosa pine for breeding (including cavity users) and foraging such as flammulated owl, woodpeckers, hawks, brown creepers, bluebirds, northern flicker, western tanager and nuthatch.

If any active raptor nests are found within the project area, these nests would be protected from disturbance with a ¼ mile buffer during the nesting season (depending on the species). Restoration activities could continue after the nesting season as long as suitable habitat is maintained within ¼ mile of the nest site. The use of winter logging would reduce the risk to nesting raptors, owls and other migratory and resident bird species.

Snag development is desirable on a landscape scale to provide for the diversity of wildlife species dependent on this habitat component. The proposed action would promote a greater amount of large snags than the no action alternative. Although dry habitats, such as those found in the project area, historically supported low densities of snags, snags would have been expected to be fairly large in diameter (for the site potential) and persist for long periods of time. As snags and fallen trees decay, they support members of different wildlife groups that use dead trees for

foraging substrate, nesting, denning, perching, roosting, and shelter. After trees fall to the ground, persistence through time of dead trees (especially those of large diameter) can last several decades. Besides providing a source of organic and inorganic nutrients for soil development, these logs also provide nesting denning, and/or hiding cover as well as foraging opportunities for small mammals, birds, and reptiles. The proposed action would provide more potential to large snag development as well as the creation of large diameter down woody material in the appropriate amounts compared to the no action alternative.

CUMULATIVE IMPACTS

Cumulative impacts are those impacts resulting from the incremental impact of an action when added to other past, present, or reasonably foreseeable actions regardless of what agency or person undertakes such other actions.

The analysis area has seen a variety of activities over the past century, including historic mining activity, development of roads, powerline placement, development and management of private lands, and some livestock grazing. It is expected that the area would continue to see recreational use in the form of motorized use of designated roads and trails, as well as other forms of non-motorized recreation (hiking, wildlife viewing, etc.). Unauthorized use of roads and trails that are not designated for travel is also likely to continue into the future, as well as unauthorized off-road motorized travel.

The Scratchgravel Hills is surrounded by subdivisions, ranches, Fort Harrison and other developments that have resulted in a substantial loss of wildlife habitat and has created long-term disturbance. Residential development around the Scratchgravel Hills has tripled from 300 residential homes in 1984 to over 1,000 homes today, and there is additional ongoing development.

Wildlife and wildlife habitat has also been lost or degraded due to high road densities, the use of motorized vehicles year-round, historic mining, timber harvest, weed infestations and recreation. Primary recreation activities include motorized OHV uses (ATV, motorcycle) and non-motorized uses (hiking, jogging, horseback riding, mountain biking, etc.). There has been one fuels reduction treatment on BLM lands that consisted of grinding small to medium size understory trees on 150 acres in the Scratchgravel Hills. Vegetative treatments on BLM lands in the Scratchgravel Hills have had minor effects to wildlife habitat in the project and analysis areas. However, development on private lands has substantially altered the landscape and caused a substantial decline in the quality and quantity of wildlife habitat in this area.

Noxious weeds and non-native invasive species are well established and spreading in the analysis area. Motorized activities play a large role in the distribution of noxious weeds. Open roads and development adjacent to BLM lands and the substantial amount of public use this area receives would still allow for the spread of noxious weeds.

Roads and development within and adjacent to the analysis area can cause disturbance to wildlife along with fragmentation and loss of habitat. Roads are associated with nearly every type of activity that has the potential to occur in the Scratchgravel Hills including vegetation treatments, timber salvage, mining, access to private lands (ROWs), fire suppression, powerline corridors and recreation. The proposed project would not allow new, permanent roads to be constructed but would authorize the use of temporary roads which would be closed after project implementation. The closure of user created, unauthorized roads would also occur during the proposed project.

Historic timber cutting, past mining activity and firewood gathering in the analysis area have reduced the amount of suitable snag habitat for cavity nesting species, and the area is snag-deficient. Although the proposed project would not actively create snags, the potential for large snag development would be greater under Alternative 2 than the no action alternative.

Though wildland fire is a random event, the probablilty that it occurs in the Scratchgravel Hills is high in the future. Wildland fire that escapes initial attack in the project area presents serious conflict with public and firefighter safety. Uncontrolled wildland fire will also have an impact on vegetation, invasive, non-native plants, visual resources, soils, air quality and wildlife. The proposed action would give firefighters a greater chance at success in safely controlling a fire over the no action alterative.

The long-term benefits of this proposed action should greatly outweigh the negative short-term impacts to recreation users and experiences, given that the potential for catastrophic fire events will be greatly reduced. Impacts from such a fire on recreational settings and user enjoyment would be devastating.

Overall, this proposed action should have long-term beneficial effects on the visual resources of the area since the potential for catastrophic fire events will be greatly reduced in the future if secondary maintenance projects to remove ladder fuels are undertaken.

Specifically, with respect to vegetation, there are complex interrelationships between biotic and abiotic components of forest plant communities. Natural and human-induced processes transcend ownership boundaries. Effects, existing and future, on the local level would contribute to existing and future effects on adjacent lands. Cumulative effects of vegetation changes would occur on other resources such as wildlife, fish, visual quality, and watersheds. Effects of new vegetative treatments would contribute to the effects of older vegetative treatments, both on BLM-managed land and on adjacent private and other public ownerships. These effects would be mitigated somewhat by the separation in time and space between earlier treatments and the new treatments (Brown et al. 2006).

While many forest products are currently being removed and used, as biomass opportunities increase, a net export of biomass would occur with successive thinning/harvest. These activities would cause a decrease in organic matter and nutrients, resulting in a cumulative degradation of site quality over the long-term. This effect could be offset, at least partially by leaving fine woody material (tops, branches, foliage) on-site during mechanical treatments for organic matter retention and nutrient cycling.

Approximately 150 acres in the Scratchgravel Hills around the Wildland Urban Interface had hazardous fuels mechanically removed and ground up on site. Effects to soils from this project were negligible. Fuels treatments conducted on private lands will also likely occur for the foreseeable future with variable effects to soils. Reducing fuels under the controlled conditions of deliberate treatments may benefit soils in the long-term by reducing the risk of high severity fires in treated areas.

Livestock grazing on adjacent BLM lands and other public and private lands adjacent to the proposed treatment area has created areas of localized soil erosion and compaction. This will continue to occur for the foreseeable future.

Increasing residential development on adjacent private lands will likely continue for the foreseeable future to variable degrees. Erosion, compaction, and covering of soils would occur

due to additional road construction, clearing/leveling for home sites, and establishment of utility infrastructure for residential developments.

Travel management proposed by the Butte RMP would close some routes in the proposed treatment areas. These closures would reduce erosion and compaction on the selected routes.

Livestock grazing will continue in areas adjacent to the proposed treatments and has the potential to impact sensitive plant populations and habitat. On public lands, ongoing rangeland health assessments and implementation of livestock grazing guidelines would continue to improve or maintain sensitive species populations and habitat. On private lands, livestock grazing is expected to decline slowly as more ranch and farmland is subdivided. Conditions may improve or degrade as management changes.

Noxious weed control will continue on both public and private lands with varying degrees of success. To the extent that these efforts are successful, sensitive plants would benefit from the reduced competition. Use of herbicides for noxious weed control could cause mortality to special status plants if individual plants are inadvertently sprayed.

Recent and anticipated subdivision growth on private lands will lead to more road construction and surface disturbance. More roads and development will reduce sensitive plant species habitat and in some cases individual populations. Additionally, subdivisions have the potential to disrupt the connectivity of plant habitat and populations as well as disturbing or eliminating pollinators needed by sensitive species. Some sensitive species that require soil disturbance may benefit.

The mechanical treatment of 150 acres of Wildland Urban Interface had hazardous fuels mechanically removed and ground up on site. Special status plant habitat was improved by opening up the closed canopy. Fuels treatments conducted on private lands will also likely occur for the foreseeable future with variable effects to sensitive plants. Some habitat and populations may be improved while others are degraded.

Travel management proposed by the Butte RMP would close some routes in the proposed treatment areas. These closures would reduce some surface disturbance and some habitat connectivity may be restored.

CHAPTER 4
PERSONS, GROUPS, AND AGENCIES CONSULTED

Scoping

The public has been involved and interested throughout the development of this EA. Public comments helped to define issues and develop alternatives for accomplishing management goals and objectives. Following are the highlights of public involvement activities and efforts.

- Public participation in this project started in 2002 with gathering data for the Wildland-Urban Interface Communities-At-Risk- Hazard Assessment. This assessment set the basis for the Scratchgravel Hills WUI Fuels Reduction Project

  - Public meetings were held in each assessment area. Publicity for the meetings was done through KTMX Radio (affiliates also), Channel 11 Public Access Channel, Independent Record, Jefferson County Courier and handbills posted at local businesses and community meeting centers in the Helena and Clancy area.

  - The West Helena Valley meeting was attended by County Commissioner Ed Tinsley, West Valley Fire Chief Jerry Shepard, Marysville Fire Chief Tom Wirth, local contractors, and residents of the affected areas.

  - The Clancy meeting was attended by County Commissioner Chuck Notbohm, Montana City Fire Chief Rick Abrahams, Clancy Fire Chief Brett Farrell, and residents of the area.

  - At all three public meetings, a Power Point presentation was used to outline the general purpose of the wildland fire hazard assessment North Wind's role was discussed, an outline of the wildland urban interface issue was presented, a fire behavior-prevention video by Jack Cohen was shown, and a question and answer session was held.

  - Interviews were conducted with the Fire Chiefs of Lewis & Clark County, Baxendale, West Valley, Birdseye, Marysville, Canyon Creek, Lakeside, Clancy, Montana City, Clancy and Jefferson City Volunteer Fire Departments; Disaster and Emergency Service Coordinator Paul Spengler; Tri-County Fire Working Group Coordinator Pat McKelvey; U.S. Forest Service FMO; and Montana DNRC Fire Supervisor Rick Grady. Topics discussed were department resources, firefighter staffing, funding, area of district, work load, mutual aid system, cross department support, perception of situation, and past current, and future mitigation efforts. Pat McKelvey has coordinated mitigation assessments and implementation of cost share mitigation practices on private land. Over 285 home assessments have been done and over 200 mitigation measures have been implemented on private land. A Fire Hazard Risk Map has been created rating the risk throughout the Tri-County Area.

  - The Tri-County Fire Working Group is a coordinated effort of Lewis & Clark County, Jefferson County, and Broadwater County to address the wildfire hazard in the counties. The commissioners of all three counties have agreed the Working Group can prioritize and allocate grant money as the group determines. Working together across geographic and political lines gives the group an advantage in grant

application. The result has been an aggressive on-the-ground effort coupled with a well-coordinated media campaign to inform the public of the wildland-urban interface issue.

- Public notification of the Proposed Action through a posting on the Butte Field Office NEPA registers in September of 2005.

- Re – initiated public notification of the Proposed Action through a posting on the Butte Field Office NEPA register in January of 2007.

- Public comment was solicited with a scoping letter distributed to approximately 264 individuals and organizations on May 17, 2007. The letter gave a brief overview of the proposed action, purpose and need, and map of the project with a public comment deadline of June 8, 2007.

- A May 22 press release titled "BLM plans vegetations treatments in the Scratchgravel Hills" was incorporated into a comprehensive story titled "BLM considers logging Scratchgravels" and published in the Helena Independent Record on March 25.

- The comment period ended on June 8, 2007 and the Butte Field Office received 25 written, phone and/ email comments from individuals.

Table 4.1.Agencies and Organizations Consulted

Name/Agency	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Tri-County Fire Safe Working Group	Consultation / Coordination on Project during monthly meeting.	They supported project and found it to be consistent with their County wide Community Wildfire Protection Plan (CWPP).
Lewis and Clark County Community Development and Planning	On April 10, 2007 a letter was sent to requesting participation form Lewis and Clark County	No response to the letter was received from Lewis and Clark Counties.
Lewis and Clark County Community Commissioners	Received Scoping Letter dated May 17, 2007.	No response was received from the commissioners
Black Feet Tribe John Murray Cultural resource Department	On May 17th 2007, a letter was sent to John Murray detailing the project and asking for issues or concerns from the tribe.	John Murray of the Blackfeet Tribes called on May 21st, 2007. He informed me that the Blackfeet Tribes would not be responding to the scoping letter on the Scratchgravel Hills Fuels Reduction Project they have received. He did say, that the Scratchgravel Hills is part of the Black feet Tribes historical range and if we come across any cultural finds to contact him.
Confederated Salsish Kootenai Tribes Marcia Pablo	On May 17th 2007, a letter was sent to detailing the project and asking for issues or concerns from the tribes.	No response was received from the tribes
Shoshone-bannock Tribes Caroyn Boyer-Smith Yvette Tuell	On May 17th 2007, a letter was sent to detailing the project and asking for issues or concerns from the tribes.	No response was received from the tribes
Chippewa Cree Joan Mitchell	On May 17th 2007, a letter was sent to detailing the project and	No response was received from the tribes

	asking for issues or concerns from the tribes.	
West Valley VWP Dave Hamilton	On April 17th 2007 A coordination meeting/field trip was held	Agreed there was a fuels/fire problem and supported the project. Wan t the teem to look at providing better access and egress of road system for initial attack resources.
Montana Department of Natural Resource and Conservation John Huston	On April 17th 2007 A coordination meeting/field trip was held	Agreed there was a fuels/fire problem and supported the project. Wanted the teem to look at providing better access and egress of road system for initial attack resources.
Birdseye Rural Fire Dept Jerry Reinier	On April 26th 2007 A coordination meeting/field trip was held	Agreed there was a fuels/fire problem and supported the project. Also agreed with DNRC and west valley that the current state of the roads system could be a safety hazard for fire fighting efforts.
Montana Department of Environmental Quality	Received Scoping Letter dated May 17, 2007.	No comments were received from DEQ
USDA, Forest Service Helena National Forest	Received Scoping Letter dated May 17, 2007.	No comments were received from Forest Service
Montana Dept. of Fish Wildlife & Parks	Received Scoping Letter dated May 17, 2007.	No comments were received from Forest Service
Montana Department of Environmental Quality	Received Scoping Letter dated March 19, 2007.	No comments were received from DEQ.

List of Preparers

Staff Specialists who determined the affected resources for this document and those who contributed further analysis in the body of this EA are listed below.

Table 4.2 List of Prepares

Name (and agency, if other than BLM)	Title	Responsible for the Following Section(s) of this Document
Charles E Tuss	Fire Management Specialist	Project Leader / Proposed Action / Fire Management/Air Quality
Sarah LaMarr	Wildlife Biologist	Wildlife/ Threatened, Endangered or Candidate Animal Species
John Sandford	Range Management Specialist	Non-Native Invasive Species / Noxious Weeds
Floyd Thompson	Range Management Specialist	Threatened or Endangered or Sensitive Plants / Soils / Riparian/Range/Vegetation
Lindsey Goetz	Forester	Forest Resources
Brad Rixford	Recreation Planner	Recreation, Travel Management // Visual Resource Management (VRM)
Carolyn Kiely	Archeologist	Cultural Resources / Native American Religion Concerns
Brian Mueller	GIS Specialist	GPS / Mapping
John W Thompson	Western Zone Fire Management Officer	Coordination / Consultation / Review

Attachments

Map 1: General Location of the Proposed Action
Map 2: Detailed Location of the Proposed Action
Finding of not significant impact (FONSI) and Decision Record

Reference

Agee, James K 1993. *Fire Ecology of Pacific Northwest Forests.* Press, Wash. DC.

Arno, Stephen F.; Harrington, Michael G.; Fiedler, Carl E.; Carlson, Clinton E. 1995. Restoring fire-dependent ponderosa pine forests in western Montana. Restoration and Management Notes. 13(1): 32-36.

Avery, Thomas Eugene and Harold E. Burkhart. 1994. *Forest Measurements: Fourth Edition.* McGraw Hill, Boson, MA. 408 pp.

Brown, James K.; Smith, Jane Kapler, eds. 2000. Wildland fire in ecosystems: effects of fire on flora. Gen.Tech. Rep. RMRS-GTR-42-vol. 2. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 257 p.

Covington, Wallace. 1996. Implementing adaptive ecosystem restoration in western long-needled pine forests. In: Covington, Wallace; Wagner, Pamela K., technical coordinators. Conference on adaptive ecosystem restoration and management: restoration of Cordilleran conifer landscapes of North America: Proceedings; 1996 June 6-8; Flagstaff, AZ. Gen. Tech. Rep. RM-GTR-278. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station: 44-48.

Covington, W. Wallace; Fule, Peter Z.; Moore, Margaret M.; [and others]. 1997. Restoring ecosystem health in ponderosa pine forests of the Southwest. Journal of Forestry. 95(4): 23-29.

Fiedler, C.E,, Keegan, C.W. Woodall, T.A. Morgan, S.H. Robertson, J.T. Chmelik. 2001. A Strategic assessement of Fire Hazard in Montana. Report submitted to the Joint Fire Sciences Program, September 29, 2001

Fischer, William C. and Bruce D. Clayton.1983. Fire Ecology of Montana Forest Habitat Types of East of the Continental Divide. USDA Forest Service Gen. Technical Report, INT-141.

Fule, Peter Z.; Covington, W. Wallace; Moore, Margaret M. 1997. Determining reference conditions for ecosystem management of southwestern ponderosa pine forests. Ecological Applications. 7(3): 895-908.

Hann,Wendel J. and Bunnell David L. 2001 Fire and Land management Planning and Implementation Across Multiple Scales. International Journal of Wildland Fire, Volume 10, 2001.

Hardy, C.C., Schmidt, K.M., Menakis, J.M., Samson, N.R. 2001. Spatial data for national fire planning and fuel management. International Journal of Wildland Fire 10:353-372.

Pfister, R.D., Kovalchik, B.L., Arno, S.F., and R.C. Presby. 1977. Forest Habitat Types of Montana. GTR INT-34. USDA Forest Service, Intermountain Forest and Range Experiment Station. Ogden, UT.

Scott, Joe and Fletcher, Rick. Thinning Ponderosa Pine in the Wildland/Urban Interface. Forestry Research West, December,1998. USDA Forest Service, Rocky Mountain Research Station.

Stein, Steven J. 1988. Explanations of the imbalanced age structure and scattered distribution of ponderosa pine within a high-elevation mixed conifer forest. Forest Ecology and Management. 25: 139-153.

U.S. Department of the Interior Bureau of Land Management (USDI BLM). 1996. Partners Against Weeds: An Action Plan for the Bureau of Land Management. Washington, D.C.

U.S. Department of the Interior Bureau of Land Management (USDI BLM). 2004. Wildland-Urban Interface Communities-At-Risk Hazard Assessment.

U.S. Department of the Interior Bureau of Land Management (USDI BLM). 2004. Wildland-Urban Interface Communities-At-Risk Mitigation Plan.

Attachment 1

Attachment 2

FINDING OF NO SIGNIFICANT IMPACT AND DECISION RECORD

January 9, 2008

Scratchgravel Hill's WUI Fuels Reduction Project

Environmental Assessment MT- (070-07-20)

MT070 2824 JT HD62

FINDING OF NO SIGNIFICANT IMPACT DETERMINATION

Based upon a review of the EA and the supporting documents, I have determined that the project is not a major federal action and will not significantly affect the quality of the human environment, individually or cumulatively with other actions in the general area. No environmental effects meet the definition of significance in context or intensity as defined in 40 CFR 1508.27 and do not exceed those effects described in the Headwaters Resource Management Plan/FEIS 1984.

DECISION

It is my decision to authorize the Proposed Action as described in the attached Scratchgravel Hill's WUI Fuels Reduction Project Environmental Assessment MT-070-07-02.

RATIONALE FOR THE DECISION

The proposed action was selected as the Preferred Alternative because it best meets the Purpose and Need described in the Environmental Assessment and responds to all of the issues identified in public comments. Incorporating the Design features into the proposed action will eliminate or minimize identified resource concerns.

The decision conforms to the Federal Land Policy and Management Act (FLMPA) of 1976, as amended {43 U.S.C. 1761}, Headwaters Resource Area Resource Management Plan/Environmental Impact Statement, Butte District November 1983, approved 1984, the Fire/Fuels Management Plan Environmental Assessment/ Plan Amendment for Montana and The Dakotas July 2003, approved September 2003 and Tri-county Fire Working Group Regional Community Wildfire Protection Plan 2005.

The No Action Alternative does not meet objectives or the purpose and needs. Under this alternative, wildland fire would be more of a threat to firefighter and public safety, as well as private property surrounding the proposed project areas.

The public was involved and interested throughout the development of this EA. Public comments helped to define issues and develop alternatives for accomplishing management goals and objectives

- Public participation in this project started in 2002 with gathering data for the Wildland-Urban Interface Communities-At-Risk- Hazard Assessment. This assessment set the basis for the Scratchgravel Hill's WUI Fuels Reduction Project

- Public notification of the Proposed Action through a posting on the Butte Field Office NEPA registers in September of 2005.

- Re – initiated public notification of the Proposed Action through a posting on the Butte Field Office NEPA register in January of 2007.

- Public comment was solicited with a scoping letter distributed to approximately 264 individuals and organizations on May 17, 2007. The letter gave a brief overview of the proposed action, purpose and need, and map of the project with a public comment deadline of June 8, 2007.

/s/ Richard M. Hotaling — January 9, 2008
Richard M. Hotaling — Date
Field Manager

Appeal Procedure

This wildland urban interface project decision is subject to appeal. You have the right to appeal to the Board of Land Appeals, Office of the Secretary, in accordance with the regulations of 43 CFR, Part 4. In order for your appeal to be considered timely, it must be received within 30 days from the date the Finding of No Significant Impacts and Decision Record was signed, January 9, 2008. If an appeal is taken, you must follow the procedures outlined in the attached Form 1842-1, Information on Taking Appeals to the Board of Land Appeals. The appellant has the burden of showing that the Decision appealed from is in error.

The Decision will become effective at the expiration of the time for filing a NOA unless a petition for a stay of the Decision is timely filed together with a NOA. See section 43 CFR 4.21(a). The provisions of 43 CFR 4.21(b) defines the standards and procedures for filing a petition to obtain a stay pending appeal.