United States
Department of
Agriculture

Forest
Service

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Environmental Assessment

Roadside Hazard Tree Removal Project

Lowman Ranger District, Boise National Forest
Boise County, Idaho

Dead and red-needle lodgepole pine along Forest Road 579 near Bear Valley, Idaho.

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1. What is the Purpose of this Environmental Assessment and How is it Organized?

This Environmental Assessment (EA) discloses the effects of falling and/or removing fire- or beetle-killed and imminently dead trees that have the potential to fall into the road along certain segments of open roads on the Lowman Ranger District of the Boise National Forest. The EA has been prepared pursuant to the requirements of the National Environmental Policy Act (NEPA, 40 CFR 1500-1508), the National Forest Management Act (NFMA implementing regulations of 2005, including transition language at 36 CFR 219.14), and the 2003 Boise National Forest Land and Resource Management Plan (Forest Plan).

The EA first describes the proposed action, its purpose and location. The EA then discusses the decisions to be made, and the public involvement undertaken. Alternatives to the proposal are then described, followed by a discussion of the effects of the proposal and a "no action" alternative. The EA concludes with a "consultation and coordination" section, which lists those involved in development of this EA, as well as Federal, State, and local agencies, tribes, organizations and citizens consulted during the planning process, and a list of literature citations.

This document is tiered to the FEIS and planning record supporting the 2003 revised Forest Plan, including documentation related to the Continuous Assessment and Planning (CAP) process described in Chapters III and IV of the Forest Plan. This documentation includes monitoring reports. Documented analyses in the Forest Plan FEIS have been referenced rather than repeated in some instances. Analyses pertaining to the FEIS for the 2003 Forest Plan are contained in the Forest Planning record located at the Forest Supervisor's Office in Boise.

Detailed information that supports the analyses presented in this document, unless specifically noted otherwise, is contained in the project planning record located at the Lowman Ranger District office.

2. What is the Proposed Action?

The Forest Service is proposing to fall and/or remove hazard trees on open roads to increase public safety in the Bear Valley and Bull Trout areas, located approximately 25 miles northeast of Lowman, Idaho in Valley and Boise Counties. The hazard trees are fire- or beetle-killed and imminently dead trees that have the potential to fall into certain segments of open roads.

The proposed action as described herein constitutes the Proposed Action Alternative.

The action consists of falling and removing dead or imminently dead trees along roads in the project area. Only trees that are considered a 'hazard' would be cut and removed. Dead or imminently dead trees are considered a hazard if the tree is leaning toward a road or the likely direction of fall under natural conditions cannot be determined. Hazard trees may be cut and removed in an area up to 160 feet on either side of the identified road segments (see Project Location). The actual distance will vary depending on tree mortality, tree size, and topography. The maximum potential area to be treated is 2,600 acres and includes portions of riparian conservation areas.

The duration of the proposed action is dependent upon mountain pine beetle activity and subsequent tree mortality levels in the project area. The estimated duration is five years.

Only trees that are dead or imminently dead will be cut under this proposal. Imminently dead trees are defined as: 1) any tree not directly killed by fire but unlikely to survive fire damage in the temporary timeframe, or 2) any tree attacked by bark beetles and not likely to survive. The following criteria will be used to determine whether a tree is likely to die from fire damage: 1) a tree of any species that has 70 percent crown scorch, or 2) any Engelmann spruce, lodgepole pine, or subalpine fir that has 50 percent or more of its basal circumference burned (Weatherby et al. 1994). A bark beetle attack will be considered successful if more than 50 percent of the tree's circumference has evidence of frass (i.e. bark beetle boring dust) (Weatherby et al. 1994). Dead trees resulting from other causes will also be cut and removed if they pose a hazard.

Tree felling techniques may include chainsaw or mechanized equipment such as a feller-buncher. Several different scenarios may occur after the trees are cut depending on the number and location of dead trees over the five year timeframe of the project. Cut trees may be left on the ground to meet resource needs, removed for personal use firewood or post and poles, utilized by the Forest Service for administrative use, or removed under permit for a commercial wood product by a purchaser. An estimated 0.8 to 2.0 million board feet of commercial products may be removed. Removal of cut trees may be accomplished using a variety of methods; including hand-carrying firewood pieces to the roadside, yarding by feller-buncher to the roadside, yarding with skidders, or yarding with cables and booms (mechanized equipment remains on road). Slash may be left untreated or may be lopped, scattered, chipped, hand- or machine-piled and burned. Slash will be removed from roadways and cutslopes.

Damage caused to the road surface from tree falling and removal will be repaired by the permit or contract holder or in the case of administrative operations repairs will be made by the Forest Service. In addition, deposits will be collected for regular road maintenance to be performed by the Forest Service.

Riparian Conservation Areas (RCAs) were delineated using Option 1 in Appendix B of the Forest Plan (Boise NF 2003, page B-33). All perennial streams have a designated 300 foot RCA on all sides of the streams; intermittent streams have a designated 150 foot RCAs. The proposed action could include up to 736 acres of hazard tree cutting within the designated RCAs. Specific mitigations to protect RCA functions will be implemented and are listed in Attachment A.

Tree falling and removal activities would generally occur from May 15 through October 30. Operations could extend into November if road conditions and weather permitted. Burning of hand- and machine-piles may extend into November. The actual activity window may vary on any given year, depending on spring snowmelt and fall weather patterns.

Design Features and Mitigation Measures

The proposed action will incorporate the design features and mitigations in Attachment A.

3. Why Has the Project Been Proposed? (Purpose and Need)

The purpose of this project:

1) Reduce the hazard that fire- and beetle-killed and imminently dead trees pose to users of open authorized roads.

2) Reduce the recurring maintenance need that fire & beetle killed and imminently dead trees pose.

The need for change:

There are two recent events that have created an elevated concern for public safety along open roadways in the Bear Valley and Bull Trout Lake areas; a mountain pine beetle epidemic and wildfire.

There is an active mountain pine beetle (MPB) epidemic in the Bear Valley area that is causing tree mortality along FR 579 and appears to be spreading. The Bull Trout Lake area is also currently experiencing extensive MPB activity. Some MPB prevention and suppression activities have been implemented in the campgrounds, but tree mortality along the roadways (FR 520) is expected to increase. Lodgepole pine is the host tree for the MPB and is the most common tree species in the project area. In addition to the beetle-induced mortality, the Red Mountain Fire burned more than 35,000 acres in 2006 and the Sheep Trail Fire in burned more than 8,000 acres in 2007. Both of these fires burned near roads and recreation areas in Bear Valley. Trees were burned along roadways near Pole Creek (Forest Road 582), Cook Ridge (FR 564), Bearskin Creek (FR 563 and spurs) and Fir Creek (FR 579).

Burn intensity varied within the fire perimeter, fire caused tree mortality was extensive adjacent to some of the existing roads. A few of these fire-killed trees will fall to the ground prior to the spring of 2009.

However, the majority of the fire-killed trees will pose a chronic hazard to travelers along these roads for many years to come. In addition, trees falling into these roads will be a recurring maintenance problem.

The Bull Trout and Bear Valley Areas have long been popular year around destinations for visitors. Visitors often camp at established campgrounds or at one of the numerous dispersed campsites in the basin, and recreate in the surrounding areas. Both areas are popular winter recreation sites, Bull Trout is a popular area for both cross country skiing and snowmobiling. Bear Valley is less accessible to cross country skiers but has groomed snowmobile trails on Forest Roads 579, 563, 582, and 555.

Open authorized roads within the project area facilitate dispersal of these visitors and receive considerable use by the general public. These roads provide access to the popular Boundary Creek Launch Site and Deadwood reservoir, as well as several established trails and numerous undeveloped campsites. Typical traffic levels on most of these roads during the summer and fall months are characterized as moderate.

Because of the high number of dead trees in these popular recreation areas, there is an elevated risk to traveling public, beyond the normal everyday risk of driving forest roads. The proposal provides a proactive plan to deal with the trees as they become a hazard to open roads.

4. Where Would the Proposed Project Be Located?

The Hazard Tree Removal Project Area is located in the Middle Fork Salmon River drainage and the South Fork Payette River drainage on the Boise National Forest, roughly 25 miles northeast of Lowman, Idaho. The analysis area includes the Warm Springs, Elk Creek, and Bear Valley 5th HUCs totaling about 146,444 acres. The project area includes approximately 2,560 acres. The project and analysis areas are displayed in Figures 1 and 2.

Legal Description:
T 11 N, R 8 E, Secs. 2, 3, 10 - 17, 22 - 27, 34 – 36;
T 11 N, R 9 E, Secs. 7, 8, 18;
T 11 N, R 10 E, Secs. 3, 9, 10;
T 12 N, R 10 E, Secs, 5, 8, 16, 17, 21;
T 12 N, R 9 E, Secs. 2, 3, 5, 6, 9, 10, 16, 17, 20, 29 - 31;
T 12 N, R 8 E, Secs. 1 – 4, 9 – 12, 15, 16, 21, 22, 27, 28, 34 – 36;
T 13 N, R 8 E, Secs. 32 – 36;
T 13 N, R 9 E, Secs. 1, 12, 16, 21, 24, 25, 28 – 36;
T 13 N, R 10 E Secs. 6, 7, 18, 19, 29 - 32

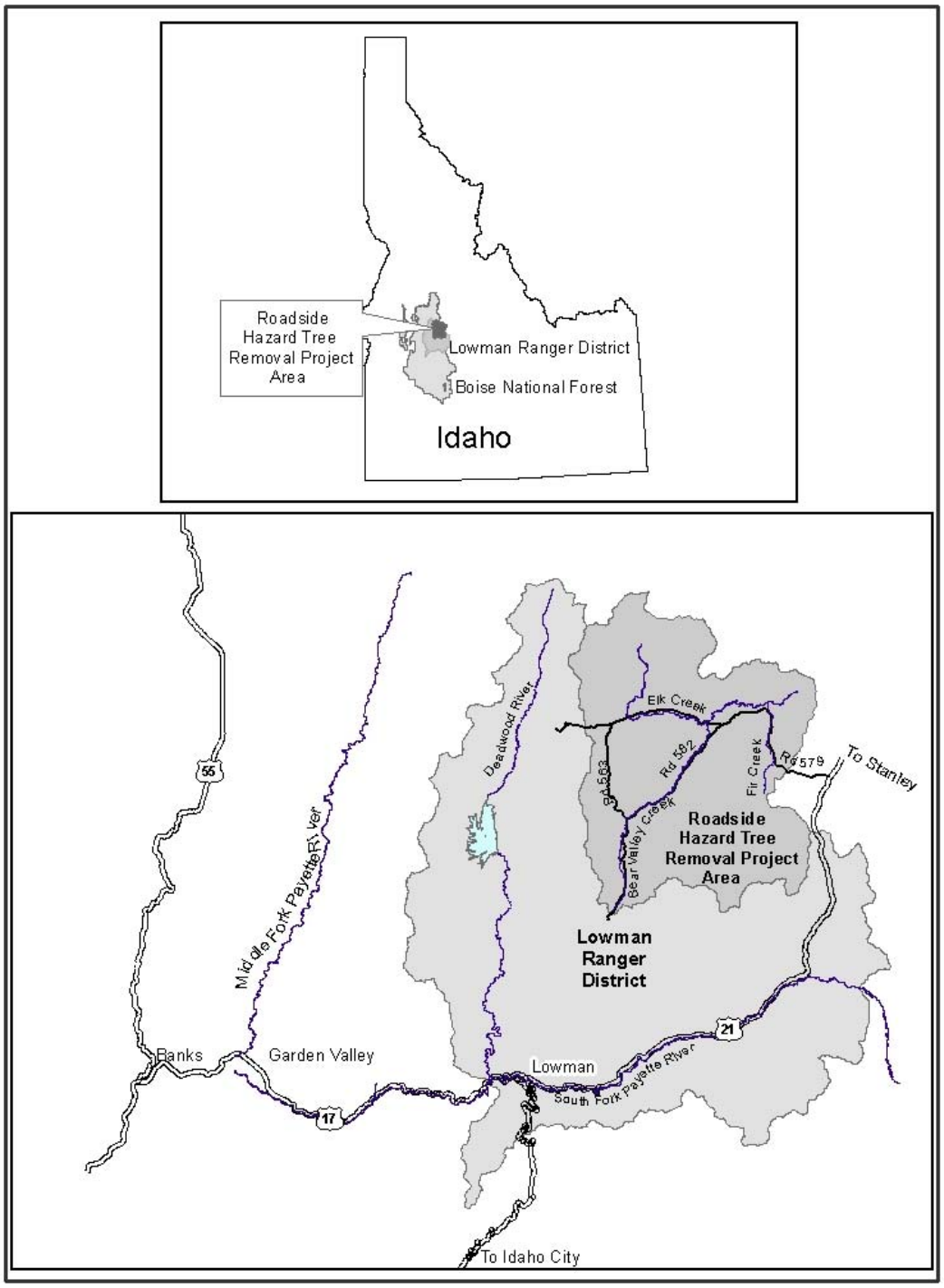

Figure 1. Vicinity Map

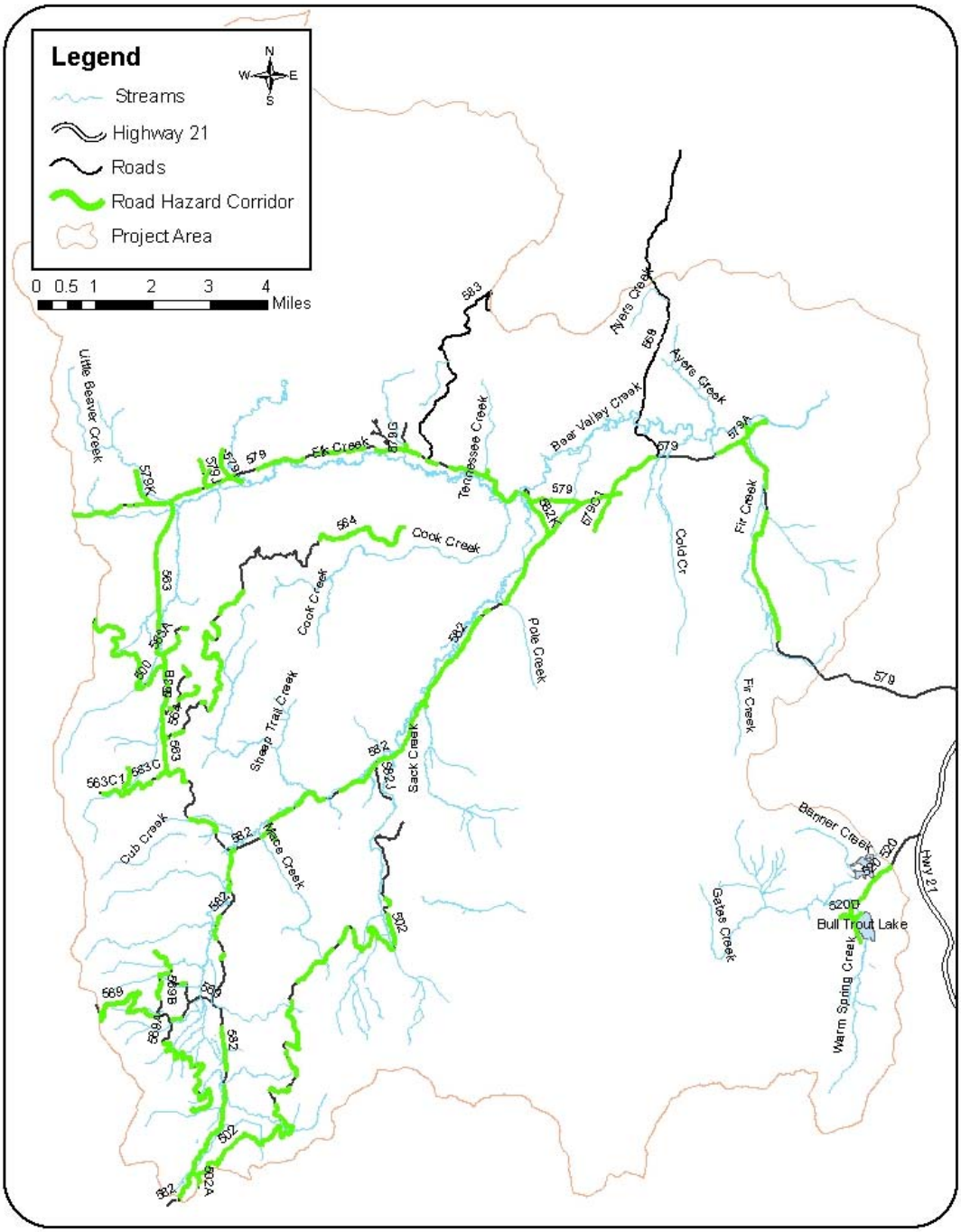

Figure 2. Project Area

5. What Decisions Are to Be Made?

Based on the analysis summarized in this EA and detailed in technical reports (on file at the Lowman Ranger District), the District Ranger will make decisions on this project, documented in a Decision Notice/Finding of No Significant Impact (FONSI). The decisions to be made include:

- Should fire- or beetle-killed and imminently dead trees that have the potential to fall into open roads be felled and/or removed along certain sections of open forest roads?

- What design features, mitigation measures, and/or monitoring should be applied to the project?

6. What Public Involvement was Undertaken and What Major Issues were Identified?

This project was listed in the Schedule of Proposed Actions for the Boise National Forest beginning in January 2008. The project was presented to the Shoshone-Paiute Tribe at the November 8, 2007 Wings and Roots meeting in Boise, ID. The project was introduced to the Shoshone-Bannock and Nez Perce Tribes in letters dated January 17, 2008 and public scoping was conducted through a letter mailing to 44 individuals and organizations on January 18, 2008. A press release was published in the Idaho World newspaper on January 26, 2008.

Based on comments received during scoping, as well as input from Forest Service resource specialists, and review of the Forest Plan, comments were evaluated against the following criteria to determine whether or not the concern would be a major factor in the analysis process:

- Has the concern been addressed in a previous site-specific analysis?

- Is the concern relevant to and within the scope of the decision being made and does it pertain directly to the proposed action?

- Can the concern be resolved through mitigation (avoiding, minimizing, rectifying, reducing or eliminating, or compensating for the proposed impact) in all alternatives?

- Can the issue be resolved through project design in all alternatives?

Based on the comment review, no major issues (i.e., points of unresolved conflict with the proposed action) were identified. Ten responses to the scoping letter were received. Comments on the scoping letter ranged from supportive of the project to concerns with noxious weeds and illegal ATV use following tree removal activities. All of the concerns with the project could be addressed through project design features (see Attachment A) and therefore no major issues with the proposed action were identified. The planning record contains all written comments received relative to this project and discloses how the Interdisciplinary Team addressed those concerns.

7. What Other Actions Would Meet the Same Need? (Alternatives)

The Interdisciplinary Team considered several other actions. However, none of these actions were fully developed into additional alternatives as these actions did not meet both the public safety and road maintenance objectives of the project.

The additional action considered included:

- Clearing fallen trees off of open roads each summer with annual road maintenance. *This action would meet the need for road maintenance but would not alleviate the ongoing risk of falling trees on open roads.*
- Restricting the use of roads and not allowing the public to access the Bear Valley or Bull Trout areas until the elevated risk of fallen trees subsides. *This action would alleviate the risk but*

would not address the hazard and is not practical to implement as the areas are popular for forest recreation.

- An aggressive thinning program may reduce stand susceptibility to MPB attack. Dense stands are more susceptible than open stands where trees do not have to compete with each other for limited water, light, and nutrients. *This action may reduce the future hazard but does not address the immediate need for road maintenance and public safety on open roads.*
- Management actions such as tree harvest and reforestation with tree species that are not susceptible to MPB would reduce the future hazard *but also does not address the immediate need for road maintenance and public safety on open road.*

8. What is the "No Action" Alternative?

NEPA requires development and analysis of a "no action" alternative under which the activities described in the proposed action would not occur. The "no action" alternative provides a baseline against which impacts of the various action alternatives can be measured and compared.

The "no action" alternative under this analysis is defined as current management, which includes annual road maintenance and issuance of firewood gathering permits. A continuation of current management actions would result in continued exposure to falling tree hazards on open roads and recreation developments. Debris from fallen trees would be removed from the roads by maintenance crews during road blading operations, which typically occur once or twice per snow-free season. The current firewood permit program will contribute to an unquantifiable reduction in hazard trees.

9. What Are the Effects of the Proposed Action, as Compared to the "No Action" Alternative?

Environmental factors that may be affected by the proposed action are summarized below and discussed in detail in technical reports and the Biological Assessment and Evaluation contained in the project record. Potential effects are discussed relative to the following resources: Recreation and Public Safety, Vegetation, Wildlife, Soils and Watershed, Fisheries, and Visual Quality. Analysis areas differ for some of the resources. Cumulative effects are also discussed under each resource heading. In addition to the resources summarized here, there are several resources where there are no anticipated effects, based on scoping comments and analysis from resource specialists. The resources with no anticipated effects are botany, cultural resources, fuels, air quality and noxious weeds. Technical reports for all of these resources are included in the planning record.

RECREATION and PUBLIC SAFETY:

People are drawn to the project area for a variety of activities such as camping, hunting, fishing, hiking, motorized and horseback riding trail use, photography, and viewing scenery and wildlife. The Forest roads proposed for hazard tree removal provide access to these recreation opportunities. The Access Management Objectives for these roads include direction to *provide access for a diversity of recreational experiences* and to *provide for safe and efficient commercial use of the roads.*

The main arterial roads (Forest Roads 579, 582, and 563) and Forest Road 520 road are located within travel corridors that have a *Roaded Natural* recreation opportunity setting. *Roaded Natural* areas have a predominately natural appearing environment with moderate evidences of the sights and sounds of man and an equal probability to experience affiliation with other user groups and for isolation from the sights and sounds of others. These roads are maintained to a condition suitable for passenger cars.

No Action: Under the No Action alternative, current management would continue. The main arterial roads (Forest Roads 579, 582 and 563) and Forest Road 520 road would be maintained annually through grading and blading. Any trees that fall onto the road would be removed from the road during annual maintenance activities. No additional hazard trees would be cut, other than those that have fallen or are blocking the roadway. The risk of falling trees to recreating public on open roads would remain elevated as beetle-caused tree mortality continues.

Proposed Action: The proposed action would pro-actively reduce the risk to public traveling on open roads by decreasing the number of roadside hazard trees. There would be some minor, localized disruptions associated with the proposed action. The noise and dust from equipment operations, additional traffic and smoke from slash burning are examples of short-term disturbances that could detract from accustomed recreational experiences. These disruptions may result in a few visitors shifting their activities to other areas.

Temporarily traffic stops will be necessary to protect the public from roadside tree falling activities and equipment operations. Anticipated delays would be about 15 minutes, not to exceed 30 minutes. In the long term, hazard tree removal would make the roads safer for travelers and reduce the chance of roads being blocked by downed trees.

Other than the annoyance of temporary traffic delays, the proposed action does not involve any changes to the transportation system or travel management that would alter public access to recreation opportunities. The Recreation Opportunity Spectrum classifications and winter activities would not be affected by the proposed action.

Within the delineated project area, there are portions of the Frank Church - River of No Return (FC – RONR) Wilderness, the Red Mountain recommended wilderness and seven inventoried roadless areas. There are no proposed activities within these areas so there would not be any changes to existing recreation opportunities, settings or experiences.

Cumulative Effects: The Red Mountain and the Sheep Trail fires altered the project area's appearance and probably resulted in the relocation of some recreation activities such as hunting to unburned areas. The Campground Mountain Pine Beetle Prevention and Suppression Project began in 2007 to reduce tree mortality and safety hazards from dead and dying trees at seven developed recreation sites. This project included work at Bull Trout, Fir Creek and Bear Valley campgrounds in 2007. Additional work is planned for the next five years. The Campground Mountain Pine Beetle Prevention and Suppression Project and the Roadside Hazard Tree Removal Project have similar objectives regarding hazard tree removal. These two actions are complimentary and combined they would have only some short-term negligible affects to recreation opportunities and experiences.

Ongoing activities include trail use and maintenance, recreation facility use and maintenance, firewood gathering, and outfitter/guide operations. The only foreseeable future management action identified for this area is the replacement of the Fir Creek culvert on Forest Road 579 with a bridge in 2009. The ongoing activities and the Fir Creek future action in conjunction with the proposed action would not incrementally contribute to a cumulative effect that would alter recreational settings or opportunities.

VEGETATION

The project area is within Bear Valley, where lodgepole pine is the most common cover type in the watershed, occupying 30% of the forest sites. Fire and insects are the dominant natural disturbance agents in the forested ecosystem of Bear Valley. High stand densities, relatively large tree sizes, and stand elevation characteristics indicate that many stands are highly vulnerable (to major insect attack) (BVWA, 2000, p.13). Many of the lodgepole pine stands within Bear Valley are highly susceptible to mountain pine beetle (MPB) attack and scattered MPB-caused mortality is evident throughout the area, (Jorgensen, 2004 p.3). Annual FHP Aerial Insect Detection Flights have recorded an increase in MPB activity in both Bear Valley and Bull Trout Lake areas (Figure 3).

No Action: Tree mortality is expected for the next five years, from continued MPB attacks.
Figure 3 shows a map of tree mortality from MPB from 2003 through 2007. The total number of dead trees is not shown on the map shown in Figure 3 and the substantial increase in mortality in the fall of 2007 is not displayed as the detection flights occur earlier in the summer. The exact amount and magnitude of such future infestation is difficult to predict but is anticipated to spread into currently un-infested stands of lodgepole pine trees. Projections can be made by comparing existing timber stand conditions within the project area to stands with similar attributes that have been attacked by MPB.

Mortality attributed to MPB attacks was documented in the Stanley Basin of the Sawtooth National Recreation Area (SNRA) an area just east of the project area. Aggregated plot data from the study area show that the diameter class distribution of trees greater than 5 inches in diameter is very similar to those in the project area. Tree size is an important factor in timber stand susceptibility to MPB attack. Mountain pine beetle spread occurs most rapidly in old, dense stands comprised of a majority of large lodgepole pines. The most susceptible stands have trees over 80 years old, average tree diameters greater than 7.9 inches in diameter, an average phloem thickness greater than 0.25 cm, over 78.8 ft^2/acre mean basal area, and stand density index between 140 and 245. During outbreaks, beetles infest the older, large diameter trees first, and eventually kill smaller trees as populations build (Jenkins et. al., 2007 p. 21).

A projection based on findings from a study conducted in 2004 by the Forest Health Protection – Boise Field Office (Jorgensen, 2004) was conducted for the Bear Valley area. Tree mortality rates, derived from the Jorgenson Study, showed an average survival of 58% with a corresponding mortality rate averaging 42% for trees greater than 5 inches in diameter. Little to no mortality is expected in smaller trees (less than 5 inches in diameter and less than 4 feet tall) due to MPB attack. These example mortality rates were applied to a selected group of stands within the Bear Valley area to display the estimated percent of specific stands which may die due to MPB attacks. Using this analysis, the estimated percentage of total mortality within the selected Bear Valley stands could range from 38% to 45%.

As lodgepole pine trees die and decay they will present a falling tree hazard over a period of many years. Lodgepole pine trees less than 5” DBH and other common tree species such as subalpine fir will not be affected by the bark beetles and will not present a hazard. In addition, trees leaning away from the road will not present a safety hazard.

The tree mortality resulting from the 2006 Red Mountain and 2007 Sheep Trail Fires was delineated from scanned aerial imagery 2007 and was ground verified in 2006 and 2007 (Figure 4). Trees of all sizes were affected by the fire resulting in a higher rate of mortality than stands affected by MPB attack. Tree mortality in these areas is estimated to range from approximately 50 – 100%.

Proposed Action: The proposed action will have no effect on tree mortality rates or the rate at which the MPB spread through the project area. Under the Proposed Action only trees that are dead or imminently dead trees that present a hazard to the road or camp grounds will be cut. Many trees which do not present a falling hazard to roads or campgrounds but are infested with MPB will remain. In addition, many of the cut trees will not be removed, which may result in MPB within the trees to mature and infest other trees in the project area.

The proposed action will affect the number of standing dead trees remaining in the area because they will come down in shorter time frame than they would naturally. This effect will be most profound in the fire areas (Figure 4) because a larger percentage of trees are dead resulting in more tree felling.

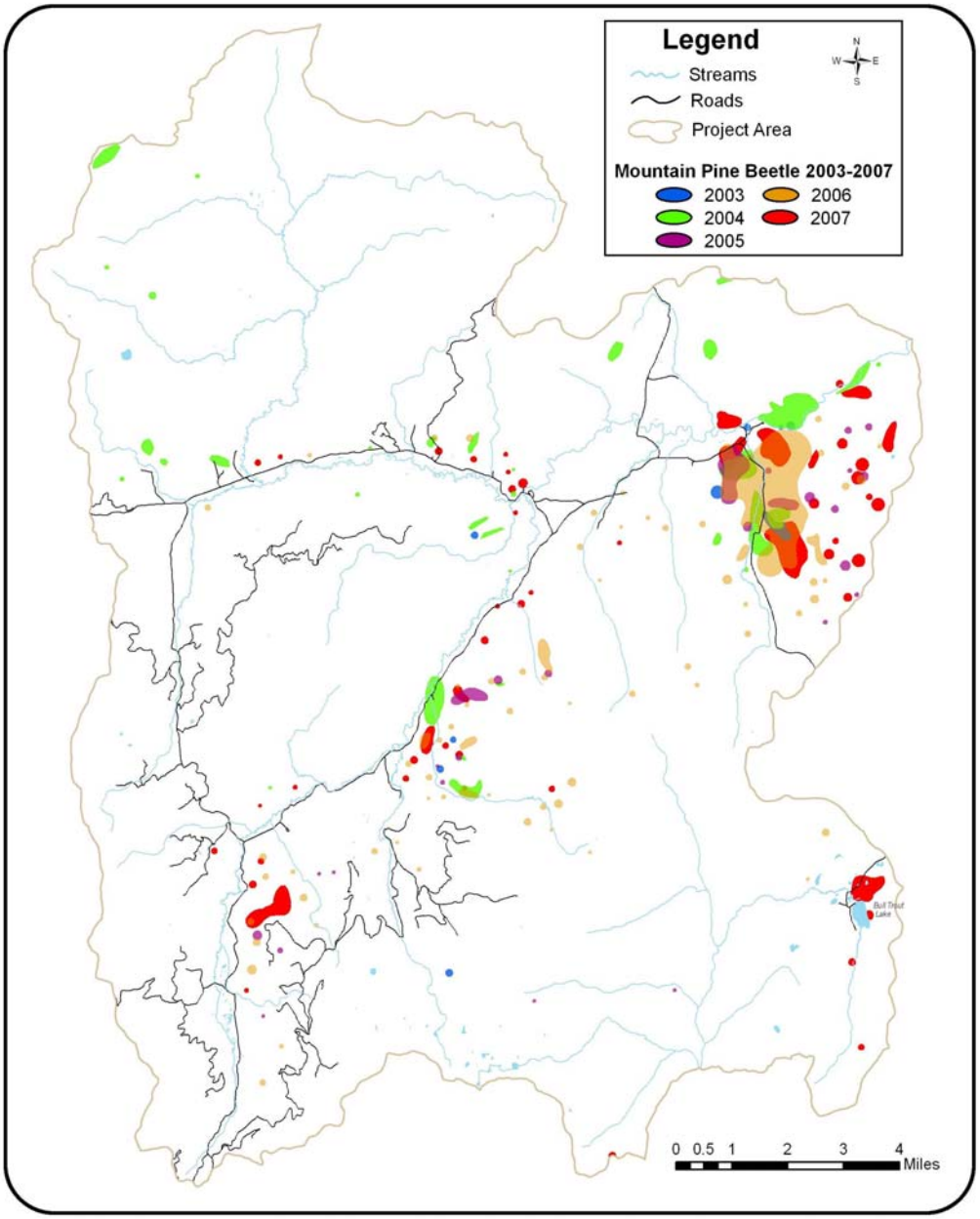

Figure 3. Aerially detected Mountain Pine Beetle Infestation 2003 - 2007

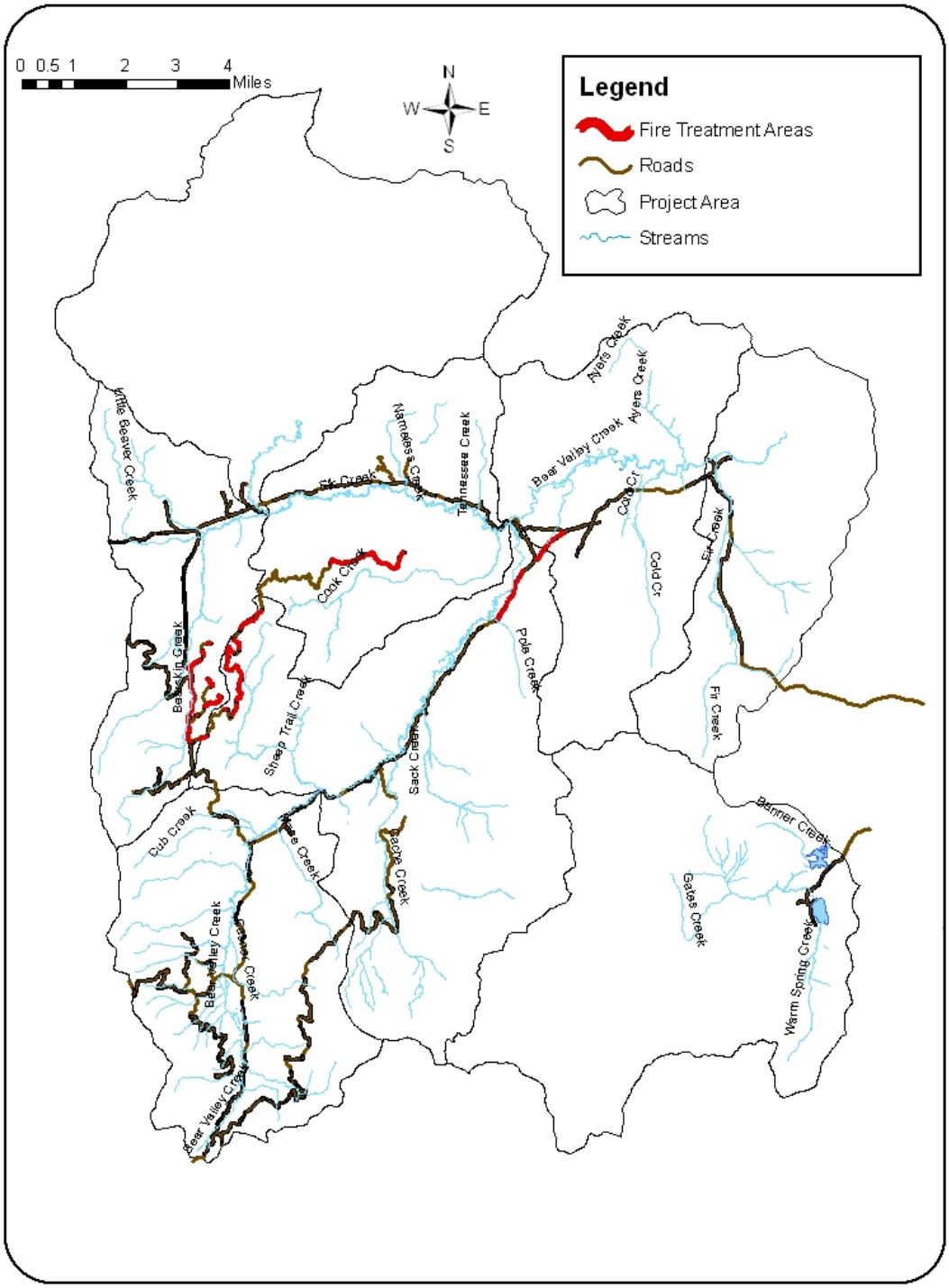

Figure 4. Areas of High Fire Mortality

Cumulative Effects: There are two ongoing actions within the project area that will affect dead trees; the firewood program and the Campground Mountain Pine Beetle Prevention and Suppression Project. The combined effects of the Roadside Hazard Tree Removal project and the two ongoing projects are expected to have no effect on the live vegetation in the project area as the trees targeted for removal are dead or imminently dead. Many trees will continue to be felled and removed under the authority of the Boise National Forest personal use firewood program. The number of trees that are removed within the project area cannot be quantified as the permit system allows removal of firewood across both the Boise and Payette National Forests. Holders of Boise National Forest firewood permits will be allowed to operate within the project area, all terms and conditions of those permits must be adhered to.

The Campground Mountain Pine Beetle Prevention and Suppression Project Decision, signed August 2007, authorizes multiple activities in the Bear Valley, Fir Creek, and Bull Trout campgrounds. These activities include two commercial timber sales (the BVFIR and Bull Salvage timber sales) that will remove dead trees in the Bear Valley, Fir Creek and Bull Trout Campgrounds. These activities are scheduled to be completed by the end of the 2008 calendar year. In the same three campgrounds trees in riparian area infested with MPB will be felled and have the bark stripped off, then left on-site. This is an effort to save other trees in the campgrounds from MPB infestation. The bark stripping kills the MPB brood before it has a chance to mature, emerge and infest other trees. This work may continue, intermittently up to calendar year 2013. A third activity authorized in the decision memo of August 2007 is carbaryl spraying of un-infested trees to protect from MPB attack. This activity is also expected to continue intermittently through 2013 or when the risk of MPB attack diminishes. A fourth activity is the deployment of verbenone, a synthetically produced pheromone that disrupts the behavior of the MPB. This activity is scheduled to be completed by the end of the 2008 calendar year.

WILDLIFE

Potential Vegetation Groups (PVGs) that will be affected by the project (in order of prevalence) include Persistent Lodgepole Pine (PVG 10), Warm Dry Subalpine Fir (PVG 7), Cool Dry Douglas-fir (PVG 4), and Hydric Subalpine Fir (PVG 9). These PVGs may provide source habitat for 1 threatened, 9 sensitive, and 1 management indicator species (MIS) at some time during stand development (Geier-Hayes and Nutt 2008; Miller et al. 2008; Nutt et al. 2008). One additional sensitive species, spotted frog, may be present in the riparian areas within the treatment area. Snags and coarse woody debris have been identified as key environmental correlates for seven of these species.

The twelve (only 11 listed) species potentially utilizing habitat in the treatment area include Canada lynx, fisher, gray wolf, western big-eared bat, wolverine, boreal owl, great gray owl, mountain quail, northern goshawk, pileated woodpecker, and three-toed woodpecker. Habitat quality for all species has been reduced by the presence of roads in the assessment area. Negative road associated factors for the species include snag reduction (cutting of snags for firewood or to provide for public safety), down log reduction (removal of logs or snags for firewood), harassment or disturbance at specific use sites (denning, nesting, roosting sites), negative edge effects (forest interior species), over-trapping, collisions, displacement, and chronic negative interactions with humans (Wisdom et al. 2000). While these species may be present in the road corridors proposed for treatment, habitat quality is reduced by the presence of roads and existing factors are negatively affecting use of the habitat by these species.

Snags and coarse woody debris are the primary habitat components affected by the proposed action. Snags are presumed to be abundant within the assessment area based on the percentage of area affected by wildfire in recent years and the increasing levels of tree mortality due to mountain pine beetles. Coarse woody debris levels are variable across the assessment area, with potential for high recruitment due to recent fire- and beetle-related tree mortality.

POTENTIAL EFFECTS

The potential pathways for impacts to wildlife species include: 1) loss of or reduced quality of habitat, 2) disturbance or displacement, and 3) injury or death.

Loss of or Reduced Quality of Habitat.

Twelve Threatened, Endangered, Sensitive/ Management Indicator Species (TES/MIS) wildlife species have been identified as potentially occurring in the treatment area. Seven of these species depend on snags, down logs, or both structures to meet life requisites. There are no unique habitats (combinations of structural components) known in the treatment area that have limited distribution outside of the proposed treatment area (i.e., the affected habitats are well-represented elsewhere in the assessment area). The habitats proposed for treatment are located adjacent to roads. The habitat quality and probable use of these habitats is currently reduced by the presence of roads.

No Action: On-going activities such as the firewood program and the Campground Mountain Pine Beetle Suppression Project will continue to affect the availability of snags and coarse woody debris within the road corridors. Snags are abundant now due to high levels of recent tree mortality and are likely to continue to increase due to mountain pine beetle mortality. Annual snag recruitment will decline at some point, probably in the short-term (3-5 years). Snags located in the road corridors will continue to be cut and removed during on-going firewood and mountain pine beetle suppression activities. Current and potential nesting and foraging habitat, especially for woodpeckers, and secondary cavity nesters will be reduced. The loss of snags to on-going activities will also reduce future recruitment potential of coarse woody debris within the road corridors. Snags and coarse woody debris within 300 feet of water features will not be affected as the general firewood program prohibits removal of firewood in Riparian Conservation Areas (RCAs). Some level of snags will probably be retained as firewood gatherers tend to avoid cutting trees with obvious signs of rot. Existing coarse woody debris should not be affected.

Proposed Action: The effects of the proposed action on habitat will be similar to the No Action alternative, although removal of snags will be less haphazard and concentrated into a shorter timeframe. Snags and coarse woody debris that serve as biological legacies following natural disturbance events will be reduced in the road corridor. However, they will not be eliminated. Snags that do not pose a hazard to the public traveling on roads or using campsites will not be cut. Snags located immediately adjacent to streams will also be retained. Whether snags located outside the RCA remain on site in the short- or long-term cannot be predicted due to the on-going firewood program. Coarse woody debris will also be retained during project activities. Existing coarse woody debris will not be removed. Cut hazard trees within one site potential tree height of water features will be left on site to reduce soil disturbance and impede sediment recruitment to streams. Cut hazard trees may also be left on site in upland habitat to provide soil stability and improve moisture carrying capacity and structure of soil. This downed material will also provide other ecological functions including facilitating vegetation recovery and providing habitat for a variety of organisms and wildlife.

While many species of wildlife may utilize the habitats within the road corridors, these habitats are not unique within the assessment area. The affected area represents less than 2% of the assessment area. Across the landscape, snags are an abundant resource due to recent extensive fire and beetle disturbances. Cutting and removal of hazard trees within the road corridor will not reduce the diversity of habitats or structures available to wildlife on the landscape. The activity occurs in an area currently impacted by the presence of roads and on-going activities that effectively reduce snag densities and future recruitment of coarse woody debris.

Disturbance or Displacement of Wildlife.

A variety of wildlife species may be present in the treatment area. Disturbance and displacement is of the greatest concern when animals are affected during vulnerable periods (birthing, rearing, hibernating, roosting, hunting season, etc.) While no sensitive sites are currently known for any TES/MIS species within the treatment area, such sites could occur at some point during the life of the project. Fisher or lynx could potentially use habitats not affected by fire and located adjacent to roads with little or no human use during the summer (Forest Roads 500, 500E, 569A). Other species such as pileated woodpeckers or great gray owls may also be present, although the treatment area probably represents lower quality habitat due to existing disturbances and other road-related impacts. The TES/MIS species with the highest likelihood of nesting in the treatment area is the three-toed woodpecker. Both fires and

beetle activity improve conditions for the species by providing abundant foraging and nesting opportunities resulting in increasing populations following disturbances.

Many portions of the assessment area are considered key calving areas for elk. Bear Valley especially has an abundance of wet meadows that provide excellent forage for cows with the adjacent unburned forests providing cover and escape. Several roads are currently closed seasonally or yearlong, at least in part to reduce disturbance in calving areas or to provide security habitat particularly during the fall hunting season. Roads with seasonal closures are open from July 1 through September 30th. The peak period for calving occurs around June 1. By the time roads open on July 1, the calves have gained strength and are traveling with the cows in nursery herds. The fall closure date occurs just prior to opening of rifle hunting season with the intent of reducing vulnerability of elk to harvest. Yearlong closures provide large blocks of relatively secure habitat throughout the year, and are important to species that are particularly sensitive to disturbance, vulnerable during the hunting season, or experience chronic negative interactions with humans.

No Action: The potential for disturbance and displacement of wildlife within the treatment area (i.e., road corridor including adjacent habitat) is high. Not only are roads used for traveling through the area, but they also provide access for out-of-vehicle activities such as fishing, camping, picnicking, wildlife watching, and firewood gathering. Such activities would displace animals such as elk that are sensitive to human presence, but may not impact other species, such as rodents or some birds, unless habitat is impacted such as through removal of snags for firewood. Under the No Action, disturbance is expected to increase within the road corridor due to the increased availability of snags for firewood. The increased out-of-vehicle activity will coincide with areas of tree mortality and will last as long as snags for firewood are abundant. Active nest and denning sites for some TES/MIS species could be impacted if they are located in areas with high tree mortality.

Proposed Action: The proposed action will also result in an increased potential for disturbance and displacement of wildlife. The increases will coincide with areas of high tree mortality (hazard trees) but may not last as long as under the No Action alternative. Existing road closures will be followed except in the instance of the one yearlong closure. Work will only occur on this road during the summer and early fall and will follow the same work period as the seasonal road closures. This will provide continued protection of calving habitat and fall security habitat during the rifle hunting season. Surveys will be conducted to determine the presence of sensitive sites for TES/MIS wildlife species. Active nest sites and denning sites will be protected to some degree depending on the species. For rare mammals such as lynx and fisher, timing and area restrictions will be placed on project activities to avoid displacing animals from the sites. For other species, such as woodpeckers that are less likely to abandon active nest sites, the nest tree itself will be protected through the remainder of the nesting period.

Injury or Death.

There is potential for wildlife to be injured or killed when trees are cut or removed. Small mammals, amphibians, reptiles, and young of the year have the highest potential for not being able to escape injury. In most instances injury/death of a single or a few individuals will not affect persistence of the local population. Concerns increase with low population numbers, low reproductive potential, or when species distribution is limited to a small area.

For this analysis potential impacts to local TES species will be considered. Eleven TES wildlife species utilize the PVGs present in the treatment area. One species, mountain quail, is not known or suspected to occur in the assessment area. Two other species (western big-eared bat, wolverine) could be present, but would not be expected to use the treatment area for denning or roosting, and therefore individuals (young of the year) that are vulnerable to injury are unlikely to be present. Four of the species (lynx, fisher, boreal owl, northern goshawk) are associated with moderate to high canopy closures. Fire and beetle disturbances result in high tree mortality and reduce the suitability of the treatment area for these species, particularly for use as nesting and denning. Gray wolves are habitat generalists, but habitats in proximity to roads don't typically represent good denning habitat because of chronic disturbance and negative interactions with humans. The three species with the highest probability of presence of

vulnerable individuals includes great gray owl, three-toed woodpeckers, and Columbia spotted frog. Great gray owl presence and breeding has been documented in the assessment area. While no nest sites are currently known within the treatment area, they could potentially occur. Spotted frogs have also been documented in riparian habitats within the assessment area and are expected along most stream zones with gentle topography and grassy streamside vegetation. Three-toed woodpeckers are also expected within the treatment areas as the abundant snags provide a concentrated source of foraging and nesting habitat.

No Action: Spotted frogs would not be impacted by firewood activities except in the instance of illegal activity within the RCA. Potential impacts to great gray owls at nesting sites is relatively low. Injury to young would more likely occur due to reduced parental care if firewood gathering activities force adults off of the nest and leave the young vulnerable to weather or predators. For this to occur, activities would have to be in the immediate vicinity of the nest. While broken topped snags are sometimes used as nest sites, these trees are unlikely to be harvested for firewood due to evidence of rot, and direct injury to young due to the nest tree being cut is unlikely. Three-toed woodpeckers are primary cavity nesters. While the presence of a cavity is a good indicator of some level of rot, not all cavities are readily evident from the ground. Snags with active three-toed woodpecker nests could potentially be cut for removal as firewood. While some individual birds may be impacted, this is unlikely to result in impacts at the population level due to the extent and amount of suitable habitat available to the species outside of the treatment area.

Proposed Action: Some spotted frogs could be injured or killed. Snags will be cut in the RCA and could fall into the water or vegetation adjacent to the stream, injuring or killing frogs utilizing these habitats. Because suitable riparian habitat is not limited in the assessment area, extensive areas of habitat will not be impacted, and spotted frogs appear to be common; it is unlikely that injury or death of a few individuals will result in negative impacts at the population level or reduce the likelihood of persistence of spotted frogs in the assessment area.

Surveys will be conducted in treatment units to determine the presence of active nest sites for great gray owls and three-toed woodpeckers, if cutting of hazard trees is planned prior to August 10. Any active nest sites will be protected from cutting until after the breeding season in order to reduce direct injury to young. This will reduce the potential for impacts to vulnerable individuals within the treatment area. Any impacts to individuals are unlikely to affect local three-toed woodpecker and great gray owl populations in the long-term. Extensive areas of similar or higher quality habitat is available outside of the road corridors.

Management Indicator Species

White-headed and pileated woodpeckers have been selected as management indicator species for the Boise National Forest. White-headed woodpeckers do not utilize the habitats present in the treatment area and will not be affected by the proposed action. Pileated woodpeckers may be present, although they are rare due to limited availability of large trees, and occur primarily in conjunction with PVG 9 (hydric subalpine fir). This vegetation type has limited representation in the assessment and treatment areas.

No Action: Potential impacts to pileated woodpecker are related to the removal of snags for firewood. Pileated woodpeckers utilize large snags for nesting. Snags also provide foraging habitat both as snags and after falling as CWD. The on-going firewood program reduces the presence of these key environmental correlates and therefore also reduces the quality of habitat adjacent to roads.

Proposed Action: Potential impacts to pileated woodpecker are similar to the No Action. The same habitats within the road corridor are impacted as with the on-going firewood program. The removal of snags is likely to occur over a shorter period of time than with the firewood program. Some snags and CWD will be retained to provide for soil stability and development and to provide other ecological functions. Snags with active pileated woodpecker nests will not be cut during the breeding season.

Migratory Birds- Unintentional Take

Both the No Action and Proposed Action could result in unintentional take of migratory birds. Firewood gathering and hazard tree removal activities both coincide with the breeding season for a variety of species. Active nests could be located in cut trees or could be located in other vegetation and destroyed when trees fall. Under the Proposed Action, surveys will be conducted in areas planned for cutting during the primary nesting/rearing period. Searches will be made for active nest sites of migratory birds identified as Sensitive or MIS species for the Lowman RD. If any are located, the nest tree will be protected from cutting until after the nesting period (August 10 and later). While this reduces the potential for unintentional take of local species of concern, it does not totally avoid unintentional take of all migratory birds.

Threatened and Endangered Species
Canada lynx is the only wildlife species within the project area listed on the Fish and Wildlife Service's (FWS) current Proposed/Listed Threatened-Endangered/Candidate species list (#2008-SL-0268 (USFWS 2008). The biological assessment for Threatened, Endangered, Proposed, and Candidate wildlife species is contained in a separate document (Green and Hergenrider 2008). The assessment concluded that the Proposed Action is Not Likely to Adversely Affect (NLAA) Canada lynx.

Implementation of the federal action is not likely to adversely affect Canada lynx. This determination is based on the following assumptions and rationale:

- Lynx have been detected in two of the three LAUs that comprise the action area. Documented sightings are rare with only three recorded. Two of the sightings occurred during the National Lynx Survey in 1999. Lynx were not detected during the two subsequent years of summer surveys or during any of the winter snow tracking surveys conducted since 1999.
- There is no evidence to indicate that lynx are successfully reproducing in Central Idaho. While potential denning habitat could occur on the 116 acres located adjacent to closed roads, the chances of lynx being disturbed at an active den site seems extremely remote.
- Felling and removal of hazard trees may have both positive and negative influences on natural regeneration and development of vegetative cover in the treatment areas. While some natural regeneration in fire areas may be negatively affected, ground disturbance in beetle-killed areas will create conditions more favorable for natural regeneration and facilitate recovery of habitat into a suitable condition for foraging and travel.
- The project will not convert any habitat into an unsuitable condition.

Sensitive Species
A summary of the effects of the Proposed Action on sensitive species is described below. A detail analysis by species is described in the Biological Evaluation for this project in the planning record.

The treatment area includes PVGs 4, 7, 9, and 10. Sensitive species potentially utilizing one or more of these PVGs include fisher, gray wolf, western big-eared bat, wolverine, boreal owl, great gray owl, mountain quail, northern goshawk, and three-toed woodpecker (Appendix B). One additional species, Columbia spotted frog, could also be present in riparian areas within the treatment area. Potential effects to these species from the Proposed Action will be analyzed in this section.

The remaining seven sensitive species will not be analyzed in detail as potential habitat is not impacted by the proposed action. Species not analyzed include spotted bat, bald eagle, common loon, flammulated owl, peregrine falcon, white-headed woodpecker, and greater sage grouse. Spotted bat, flammulated owl, and white-headed woodpeckers are all found at lower elevations in conjunction with the dry ponderosa pine, Douglas-fir forested types (Miller et al. 2008; Nutt et al. 2008). While bald eagles are occasionally observed in the assessment, the two key habitats (breeding and wintering) are not present and will not be impacted by the Proposed Action. Common loons nest on ponds and lakes, usually 22 acres or larger in size. Bull Trout Lake is the only water feature potentially suitable for common loons in the assessment area. A portion of the treatment area falls within the Bull Trout Lake RCA. This portion

of the RCA is already impacted by human development (campground) and does not provide suitable nesting habitat for loons. Peregrine falcons are not expected to occur due to the lack of suitable nesting sites in the vicinity of the treatment area. Greater sage grouse is not analyzed as current and historical habitat is not found on the Lowman Ranger District.

Table 1 summarizes the determination for the sensitive species.

Table 1: Summary of determination of effects of Proposed Action on Boise NF Sensitive wildlife species.

Species	Determination
Fisher-- (*Martes pennanti*)	MII
Gray Wolf-- (*Canis lupus*)	MII
Spotted Bat-- (*Euderma maculatum*)	No Impact
Townsend Big-Eared Bat-- (*Corynorhinus townsendii*)	No Impact
Wolverine-- (*Gulo gulo luscus*)	No Impact
Bald Eagle-- (*Haliaeetus leucocephalus*)	No Impact
Boreal Owl-- (*Aegolius funereus*)	MII
Common Loon-- (*Gavia immer*)	No Impact
Flammulated Owl-- (*Otus flammeolus*)	No Impact
Great Gray Owl-- (*Strix nebulosa*)	MII
Greater Sage Grouse-- (*Centrocercus urophasianus*)	No Impact
Mountain Quail-- (*Oreortyx pictus*)	No Impact
Northern Goshawk-- (*Accipiter gentilis*)	MII
Peregrine Falcon-- (*Falco peregrinus*)	No Impact
Three-Toed Woodpecker-- (*Picoides dorsalis*)	MII
White-Headed Woodpecker-- (*Picoides albolarvatus*)	No Impact
Columbia Spotted Frog-- (*Rana luteiventris*)	MII

MII= '*May impact individuals, but will not lead toward a trend of federal listing*'.

SOILS/WATERSHED

The main activities associated with this project that may affect soil and water resources are log yarding and harvesting trees within RCAs.

SOILS

The Boise Forest Plan (2003) sets forth standards for detrimental disturbance to soils and total soil resource commitment (TSRC). Detrimental disturbance includes damage to soil from displacement, compaction, puddling or high severity burning and can occur during management activities. Total soil resource commitment is the conversion of a productive site to a non-productive for a period of more than 50 years. Examples include system roads, landings, parking lots, campgrounds or other dedicated facilities. The Forest Plan standards and direction are displayed below:

	Forest Plan Standard or Direction	**Existing Condition / No Action**	**Proposed Action**
Detrimental Disturbance	< 15%*	0.3%	0.3%
Total Soil Resource Commitment	< 5%*	4.5%**	4.5%**

*of the analysis area, (details in the watershed technical report (project record).
** includes 68 mi of system road.

No Action: Under the No Action alternative, detrimental disturbance and TSRC are not expected to change. Currently, there is approximately 0.3% of the project area in a detrimentally disturbed condition due to timber harvests in the last 10 years and some high severity burning associated with the 2006 Red Mountain Fire. Detrimental disturbance will remain at 0.3% and slowly ameliorate with time. Currently, there is approximately 4.5% of the project area in a TSRC condition. This is a high percentage because roads and campgrounds are included in the TSRC calculation and the project are is focused around roads and trails.

Proposed Action: Neither detrimental disturbance nor TSRC are expected to increase with implementation of the proposed action. Detrimental soil disturbance is not expected with this project for two reasons. First, there are no constructed skid trails with this project. Much of the log yarding will be from roads, with some off-road passes. Second, heavy equipment used for log yarding off-roads will be limited to three passes on the same area to reduce the potential for detrimental disturbance. The soils in Bear Valley are coarse-grained granitics. In a study of several different soil types and a variety of different soil moistures, Froelich and others (1983) developed a relationship between the number of equipment passes and the percent increase in bulk density. (An increase in soil bulk density is an indicator of compaction). Susceptibility to compaction increases after three equipment passes over the same area and will likely reach a detrimental level of compaction after 16 trips (Froelich et al 1983).

No additional total soil resource commitment will be created with this project as ground-disturbing activities are very minor in intensity (no new roads or constructed skid trails) and extent (within 160 feet of roads). Additionally, there are no plans with this project for road or campground obliteration. The TSRC will remain at 4.5%

Cumulative Effects: Within the analysis area (146,440 acres), no cumulative effects to soils are expected as the project area affects a very small portion of the total subwatersheds (see Watershed Technical Report). At the project scale (2,560 acres), the project is not expected to contribute cumulative effects to detrimental soil disturbance as no detrimental disturbance or TSRC is anticipated with this project and there are no additional projects (past, present or foreseeable future actions) that may contribute to detrimental soil disturbance. The campground vegetation project is an ongoing project adjacent to the proposed action, but no detrimental soil disturbance or TSRC is associated with that project.

WATERSHED

Riparian Conservation Areas:

Riparian Conservation Areas (RCAs) were delineated using Option 1 in Appendix B of the Forest Plan (2003, page B-33). All perennial streams have a designated 300 foot RCA on all sides of the streams; intermittent streams, springs, wetlands and ponds have designated 150 foot RCAs. Streams are those identified in the stream layer as mapped in the Boise National Forest GIS Database (2008) or as identified in the field.

Riparian areas are prevalent and generally associated with the major streams and springs. Approximately 736 acres of the project area are within RCAs. Some of the riparian areas were burned during the 2006 Red Mountain Fire and 2007 Sheep Trail Fire. Within the 2,560-acre project area, none of riparian area experienced a high severity burn during the fires and approximately 6.8 acres experienced a moderate severity burn. Field observations in 2007and 2008 of the 2006 Red Mountain wildfire has shown that riparian hardwoods, shrubs, forbs and grasses are recovering well. Overstory conifers were burned along sections of several perennial streams (i.e. Pole Creek, Wyoming Creek, Bear Valley Creek); few stream reaches were completed denuded of overstory vegetation. Open meadows with healthy, dense wetland plant communities are a common riparian feature in Bear Valley in general and also occur within the project area. These meadows are resilient to disturbances such as fire, and have provided a buffer to burned areas (this is especially evident along Bear Valley Creek). In the Bull Trout Lake area, riparian areas are healthy and diverse, associated with lakes, ponds and springs, as well as perennial streams. Neither the 2006 Red Mountain wildfire nor the 2007 Sheep Trail wildfire burned within the project area near Bull Trout Lake.

A mountain pine beetle infestation is prevalent in riparian areas in both the Bull Trout Lake area and the Bear Valley area (specifically near Fir Creek and Bruce Meadows). Tree mortality due to beetle infestation is expected to continue within the riparian areas, based on a similar infestation in the Stanley area.

No Action: Vegetation health, vigor and diversity within the burned riparian areas will continue to improve each year following the wildfires as revegetation occurs. The forested riparian areas will continue to experience overstory mortality from the mountain pine beetle infestation. This will result in some losses to stream shade and may affect stream temperature. However, riparian understory may be stimulated by a decrease in canopy cover.

Proposed Action: The proposed action could include up to 736 acres of hazard tree cutting within the designated RCAs (300 feet for perennial streams). Trees that pose a road hazard will be cut within RCAs. However, if the hazard tree is within 1 site potential tree height of the stream or between the 582 road and Bear Valley Creek (see Design Feature 8, Attachment A), the cut tree will be left on site to provide for riparian functions such as large wood debris, sediment control and soil productivity. Table 2 below displays the total acres of RCAs within the project area, as well as acres proposed for treatment within one site potential tree height.

Table 2: Acres of RCAs within the project area, and within 1 site potential tree height.

	Total Acres within RCAs	Acres within 1 SPTH of streams proposed for cut and leave
Proposed Action	736 acres	160 ac

Treatment with RCAs has the potential to affect the riparian functions and processes listed in the Forest Plan Appendix B (page B-37). Of the 11 functions and parameters discussed in the Forest Plan, the RHTR has the potential to directly impact three: stream shading, large woody debris recruitment and sediment control.

Stream Shading: The proposed action is not expected to affect stream shading. The area of most concern for stream shade is within one site potential tree height of streams. FEMAT (USDA 1993) found that a buffer of about one site-potential tree height is sufficient for maintain shading. Trees targeted for cutting within one site potential tree height have to meet two criteria; (1) the tree is determined to be a hazard to the road and (2) the tree is either dead or dying (from mountain pine beetle infestation or wildfire). There are approximately 160 acres that have the potential for cutting of dead/dying trees within one site potential tree height of streams. Effects to stream shade from the loss of those trees have already occurred (in the case of the dead trees) or will occur within the short-term (dying trees). In temporary and short-term timeframes, there may be some minor impacts to stream shading from the removal of dying trees. The project could accelerate the timing of shade loss that would occur eventually when the infested trees die. To remedy this potential effect, hazard trees within 1 site potential tree height of streams will not be cut until the needles on the trees have dropped. In the long-term, removal of dead trees may encourage riparian growth and subsequent stream shade.

Large woody debris recruitment: Large woody debris recruitment is not expected to be affected by the propose action. Several studies have shown that most of wood delivered to streams originates within 60 feet of the stream (Fleece, 2002, pg 2; Naiman and others 2002, pg 8; Van Sickle and Gregory 1990, pg 6). Although approximately 736 acres may have some cutting of hazard trees within RCAs (depending on the hazard posed by the dead/dying trees), tree removal will not occur within one site potential tree height (80 feet for PVG 10). Approximately 160 acres of treatment is proposed within one site potential tree height of streams. Within the 160 acres, cut trees will remain on site to provide for riparian function including large woody debris recruitment.

Sediment Control: Sediment control will not be negatively affected because all trees cut within one site potential tree height of streams will be left on site. The cut trees left on site can act as sediment storage if overland flow occurs. In addition, no cut trees will be removed between Forest

Road 582 and Bear Valley Creek. Sediment storage by down trees will increase as dead trees (that aren't road hazards) fall and cut trees are left on site.

The Watershed Technical Report describes that the proposed action will produce very little sediment (project record). The total estimated increase in sediment yield due to the project is 0.08% to 0.3% above background sediment range of 69 to 265 tons/mi^2/year. The Watershed Erosion Prediction Project Fuel Management Tool (WEPP-FuMe) (Elliot 2004) model was utilized to evaluate the combined sediment effects of harvest and road use for the proposed action. No additional system or temporary roads will be constructed with this project, so road sediment was estimated based on use of existing roads. Use of the roads during tree yarding could increase potential sediment yield. This is an increase of 0.3% above the low estimate of background sediment yield (69 tons/mi^2/yr). Sediment from harvest operations was estimated using the commercial thinning runs from WEPP-FuMe, although there will be no skid trail construction with this project. Log yarding will mostly be done from the road with some yarding off road, as needed. There will be no more than 3 passes by heavy equipment on the same piece of ground. The WEPP-FuMe model predicted that tree yarding would generate no sediment in the years following activities in the unburned areas (92% of the project area).

Sediment yield is expected from the burned areas (8% of the project area) in the temporary timeframe (0-3 years) regardless of implementation of the Proposed Action. Overland flow did occur in the burned area during an intense July 2008 thunderstorm, mobilizing ash and fine sediment from headwater areas to RCAs. Although most of the burned areas of concern (in RCAs) were treated with straw mulch during the Burned Area Emergency Rehabilitation (BAER), ash and some fine sediment entered Bear Valley Creek and its burned tributaries as a result of the intense rainfall. Potential sediment yield from the wildfires was included in the WEPP-FuMe modeling and is part of the background sediment estimates of 69 to 265 tons/mi^2/year. Implementation of the Proposed Action will provide additional storage of sediment from the uplands to the creeks through cutting and leaving trees on the ground with one site potential height of streams. Additionally, no removal of cut trees will occur within between Forest Road 582 and Bear Valley Creek to provide additional sediment control.

Cumulative Effects: No negative cumulative effects to RCAs are expected with the Roadside Hazard Tree Removal Project. The campground vegetation project is an ongoing project occurring adjacent to the project area. The campground project is located in and around the Bear Valley, Fir Creek and Bull Trout campgrounds. Trees (dead or infested) cut within RCAs for the campground project will be left onsite similar to the proposed action.

FISHERIES

There is occupied habitat for three TES fish species within the project area; bull trout, chinook salmon and steelhead. The majority of the project activities will take place within the Bear Valley Creek bull trout local population in the Middle Fork Salmon River Core Area. Project activities occurring in the Bull Trout 6th HUC are in the Warm Spring bull trout local population in the Upper South Fork Payette River core area. (FWS 2002) In addition, all streams within the Bear Valley Watershed have been designated critical habitat for the Bear Valley Population Snake River Spring/Summer Chinook Salmon and the Bear Valley Population Snake River Steelhead (Lowman Ranger District, Bear Valley Watershed Analysis 2000). Areas identified for treatment in the Roadside Hazard Tree Removal Project are all or partly located within RCAs, as defined under option 1 (Boise Forest Plan, page B-34).

Effects to TES fish species are evaluated using watershed condition indicators (WCIs) as described in Appendix B of the Boise Forest Plan (2003). The baseline condition of and expected effects to each WCI is described in detail in the Biological Assessment for this project (Green and Hergenrider 2008) located in the project record. A summary of effects is discussed below.

No Action: Under the No Action alternative, no management induced changes to watershed and aquatic conditions relative to fish species would occur within the project area. Some of the baseline conditions would be affected as the dead and imminently dead trees within the project area die (from Mountain Pine Beetle or fire) and fall at natural rates. Stream temperatures would be expected to show increases as the trees within one site potential tree height of streams die, resulting in a decrease in canopy cover and less stream shading. Other baseline conditions, such as large woody debris, pool frequency and quality, and large pools would be expected to improve as inputs of large woody debris (LWD) to stream channels are increased due to the large number of dead and dying trees in the project area.

Proposed Action: Implementation of the project is *Not Likely to Adversely Affect* (NLAA) bull trout, spring/summer chinook salmon, steelhead or their habitat. In the long-term (> 15 years), no effects are expected to any of the WCIs. In the temporary timeframe (0-3 years), the proposed action may have an immeasurable effect on twelve of the WCIs including local population size, growth and survival, life history diversity and isolation, temperature, sediment, chemical contaminants/nutrients, substrate embeddedness, LWD, pool frequency/quality, large pools, streambank condition, RCAs, and integration of species and habitat conditions). There will be no impact to the other indicators. Several design features and mitigations (see design features #7 and #*8, Attachment A) have been incorporated into the project to ensure that any anticipated effects remain small and immeasurable.

Cumulative Effects: Effects of ongoing projects have been considered in the baseline of WCIs and included in the Biological Assessment for the project (Green and Hergenrider 2008). No changes are expected in any of these activities that would be substantial enough to lead to changes in the baseline.

VISUALS

The area of analysis for visual quality will be confined to the project area boundary as it consists of a logical visual landscape unit. While most all National Forest lands can be viewed from high vista points or from aircraft, the aesthetic concern varies with the types of viewers, number of viewers, and the view duration. During the Forest Planning effort various visual quality objectives (VQOs) were established for seen areas. These VQOs function as indicators of allowable levels of induced change on the landscape (USDA Forest Service 1974). VQOs defined in the Forest Plan (2003) and described in detail in the Visual Technical report for this project (project record).

No Action: There are no direct or indirect effects to VQOs under the No Action alternative. There would be short and long term changes associated with the natural processes of vegetation growth and succession. Portions of the foreground landscape may become heavily infested with beetles and the resulting tree mortality may dominate portions of these road corridors over time. Amount and magnitude of such future infestation is difficult to predict but is anticipated to increase from the present levels.

Proposed Action: *Beetle Killed Hazard Tree Removal* - Levels of infestation and resulting areas of dead lodgepole pine are anticipated to increase. The effect to visual conditions is directly related to the intensity of this removal, which is dependent on the level of future infestation. A projection can be made from recent heavy infestation in the Bull Trout and Fir Creek Campgrounds. Approximately 29-45 trees per acre are marked as hazardous and beetle infested. The density of lodgepole pine trees (host species for beetle infestation) >5” DBH in these areas ranged from 227 to 345 trees per acre. Infestation was approximately 13 to 20 percent of the host trees above 5” DBH.

It is predicted that heavy epidemic levels could reach mortality ranges up to 30 to 42 percent of existing trees along the road corridors identified in the project area for potential treatment (Vegetation Specialist Report, Wagner C., 2008, Predicted Mortality from Mountain Pine Beetle attacks in the Roadside Hazard Tree Removal area, and Jorgensen, C., Mocettini, P. 2004).

The Boise Forest Plan sets forth standards to meet visual quality objectives as identified for the Management Area (standard SCST01, Forest Plan, page III-67). The Plan also includes a standard (SCST02, Forest Plan, page III-67) which allows for short-term reductions in VQOs to protect investments and for public safety. Depending upon degree of infestation, treatments may meet the specific VQOs, others may have to be adjusted. Design features #30 through #34 have been incorporated to ensure that

he next-highest objective at the closet viewer distance are met with implementation of the proposed action. The Visuals technical report describes specific road segments that may be affected (project record).

Fire Killed Hazard Tree Removal - The northerly two mile segment of Forest Road 582 is identified for hazard tree removal as a result of the 2006 Red Mountain wildfire. The mortality in this area from the fire is estimated to be in the range from 50 to 100 percent (Vegetation Specialist Report). The removal for hazard trees in this section could be relatively high due to the high amount of fire mortality. It is likely that Forest Plan standard SCST02 would need to apply to allow lowering the VQO to modification. It is expected that the modification VQO would be met and not likely exceeded.

Cumulative Effects: Past disturbances such as the 1992 County Line Fire and the subsequent associated salvage logging convey a modified landscape character in some areas. Most locations along the visually sensitive roadways have a predominant natural appearing condition. The developed campground areas reflect the physical improvements to accommodate overnight camping. The cumulative effect to the scenic environment is difficult to predict as the future infestation and subsequent intensity of hazard tree removal is unknown. In the areas of current infestation along forest road Forest Road 520, in Bull Trout Campground and along the Fir Creek segment of Forest Road 579 where there is current infestation it is anticipated that the hazard tree removal will create noticeable visual effects. The portion of Forest Road 582 hazard tree removal of wildfire killed trees will likely have the most visual change and is expected to dominate the landscape setting adjacent the roadway due to the high amount fire killed trees. There will be noticeable stumps, slash, and ground disturbance in most areas of hazard tree removal. In other areas where current infestation has not yet reached levels of concern, it is not possible to predict cumulative visual effects with any degree of certainty.

10. What Regulatory Requirements Have Been Considered?

This project as designed meets the following regulatory requirements (all documents referenced are included in the planning record for this project):

Regulatory Requirement	Analysis Completed
Endangered Species Act	Biological Assessment completed July 2008.
National Historic Preservation Act	Concurrence from Idaho SHPO, 1/5/08.
Migratory Bird Treaty Act	Analysis in Wildlife Specialist Report.
Clean Air Act	Analysis in Fuels Specialist Report
Clean Water Act	Analysis in Watershed Specialist Report.
National Forest Management Act	Consistency Checklist for all resources.
Forest Plan Standards & Guidelines	Consistency Checklist for all resources.

11. Who Prepared the EA and What Consultation and Coordination Occurred?

The following persons were involved in preparation of the EA:

Name	Resource Area
Neil J. Bosworth	District Ranger, Project Oversight
Dusty Pence	Air Quality
Nadine Hergenrider	Wildlife
Kay Beall	Botany
Kari Grover Wier	Hydrology/NEPA
Devon Green	Fisheries
Susie Osgood	Heritage
Chris Wagner	Vegetation Management, Project Leader
Robin Metz	Recreation, Range, Noxious Weeds, Special Uses
Carl Jorgenson	Entomologist
Dan Schlender	Visuals

This project was listed in the Schedule of Proposed Actions for the Boise National Forest beginning in January 2008. The project was presented to the Shoshone-Paiute Tribe at the November 8, 2007 Wings and Roots meeting in Boise, ID. The project was introduced to the Shoshone-Bannock and Nez Perce Tribes in letters dated January 17, 2008 and public scoping was conducted through a letter mailing to 44 individuals and organizations on January 18, 2008. A press release was published in the Idaho World newspaper on January 26, 2008.

11. What Literature was Cited?

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Cultural Resources

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ATTACHMENT A

Design Features and Mitigation Measures

1. Dead and imminently dead hazardous trees of all sizes will be cut if they meet one of the following criteria:

a) The direction the tree may fall under natural conditions cannot be readily discerned.
b) The tree is leaning toward a road.

2. Dead or imminently dead trees that are leaning away from the road and do not present a hazard will not be cut or removed.

3. Green trees that do not meet the 'imminently dead' definitions will not be cut.

4. Skid trails and landings will be approved by the Forest Service before operations begin.

5. Piled slash will be burned by the Forest Service.

6. No road construction, reconstruction, or road restoration will occur. Roads currently closed with earthen berms and/or boulders will not be opened to facilitate treatment activities.

7. To limit the possibility of petroleum based product from reaching streams during project activities, these measures will be followed:

- An appropriate spill kit and spill plan will be on site during the felling and removal of dead or imminently dead trees.

- When the dead or imminently dead trees are felled within 1 Site Potential Tree Height (minimum 80 feet) of a stream by chainsaw, vegetable oil must be used in lieu of bar oil. In those cases where a road parallels the stream within 1 SPTH of the stream, use of vegetable oil will be required below the road, but not above.

- Do not authorize storage of fuels and other toxicants or refueling within RCAs unless there are no other alternatives. Storage of fuels and other toxicants or refueling sites within RCAs shall be approved by the responsible official and have an approved spill containment plan commensurate with the amount of fuel.

8. RCAs: All perennial streams have a designated 300 foot RCA on all sides of the streams; intermittent streams, springs, ponds and wetlands have a designated 150 foot RCAs. Streams are those identified in the stream layer as mapped in the Boise National Forest GIS Database (2008) or as identified in the field.

a) Harvest within RCAs: Tree cutting (of dead/dying trees) may occur within one site potential tree height (based on the PVG) of a water feature, but not within 15 feet of a streambank (to maintain bank stability), unless approved by a hydrologist or fisheries biologist.

- No removal of cut trees or ground-based skidding will occur within one site potential tree height (based on the PVG) of any water feature. This applies to all areas, including those areas where an open authorized road parallels the stream. There are approximately 3 acres within the project area where trees will be felled and left onsite above an open authorized road.

- No removal of cut-trees or ground-based skidding will occur between Forest Road 582 and Bear Valley Creek between the junction with Forest Road 563 and Forest Road 582K (both within and outside RCAs) to provide sediment control.

- No piling or burning of slash within one site potential tree height of water features to maintain soil and wetland plant protection.

9. Log Yarding. Heavy equipment use off roads will be limited to 3 passes over the same area to reduce the potential of detrimental soil disturbance. Skid trails will be covered with available slash to mitigate any soil displacement and/or prevent off-road access following project activities.

10. Landings: No new landings will be constructed. Trees will be decked alongside the roads or transported to an existing landing.

11. Fuel Storage. Do not authorize storage of fuels and other toxicants or refueling within RCAs unless there are no other alternatives. Storage of fuels and other toxicants or refueling sites within RCAs shall be approved by the responsible official and have an approved spill containment plan commensurate with the amount of fuel.

12. Coarse Woody Debris. To meet soil quality guidelines in the Forest Plan, coarse woody debris (CWD), defined as material greater than 3 inches in diameter, should be retained in the ranges specified below, by potential vegetation group:

Desired ranges of coarse woody debris in tons per acre and distribution > 15" (Boise NF 2003, Appendix A, page A-9).

PVG 4 – 4 to 14 tons/ act (>65%)
PVG 7 – 5 to 19 tons/acre (>50%)
PVG 9 & 10 – 5 to 19 tons/acre (> 25%)

Potential sources of CWD include existing down and standing dead trees, and harvest generated slash.

13. Any disturbed areas, beyond normal harvest contract provisions, will be mulched and seeded.

14. Signs will be posted prohibiting the removal of felled trees within RCAs. Signs will also be posted prohibiting the removal of felled trees between FR 582 and Bear Valley Creek between junction with FR 563 and FR 582K (both in and outside of RCAs). Signs do not need to be posted on the upslope side of roads that are in an RCA (consistent with firewood regulations).

15. Forest Service personnel will mark all trees identified for removal.

16. Tree will not be felled into streams to avoid direct impacts to adult and juvenile Chinook salmon, steelhead, and bull trout.

17. Snags will be retained at levels to meet Forest Plan desired ranges (Boise NF 2003, Appendix A-9) within the 2,600 acre treatment area. Snags designated for retention should be located 100 feet or more from the roads or within the 300 foot RCA buffer to reduce the likelihood of removal under the general firewood program. When possible, snags should be retained in clumps with larger diameter snags favored for retention.

Desired range of snags per acre for PVGs occurring in the treatment area:

Diameter Group	PVG 4	PVG 7	PVG 9	PVG 10
10" – 20"	1.8 – 2.7	1.8-5.5	1.8-7.5	1.8-7.7
Greater than 20"	0.2-2.1	0.2-3.5	0.2-3.0	NA
Total	2.0-4.8	2.0-9.0	2.0-10.5	1.8-7.7
Minimum Height	30 ft	30 ft	30 ft	15 ft

18. Stump heights will be limited to 6" in treatment areas implemented under a commercial permit or contract.

19. Existing Cultural Resource sites will be protected through avoidance. If any additional cultural materials are encountered during the course of the project, then all ground disturbing activities will cease until a qualified archeologist is consulted (Cultural Resource Report No. BS-08-2746).

20. No mechanical equipment (except chainsaws) is to be used within one site potential tree height of the RCA for protection of rare plant habitat.

21. In wet habitats, foot traffic should be minimized to what is needed to accomplish the work.

22. Leave existing downed and decaying wood in place to help provide suitable habitat conditions for rare plant species such as sugarstripe (*Allotropa virgata*) and pollinator habitat.

23. Riparian surveys for Ute lady's tresses (*Spiranthes diluvialis*) will be conducted in select locations (treatment areas in Bearskin Creek 5th HU below 6,500 ft) in August. If plants are located, the Botanist will work with the Project Leader to develop avoidance mitigations and notify the US Fish & Wildlife Service.

24. Surveys for Idaho douglasia (*Douglasia idahoensis*) will be conducted in select locations (FS Rd 569, 569C and 564) in early/mid-July. If any plants are located, the Botanist will work with the Team Leader to develop avoidance mitigations. These may include: directional falling to avoid crushing plants, prohibiting skidding, landings, piling/burning, staging or using equipment within the identified area.

25. Weed seed or parts can be easily transferred from one area to another by vehicles and heavy equipment, increasing the chance for weed colonization. An increase in bare ground also increases the probability for weed spread. The land within the project area has relatively few noxious weeds. To maintain this condition follow guidelines documented in "USDA Forest Service Guide to Noxious Weed Prevention Practices" (2001) and management direction from the Forest Plan (Boise NF 2003, Non-Native Plants, III-35-37, 188).

26. Forest personnel should report findings of undocumented weed populations in the area to the District Weed specialist to include in monitoring and treatment prescriptions.

27. Treatments along roads with seasonal and yearlong closures (500, 500E, 564, 569A/B) would only occur during the normal open period for seasonal roads (July 1 through September 30). District personnel coordinating the mobility impaired hunting opportunities will be informed in advance when project activities are planned on FR 500 between September 1 and September 30 (archery season). Timing restrictions are related to protection of calving areas for elk; providing security habitat during the fall hunting period; and providing mobility impaired hunting opportunity on FR 500 and FR 564.

28. Surveys will be conducted (FR 500, 500E, 569A) to determine presence and use of treatment areas as denning habitat by fisher and lynx prior to any treatments adjacent to these roads. If den sites are located, they would be protected from disturbance. These roads are closed yearlong and/or receive little human use during the birthing/rearing season. Habitat has not been impacted by fire and has a higher potential for being used by fisher or lynx.

29. Treatment units will be surveyed prior to onset of tree-cutting if trees are to be cut between May 15 and August 10. Surveys will be conducted the same year/season as the tree-cutting. Survey objectives are to locate active nest sites for three-toed woodpeckers, black-backed woodpeckers, western bluebirds, great gray owl, goshawk, and pileated woodpeckers. If active nest sites are located, nest trees will be flagged and will not be cut prior to August 10 of the year in which the nesting site is active. Protection of active goshawk or great gray owl nest sites may also include an area (buffer) as well as a timing restriction. Surveys are not needed for units where tree-cutting is conducted after the breeding season (August 10 through November). Mitigation relates to protection of sensitive and MIS species reproductive efforts (WIST03). Two additional Idaho Species of Conservation Need (IDFG 2005) are also included due to a high likelihood of occurrence in fire and beetle mortality areas.

30. Any generated slash or harvest residues not piled for burning should be lopped and scattered to a maximum height of 12” from the forest floor to reduce visibility.

31. Any hand piles of slash should be located at least 25’ from the stand edge facing the roadway; piles would be subsequently burned when conditions permit.

32. In the section of Forest Road 579 (east of 568 intersection) with a retention/partial retention visual objective (Plan standard SCST02) and in the Bear Valley Creek eligible Wild and Scenic River corridor with a scenic classification, remove no more than 35 percent of the trees > 5” DBH.

33. In the Fir Creek, Bull Trout and Bear Valley campgrounds, harvest generated slash would be removed or piled and burned. Trees and sizeable limbs may be bucked to firewood lengths, piled, and left on site for campground users. Remove no more that 35 percent of the trees > 5” DBH in the campgrounds.

34. All areas used as landings will have complete slash, residue, and debris cleanup to mitigate visual effects.

35. Warning signs would be posted along travel routes to forewarn the public of hazard tree removal activities, truck traffic and possible travel delays. Flaggers and appropriate signs will be necessary for the temporary traffic stops.

36. Log hauling on Forest roads would be prohibited on weekends (Friday noon through Sunday), all Federal holidays, and opening day of deer and elk general rifle hunting season.

37. Skid trails that may be accessible to motor vehicle travel should be closed by slash, earth berms or rock to prevent unauthorized cross-country travel.

38. Within campgrounds and trailheads, slash of a suitable size for firewood should be bucked up and left in place for recreation use. Limbs and tops would be piled and burned in the fall.

39. Fuel conditions will be assessed following treatments. If unexpected levels of activity fuels are present, this fire hazard may be reduced through additional hand-piling and burning.

40. Fire behavior and primary effects will be monitored during prescribed burning activities. If undesirable effects occur or objectives are not being met, firing will be discontinued until objectives can be met and effects are within the desired range.

41. Smoke guidelines will be adhered to, working through the Montana/Idaho Airshed Group. The Group will be notified 1 day before ignition. No ignition will occur until permission is granted from the Group.

42. Only 15 piles per day may be burned within 1 mile of Bruce Meadows Airstrip to maintain air quality and safety.

43. A NOTAM (Notice to Airmen) will be issued if piles are burned within 1 mile of Bruce Meadows Airstrip.

44. Best Management Practices (BMPs) that limit erosion and sediment delivery, as described in the Idaho Forest Practices Act, would be applied under the selected alternative.