United States Department of Agriculture **Forest Service** **Custer Gallatin National Forest**

Yellowstone Ranger District
5242 Highway 89 South
Livingston, MT 59047

File Code: 1950
Date: January 6, 2017

Dear Interested Party:

I am pleased to inform you that the Custer Gallatin Forest Supervisor, Mary Erickson, has signed a decision for the Smith Shields Forest Health Project authorizing vegetation and fuel management activities on approximately 1,660 acres, as well as road maintenance/management activities. The Decision Memo documents the activities and explains the Forest Supervisor's rationale.

I would also like to take this opportunity to thank you for your interest in this project. We initiated a collaborative process to develop this project in July 2016 to incorporate feedback and address issues and concerns early in and throughout the project development process. Your patience as we worked through this process was greatly appreciated, as is your continued interest in and dedication to developing this project. Based on feedback from members of the interdisciplinary team working on this project and those members of the public that participated in development of the proposed action, I genuinely believe the efforts to collaboratively develop this project led to a more informed decision that better addresses the needs and concerns you helped identify.

I anticipate project implementation activities will begin in summer 2017. If you have any questions about the project, please direct them to Project Leader Tera Little (406-758-5357 or teralittle@fs.fed.us) or me (406-823-6066). Additional information about the project can also be found on the project webpage at https://www.fs.usda.gov/projects/custergallatin/landmanagement/projects (scroll down and click on the Smith Shields link).

Sincerely,

Alex Sienkiewicz
ALEX SIENKIEWICZ
District Ranger

Enclosures: 1 (Smith Shields Decision Memo)

Smith Shields Forest Health Decision Memo

USDA Forest Service

Custer Gallatin National Forest

Yellowstone Ranger District

Meagher & Park Counties

January 2017

Decision Memo
Smith Shields Forest Health Project
U.S. Forest Service

Yellowstone Ranger District
Custer Gallatin National Forest
Meagher & Park Counties, Montana

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Figures & Tables

NOTE: *For those receiving a hardcopy of this document, documents and specialist reports hyperlinked in this document can be found on the project webpage at http://www.fs.usda.gov/project/?project=49926.*

BACKGROUND

Overview of the Project Area

The Smith Shields Forest Health project is located approximately 16 miles northeast of Wilsall, MT in the Crazy Mountains (see Figure 1). Wilsall is approximately 25 miles north of Livingston on Hwy 89. The project area, which is split between Meagher and Park counties, is over 19,000 acres; however, treatments/activities are only proposed on approximately 1,660 acres (T5N-R10E Sections 6, 8, 26, 35 and 36; T5N-R11E Sections 16, 17, 18, 20 and 21; T6N-R9E Sections 25 and 36; and T6N-R10E Sections 31 and 32). While there are non-Forest Service lands in the vicinity of the project area, activities proposed for this project would only occur on National Forest System (NFS) lands.

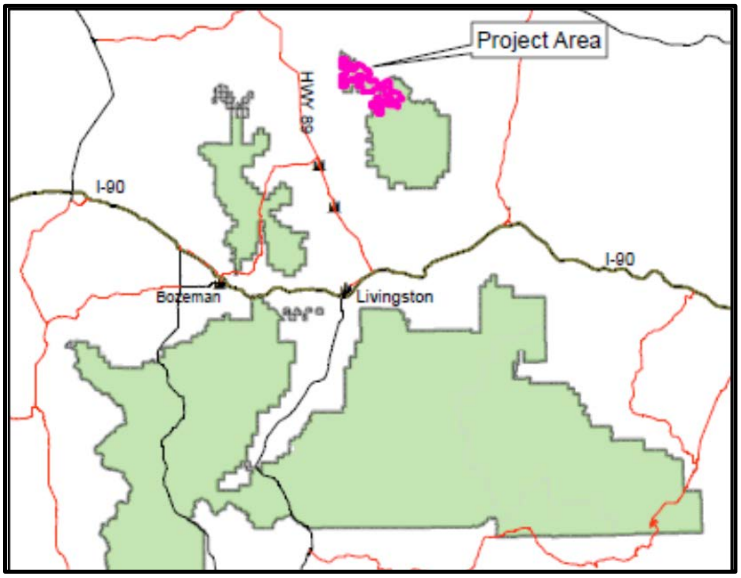


Figure 1: Vicinity of Smith Shields project area

The Smith Shields project area was designated as part of an insect and disease treatment program in accordance with Title VI, Section 602, of the Healthy Forest Restoration Act (HFRA), as amended by Section 8204 of the Agriculture Act (Farm Bill) of 2014.

To be designated, areas must be:

1) Experiencing declining forest health, based on annual forest health surveys conducted by the Secretary;
2) At risk of experiencing substantially increased tree mortality over the next 15 years due to insect or disease infestation based on the most recent National Insect and Disease Risk Map published by the Forest Service; or
3) In an area in which the risk of hazard trees poses an imminent risk to public infrastructure, health or safety.

The Smith Shields project area is also located in the Wildland Urban Interface (WUI), as defined by the Meagher and Park County Community Wildfire Protection Plans (CWPPs). Both CWPPs identified the need for future projects in this area to reduce hazardous fuels.

Management Areas (MA) 8, 11 and 99 in the Gallatin Forest Plan (as amended) apply to all NFS lands where activities are proposed in the project area.

- MA 8: Consists of lands suitable for timber management
- MA 11: Consists of productive forest lands available for timber harvest as long as big game habitat objectives are met
- MA 99: Consists of lands acquired by the Forest Service after the 1987 Forest Plan. Forest-wide standards and adjacent management area direction is being applied to MA 99. For this project, MAs 8 or 11 are being applied to MA99 areas proposed for treatment.

Conditions Observed in the Project Area

Vegetation Conditions

Throughout spring and summer 2016, a silviculturist walked through stands in the project area to assess the severity and types of insects and diseases impacting the stands, as well as assess hazardous fuel conditions. Additionally, in June 2016 a forest pathologist and forest entomologist from the Missoula Field Office of the U.S. Forest Service Northern Region Forest Health Protection Group visited the project area to observe and document the forest health conditions (*20160803_VEG_ForestHealthReport_MFO-TR-16-08*).

Figure 2: A) Forest Service employees observe a mixed conifer/lodgepole pine stand hit by western spruce budworm and mountain pine beetle (MPB) (Unit 9); B) A silviculturist assesses existing conditions in a lodgepole pine stand with 30-40% mortality from MPB (Unit 17)

Areas were reviewed for past insect and disease activity, as well as for 10-year projections based on current conditions and anticipated climate trends. The following conclusions were made based on these observations:

This area has experienced persistent insect activity, including a western spruce budworm (WSB) outbreak that caused defoliation, crown dieback, and small tree mortality from 2004-2009 and during individual years in 2012 and 2015 (see Figure 3 and Figure 6, A). Additionally,

mountain pine beetle (MPB)-caused lodgepole pine mortality occurred at low levels from 2002-2005 and at epidemic levels during an outbreak from 2006-2010 (see Figure 4).

Mountain pine beetle and western spruce budworm amplify populations to outbreak levels typically during times of protracted, multi-year drought periods. Thus, impacts to susceptible vegetation and related forest health declines are anticipated if a substantial drought period occurs within a 10-year management horizon. MPB-caused mortality is predicted to range between 42-89% for some lodgepole pine stands during the next protracted drought/landscape-scale beetle outbreak period.

Vegetation within the project area is susceptible to further insect activity based on conditions observed. Stands that were dominated by lodgepole pines rated at a moderate or high hazard for susceptibility to MPB-attack. Furthermore, areas immediately adjacent to and within surrounding subwatersheds are estimated to have sufficient susceptible vegetation to support a severe and widespread MPB outbreak (Krist et al. 2014) (see Figure 5).

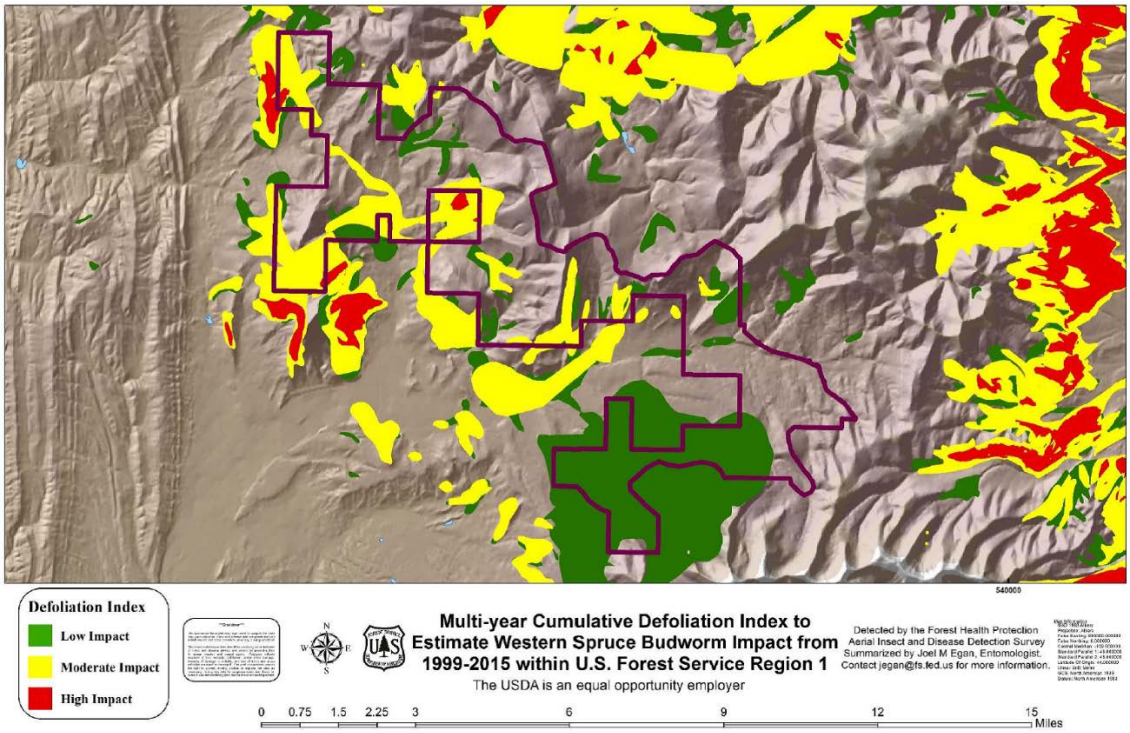


Figure 3: Cumulative western spruce budworm impact from 2000-2015 within Smith Shields project area

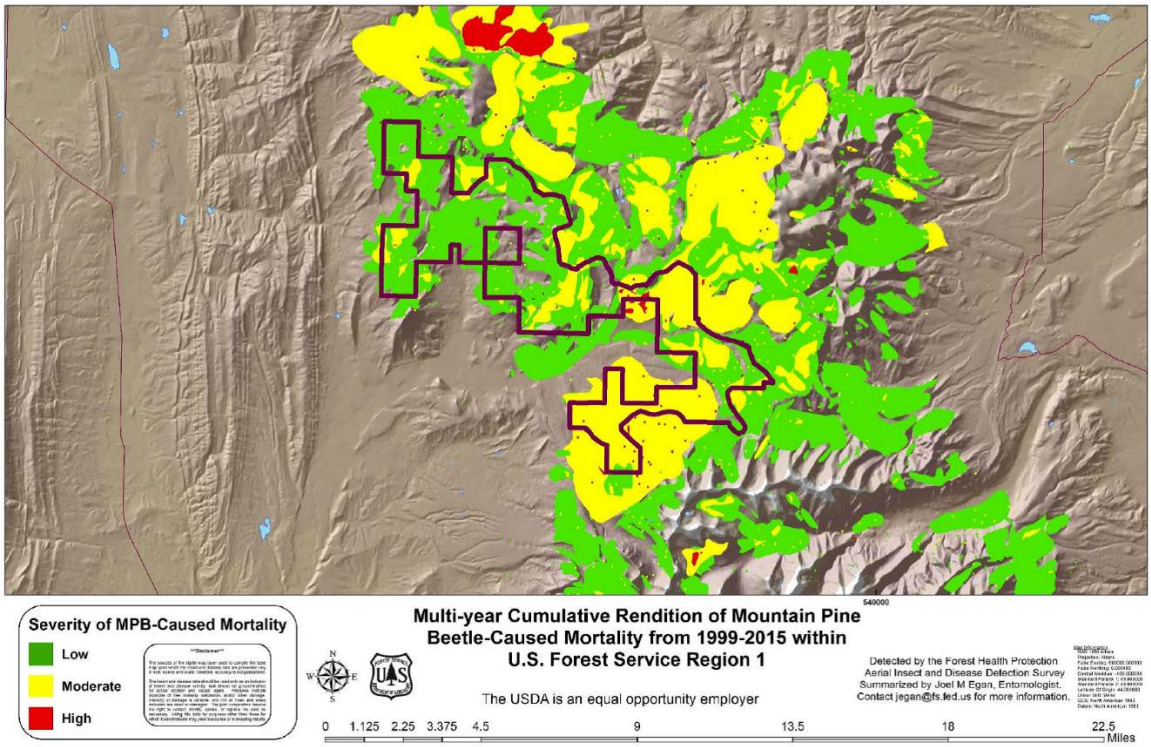


Figure 4: Cumulative mountain pine beetle (MPB) impact from 1999-2015 within Smith Shields project area

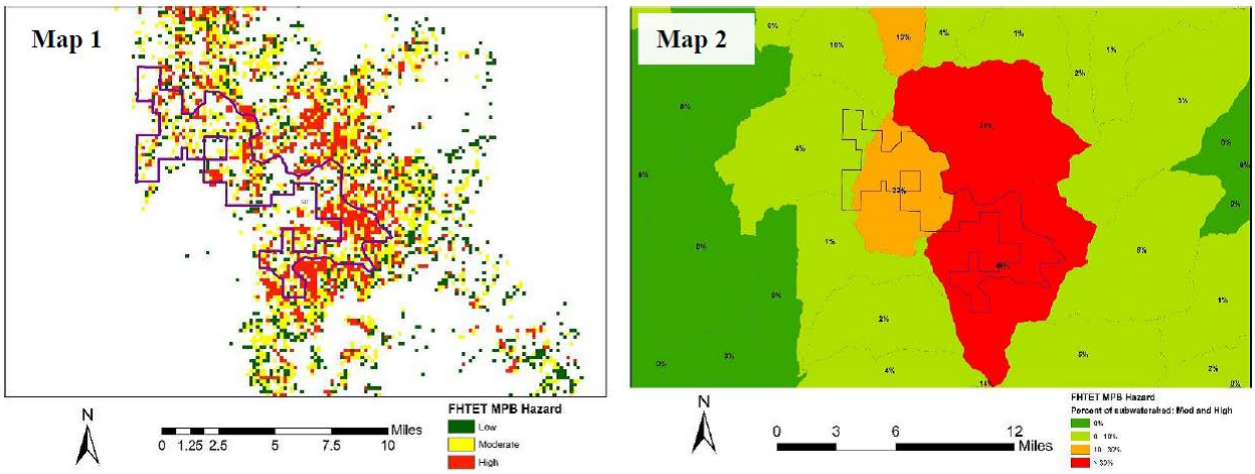


Figure 5: Maps estimate substantial vegetation susceptible to MPBs within and immediately adjacent to the Smith Shields project area (Map 1) and at a landscape-scale in surrounding sub-watersheds (Map 2)

Similarly, other mixed-species stands had composition and multi-canopied structures that are conducive to further WSB-caused defoliation (see Figure 6, A). Defoliation rarely leads to overstory tree mortality but can cause crown dieback, reduce growth rates and tree vigor, and increase physiological stress in overstory layers. In mid-story and understory canopy layers, defoliation can impact vegetation more severely, often leading to severe crown dieback and tree mortality in susceptible host species. Furthermore, defoliation can cause physiological stress that enhances susceptibility to mortality caused by bark beetles.

Figure 6: A) Defoliation from western spruce budworm; B) Dwarf mistletoe in lodgepole pine stand; C) Tomentosus root rot in blowdown area

Lodgepole pine dwarf mistletoe (LPDM) was found in numerous lodgepole pine-dominated stands (see Figure 6, B). This disease will be persistent within these stands and slowly increase in its incidence and occurrence during the 10-year management horizon. This agent is anticipated to promote physiological stress, growth loss, general decline, and eventual mortality in host trees that were noted with severe LPDM infections. Additionally, LPDM infection can spread rapidly to vegetation in subordinate canopy dominance classes and prevent the recruitment of a healthy replacement cohort of advanced lodgepole pine regeneration.

Strong winds and the potential for blowdown will likely increase during the 10-year management horizon in areas impacted by recent tree mortality (especially after snag-fall) and/or in treatment areas where intermediate harvesting activities occur. Surveys of recent blowdown areas in the Shields River area detected decay characteristic of tomentosus root rot, which was associated with tree failure (see Figure 6, C).

Wildland Urban Interface

Hazardous forest fuels were also taken into consideration as the project area is designated as wildland-urban interface (WUI). The insects and diseases noted above are killing and/or weakening trees in most of the forest stands in the project area. This causes elevated levels of surface fuels on the forest floor and creates small openings in the upper forest canopy where understory trees can grow and develop into “ladder fuels” (see Figure 7). The high surface fuels, along with the ladder fuels, can create conditions where surface fires can jump into the upper crowns and quickly travel great distances with winds. Crown fires are the most difficult and dangerous to suppress and often fire-fighting tactics are not very effective in those conditions. In addition to insect and disease causes, fuels have been elevated to hazardous levels through the practice of suppressing wildfires, along with normal forest successional processes. This has created an overall hazardous condition to people living in, recreating in or traveling through the area.

Figure 7: During a public field trip to the project area, surface and ladder fuels are discussed in Unit 19

Watershed Conditions

Watershed improvements have been occurring in the Smith Shields project area since 2006, both on and off National Forest System lands. Much of the improvements on Forest Service lands have occurred through road decommissioning and culvert replacement with aquatic organism passages. The Shields River has a TMDL (total maximum daily load) for sediment and siltation impairment. Additional aquatic organism passages have been identified for replacement as part of previous decisions. Some replacements would establish fish barriers to prevent non-native species (e.g. brook trout) from occupying key habitat for native Yellowstone cutthroat trout. (See *20161129_AQ_AquaticsReport_SmithShields* for additional discussion on aquatic conditions.)

PURPOSE & NEED

Based on the observed existing conditions described above, as well as other supporting information (e.g. annual insect and disease aerial detection surveys, national insect and disease risk maps, community wildfire protection plan, input from local community members), **there is a need to reduce vegetative susceptibility to subsequent insect and disease activity to minimize tree mortality that would contribute to surface fuel loadings, as well as a need to maintain fuel loadings at levels that are not conducive to active, crown independent wildland fires during severe weather conditions.**

The objectives of the Smith Shields proposed action are to:

- Reduce the risk or extent of, or increase resilience to, **insect or disease infestations** in the project area by improving resiliency of stand structure, function and composition;

- Modify potential **uncharacteristic wildfire behavior** by creating vegetation and fuel conditions that provide for more effective and safer firefighter response.

Additionally, during the collaborative process used to develop this proposal, other objectives were identified by local community members:

- Local community members living within the project area identified a **need to address road maintenance along National Forest System road 991 in the project area**.
- Local community members identified a **desire to designate firewood gathering areas nearer to private properties** adjacent to the project area that are dependent on woodstoves as a heat source and to also use this as a method for reducing surface fuel loads.
- Local industry representatives and county commissioners also articulated the **desire to supply forest products to support local economies and industries**.

DECISION

Project Activities

I have decided to authorize the vegetation and road management activities displayed in Table 1. Fuel management activities are also authorized, as described below. My decision also includes the Design Features, Mitigation Measures and Monitoring Requirements described in *Appendix A.* These activities are in compliance with law, regulation and policy, to include the Gallatin Forest Plan (as amended).

Note: *The proposed action, as analyzed, included 256 acres of clearcut with reserves (for a total of 359 acres of regeneration) and 6.4 miles of temporary road. Based on the soils analysis, existing detrimental soil disturbance (DSD) levels in Unit 17 already exceed the Region 1 allowable DSD levels. To ensure additional soil disturbance was not created in Unit 17 during implementation, the temporary road in this unit was eliminated, as were 8 acres that could not be treated without the temporary road. It was also determined that this unit can only be harvested during winter conditions. These mitigations and changes have been reflected in Table 1, Appendix A (Mitigation Measures), Appendix B (tables) and Appendix C (maps).*

Vegetation management activities include intermediate harvest and regeneration harvest (also see tables in *Appendix B* and maps in *Appendix C*). Intermediate treatments will occur on 1,309 acres and are a suite of treatment types that leave a stocked stand when completed and are designed to enhance growth, quality, vigor and composition of a stand after establishment or regeneration and prior to final harvest. Regeneration treatments will occur on 351 acres and seek to create a new age class, as the only age class in a stand or as part of a two age or uneven-aged stand. Very few trees are left immediately following a regeneration harvest but stands must be restocked within 5 years after treatments (to include post-harvest fuel treatments) are completed. Two of the proposed regeneration harvest units (Units 14c and 15) would result in an opening greater than 40 acres (opening would be approximately 165 acres).

Post-harvest fuel treatment activities will include underburning, grapple piling, slash and grapple piling or slash and underburning. The post-harvest fuel treatments necessary to achieve vegetation management, fuel level and coarse woody debris objectives will be determined when final silvicultural prescriptions are completed.

Road management activities are required to allow for implementation of the vegetation and fuel management work. Routine maintenance would continue on 20.3 miles of primary routes. Maintenance to bring roads up to required standards to implement project activities would occur on 16 miles of secondary routes. If a contractor opted to use the alternate route, maintenance would occur on an additional 1.4 miles on National Forest System road 991 to bring this section of road up to required standards to implement project activities. If this section is not needed for project implementation activities, additional maintenance will not occur. Construction of approximately 6.2 miles of temporary roads would occur and these temporary roads will be decommissioned within 3 years of project completion. No permanent roads will be constructed.

Table 1: Summary of Proposed Vegetation & Road Management Activities

Proposed Activity	Activity/Treatment Size
Vegetation Management (Acres; rounded to nearest whole #)	
Regeneration Harvest w/ Whole Tree Yard	
Clearcut with Reserves	*248*
Clearcut w/ Patches	*21*
Clearcut Whole Tree Yard	*62*
Group Selection	*20*
TOTAL REGENERATION	**351**
Intermediate Harvest	
Sanitation/Salvage	*1055*
Salvage/Stand Improvement	*69*
Thin	*185*
TOTAL INTERMEDIATE	**1309**
TOTAL HARVEST	**1660**
Road Management Activities for Project Implementation (Miles; rounded to nearest tenth)	
Maintenance on Secondary Routes	16.0
Maintenance on Alternate Route	1.4
Maintenance on Primary Routes	20.3
Construction of permanent system road	None
Construction of temporary road	6.2

DECISION RATIONALE

Considerations Based on Collaborative Input, Interdisciplinary Project Development and/or Scoping

Hazardous fuels reduction

The northern portion of the project area was of particular interest to those living in the Smith Creek community. This is a community that has invested in their own fire engine and put a lot of effort into reducing hazardous fuels on private properties. For the most part, they supported

efforts to reduce hazardous fuels on National Forest System lands adjacent to and around private property. Some landowners expressed concern with some of the additional areas being considered for treatment because of the amount of temporary road building that would be required. Several landowners were pleased that previous roads had been decommissioned and did not want these re-opened, even temporarily. Part of their reasoning was that their private wells were fed by water in these areas and they had concerns about how road building and timber harvest in these areas would affect water quality. Another reason was that some did not want increased public access to areas adjacent to their property, even on a temporary basis. Ultimately, additional acres were included for Unit 19 to complement hazardous fuels reduction efforts on adjacent private lands, as well as to address forest health issues found in these stands. Unit boundaries for 19e and 19f were adjusted to eliminate treatments near wetlands and springs found in these areas. Some additional areas proposed for treatment primarily for hazardous fuels reasons were not included due to low forest health hazards/concerns, observed old growth characteristics and large tree components found in the stands, and the amount of temporary road building that would be needed to access these areas (see rationale in the Scoping Letter; *20160912_SCO_Scoping_Proposed Action_SmithShields*).

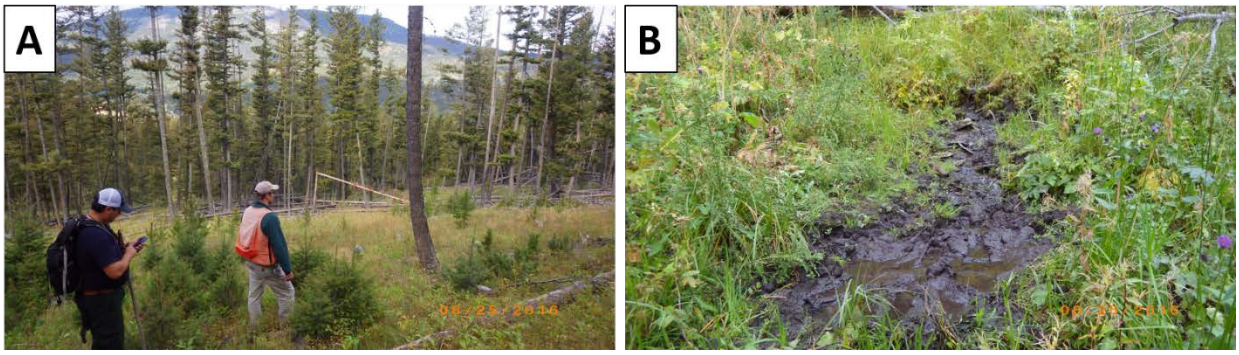


Figure 8: A) Forest Service employees observe hazardous fuels reduction efforts on private land adjacent to Unit 19f; B) A spring in the original Unit 19f that was buffered out of the final area proposed for treatment

Road Maintenance

As discussed in the Watershed Conditions section above, many of the primary roads in the project area are in good condition after upgrades completed through the American Recovery & Reinvestment Act. Secondary roads in the project area would be brought up to standard as required to implement project activities. National Forest System Road 991 is a primary ingress/egress route for the Smith Creek community. Because of the soils composition in this area (heavy clay component), portions of this road get a lot of rutting and water channeling during spring thaw and after periods of heavy precipitation. Residents in the Smith Creek community expressed the need to improve sections of this road, especially if traffic and heavy equipment use would increase with project implementation. As part of this project, maintenance will be done on any portions of this road used to implement project activities to bring it up to required standards.

Firewood Access

Several Smith Creek community members expressed the desire to have firewood gathering locations identified during project implementation. They have seen the amount of wood being piled and burned and would like to utilize some of this material as firewood since many of them

depend on wood burning stoves as a heat source. Leaving piled, dead wood can be a concern from a forest health perspective as it can attract Ips beetles. The fuels specialist and silviculturist worked with Forest Health experts to develop a design feature that would allow for some of this material to be saved for firewood (see Fire/Fuels section under Design Features, *Appendix A*). The Yellowstone District Ranger will coordinate the identification of firewood gathering areas with project implementation activities to allow access to dead material generated by the project.

Wildlife Habitat

Throughout spring and summer 2016, wildlife biologists assessed habitat conditions in the project area. There have been ongoing discussions and meetings with the Montana Fish, Wildlife & Parks biologists for this area. Those discussions have mainly focused on big game use and considerations in the project area. Observations, as well as field verification plots, were placed in proposed treatment units to assess winter snowshoe hare cover, stand condition for lynx habitat, and elk cover and security (see Figure 9). Overall, elk security has improved with the road decommissioning that has been occurring in the area since 2006. Most stands within the project area have high cover and are exceeding the Forest Plan standards. Treatments could open up areas and improve summer big game forage, which would reduce cover but still maintain 2/3 of the baseline cover over time in the Smith Shields Elk Analysis Unit, as required by the Forest Plan. Goshawk habitat was observed and surveyed within the project area. No nests were found in any of the units proposed for treatment and design features would protect raptor nests that may be found during implementation. Habitat of sensitive species was observed within the project area and some of those areas were removed from potential treatment areas, such as through application of stream and riparian buffers, to reduce impacts to species and habitats. Other species, including some migratory birds, will benefit from treatments that reduce older stands and provide edge habitat and earlier successional stages within the project area.

Figure 9: A wildlife biologist assessed habitat conditions in areas proposed for treatment; cover board surveys were conducted for elk (A) and lynx (B) to determine percentage of hiding cover and winter snowshoe hare habitat, respectively

Conifer encroached aspen stands were found in the Smith Creek area. Aspen stands benefit many wildlife species, such as sapsuckers and many second cavity nesters found in the area; however,

no aspen regeneration is proposed as part of this project. The Custer Gallatin National Forest completed a decision memo in 2014 that authorizes aspen regeneration projects. Any future aspen regeneration work in the project area would be completed under that 2014 decision as assessments indicate a need and identify site conditions that are most favorable to support aspen given increasing temperatures and in consideration of the effects of ungulate or livestock browsing, as specified in that decision (see Design Features for Vegetation in *Appendix A*).

Project Objectives

After reviewing the proposed action and natural resource specialists' considerations of effects, I have determined the activities authorized as part of this decision will achieve the following objectives for the reasons specified:

Forest Health (Insects & Disease)

Objective: *Reduce the risk or extent of, or increase resilience to,* ***insect or disease infestations*** *in the project area by improving resiliency of stand structure, function and composition.*

The proposed vegetation management activities will reduce the risk or extent of, or increase resilience to, **insect and/or disease infestations** in the project by changing stand structure, function and composition.

The desired conditions for the Smith Shields project area are lower levels of mountain pine beetle, lodgepole pine dwarf mistletoe, western spruce budworm, and Douglas-fir beetle hazards. Creating mosaics of less heterogeneous age classes and species distributions will generally make the area more resilient to insects and pathogens.

Changing species composition towards non-host species, such as Douglas-fir, will lower mountain pine beetle hazard ratings and add more species diversity at the landscape level. In some cases, Douglas-fir will be released and all other species removed via improvement cutting. This will trend parts of the landscape to favoring an open grown Douglas-fir type.

Changing stand structure will meet multiple objectives. Lowering stocking allows residual trees to allocate more resources toward growth, specifically height and diameter growth (Oliver & Larson, 1990), thus making them more resilient to insects and disease (Fettig, Gibson, Munson, & Negron, 2014) (Kegley, 2011) (Pederson, Sturdevant, & Blackford, 2009).

Treatments will have the added benefit of creating a more equal distribution of size classes, creating more early seral classes and increasing the rates of growth in the 10-14.9" size class, so it moves into the greater than 15" size class more quickly. This change in structure will promote conditions in the project area that are more resilient to insects and disease and make the project area more in line with the Forest Plan.

Currently, the project area has an un-even distribution of size classes as demonstrated by V-Map data (see Figure 10). The Forest Plan has direction to use fire and other management tools to help achieve vegetative size and age class diversity. In addition to meeting Forest Plan standards, diversifying the size class distribution also creates greater resiliency to insects and disease at the landscape level.

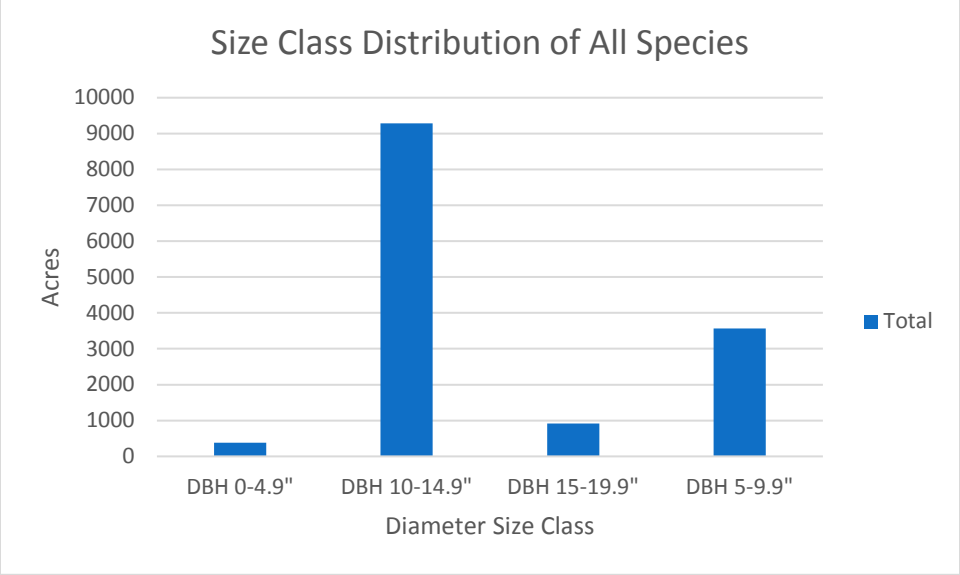


Figure 10: Size class distribution of all species in the Smith Shields project area

For specific explanation of how treatments will affect different insects and pathogens currently acting in the project area (e.g. mountain pine beetle, western spruce budworm, Douglas-fir beetle and dwarf mistletoe), see additional discussion in the Vegetation Report (*20161128_VEG_SilvicultureVegReport_SmithShields*)

Wildfire Behavior

Objective: *Modify potential* ***uncharacteristic wildfire behavior*** *by creating vegetation and fuel conditions that provide for more effective and safer firefighter response.*

In areas proposed for treatment, current (no action) fuel hazard ratings are mostly in the medium to high hazard range (see Figure 12). Post-treatment (implementation of the proposed action), these ratings are anticipated to drop to low for most treated areas, primarily due to the change in fire type. Removing canopy fuels will change fire type from passive and active crown fire to surface fire and passive crown fire. This is a substantial difference with regard to spotting potential, rates of spread and resistance to control, as well as fire effects to the vegetation.

The proposed vegetation and fuel treatment activities, combined with other hazardous fuel reductions in the project area on private and federal lands, will modify potential **uncharacteristic wildfire behavior** by contributing to the overall reduction of surface, ladder and crown fuels (see Figure 11), thereby reducing fire intensity and crown fire potential within the project area, while still maintaining required levels of coarse woody debris. Modifying the fuel profile will trend towards conditions where flame lengths and fire intensity are reduced, thereby reducing wildfire risk to local communities and surrounding federal lands. This modification, combined with a reduction of snags and standing dead and dying trees (while still meeting the Forest Plan snag standards), will also allow for more effective and safer firefighter response for forces engaging in fire management actions and for the public recreating in the project area. See additional discussion in the Fire/Fuels Report (*20161121_FIRE_FireFuelsReport_SmithShields*).

Figure 11: Examples of undesirable ladder (A) and surface (B) fuels in Units 19

Local Economies, Industries & Communities

Objectives: *1) Supply* ***forest products*** *to support local economies and industries; and 2) designate* ***firewood*** *gathering areas nearer to private properties adjacent to the project area that are dependent on woodstoves as a heat source.*

By-products of this forest health restoration and fuels reduction work will provide **forest products** to local economies and industry, to include potential for both large and small-diameter material (saw and non-saw timber). Restoration work that is accomplished through service contracts has potential to employ the local labor force and provide **firewood** gathering opportunities for local landowners that rely on a wood burning heat source. Firewood gathering is also another tool for reducing fuel loads on National Forest System lands.

Road Maintenance & Public Safety

Objective: *Address* ***road maintenance*** *along National Forest System road 991 in the project area.*

In addition to allowing implementation of forest health restoration work, the proposed **road maintenance** activities on National Forest System roads, to include 991, will improve conditions of this road for public access and travel. For those living or recreating in the Smith Creek area, 991 is a primary evacuation route if a wildfire, other natural disturbance or emergency event were to block the southern aspects of the route or the main Shields River road. See additional discussion in the Transportation Report (*20161122_TRAN_TransportationReport_SmithShields*).

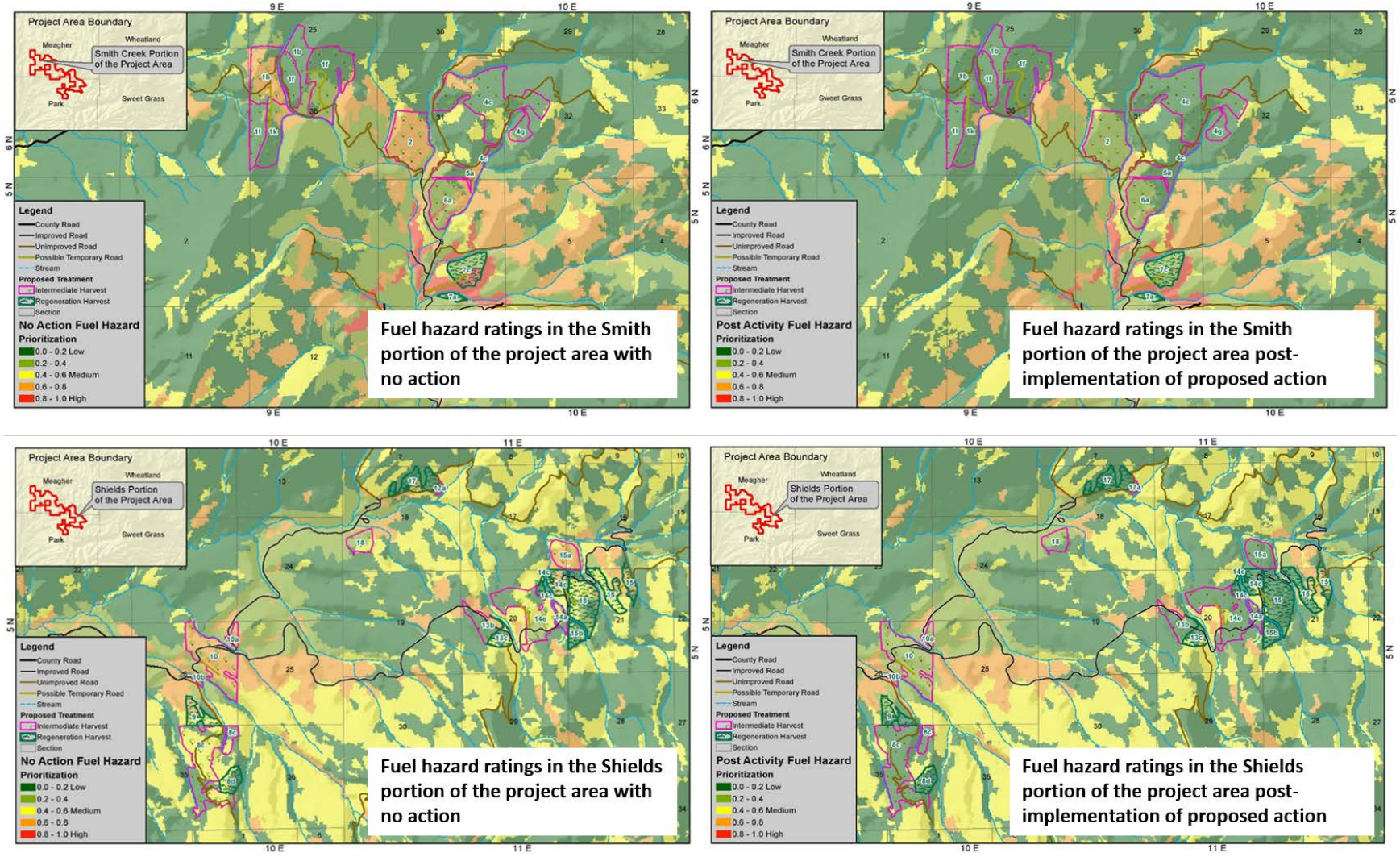


Figure 12: Combination of maps showing fuel hazard ratings in treatments areas with no action versus post-implementation for the Smith and Shields portions of the project area

EXTRAORDINARY CIRCUMSTANCES

After review of effects findings for pertinent resources and consideration of responses received to scoping of the proposed action, I find there are no extraordinary circumstances that would warrant further analysis and documentation in an EA or EIS. Cumulative effects were considered by resource specialists as needed for a categorical exclusion. I took into account resource conditions identified in agency procedures that should be considered in determining whether extraordinary circumstances might exist.

Table 2: Summary of Resource Conclusions for Extraordinary Circumstances

Resource	Conclusion
Federally listed threatened or endangered species or designated critical habitat; **species proposed for Federal listing or proposed critical habitat;** **or Forest Service sensitive species**	**Wildlife & Fish** ***Threatened and Endangered Wildlife Species*** **Canada Lynx:** ***May Affect, But Is Not Likely To Adversely Affect –*** • The project occurs in secondary and peripheral lynx habitat on the Custer Gallatin National Forest. In the unlikely event that lynx were to enter the action area during project implementation, it is expected that they would be transitory rather than part of a resident population. • There have been no recent sightings of lynx in the action area and they are not likely to be found in there during project implementation. Although temporary movement of a lynx is possible to avoid mechanical operations, the transient nature of lynx in the mountain range and the fact that lynx have not been found recently (over 15 years) in the action area indicate this effect to be unlikely (discountable effect). • The project maintains connectivity of lynx habitat because no new roads are created and untreated areas throughout the West Crazies lynx analysis unit (LAU) will provide cover similar to the current condition, allowing transient lynx to move through the area in search of quality habitat that may be present in adjacent/other landscapes. • Cumulative effects from State or private activities are minimal, and the project does not exacerbate any of these cumulative effects. • The project is in an identified wildland urban interface (WUI) and therefore the project is not required to meet all the standards in the Northern Rockies Lynx Management Direction (NRLMD). However, as a conservative measure regarding species protection, the standards in the NRLMD were reviewed anyway and found to be met with the WUI exceptions. Meeting these standards provides additional evidence that the project area will continue to provide for use as secondary peripheral habitat, by transient lynx, should they occur in the project area now or in the future.

Resource	Conclusion
	• The project would maintain both snowshoe hare and red squirrel habitat throughout the LAU, and prey levels would be adequate for transient lynx should they occur in the project area. • New science relevant for conservation of Canada lynx in the Northern Rockies is consistent with conservation measures in the Lynx Conservation Assessment & Strategy and management direction in the NRLMD. The U.S. Fish & Wildlife Service determined that new information made available since 2007 is consistent with information considered for the NRLMD's 2007 Biological Opinion. **Grizzly Bear:** ***No Effect*** – There have been no verified sightings or other documented detections (e.g. tracks, DNA samples, photos with landmarks) of grizzly bears in the Crazy Mountain Range for several decades, and the U.S. Fish and Wildlife Service does not indicate that grizzly bears may be present north of Interstate 90 on the Custer Gallatin National Forest. The proposed action is in an area that may prove suitable as a travel corridor for grizzly bears sometime in the future. Implementation of the project is not expected to result in any impediments or barriers to grizzly bear movement. Therefore, the proposed action would have no effect on grizzly bears. ***Wildlife Species Proposed for Listing or Proposed Critical Habitat*** **Wolverine:** ***Will Not Jeopardize*** – There have been a few verified sightings of wolverines in the project area. It is recognized that project activities may have a negative impact on individual wolverines and/or their habitat, but not to the point where the species' existence is jeopardized. Proposed activities will not jeopardize the continued existence of the distinct population segment (DPS) of the North American wolverine because: • The projects will not contribute to the identified Primary or Secondary threats to the wolverine DPS (climate change, inadequate regulation of climate change, harvest, and small population size); • None of the proposed activities are considered a threat to the DPS; • The individual project activities and cumulative actions will result in relatively small-scale disturbances in relation to the large wolverine home range size, and wolverine are able to adjust to and co-exist with moderate levels of disturbance; • The projects and cumulative effects will not result in barriers to dispersing individuals.

Resource	Conclusion
	(Additional discussions on Canada lynx, grizzly bear and wolverine can be found in the Biological Assessment; 20161227_WL_USFWS-Concure_ BA-wUpdates_SmithShields) ***Threatened and Endangered Fish Species*** – None ***Fish Species Proposed for Listing or Proposed Critical Habitat*** – None ***Wildlife & Fish Sensitive Species*** ***May Impact Individuals Or Habitat, But Will Not Likely Contribute To A Trend Towards Federal Listing Or Cause a Loss of Viability To the Population or Species:*** **Black-backed Woodpecker, Flammulated Owl, Gray Wolf, Long-eared & Long-legged Myotis, Western Boreal Toad, Northern Leopard Frog, Yellowstone Cutthroat Trout** *(See Aquatics and Wildlife Reports for additional discussion supporting determinations for these species; 20161129_AQ_AquaticsReport_SmithShields and 20161216_WL_WildlifeReport-BE_SmithShields)* ***No Impact:*** **Bald Eagle, Harlequin Duck, Peregrine Falcon, Townsend's Big-eared Bat, Trumpeter Swan, Bighorn Sheep** – Not currently known or suspected to be present in the project area, and there are no treatment units that would impact essential habitat in the project area. **Botany** ***Threatened and Endangered Species or Critical Habitat*** – None ***Species Proposed for Listing or Proposed Critical Habitat*** – None ***Sensitive Species*** ***May Impact Individuals Or Habitat, But Will Not Likely Contribute To A Trend Towards Federal Listing Or Cause a Loss of Viability To the Population or Species:*** **Whitebark Pine (*Pinus albicaulis*), Short-styled Columbine (*Aquilegia brevistyla*), Northern Rattlesnake-plantain (*Goodyera repens*), and Small Yellow Lady's-slipper (*Cypripedium parviflorum*)** *(See Botany/Sensitive Plants Report for additional discussion supporting determinations for these species; 20161122_BOT_SensPlantsReport_SmithShields)* ***No Impact*** – **Remaining Forest-listed sensitive plant Species:** Habitat components for the remaining sensitive plant species listed for the Forest do not exist within the proposed treatment areas. No effects

Resource	Conclusion
	are anticipated.
Flood plains, wetlands or municipal watersheds	**Minimal Effect** – Although there may be individual water users, there are no municipal watersheds or designated public water supplies in the project area. Source water areas have been identified for individuals living in the project area as a result of scoping comments received, and treatment unit boundaries were adjusted in these areas to protect water sources. Any floodplains and wetlands adjacent to or within proposed treatment units were buffered by 50 feet to exclude these areas and would be protected by project design criteria. It is expected that project related sediment impacts to stream channels, floodplains, and wetland areas will be negligible with the application of buffers and use of best management practices. (See *20161129_AQ_AquaticsReport_SmithShields* for additional discussion)
Congressionally designated areas, such as wilderness, wilderness study areas, or National Recreation Areas	**No Effect** – There are no wilderness, wilderness study areas, or national recreation areas in the project area; therefore no activities are proposed in these designated areas. Additionally, none of these types of areas are in close proximity to the project area or proposed activities.
Inventoried roadless areas or potential wilderness areas; Research Natural Areas	**No Effect -** These areas do not exist within in the project boundary and therefore no activities are proposed in these types of areas. No RNAs or potential wilderness areas are in close proximity to the project area or proposed activities. There are roadless areas in proximity (Box Canyon is an IRA to the north of the Smith area; Crazy Mountain is an IRA to the east of the Shields project area) to the project in several locations, but no project related activities are proposed inside roadless area boundaries, so there will be no effect to roadless characteristics or recreation experiences in these areas. (More discussion in *20161116_REC_RecreationReport_SmithShields* for these areas and wilderness areas discussed above)
American Indians and Alaska Native religious or cultural Sites; Archaeological sites, or historic properties or areas	**No Effect** –Surveys have been completed on all units being proposed for treatment. Three cultural resource sites with historic attributes were recorded, along with two isolated finds. None of these sites are eligible for nomination to the National Register of Historic Places. Identified sites would be avoided through design features/mitigation measures. Consultation with the State Historic Preservation Office (SHPO) was completed and SHPO concurred with the findings for heritage resources (*20161213_HERI_SHPO-Concurrence*). Tribal consultation was also conducted.

Other Wildlife & Fish Considerations

Presence and potential habitat for some Management Indicator Species (MIS) are known to occur in the project area. MIS species for the Custer Gallatin National Forest, as identified in the Gallatin Forest Plan, entail elk, marten, goshawk, bald eagle and wild trout, all of which except bald eagle are known to occur in the project area (bald eagle also discussed above under Wildlife sensitive species). Implementation of the proposed activities may have minor and temporary impacts on some MIS but will not impact forest-wide populations of any MIS species. Additional discussion on MIS, as well as Migratory Birds, can be found in the Wildlife and Fisheries reports (*20161216_WL_WildlifeReport-BE_SmithShields* and *20161129_AQ_Aquatics Report_SmithShields*).

COLLABORATION, SCOPING AND PUBLIC NOTICE

Collaboration & Public Engagement

Initial Outreach & Communication

The collaborative process for the Smith Shields project started with early discussions between the Custer Gallatin National Forest and the Custer Gallatin Working Group, which included county commissioners from Park County, regarding the purpose and need and urgency for the project. In June 2016, notice of the potential for a project in the Crazy Mountains was provided to over 150 individuals and organizations. Recipients of this notice were asked to respond if they would like to continue to receive information about the project; responses were received from approximately 25 individuals/organizations. These notices, as well as news releases provided to local media, also included information about a public meeting and field trip being planned for the following month. The project team leader also coordinated with a local Smith Creek community member to have information posted to the *Smith Creek community webpage* (*http://smithcreek.weebly.com/*).

Figure 13: The Yellowstone District Ranger (left) discusses previous hazardous fuels reduction efforts in the project area; the Custer Gallatin Forest Supervisor and local county commissioners (right) engage in discussions on needs to support local economies and industries

Initial Discussions

In July 2016, the collaborative process became more engaged with a public meeting being held in Livingston, MT at the Yellowstone Ranger District to provide additional information about the

project to interested members of the public. This meeting focused on outlining the preliminary purpose and need for the project and clarified how potential treatment areas had been identified (*20160727_CPI_Handout_July27-PublicInfoMtg; 20160727_CPI_Presentation_ July27-PublicInfoMtg; 20160727_CPI_Map-PreliminaryTreatmentOpportunities_July27-PublicInfoMtg*). Shortly after this meeting, a field trip to the project area occurred (see Figure 13), allowing participants in the collaborative process to view past treatments in the WUI, as well as look at untreated areas that were being considered for treatment. After this initial meeting and field trip, participants requested more detailed information about what types of treatment were being proposed in the areas identified for potential treatment so they could better understand what these areas might look like post-treatment. They also requested meetings be held closer to the project area as the majority of the participants lived in or near the project area. Based on initial feedback at this meeting and field trip, additional acres adjacent to private land were included in the potential treatment areas to explore additional forest health and hazardous fuel reduction opportunities *(20160804_CPI_Meeting-FieldTripNotes_SmithShields)*.

Follow-up Discussions

In August 2016, additional information about proposed treatment types was provided to those who requested to remain on the project mailing list (*20160811_CPI_UpdatedMap_ Potential TreatmentUnits-Types*). This follow-up communication, to include news releases provided to local media, contained information about another public meeting/working session in Clyde Park (see Figure 14) to further review and refine the areas being proposed for treatment and the types of treatment. Additional acres were proposed for treatment at this time and the interdisciplinary team committed to visiting these areas to determine suitability for including them in the proposed action (*20160819_CPI_PreScopingComments_JessSecrest; 20160826_CPI_Public MeetingNotes_SmithShields*).

Figure 14: At the August public meeting, Jess Secrest (FireWise) and the project silviculturist and fuels specialist discuss additional units being proposed as part of the collaborative process to address hazardous fuel concerns on National Forest System lands adjacent to private property

A previous project in the Smith Creek portion of the project area went through numerous rounds of litigation and delayed project implementation. The primary issue raised in the complaint on that project was if the forest was meeting the elk hiding cover standard in the Gallatin National Forest Plan. Community members expressed concern that litigation around the same issues previously raised would stall the Forest Service's ability to implement the Smith Shields project.

In September 2016, the scoping period started (*20160912_SCO_Scoping_Proposed Action_SmithShields*). A detailed letter describing the purpose and need, process for developing the proposed action and the preliminary proposed action was sent to those who requested to remain on the project mailing list. Notice of the scoping period starting was provided in news releases to local media and a copy of the letter was posted on the project webpage for any other members of the public who would like to provide feedback on the project. Scoping comments were received from nine individuals/organizations/agencies and posted on the *project webpage* for further review by those interested in the project.

In October 2016, the District Ranger on the Yellowstone Ranger District invited Alliance for the Wild Rockies (AWR), a party who requested to receive project information but who had not participated in the collaborative process to develop the proposed action, out to the project area and AWR accepted the invite (see Figure 15). The invite was further expanded to others who had participated in the development of the proposed action and a second field trip occurred, visiting two of the areas visited as part of the initial field trip *(20161011_CPI_PublicFieldTrip Notes_Smith Shields*). Alliance for the Wild Rockies raised concerns regarding impacts to wildlife, to include elk, lynx and goshawks, during this field trip.

Figure 15: During a second field trip, the Yellowstone District Ranger (foreground) listens to local landowners discuss their appreciation for the collaborative process used to develop the proposed action

Public Notice and Scoping

Use of the categorical exclusion requires public notice and scoping. Notice of potential for a project in the Crazy Mountains was sent to potentially interested parties in June 2016, to include

landowners within or adjacent to the project area and pertinent local/state governments and agencies. This project was listed as a proposal on the Custer Gallatin National Forest's Schedule of Proposed Actions on August 1, 2016 and the *project webpage* was updated periodically during the project development process. The scoping period was initiated on September 12, 2016 and concluded on October 12, 2016.

APPLICABLE CATEGORICAL EXCLUSION

Background

Section 8204 of the Agriculture Act of 2014 (Public Law 113-79) (also referred to as Farm Bill) amended Title VI of the Healthy Forests Restoration Act of 2003 (HFRA) (16 U.S.C. 6591 et seq.) to add Sections 602 and 603 to address qualifying insect and disease infestations on National Forest System lands. The Secretary of the U.S. Department of Agriculture delegated authority to implement the provisions of the Farm Bill to the Chief of the Forest Service on March 6, 2014.

Section 602 provides, in part, the opportunity for Governors to request designation to areas in their State that are experiencing, or at risk of, an insect or disease epidemic. The Forest Service received letters from 35 states requesting designations. These requests were reviewed to ensure they met at least one of the following eligibility criteria outlined in the Farm Bill: experiencing forest health decline based on annual forest health surveys; at risk of experiencing substantially increased tree mortality based on the most recent Forest Health Protection Insect and Disease Risk Map; or contains hazard trees that pose an imminent risk to public infrastructure, health, or safety.

Upon reviewing the States' requests, the Chief designated approximately 45.6 million acres of National Forest System lands across 94 national forests in 35 States. Over 6.6 million acres were designated in the Northern Region (1,708,628 acres in Idaho; 4,955,159 million acres in Montana). These areas will be further evaluated to identify potential projects that reduce the risk or extent of, or increase resilience to, insect and disease infestations. *Information on the request and designation process*, by state, can be found online (*http://www.fs.fed.us/farmbill/area designations.shtml*).

Section 603 establishes a categorical exclusion for qualifying insect and disease projects in designated areas on National Forest System lands. An insect and disease project that may be categorically excluded under this authority is a project that is designed to reduce the risk or extent of, or increase the resilience to, insect or disease infestation in the areas (HFRA, Sections 602(d) and 603(a)).

Insect & Disease Infestation Categorical Exclusion

This categorical exclusion may be used to carry out a collaborative restoration project in an insect and disease treatment area designated by the Chief under section 602. The applicable category of actions is identified in agency procedures Forest Service Handbook 1909.15, Chapter 30, Section 32.3 (Categories Established by Statute), #3. Insect and Disease Infestation.

The actions proposed for this project are categorically excluded from documentation in an environmental impact statement (EIS) or an environmental assessment (EA). The Insect and Disease Infestation category is applicable for this project because:

1. The project is in an area designated in accordance with section 602(b) and (c) of the Healthy Forest Restoration Act.
2. The entire project is in the Wildland Urban Interface.
3. The project is **not** located: in congressionally designated Wilderness and Wilderness Study Areas; in areas where the removal of vegetation is restricted or prohibited by statute or by Presidential proclamation; or in areas where the activities described above would be inconsistent with the applicable Land and Resource Management Plan.
4. The project's number of acres treated does not exceed 3,000 acres.
5. The project does not include the establishment of permanent roads. Temporary roads will be constructed but will be removed no later than three years after the project is completed. Maintenance or repairs will be conducted on permanent roads that are already established in the project area.
6. Public notice and scoping was conducted. (See discussions on the public involvement process under the *Collaboration and Public Involvement* section.)
7. The project was developed through a collaborative process that includes multiple interested persons representing diverse interests and is transparent and non-exclusive. (See additional discussions on the collaborative process under the *Collaboration and Public Involvement* section.)
8. The best available scientific information was considered to maintain or restore ecological integrity, including maintaining or restoring the structure, function, composition and connectivity.
9. The project maximizes the retention of old growth and large trees, as appropriate for the forest type, to the extent that the trees promote stands that are resilient to insect and disease.

FINDINGS RELATED TO OTHER LAWS AND REGULATIONS

National Forest Management Act

1. Consistency with the Gallatin Forest Plan

The NFMA requires that projects and activities be consistent with the governing Forest Plan (16 USC 1604(i)). The Gallatin Forest Plan (as amended) establishes management direction for the Gallatin portion of the Custer Gallatin National Forest. This management direction is achieved through the establishment of Forest Plan goals and objectives, standards and guidelines, and Management Area (MA) goals and accompanying standards and guidelines. Harvest activities will occur within Forest Plan MAs 8 and 11, which are suitable for timber production and allow for commercial timber harvest. This project is consistent with all applicable Forest Plan forest-wide standards. The resource reports in the project file (and posted on the *project webpage*) provide further discussion regarding consistency with applicable standards and laws.

2. Suitability for Timber Production

No timber harvest, other than salvage sales or sales to protect other multiple use values, shall occur on lands not suited for timber production [16 USC 1604 Sec.6 (k)]. The Gallatin Forest

Plan identifies which Management Areas (MAs) are suitable for timber production. All timber harvest authorized in this Decision Memo will be located within areas classified as suitable for timber production (MAs 8, 11 and 99). Stands identified for harvest treatment were examined by a certified silviculturist, soil scientist, and other resource specialists, who determined the lands are physically suited for timber harvest.

3. Timber Harvest

All projects that involve timber harvest for any purpose must comply with four requirements found in 16 USC 1604 Sec.6 (g)(3)(E).

(i) Soil, slope, or other watershed conditions will not be irreversibly damaged.

The Forest Service fully assessed the potential effects of timber harvest on soil and water resources. The analysis is documented within the Soil and Aquatics reports. Soil and watershed conditions will be protected because Design Features (see *Appendix A*) effectively minimize potential impacts.

(ii) There is assurance that such lands can be adequately restocked within five years after harvest.

Lodgepole pine stands are the only type being recommended for regeneration harvest. On this portion of the Custer-Gallatin National Forest, lodgepole pine adequately restocks naturally when not harvested in winter as cones break off of trees during harvest. Stands prescribed for regeneration harvest will be inspected for stocking at years 1, 3 and 5 following harvest. If un-stocked stands still exist at year 3, planting will be considered with species most appropriate to meet stated project goals.

(iii)Protection is provided for streams, stream-banks, shorelines, lakes, wetlands, and other bodies of water from detrimental changes in water temperature, blockages of water courses, and deposits of sediment, where harvests are likely to seriously and adversely affect water conditions or fish habitat.

The application of stream buffers and forestry BMPs (see Design Features for Aquatics) will effectively protect water resources.

(iv) The harvesting system to be used is not selected primarily because it will give the greatest dollar return.

The purpose of the vegetation treatment is to address stands impacted by insect/disease and/or overstocking. Harvesting systems were applied to minimize resource impacts and trend stands from existing to desired conditions.

4. Clearcutting and Even-aged Management

When timber is to be harvested using an even-aged management system, a determination that the system is appropriate to meet the objectives and requirements of the Forest Plan must be made and, where clearcutting is to be used, must be determined to be the optimum method.

a. *For clearcutting, it is determined to be the optimum method, and for other such cuts it is determined to be appropriate, to meet the objectives and requirements of the relevant land management plan [16 USC 1604 Sec.6 (g)(3)(F)(i)]:*

Regeneration harvest is proposed and in some instances will result in openings greater than 40 acres. See additional discussion under (d), below.

b. *The interdisciplinary review as determined by the Secretary has been completed and the potential environmental, biological, esthetic, engineering, and economic impacts on each advertised sale area have been assessed, as well as the consistency of the sale with the multiple use of the general area [16 USC 1604 Sec.6 (g)(3)(F)(ii)]:*

Full interdisciplinary review has been completed for this project. All treatments meet the multiple use goals and objectives in the Gallatin Forest Plan for designated Management Areas.

c. *Cut blocks, patches or strips are shaped and blended to the extent practicable with the natural terrain [16 USC 1604 Sec.6 (g)(3)(F)(iii)]:*

Treatment areas are designed to blend as much as possible with the existing terrain.

d. *Cuts are carried out according to the maximum size limit required for areas to be cut during one harvest operation, provided, that such limits shall not apply to the size of areas harvested as a result of natural catastrophic conditions such as fire, insect and disease attack, or windstorm [FSM Region I supplement 2400-2001-2-2471.1, 16 USC 1604 Sec.6 (g)(3)(F)(iv)]:*

Forest Service Manual 2471.1 (R1 Supplement 2400-2001-2) requires a 60-day public review and Regional Forester approval for even-aged regeneration harvest openings exceeding 40 acres. Regional Forester approval was received in December 2016 (*20161213_VEG_2470 FY17AuthorizationToExceed_40ac_opening*).

The following addresses the documentation required in Forest Service Manual (FSM) 2471.1:

- **A concise statement that summarizes why it is deemed desirable to treat units larger than the maximum size specified above by even-aged regeneration cutting methods.**

  Regeneration harvest is proposed for units 14c and 15 because stands in these units are dominated by lodgepole pine with 30-40 percent mountain pine beetle mortality and latent dwarf mistletoe infections in the live component of lodgepole pine, which are expected to infect regeneration post treatment. A component of Engelmann spruce, Douglas-fir, and subalpine fir is present and evidence of root rot is present in all three of these species. Most of the 165 acres is situated in areas prone to high winds and evidence of blowdown exists in adjacent stands. For these reasons, regeneration harvest is appropriate for these units even though it will result in an opening greater than 40 acres.

- **A statement confirming that each treatment is supported by a silvicultural diagnosis and that a detailed prescription will be written or reviewed by a certified silviculturist.**

  Silvicultural diagnosis was done by a silviculturist in 2016. Detailed silvicultural prescriptions will be completed in 2017.

- **Identification of adjacent stands, their acreage, and their present status of recovery.**

  One group of proposed regeneration units (Units 14c and 15) will result in increased patch

size of forest opening (seedling/sapling) by creating openings that are larger than 40 acres. These proposed openings are not immediately adjacent to any past even-age regeneration harvests that still qualify as openings.

- **A statement of when the 60-day public notice began or when it will begin.**

  The 60-day public review period started September 12, 2016 when notice was provided in the Smith Shields scoping letter.

e. Such cuts are carried out in a manner consistent with the protection of soil, watershed, fish, wildlife, recreation, and esthetic resources, and the regeneration of the timber resource [16 USC 1604 Sec.6 (g)(3)(F)(v)]:

Documentation of the effects on other resources is contained in the Project File. Effects of regeneration harvest and those units that would contribute to openings greater than 40 acres were also considered by resource specialists during analysis. Protection of all resource values is maintained. All sites considered for treatment will use established harvest methods. Treatments are designed to sustain and perpetuate native seral species. Design Features and applicable Best Management Practices will be sufficient to protect soil and water resources.

5. Sensitive Species

Federal law and direction applicable to sensitive species include the National Forest Management Act (NFMA) and Forest Service Manual 2670. The NFMA directs that guidelines for land management plans provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives [16 USC 1604 Sec.6 (g)(3)(B)]. The Gallatin Forest Plan contains standards for sensitive species. The Regional Forester has approved the sensitive species list (those plants and animals for which population viability is a concern) (FSM 2610.5). The analysis and projected effects on all sensitive species listed as occurring or possibly occurring on the Custer Gallatin National Forest is documented in the Biological Evaluations contained in the project file and summarized in the Extraordinary Circumstances section of this document. The findings document that the authorized action will have no adverse impacts on some sensitive species but for other species activities *May Impact Individuals or Habitat, but will not contribute to a trend toward federal listing* (see Table 2). The diversity of plant and animal communities will be maintained, consistent with the NFMA.

Endangered Species Act (ESA)

Under provisions of ESA, Federal agencies are directed to seek to conserve endangered and threatened species and to ensure that actions are not likely to jeopardize the continued existence of any of these species. As displayed in the Extraordinary Circumstances section, the Forest Service determined that authorized activities will have no effect on grizzly bear. The project may affect, but is not likely to adversely affect, Canada lynx. Wolverine is a species proposed for listing. It is recognized that project activities may have a negative impact on individual wolverines and/or their habitat, but not to the point where the species' existence is jeopardized. No federally listed threatened or endangered fish or plant species occur in the project area. White bark pine (WBP) is a species proposed for listing. Project activities will occur below elevation for WBP stands and while individual seedlings incidentally occurring in areas proposed for treatment may be impacted, these impacts would not further contribute to the trend towards

federal listing or cause a loss of viability to the population. No designated critical habitat for wildlife, fish or botany occurs in the project area. (See extraordinary circumstances table above for further discussion supporting the summary statements made here.) Informal consultation was initiated and U.S. Fish and Wildlife Service concurred with these findings.

Migratory Bird Treaty Act

On January 10, 2001, President Clinton signed an Executive Order outlining responsibilities of federal agencies to protect migratory birds. Project activities have the potential to affect migratory birds by altering habitat and displacing birds through disturbance. In areas where activities are ongoing, breeding birds may avoid or abandon habitats to avoid human activities and disturbance. Activities would be limited in time and spatial extent, so effects would be temporary and would affect migratory birds at a small scale. Proposed activities would not affect migratory birds at the planning unit scale. The project will maintain a mosaic of vegetation types and age classes to provide for a diversity of species, consistent with this Executive Order.

Montana State Water Quality Standards and Clean Water Act (CWA)

The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. Under the CWA, the Environmental Protection Agency (EPA) has implemented pollution control programs, such as setting wastewater standards for industry. The EPA has also set water quality standards for all contaminants in surface waters. The CWA makes it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit is obtained. EPA's National Pollutant Discharge Elimination System (NPDES) permit program controls discharges. NPDES permits for logging roads are not necessary; however, any other necessary permits will be obtained prior to implementation. The resource protection measures for Aquatics, outlined in the Design Features section, will protect water quality. Thus the project is consistent with these regulatory requirements.

Clean Air Act (CAA)

The CAA of 1977 (as revised 1991) requires the Environmental Protection Agency (EPA) to identify pollutants that have adverse effects on public health and welfare and to establish air quality standards for each pollutant. Each state is also required to develop an implementation plan to maintain air quality. The CAA (Section 110) requires states to develop State Implementation Plans (SIPS) which identify how the State will attain and maintain national air quality standards. Three elements of the Clean Air Act generally apply to management activities that produce emissions: (1) protection of ambient air quality standards; (2) conformity with state implementation plans; and (3) protection of visibility in Class 1 airsheds. Burning activities will be coordinated through the Montana/Idaho Airshed Group to ensure compliance with the CAA.

National Historic Preservation Act (NHPA)

Section 106 of the NHPA directs all Federal agencies to take into account the effects of their undertakings (actions, financial support, and authorizations) on properties included in or eligible for the National Register. Heritage resource surveys have been completed for all units/areas where activities are proposed or where other disturbance may occur. The project is not expected to have any effects on heritage resources because there are no known sites eligible for the National Register of Historic Places. The Montana State Historic Preservation Office has

concurred with these findings. Recognizing the potential exists for unidentified sites to be encountered or disturbed during project activity, standard provisions for their protection will be included in the contract to implement this project. These provisions will allow the Forest Service to unilaterally modify or cancel a contract to protect heritage resources, regardless of when they are identified. This provision will be used if a site is discovered after project activities have begun. This project is in compliance with the Region 1 programmatic agreement with the State Historic Preservation Office and the Advisory Council on Historic Preservation.

Healthy Forest Restoration Act (HFRA)

Passed in December 2003, the HFRA provides improved statutory processes for hazardous fuel reduction projects on certain types of at-risk National Forest System and Bureau of Land Management lands and also provides other authorities and direction to help reduce hazardous fuel and restore healthy forest and rangeland conditions on lands of all ownerships. The Agriculture Act of 2014 (or Farm Bill) was signed into law on February 7, 2014. Section 8204 of the Farm Bill amends Title VI of the HFRA by adding section 602 (Designation of Treatment Areas) and section 603 (Administrative Review) to address qualifying insect and disease infestations on National Forest System lands. This project is in an area designated as part of an insect and disease treatment program and meets the limitations and requirements for using the categorical exclusion created under Section 603, Title VI of HFRA. (Also see previous discussion under *Applicable Categorical Exclusion* section.)

Environmental Justice Executive Order

On February 11, 1994, President Clinton signed Executive Order 12898 requiring each Federal agency to achieve environmental justice as part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority and low-income populations. The transparent, non-exclusive collaborative process used to develop this project, as well as consultation with tribes, ensured fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. No environmental justice issues were identified for this project as it is not expected to lead to disproportionately high and adverse impacts on minority or low-income populations.

Figure 16: View of the Shields River Valley from the project area

ADMINISTRATIVE REVIEW OPPORTUNITIES

Decisions that are categorically excluded from documentation in an Environmental Assessment (EA) or Environmental Impact Statement (EIS) are not subject to an administrative review process (pre-decisional objection process) (Agriculture Act of 2014, Subtitle A, Sec. 8006).

IMPLEMENTATION DATE

The project is expected to start implementation in the summer of 2017.

CONTACT

For additional information concerning this decision, contact:

Tera Little, Project Team Leader, Northern Region, 650 Wolfpack Way, Kalispell, MT 59901, 406-758-5357; or

Alex Sienkiewicz, District Ranger, Yellowstone Ranger District, 5242 Highway 89 South, Livingston, MT 59047, 406-823-6066.

Mary C Erickson

January 6, 2017

Mary C. Erickson

Forest Supervisor, Custer Gallatin National Forest

APPENDIX A: DESIGN FEATURES, MITIGATION MEASURES & REQUIRED MONITORING

The following design features and mitigation measures are included in the decision and they provide for consistency with the Forest Plan and other laws, regulations, policy or guidance, and/or they minimize potential impacts to the applicable resources.

Design Features

Aquatics (Hydrology & Fisheries)

1. All work will comply with Montana Streamside Management Zone (SMZ) Law and Rules:
    a. SMZ boundaries will be defined as: 50 feet from the ordinary high water mark (OHWM) for Class 1 and 2 streams. For slopes >35%, the SMZ boundary will extend to 100 feet. Specifically, this 100 foot extension includes a portion of the southern boundary of Unit 1F along Smith Creek, a portion of the southern boundary of Unit 10 along Deep Creek, and a portion of Unit 15 along Turkey and Scofield Creeks. For Class 3 streams the SMZ is 50 feet regardless of slope.
    b. Tree retention guidelines in SMZs will follow SMZ Rule #5. Additionally, a fisheries biologist or hydrologist will work with the marking crew to designate leave trees. The purpose is to retain any trees outside of the riparian area that are tall enough to be recruited to the channel and floodplain and that are leaning in the proper direction.
    c. Ground-based equipment will be prohibited from entering SMZs without the appropriate variance from Montana DNRC (Dept. of Natural Resources & Conservation) (SMZ Rule #4).
2. No treatment will occur within those areas meeting a functional definition of a riparian zone (See Figure 1). This includes areas within the hydrologic zone of influence of streams characterized by riparian vegetation.
    a. Riparian areas will be delineated on all streams by a Forest Service fisheries biologist or hydrologist. Streams are defined as, “a natural water-course of perceptible extent that has a generally sandy or rocky bottom or definite banks and that confines and conducts continuously or intermittently flowing water.”
    b. Riparian zones for streams with relatively wide floodplains may be wider than the SMZ.
3. No trees will be cut within 15 feet of the OHWM along any stream.
4. Additional mitigations:
    a. Generally, there will be no fuel storage, mixing of fuels, or refueling equipment in riparian areas. If there are no alternatives, refueling in riparian areas may occur, but must be pre-approved by the fisheries biologist or hydrologist, and have an approved spill containment plan.
    b. Temporary roads will not enter riparian areas except where necessary to cross streams or wetlands with appropriate permits (Gallatin National Forest Travel Plan Standard E-5).

Botany

5. Where possible, retain incidental occurrences of whitebark pine in units.
6. To the extent possible, avoid or minimize detrimental impacts to sensitive plant populations and their associated habitat. Plant- and site-specific mitigation measures would be implemented in areas with known sensitive plant populations proposed for management activities.
7. Any changes to the proposed action that may occur during layout would be reviewed by a botany coordinator, and rare plant surveys would be conducted as necessary prior to project implementation. Newly documented occurrences would be evaluated, with specific protection measures implemented to protect population viability. Such measures could include the following:
    a. Dropping units from harvest activity;
    b. Modifying unit boundaries to provide adequate buffers around documented occurrences, as determined by a botany coordinator;
    c. Modifying harvest methods, fuels treatment or logging systems to protect rare plants and their habitats; and/or
    d. Implementing, if necessary, Timber Sale Contract provisions B6.24, Protection Measures Needed for Plants, Animals, Cultural Resources, and Cave Resources; C6.24#- Site Specific Special Protection Measures; and B8.33, Contract Suspension and Modification.

Fire/Fuels

Post-Harvest Fuel Treatments

8. Fuel breaks shall be created around treatment units that will have prescribed fire treatment following harvest activities; this should include removal of all vegetation material greater than 3 inches in diameter on the large end and 4 feet long or longer in length for a distance of 15 feet from the center of the fuel break. This slash will not be piled or windrowed but either removed from site or scattered so as not to concentrate slash around perimeter of fuel break. All species over 4 feet in height not meeting minimum diameter specifications that are damaged beyond recovery by operations shall be cut and slashed within 18 inches of the ground and bucked into lengths shorter than 4 feet.

The following are recommended specifications for pile construction with the use of mechanized equipment:

9. For activities accomplished with a service contract, identify firewood gathering areas and stage residential/commercial firewood products in these areas prior to piling. This will limit piles being torn apart from firewood gathers and promote more efficient usage of solid material. Firewood products shall be placed at least twice the pile diameter away from any piles to avoid ignitions from burning of pile slash. (This design feature will not apply to timber sale or stewardship contracts.)
    a. To reduce insect infestation concerns, only Douglas-fir, where the entire piece left is less than 10 inches in diameter, and lodgepole pine will be left for firewood. All

other species and Douglas-fir greater than 10 inches in diameter will be placed in burn piles.

10. Piles that are to be burned will not be located over buried utility lines. Piles should be in an area void of utility lines and shall be located at least 50 feet from residual timber.

Fireline Construction

11. Fireline will be constructed by a combination of methods including hand, mechanical (less than 35% slope), and/or explosives to 18-24" wide to mineral soil. Use of natural and existing barriers is preferred. Fireline rehabilitation associated with burning activities would be pulling back (with hand tools) the berm adjacent to the constructed line, constructing water bars as needed and where fireline intersects NFS trails consider disguising the intersections by scattering cut vegetation.

Implementation & Pre-Burn Preparations

12. Whole tree yarding may be prescribed to remove cut trees and process them for hauling. Slash remaining in treatment units will be minimal and will be concentrated at landings, where it will be machine piled and burned. In units that are not being treated with whole tree yarding, activity created fuels will need to be lop and scattered, hand or machine piled, burned and/or chipped. Slash will be left in units where it is available to meet the Forest Plan standard of 15 tons per acre; downed woody debris will not be hauled into units to meet 15 ton per acre. Prescribed burning is conducted based on weather and site specific conditions and would take place under the guidelines set forth in a prescribed fire burn plan developed specifically for this project area. Prescribed burn plans are required to address parameters for weather, air quality and contingency resources and are implemented in full compliance with the Montana Department of Environmental Quality (MTDEQ) air program with coordination through the Montana/Idaho Airshed Group.

Heritage

13. If, in connection with operations under this decision, any unanticipated historic or prehistoric resources are encountered, activities must cease in the vicinity of the find and the District Ranger and Forest Archeologist notified. Plans designed to avoid or reduce further disturbance or to mitigate existing disturbance will be formulated in consultation with the Montana State Historic Preservation Office (MT SHPO), affected tribes, and the Forest Service. The discovery must be protected until notified in writing to proceed by the authorized officer (see 36 CFR 800.100, 112:43, CFR 10.4).

14. All cultural field inventories will be completed for temporary roads, piles, and landing locations as they are finalized.

15. The Custer Gallatin NF is following Wildland Urban Interface and Large Scale Hazardous Fuels Reduction Site Identification Strategy (SIS) to address the effects that large scale, landscape level hazardous fuel reduction projects may have on cultural resources and identify measures to reduce or eliminate those effects. The SIS was approved as part of the programmatic agreement between the Forest Service Northern Region, the Advisory Council on Historic Preservation and the MT SHPO. The SIS protocol is followed for this project in compliance with the National Historic Preservation Act. Under the SIS the following measures will be taken to mitigate the effects of this

undertaking.

a. All sites within ground disturbing units will be reviewed by the Forest Archaeologist and individual treatment prescriptions assigned prior to ground disturbing activities.

b. Forest Archaeologists will be notified prior to conducting the approved cultural site treatments and will monitor all approved treatments.

c. All activity fuels will be piled outside the perimeter of all cultural sites. No mechanized equipment will be allowed to operate within the heritage site boundaries unless specifically allowed by the prescribed site treatment.

d. The Forest archaeologist will monitor the sites receiving protective treatments during project implementation and upon completion of the project to assure the preservation and protection of the heritage resources and determine the success of the proposed treatments.

Roads/Transportation System

16. Best Management Practices (BMP's) would be applied during project implementation and no permanent roads will be established.

17. Decommission all temporary constructed roads within 3 years of completion of project, to include post-harvest activities (e.g. burning, reforestation etc.).

18. Use gates, barricades, or earthen barriers to close certain roads not open to public motorized use during project implementation. Permanent barricade devices will be considered on an as needed basis when decommissioning temporary roads.

19. Implement temporary traffic control measures for public safety in accordance with Forest Service signing policy and the manual on Uniform Traffic Control Devices.

20. Restrict hauling seasonally to prevent hauling on wet/soft roadbeds. Hauling should be done when the roads are dry or when frozen in the winter.

Scenery/Visuals

Units proposed for an intermediate harvest treatment

21. Unit 18 is in an area where the assigned Forest Plan standard is Partial Retention. Parts of the north facing higher slopes and ridge top of that unit would be visible in the foreground from the area in and around the Shields River Campground, especially as some of the trees that surround the campground are lost to mortality for a variety of reasons. Some of the west-facing higher parts of units 8c and 10, for which the visual quality objective (VQO) is Modification, would be visible in the middleground from County Road 844 along the approach to the Shields River Campgrounds area. The following conditions apply to those portions of those specific units:
    a. Trees with the fullest crowns should be left as appropriate for the silviculture prescription.
    b. Trees and tree-clumps that are left should not have on-center spacing, especially on steeper, visible slopes. The goal is to avoid rigid, unnatural-appearing spacing patterns.
    c. Edges should avoid being discernibly straight with sharp corners or abrupt transitions between dense trees and open areas. To help accomplish this, a

transition zone of at least 100-200 ft. should be created so as to avoid abrupt transitions in tree density and standing and deadfall patterns.

Units proposed for regeneration harvest treatment

22. Unit 17 is in an area where the assigned Forest Plan VQO is Partial Retention. Portions of that unit would be visible in the foreground from the Shields River Campground/ Crandall Creek Rental Cabin area. Units 7a and 7c are in an area assigned a VQO of Modification and would be visible in the close middleground from parts of the dense residential area in the southwest corner of Section 6 to the west. When viewed from there, unit 7a would be juxtaposed with other existing open areas and would visually tie in with those openings. The following conditions apply especially to the upper portions and side edges of unit 17 and to the upper edges of unit 7:
    a. Link edges of units into natural meadows or existing open areas.
    b. Trees or tree clumps with full crowns should be left along the edges as appropriate for the silvicultural prescription.
    c. To avoid straight lines, edges should be irregularly shaped to the extent possible. The larger the unit, the greater the irregularity should be, with a few meanders at least 300-500 ft for larger units.
    d. To soften edges of units and avoid edges that appear like a wall of trunks, leave healthy younger trees, where possible, that are progressively taller towards the adjacent uncut forest.
    e. Stumps within 100 ft of the road in unit 17 should be no higher than 6” where possible.

Temporary Roads

23. After tree and slash removal work has been completed, the temporary roads should be re-contoured to blend with adjacent, undisturbed grades and seeded with a native seed mix appropriate for the area.

Soils

Conduct of Logging - Ground-Based Harvesting

24. Ground-based harvest systems will only be used on slopes having sustained grades less than 35 percent.

25. Require a systematic skid trail pattern during logging.

26. Lay out skid trails, when reasonable, in a manner that minimizes continuous grades steeper than 15%.

27. Avoid placing skid trails or temporary roads, when reasonable, over convex knobs or along narrow, rocky ridges. These areas, although frequently armored by surface rock, are often the least able to recover from soil disturbance.

28. Maintain an average of at least 75 feet between skid trails in partial cuts and an average of at least 100 feet in clearcuts. Skid trails may be closer than this spacing where converging so long as overall spacing averages 75 and 100 feet, respectively.

Soil Moisture Restrictions on Use of Ground Based Harvesting Equipment

29. Ground based skidding and harvesting equipment (tractors) shall be restricted to established skid trails when, in the judgement of the timber sale administrator, "wet soil conditions exist", that will result in excess soil resource damage from off trail use. Specific guideline for identifying when "wet soil conditions exist will be provided to the timber sale administrator and a soil scientist for the Custer-Gallatin national forest will be available to provide advice on soil moisture status as needed. *Criteria integrates soil texture and soil moisture effects – see USDA Technical Guide for Estimating Soil Moisture (USDA-NRCS 1998). This use is approved only to the extent needed to harvest the available timber.* Repeat passes over the same ground should be minimized.

Special Protection Areas – Meadows and Wetlands

30. Vehicular or skidding equipment shall not be used on meadows areas within Treatment Units of the Smith Creek drainage or Treatment Unit 17 in the Shields River area. Landings will not be located in pocket wetlands, associated with grassland meadows or otherwise, nor should landings be located in ephemeral wetlands adjacent to minor drainages in the treatment units noted above.

Scarification/Shallow Ripping of Disturbed Areas: Landings, Skid Trails, and Temporary Roads

31. All landings, skid trails, and temporary roads will be scarified (shallow ripped) to a depth of 4 to 8 inches in areas of obvious soil compaction or rutting due to heavy equipment trafficking during log processing, loading, and unloading as well as all portions of the slash pile area after burning. This provision may be waived in any portions of the burn pile area where very rocky soil conditions exist within the top 6 inches of mineral soil as defined in the Soil Specialist's report.

32. The ground surface after scarification, i.e. shallow ripping, shall be left in a roughened condition with mineral soil exposed to provide a suitable seedbed for seeding native plant species.

Landings

33. Prioritize landing locations to low slope forested areas or where reasonable, along old road prisms or adjacent to existing Forest Service roads.

Temporary Roads

34. Utilize existing old temporary road or jammer road prisms in lieu of creating new temporary road prisms where feasible.

35. The roadbed and fill slopes of temporary roads will be stabilized by such measures of out-sloping, drainage ditches, and water spreading ditches.

36. Temporary road cut and fill slopes will be recontoured at the completion of use except for those portions identified by the Timber Sale Administrator as unsuitable for recontouring due to very rocky material.

37. Repeat passes over the same ground should be minimized.

Course Woody Debris and Soil Productivity

38. Coarse woody debris, where available in forest stands, will be retained at an approximate

rate of 15 tons per acre (as required to meet wildlife standards in the Gallatin NF Forest Plan).

39. Logging slash creating by logging operations outside the unit boundary will be pulled back into the unit and incorporated into the slash treatment for the unit.

Winter Harvesting

40. For winter harvesting, tractor harvesting over snow or frozen ground in the winter will be limited to periods when there is a minimum of 8 inches of settled snow depth covering the ground surface or over frozen ground. Frozen ground is defined here as having the top 3 inches of mineral soil frozen. Winter harvesting must not be conducted if ponding or excessive wetness occurs at the soil surface due to partial thawing of an underlying frost layer which would result in excessive soil resource disturbance. *(See Mitigation Measures below specifying winter harvest requirements for Unit 17.)*

Soil Excavations of Limited Extent

41. There is no expectation that any soil disturbances associated with soil excavations will be associated with this project. If backhoe or dozer excavations do occur, however, they will be subject to the current *Custer-Gallatin National Forest - Best Management Practice for Soil Excavations of Limited Extent* (Keck 2012) which requires topsoil salvaging during excavation and replacement at surface at the end of backfilling.

Trails and Developed Recreation Sites

42. Trails and roads that connect to recreation sites, trailheads, and trails in the project area will be well signed to notify visitors of project activities.

    a. Avoid the use of trailheads for any timber harvesting related activities. The public must be notified via clear signage and public notice if any work will be done near trailheads or trails to avoid conflicts with recreationists or safety issues.

    b. Visitors to recreation sites (including the Shields River Campground and dispersed campsites) and rental cabins (the Crandall cabin is in the vicinity of proposed treatment units and visitors to the Porcupine cabin may be using the trail system that enters the project area) will be notified via clear signage, visitor contacts, public notices, and press releases that there may be increased noise, traffic, logging trucks, heavy equipment in the area, on forest roads and trails. Any temporary road closures or blockages must be clearly marked well ahead of time so visitors have ample time to plan their trips to the forest for recreation purposes.

43. From September 1 – November 30, hauling activities will be limited to weekdays only to accommodate increased weekend visitor use during big game hunting seasons. If there is a need to extend hauling over a weekend, the District Ranger and the district/zone recreation specialist must be consulted prior to approving weekend hauling.

44. Any temporary roads for the project would be blocked and signed to prohibit motorized or other travel by visitors during the project. All of these temporary routes would be thoroughly decommissioned within 3 years of project completion.

Vegetation

45. Prepare detailed site specific silvicultural prescriptions and marking guides incorporating

all guidance in the Forest Plan, specialist reports, and applicable laws and regulations for all treatment areas requiring vegetation manipulation.

46. The largest and healthiest trees, as appropriate for the forest type, habitat type, and old growth group will be retained to the extent that the trees promote stands that are resilient to insects and disease, fire, and changing climate. Due to strong localized winds in the Crazy Mountains, it is anticipated that some trees will blow down; therefore, more trees than necessary will be left.
    a. Harvest unit layout will consider suitability limitations on a site-by-site basis on the ground. Harvest and site preparation treatments will consider the short and long term potential negative effects (including blow down, fire mortality, etc.) of proposed activities on adjacent trees and stands with site by site prescription modifications, such as change in unit boundary.
47. If aspen are found during unit layout, follow the process to determine site favorability to support aspen and apply tools to maintain or restore aspen as identified in the Gallatin Aspen Project Decision Memo.

Weeds/Range

48. Noxious weed treatments would be conducted according to guidelines and priorities established in the Gallatin National Forest Noxious and Invasive Weed Management EIS (Environmental Impact Statement) (2005).
49. Avoid damaging sagebrush sites near recently converted sagebrush stands, especially in Smith Creek drainage.
50. Crews will inspect, remove and properly dispose of weed seed and plant parts found on their clothing and equipment during project implementation.
    a. Off-road equipment will be washed before moving into the project area to ensure that the equipment is free of soil, seeds, vegetative material, or other debris that could contain or hold seeds of noxious weeds.
    b. When working in known weed infested areas equipment will be cleaned at a washing station before moving to other Forest Service System lands which do not contain noxious weeds.
51. Avoid burning slash piles within 50 feet of main road corridors where possible.
52. Avoid piling and burning slash on weed infestations.
53. Monitor and treat for weed and cheatgrass establishment and/or spread post-treatment until populations are controlled or eradicated.
    a. Cheatgrass areas will be marked on the ground prior to any ground disturbing activities. If necessary treatment and re-seeding these areas will occur.
    b. If possible, treat moderate to heavy weed infestations 1-2 years prior to project implementation.
    c. Weed infestations within the project area or along associated travel routes will be manually controlled/removed or flagged so they may be avoided during project

implementation to the extent possible.

54. Seed all ground disturbance areas associated with temporary road construction or road corridor restoration and all shallow ripped/scarified areas at landings using an appropriate native seed mix either provided by or approved by the Custer Gallatin National Forest, after site preparation has been completed. In all cases, the ground surface should be left rough prior to seeding. Broadcast seeding is recommended. Complete weed control as needed, including, but not limited to, pre-treating any new temporary road corridors prior to road construction if weed species of concern are present. All herbicides used should be pre-approved by the Custer Gallatin National Forest.

55. After timber harvesting and any land restoration actions have been completed, skid trials will be revegetated by appropriate methods, either by seeding with a native grass seed mix where substantial bare soil exists and/or ripping has occurred or by natural recovery of native species from propagules in the soil and encroachment from plants growing adjacent to the trail. Complete weed control as needed if weed species of concern are present.

Wildlife

Sensitive Species

56. Discovery of sensitive wildlife species sites, areas, or wildlife species requiring special attention would be reported to the designated Forest representative and the district wildlife biologist. Forest Plan direction for each species will be followed as necessary (Gallatin Forest Plan, Amendment # 51).

Migratory Bird Species

57. Trees and snags with broken tops, obvious large nest structures, or cavities will be targeted for retention to meet snag management standards.

58. Surveys have been done for certain raptor nest sites (i.e. Northern Goshawk) and will continue prior to treatment in any proposed unit that particular year to determine if any changes in nesting activity have occurred. Forest Plan direction will be followed as necessary.

59. If active goshawk nests are found within the project area, no treatment will be allowed within a minimum buffer of 40 acres around known occupied goshawk nest trees; and

60. No ground-disturbing activities within known occupied post fledging area (PFA) between April 15 and August 15. The PFA is the area roughly 420 acres surrounding an active goshawk nest.

Big Game

61. Within treatment units, maintain at least two thirds of the existing hiding cover associated with key habitat features such as wallows or moist meadows and foraging areas. This will be accomplished through implementation of SMZs in riparian areas, and maintaining at least 40% canopy cover in forested habitat within 50 feet of natural meadows for at least 2/3 of the meadow perimeter.

62. In Management Area (MA) 11, restrict timber sale activities to no longer than five

consecutive years.

63. In MA 11, maintain a minimum of two years inactivity following 1-3 years of consecutive sale activity, or a minimum of five years inactivity following 4-5 years of consecutive sale activity.

Snag Dependent Species

64. Within treatment units, leave an average of 30 snags (at least 18 feet tall and 10 inches dbh) per 10 acres. If there are not sufficient dead trees meeting the size criteria, the largest available dead trees will be left as snags unless an individual tree creates an immediate safety hazard.

65. Within harvest units, designate an average of 30 live trees per 10 acres to be left as replacement snags over time. For Douglas-fir and subalpine fir on rocky or shallow soils designate 60 trees per 10 acres as replacement trees.

Mitigation Measures

The following mitigation measures are included in my decision to avoid impacts to the applicable resources.

Soils

Based on the soils analysis, existing detrimental soil disturbance levels in Unit 17 (16%) already exceed the allowable Region 1 detrimental soil disturbance levels (15%). To ensure additional soil disturbance is not created in Unit 17 during implementation, the temporary road (.2 miles) in this unit must be eliminated. Additionally, this unit can only be harvested during winter conditions.

Unit 17 will now be only 32 acres instead of 40 acres (as analyzed) and will have no temporary road. This change is reflected in the proposed action discussion above, in the tables in Appendix B and on the maps in Appendix C.

Required Monitoring

1. Monitoring would occur after burning to determine if the slashing, piling, pile burning, jackpot burning, or broadcast burning met the objectives to modify fire behavior characteristics and reach desired fuel loading in units. Monitoring will also identify areas requiring weed treatments.
2. Pretreatment of roads and equipment, as proposed in the design features, would be documented. The effectiveness of seeding disturbed areas would be evaluated upon completion of the activity. Treated areas would be surveyed and monitored according to treatment priorities established in the Gallatin National Forest Noxious and Invasive Weed Management EIS (2005).

APPENDIX B: PROPOSED TREATMENTS & TEMPORARY ROADS BY UNIT

INTERMEDIATE HARVEST UNITS

Unit	Proposed Treatment	Logging System	Acres
1b	Sanitation/Salvage/Thin	Tractor	113
1f	Thin	Tractor	126
1k	Sanitation/Salvage/Thin/Stand Improvement	Tractor	48
1l	Sanitation/Salvage/Thin	Tractor	35
2	Sanitation/Salvage/Thin	Tractor	81
4c	Sanitation/Salvage/Thin/Stand Improvement	Tractor	146
4g	Salvage/Stand Improvement/Thin	Tractor	15
5a	Sanitation/Salvage/Stand Improvement	Tractor	32
6a	Sanitation/Salvage/Thin	Tractor	61
8c	Sanitation/Salvage/Release	Hand or Machine	154
10	Sanitation/Salvage/Improvement/thin PICO patches	Tractor	114
10a	Sanitation/Salvage/Improvement/Thin	Tractor	10
10b	Thin/Stand Improvement	Hand or Machine	3
13b	Salvage/Improvement/Stand Improvement	Tractor	36
14a	Thin	Hand	12
14e	Sanitation/Improvement/Stand Improvement	Tractor or Hand	110
15a	Thin	Tractor	39
17a	Thin	Tractor	4
18	Sanitation/Salvage/Thin	Tractor	27
19a	Sanitation/Salvage/Improvement	Tractor	12
19c	Sanitation/Salvage/Improvement/Thin	Tractor	50
19d	Improvement/Salvage/Stand Improvement	Tractor	18
19e	Sanitation/Salvage/Thin	Tractor	53
19f	Sanitation/Salvage/Improvement/Stand Improvement	Tractor	8
TOTAL INTERMEDIATE HARVEST ACRES			**1309**

REGENERATION HARVEST UNITS

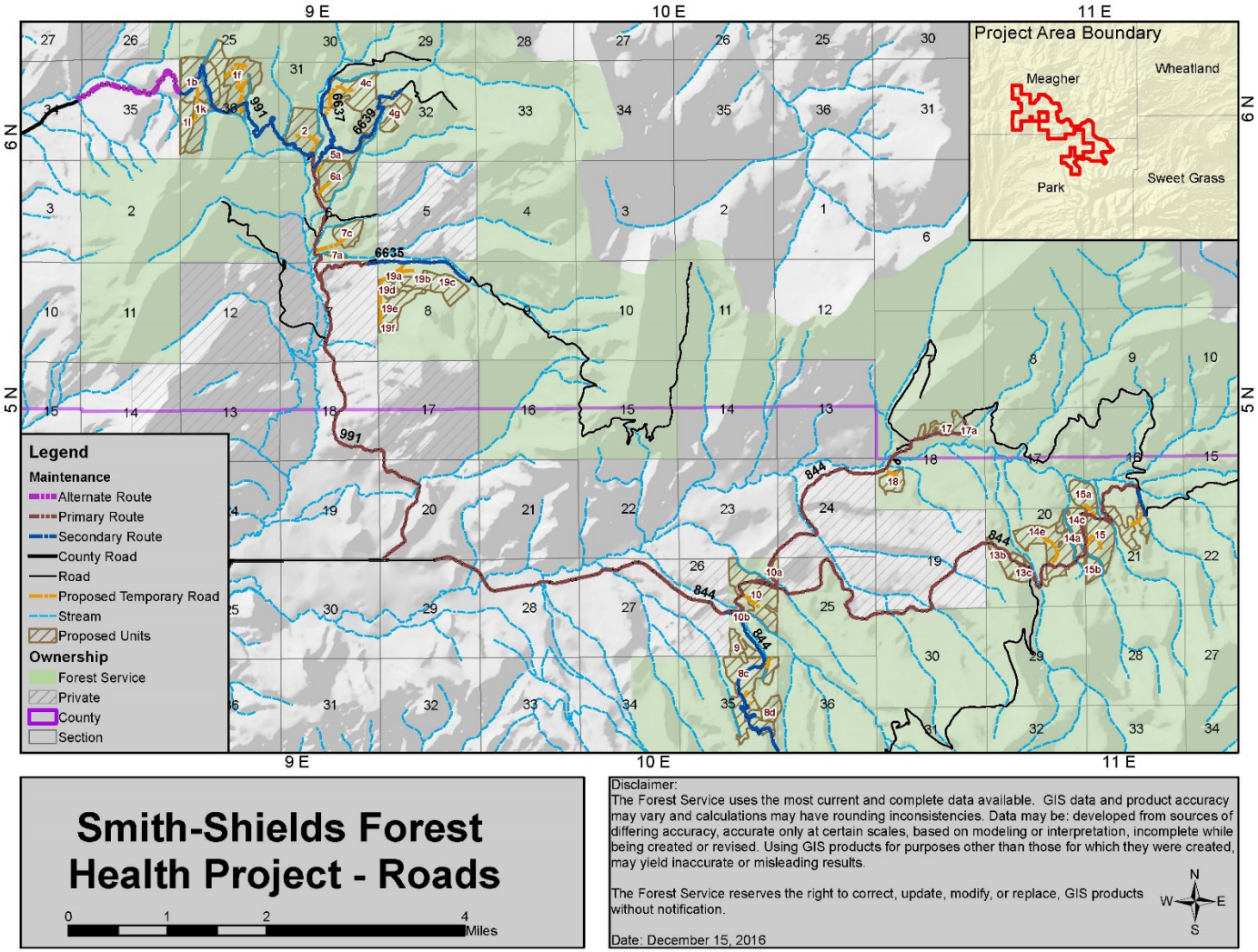
Unit	Proposed Treatment	Logging System	Acres
7a	Clearcut (CC) Whole Tree Yard (WTY)	Tractor	5
7c	CC with reserves	Tractor	35
8d	CC with reserves	Tractor	24
19	CC with reserves	Tractor	27
13c	CC WTY	Tractor	21
14c	CC WTY	Tractor	35
15b	Group Selection WTY	Tractor	20
15	CC with reserves	Tractor	78
15	CC with reserves	Tractor	33
15	CC with reserves	Tractor	18
17*	CC with reserves	Tractor	~~40~~ 32
19b	CC leaving 2+ acre patches of trees	Tractor	21
TOTAL REGENERATION HARVEST ACRES			**~~359~~ 351**

TEMPORARY ROADS

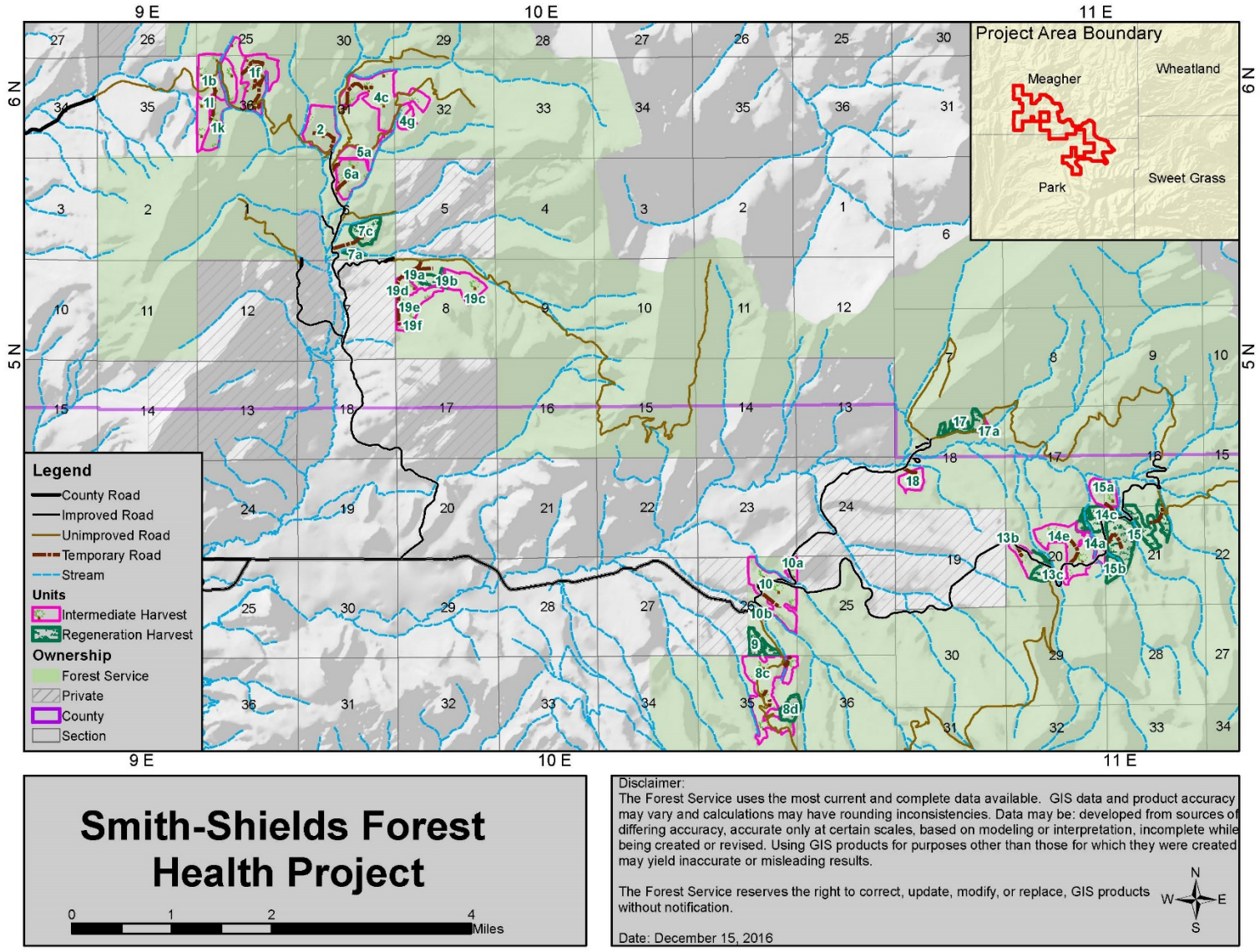
Road Management Activity	Temp Road Unit Location	Mileage
Temporary Road	1	0.4
	7	0.4
	19	0.8
	19	0.2
	6a	0.2
	6a	0.1
	2	0.4
	1f	1.0
	4c	0.5
	8c	0.1
	8c	0.1
	8c	0.2
	10	0.2
	~~17~~*	~~0.2~~
	18	0.2
	15	0.2
	15	0.3
	15	0.3
	13b	0.2
	14e	0.4
TOTAL		**~~6.4~~ 6.2**

**The temporary road was dropped in Unit 17 and acres adjusted as described in the Mitigation Measures for Soils (Appendix A).*

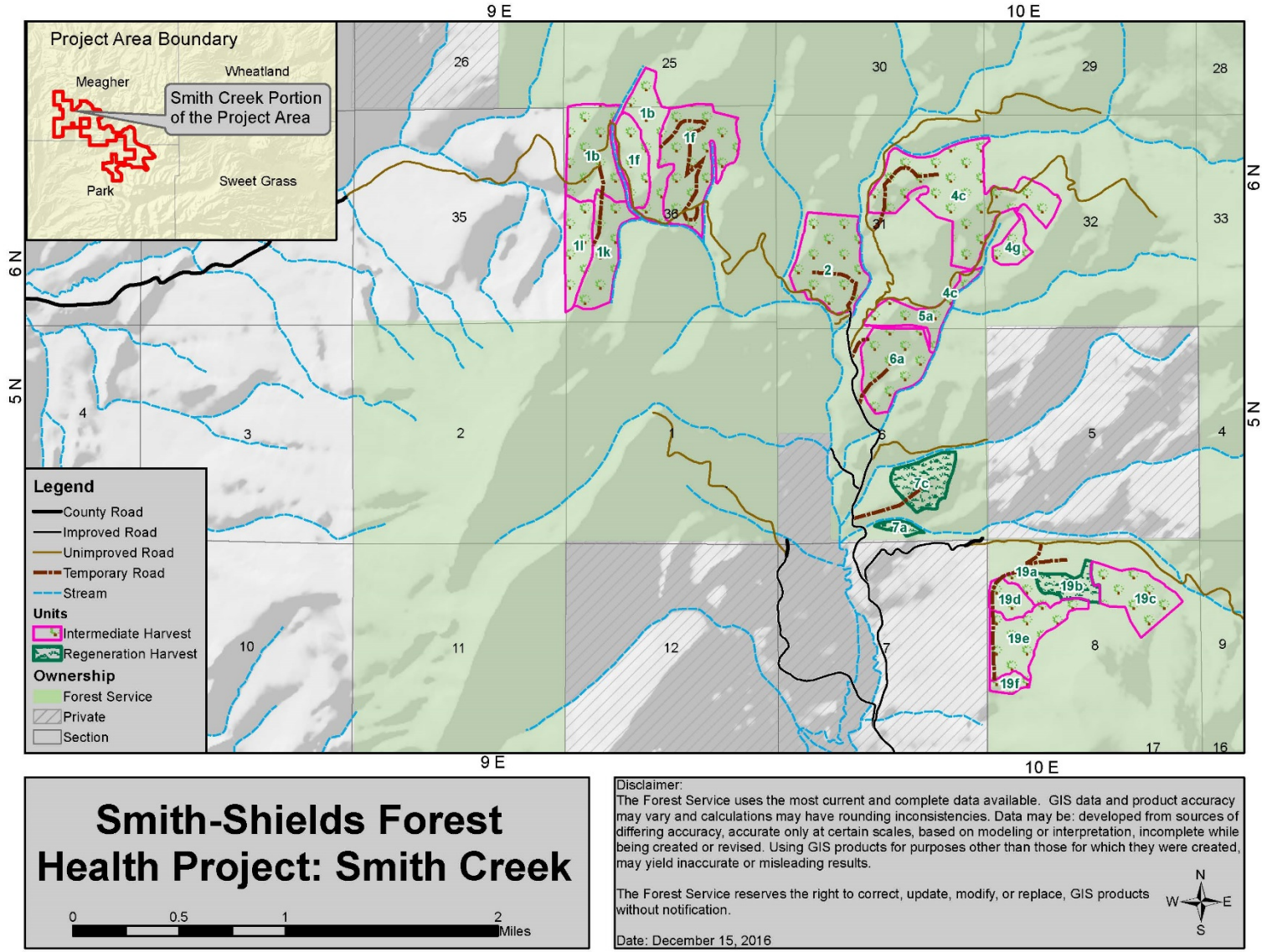
APPENDIX C: MAPS OF PROPOSED ACTIVITIES



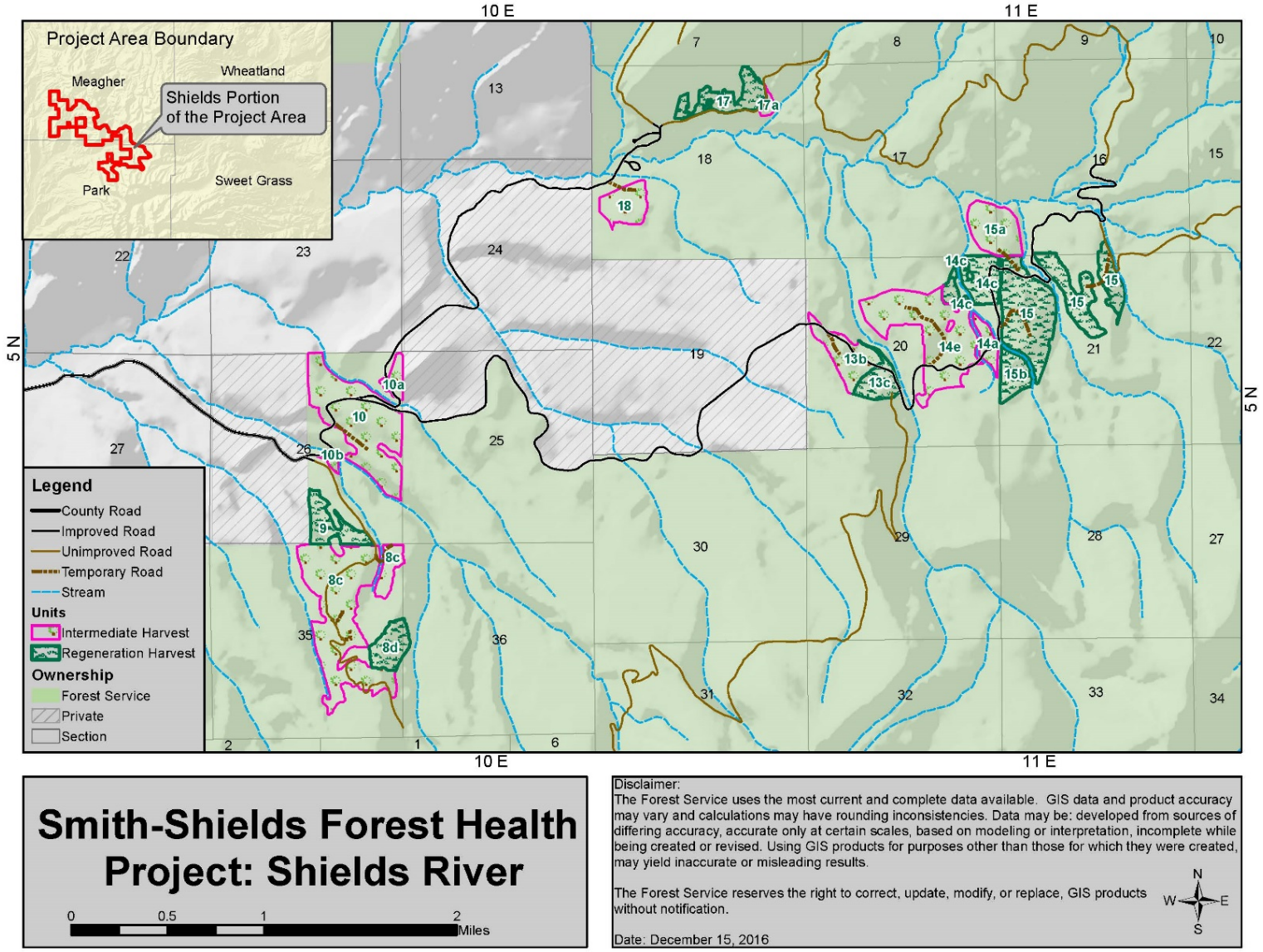
Map of road maintenance and temporary road construction included in the Smith Shields decision



Map of vegetation management activities included in the Smith Shields decision



Map of vegetation management and temporary road construction activities just in the Smith Creek area that are included in the Smith Shields decision



Map of vegetation management and temporary road construction activities just in the Shields River area that are included in the Smith Shields decision

APPENDIX D: LITERATURE CITED

Fettig, C. J., Gibson, K. E., Munson, A. S., & Negron, J. F. (2014). Cultural Practices for Prevention and Mitigation of Mountain Pine Beetle Infestations. *Forest Science*, 13-32.

Kegley, S. (2011). Douglas-fir Beetle Management. In F. H. Protection, *Forest Insect and Disease Identification and Management.* USDA Forest Service.

Oliver, C. D., & Larson, B. C. (1990). *Forest Stand Dynamics.* New York: McGraw-Hill.

Pederson, L., Sturdevant, N., & Blackford, D. (2011). Western Spruce Budworm Management. In U. F. Service, *Forest Insect and Disease Identification and Management.* USDA Forest Service.

See specialist reports on the project webpage for other references/literature cited in resource-specific analysis that supports this decision.