USDA United States Department of Agriculture | Forest Service | West Fork Ranger District | 6735 West Fork Road Darby, MT 59829

File Code: 1950
Date: September 6, 2019

Dear Interested Party,

With this letter I am inviting you to comment on the proposed Mud Creek project on the Bitterroot National Forest. Details of the comment period, the methods to comment, and a summary of proposed actions are included. Please take the time to read through the project description and provide your comments. We are committed to providing an open, transparent and inclusive process. Your input is valued and important to a successful outcome.

The West Fork Ranger District of the Bitterroot National Forest is proposing the Mud Creek project to address forest health, hazardous fuels, and road network concerns in the entire Mud Creek watershed and portions of the Nelson Lake, Little West Fork, Lloyd Creek, Lower Blue Joint and Painted Rocks watersheds areas of the Bitterroot Mountains. The project area is approximately 48,523 acres, however, most vegetation treatments will focus on the Wildland-Urban Interface (WUI).

The Responsible Official, Forest Supervisor Matt Anderson, is requesting feedback on the project during scoping to identify any potential issues you would like the interdisciplinary team to consider. The following pages provide information on the project area, how the project was developed and details what actions are being proposed.

In order for your scoping comments to be reviewed and considered in a timely manner, we ask that you **please submit comments within 30 calendar days following the date of signature on this letter. Comments specific to the proposed action that identify a cause-effect relationship are most helpful.** Comments received in response to this solicitation, including names and addresses of those who comment, will be considered part of the public record for this project and will be available for public inspection. Additional information on how to submit comments is included in the Scoping Process and How to Comment section below.

Sincerely,

Seth A Carbonari

SETH CARBONARI
District Ranger

Project Location

The Mud Creek project is located on the West Fork Ranger District immediately downstream of Painted Rocks Reservoir (see map at end of document). The project area boundary consists of the entire Mud Creek watershed and portions of the Nelson Lake, Little West Fork, Lloyd Creek, Lower Blue Joint and Painted Rocks watersheds. The project area is 48,523 acres which includes 1,897 acres of private land and 166 acres of State lands. No treatments would be conducted on private or State lands are part of this project. There are 236 parcels of private land with 175 structures within or immediately adjacent to the project area[1]. Thirty-five percent (17,171 acres) of the project area which includes private property is considered WUI, as defined by the Bitterroot Community Wildfire Protection Plan. Seventy-three percent (35,486 acres) of the project area has been identified as Community Protection based on results of the 2016 Bitterroot Wildfire Risk Assessment. Community Protection shows areas of the Bitterroot National Forest that if a fire were to start, have greater than four percent probability of reaching private land and impacting those communities or inholdings. Even though vegetative treatments will be primarily focused within the WUI and Community Protection, the project area boundary was left larger to incorporate other resource opportunities (Fish Habitat, Recreation & Watershed Function) that are spread out. Management Areas (MA), as described in the Bitterroot National Forest Management Plan, include MA 1, MA 2, MA 3A, MA 5, and MA 8A.

Management Area	Management Goals
1	Emphasize timber management, livestock and big game forage production, and access for roaded dispersed recreation activities and mineral exploration. Assure minimum levels for visual quality, old growth, and habitat for other wildlife species.
2	Optimize elk winter ranger habitat using timber management practices. Emphasize access for mineral exploration and roaded dispersed recreation activities. Provide moderate levels of visual quality, old growth, habitat for other wildlife species and livestock forage.
3A	Maintain the partial retention visual quality objective and manage timber. Emphasize roaded dispersed recreation activities, old growth, and big game cover. Provide moderate levels of timber, livestock forage, big game forage and access for mineral exploration.
5	Emphasize motorized and non-motorized semi-primitive recreation activities and elk security. Manage big game winter range to maintain and enhance big game habitat. Manage existing road corridors to provide recreation access.
8A	Manage at the minimum level, but protect timber, soil, water, recreation, range and wildlife resources on adjacent management areas. Maintain existing uses and facilities.

Need for the Project

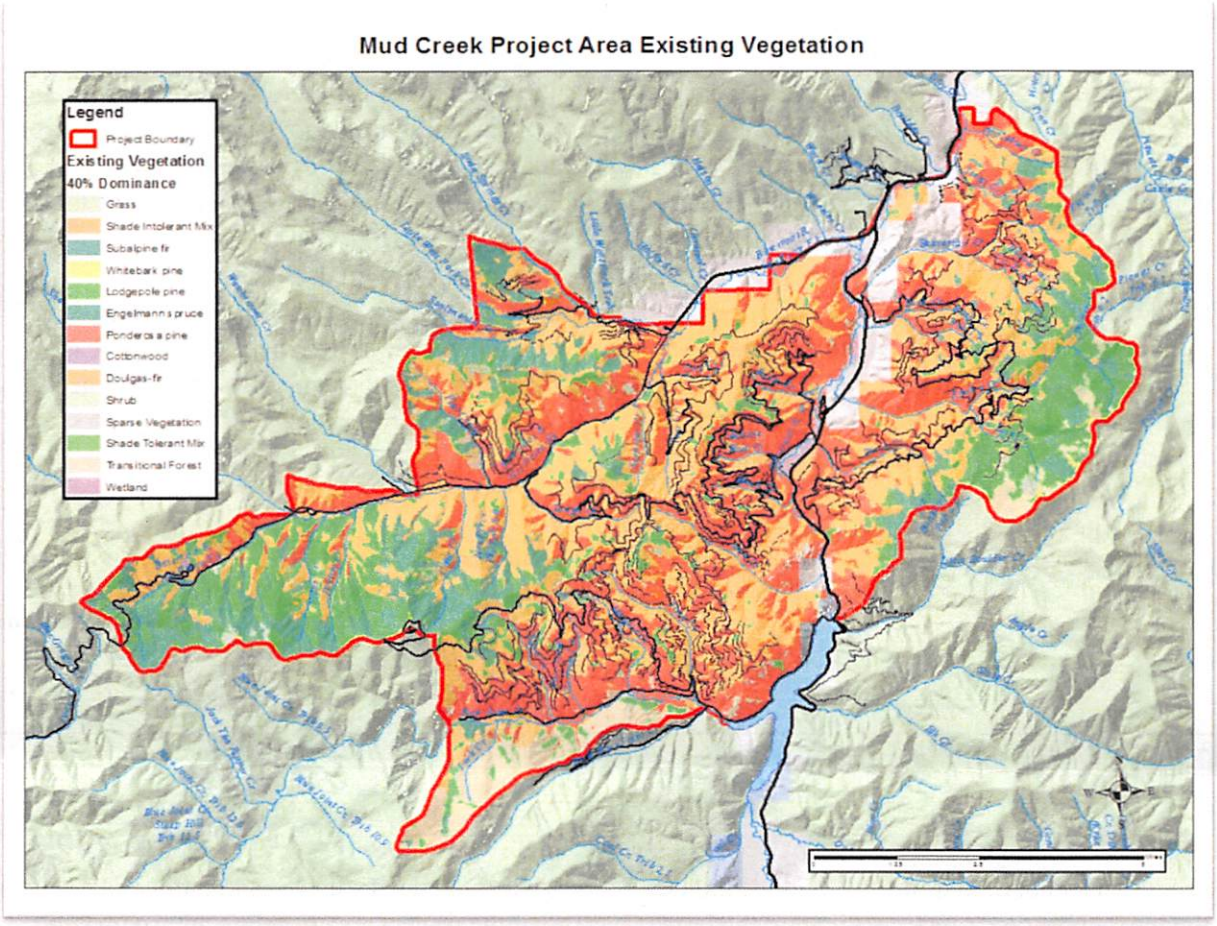
Project Area Vegetation Composition

The Mud Creek project area is made up of a variety of vegetation cover types. Cover types are identified through the USFS Northern Region Existing Vegetation Mapping Program (VMap) and are categorized by the species with the greatest dominance[2]. The existing mapped vegetation with 40% or greater

[1] Private property and structure estimates are based on 2017 Ravalli County tax records.

[2] Dominance refers to the species with the greatest abundance of canopy cover, basal area, or trees per acre within an area

dominance in the Mud Creek project area is provided below (Map 1). The mapped existing vegetation is further grouped into the following USFS Region 1 Cover Types (Table 1).



Map 1. Spatial arrangement of vegetation cover type for the Mud Creek project area.

Table 1. Vegetation cover type for the Mud Creek project area.

Cover Type (40% Dominance)	**Acres**	**Percent of Analysis Area**
Dry Douglas-fir	17,946	38.6%
Ponderosa pine	13,428	28.9%
Lodgepole pine	5,910	12.7%
Spruce/fir	5,510	11.8%
Transitional Forest	1,856	4.0%
Mixed Mesic Conifer	754	1.6%
Grass	384	0.8%
Non-Vegetated	355	0.8%
Hardwood/Cottonwood	212	0.5%
Mesic Shrub	78	0.2%
Whitebark pine	71	0.2%
Total Acres	**46,505**	

Departure from Historic Fire Regime

Natural disturbances, such as fire, insects, and disease, play a significant role in shaping the forest vegetation and each cover type responds differently to disturbance. Biological and physical conditions drive successional processes in forest vegetation communities that result in a mosaic pattern across the landscape made up of different age-classes, stand structure, and species composition. The primary historical fire regimes[3] within the assessment area had short to moderately short fire-free intervals, and were not typically stand replacing fires. Examining fire scars across multiple locations on the Bitterroot National Forest, Arno (1976) found an average fire-free interval of 11-16 years in ponderosa and Douglas-fir and 16-27 years in Douglas-fir, lodgepole pine dominated sites during the period of 1734-1889.

The departure from the desired historic conditions within the assessment area is especially pronounced within Fire Regimes I & II where, based on Arno's research, the mean fire free period was 19 years (Table 2). Over the past 129 years, only approximately 4% of the acres that should have experienced multiple fires have even burned once. This departure from natural disturbance patterns has led to major changes in fuels and vegetation composition.

Table 2. Fire regime data for the Mud Creek project area.

Fire Regime Group	Total Acres by Fire Regime	Percent of Project Area	Acres Burned 1889-2018	Missed Fires (Mean Fire Free Period)	Percent of Acres Burned vs Historical Regime 1889-2018
I (0-35)	33,279	69	8,370	6.8 (19 years)	4%
II (0-35	2,743	6	482	6.8 (19 Years)	3%
III (35-100)	5,432	11	2,054	4.6 (28 years)	8%
IV (35-200)	6,776	14	3,769	3.9 (33 years)	14%
V (200+)	227	<1	65	3.9 (33 years)	7%

The warm and dry environments include the Dry Douglas-fir (Douglas-fir and Shade Intolerant Mix) and ponderosa pine cover types making up the largest portion of the project area (totaling approximately 68%). The Warm and Dry vegetation types are often found at lower elevations and on warm and dry southern and western aspects. These forests types are currently dominated by ponderosa pine and Douglas-fir. Without fire as a natural disturbance, the species composition is shifting from historically dominated fire dependent and fire tolerant ponderosa pine to a higher percentage of Douglas-fir, a less fire tolerant species. Without frequent low intensity wildfire (0-35 years), young Douglas-fir have regenerated in the understory and are competing with ponderosa pine and often prevent the successful regeneration on ponderosa pine seedlings.

[3] A fire regime describes how fire naturally functioned in terms of extent, severity, and frequency in a particular place.

The most impactful changes to stand structure and composition affecting fire behavior within Mud Creek have been increases in small to medium-sized, shade tolerant conifers that are sensitive to fire and increases in surface fuel loadings due to insect activity and the disruption to the natural fire cycle (Photo 1). High densities of shade tolerant tree species in the understory lower crown base heights and link surface fuels to crown fuels. These understory trees act as ladders that allow fire to burn into the overstory tree crowns. Higher surface fuel loads increase flame lengths that further aid in transitioning a surface fire into a crown fire. Crown fire behavior is also outside the range of variability for the majority of these vegetation types based on fire regime groups. With the current vegetation conditions in the project area, the risk of losing key ecosystem components is moderate to high. Crown fire activity reduces the effectiveness of fire suppression efforts and compromises the safety of firefighters and the public.


Photo 1

The cool and moist settings include the Lodgepole pine, Spruce/fir (Engelmann spruce and Subalpine fir), and Mixed Mesic Conifer (Shade Tolerant Mix) cover types making up approximately 26% of the project area. Cool and moist vegetation types are typically found at higher elevations and/or on northern and eastern aspects. The forest vegetation in these areas are often made up of a mix of some or all of the above species. Historic fire return intervals in these stands were less frequent (35-100 years) and vary in fire intensity from low to high intensity. These tree species are less fire tolerant than the warm and dry species with some species displaying little to no fire tolerance and therefore naturally experience high levels of mortality or stand replacing fire. Over time, species composition in these stands often shift from Douglas-fir and lodgepole pine dominance to a higher component of subalpine fir. Stand densities increase as more shade tolerant trees continue to regenerate on site leading to dense multistoried stands (Photo 2). While these wetter sites are naturally capable of supporting more trees, stand densities have continued to increase leading to conditions favorable for insects and disease that thrive in multistoried conditions. Fewer fires have led to less diversity in stand ages and successional stages across the landscape. Without the varied patch size and patterns historically created by fire across the landscape, wildfires are burning with greater intensity over larger areas and insects and diseases are able to spread further with the increase in older and denser stands.


Photo 2

The departure from historic fire conditions also has implications for wildlife. Extended fire return intervals contribute to conifer encroachment in meadow habitats across the landscape. These habitats are important areas for wildlife species such as elk, mule deer, moose, and numerous songbirds. In addition, the shift in species composition and subsequent high densities of shade-tolerant understory species can limit the availability and distribution of forage for large ungulates. Natural fire regimes in the warm and dry environments that maintain or reduce tree densities allow for more sunlight to hit the forest floor and thus increase forage production and availability for big game in winter range.

Insect and Disease Disturbance

Forest insects and diseases are also disturbance factors that can dramatically alter the structure, composition and age class distribution. Douglas-fir beetle and western spruce budworm are actively present in the project area at minimal or moderate levels while the signs of past mountain pine beetle mortality is readily available. The Region 1 Forest Insect Hazard Rating System[4] has developed hazard ratings to aid in identifying stands that are risk for significant insect activity (Table 3). As seen in the table below, approximately one third of the project area is at a moderate to high hazard rating for at least one of the three commonly found insects.

Table 3. Hazard rating for insects in the Mud Creek project area based on USFS Region 1 Forest Insect Hazard Rating System.

Insects	Moderate Hazard Rating (% of Project Area)	High Hazard Rating (% of Project Area)
Douglas-fir Beetle	28%	2%
Western Spruce Budworm		33%
Mountain Pine Beetle	26%	12%

Dwarf mistletoe is also impacting Douglas-fir in the project area (Photo 3). Dwarf mistletoe is a parasitic plant that depends on a living host for water and nutrients. The witches brooms found in the tree canopies divert the nutrients to the mistletoe plant and reduce the amount of available nutrients to the rest of the tree. Eventually this drain in nutrients leads to a slow death starting from the top down. Severe infestations cause growth loss and cause the tree to be predisposed to attack by other insects or diseases. Additionally, witches brooms are highly flammable and increase fire risk and intensity within a stand.


Photo 3

Project Area Road Network

The Mud Creek project areas has an extensive road network. Current open road densities range from 0.6 miles / sq. mile in the Little West Fork watershed (for the portion of watershed within the project area) to 4.9 miles / sq. mile in the Lower Blue Joint watershed. A survey of project area roads was completed during the summer 2018 by U.S. Forest Service staff to determine on-the-ground conditions of each road segment and provide data to facilitate management decisions. Undersized culverts, unstable soils or road beds, culverts not functioning correctly (e.g. barrier to fish passage), erosive sites, vegetative condition, closure type, and evidence of motorized or non-motorized use were noted along with recommendations for possible repairs to eliminate or reduce impacts to streams. Field surveys indicated road conditions were largely dictated by geologic setting. Roads located in areas of mixed volcanic soils tend to be hydrologically stable and show fewer areas of sediment erosion from the road surface (Photo 4). Whereas roads with higher amounts of sediment erosion from the surface tend to be in areas with general granitic soils (Photo 5).

[4] Hazard ratings are determined based on the key stand characteristics desirable to each insect including species composition, tree size, stand age, and density.

Photo 4: Road in Lower Blue Joint watershed showing hydrological stable conditions.

Photo 5: Road in Nez Perce Fork – Nelson Lake watershed with areas of surface erosion.

As part of the Mud Creek project, a roads analysis will be completed. A roads analysis is required under the following conditions: "When proposed road management activities would result in changes in access, such as changes in current use, traffic patterns, and road standards, or where there may be adverse effects on soil and water resources, ecological processes, or biological communities (road construction, reconstruction, and decommissioning), these decisions must be informed by roads analysis (FSM 7712.1) except as provided in section 7712.13c." *(36 CFR Part 212, FSM 7712.13)*. The roads analysis includes a risk:benefit matrix evaluating resource protection and management needs to help inform a proposed status (e.g. maintain open, store, decommission) for each road segment within the project area.

Desired Conditions following Treatment

The desired future condition for the project area is to maintain a diversity of forested, non-forested, and other native vegetative types that are resilient to ecological processes that frequent the area. These community types are those listed in Table 1 above.

Vegetation/Silviculture – At the landscape scale, the desired future condition is a mosaic and diverse landscape that is adaptable and resilient to natural disturbances such as insects, disease, fire and climate variability. The current forest conditions are not as resistance and resilient to disturbances as they historically were. While the project area is highly variable and treatments will be site specific, the desired results following treatment would be:

- Species compositions dominated by early seral species such as the more fire tolerant ponderosa pine.
- Lower stand densities to improve tree health and vigor and increase resilience to insects and disease.
- Stand structure that reduces the spread of insects, disease and fire.
- Appropriate species and age class diversity at the landscape scale.
- Varied patch size and patterns across the landscape to allow natural disturbance processes to take place at smaller scale as historically occurred.

Fire – Treatments that include surface fuel reduction, particularly by prescribed burning, are well supported for moderating potential wildfire behavior in both long-needle pine and mixed conifer forests. Research indicates the most appropriate fuel treatment strategy is often thinning (mechanical treatments that remove ladder fuels and decrease crown density) followed by piling and burning fuels, and prescribed

fire. These treatments would provide maximum protection from severe fires in the future (Peterson 2005). Additionally, to achieve desired effects in tempering fire behavior at a landscape scale, land managers must apply optimally placed treatments at a rate of 1% to 2% on their land base per year (Finney 2008). Overtime, prescribed fire would continue to be used to maintain the desired conditions of this fire-dependent ecosystem. Following implementation, the desired results would be:

- Less acres of crown fire behavior within the WUI, Community Protection and in low/mixed severity fire regimes.
- Vegetation and fuel conditions similar to those of historic fire regimes.
- A reduced risk from wildfire to firefighters, the public and adjacent private lands within the project area.
- Fire is restored as a natural process on the landscape necessary to maintain desired conditions.

Wildlife Habitat - Treatments across the project area have well-documented beneficial effects to wildlife when combined with appropriate design features to minimize impacts to T&E or sensitive species. Following implementation, the desires results would be:

- Increased forage and nutritional quality, and escape/security habitat, for the Painted Rocks bighorn sheep population.
- Increased forage and nutritional value for big game species in winter range through fuels treatments, prescribed burning, and invasive weed control.
- Reduced conifer encroachment in meadow habitats to restore increase forage and nutritional value for big game species and important song bird breeding and rearing habitat.
- Preserve and/or increase current old growth distribution across the landscape to provide habitat for important wildlife species such as Flammulated Owl, Lynx, Fisher, and Wolverine.
- Preserve and/or increase elk habitat effectiveness and/or elk security habitat through appropriate travel management restrictions.

Project Purpose and Need

The Mud Creek project will have three main focal areas: 1) the departure from historic disturbance regimes and subsequent existing vegetation and fuel conditions, 2) conditions related to the current road network, and 3) a programmatic forest plan amendment related to elk habitat objectives.

- **Improve landscape resilience to disturbances (such as insects, diseases, and fire) by modifying forest structure and composition, and fuels.**

  The departure from historic fire regimes within the project area has created forest stands characterized by high stem densities, hazardous fuels build up, stressed tree condition, and a loss of meadow habitat area and quality. The results are forest stands with high surface and ladder fuels, susceptibility to uncharacteristic fire behavior, and at risk to future insect outbreaks. Meadow habitats are experiencing a reduction in size through conifer encroachment and quality through lack of fire necessary to stimulate forbs and grasses.

  - There is a need to reduce crown fire hazard potential within the Wildland-Urban Interface, adjacent community protection zone and low severity fire regimes.
  - There is a need to reduce stand densities, increase age class diversity and favor shade intolerant species to promote resilience to stressors (e.g. drought, insects, and diseases).

- There is a need to improve habitat and forage quality and quantity for bighorn sheep, mule deer, elk, and other regionally sensitive species.

- **Design and implement a suitable transportation and trail system for long-term land management that is responsive to public interests and reduces adverse environmental effects.**

  The project area currently has one of the highest road densities found on the Bitterroot National Forest. Field surveys have identified some road segments in need of maintenance and repair to address resource concerns (e.g. watershed health). Some third order drainages currently exceed Bitterroot Forest Plan road density standards for elk habitat effectiveness. And opportunities exist to designate new motorized and non-motorized trails and make on-the-ground conditions compatible with road travel status in the Bitterroot Travel Management Plan.

  - There is a need to implement road improvements and BMPs to address chronic sediment sources to improve water quality and fish habitat.
  - Where road segments are not needed for future management, there is a need to decommission road segments to reduce road densities and improve elk security.
  - There is a need to address discrepancies (e.g. gated roads designated as open) between on-the-ground road conditions and travel status in the Bitterroot Travel Management Plan.
  - There is a need to provide for additional recreational opportunities, by creating motorized and non-motorized trail opportunities when resource concerns can be mitigated.

- **Conduct a programmatic Forest Plan amendment related to elk habitat objectives.**

  The 1987 Forest Plan contains several standards pertaining to elk habitat effectiveness, thermal cover, and hiding cover, collectively referred to as Elk Habitat Objectives. The science behind implementing the Elk Habitat Objectives is based on guidance from the 1970's as well as direction from Lyon et al. (1983). The guidance provided by Lyon et al. was misapplied within the Forest Plan creating a situation where the elk habitat effectiveness standard is not met under the existing condition in most third order drainages. This has necessitated the need for a project-specific amendment for elk habitat objectives for each project. A programmatic forest plan amendment will address the discrepancy between more recent scientific literature related to elk habitat effectiveness and the Forest Plan.

Proposed Actions

Broad-scale Modeling

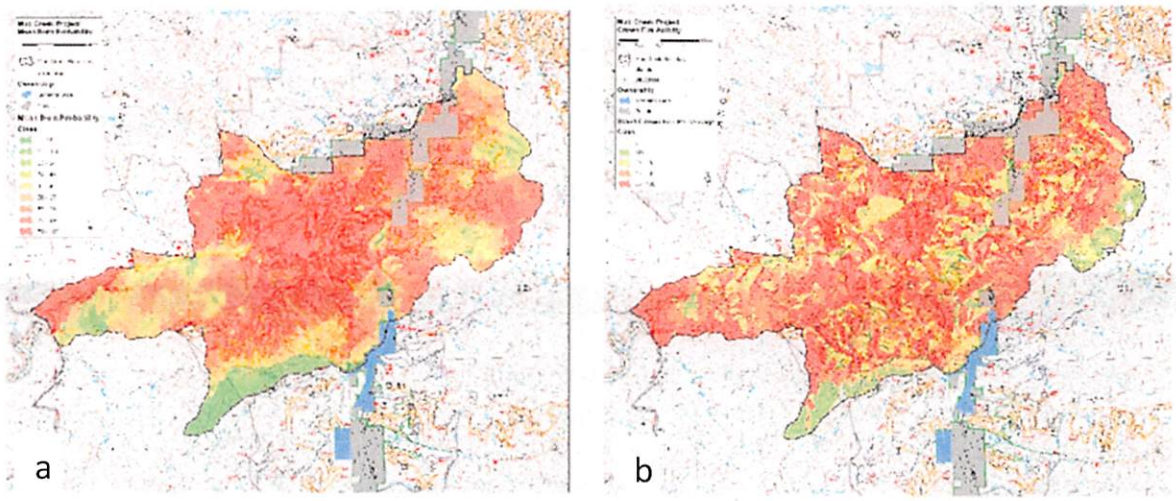
Areas for fuels, vegetation and wildlife habitat treatments were initially determined through broad-scale modeling during the Overwhich Mud National Forest Management Act assessment. Fuels modeling used four primary criteria to identify areas for priority treatment: (a) burn probability[5], (b) crown fire

[5] Burn probability is the probability that a wildfire will burn a given acre during a single calendar year.

percentage[6], (c) distance to structures, and (d) ignition density weight[7]. Vegetative conditions were modeled through querying the Region 1 VMap database and focused on the following questions:

- Shade tolerant species are encroaching or outcompeting ponderosa pine (basal area (BA)[8] greater than 50 BA).
- Ponderosa pine or lodgepole pine are at risk to density induced mortality (BA greater than 50 BA).
- Western spruce budworm hazard is high.
- Douglas-fir beetle hazard is moderate to high.
- Mountain or western pine beetle hazard is moderate to high.
- Whitebark pine is present.

Wildlife habitat modeling queried existing spatial vegetation datasets and past treatment databases to identify areas where active vegetation removal (i.e. thinning and timber harvest) would benefit habitat conditions, where supplemental planting of vegetation beneficial to wildlife may be needed, and where road decommissioning would improve wildlife security. Modeling results were ranked and prioritized to generate a forest-wide layer of habitat improvement potential.

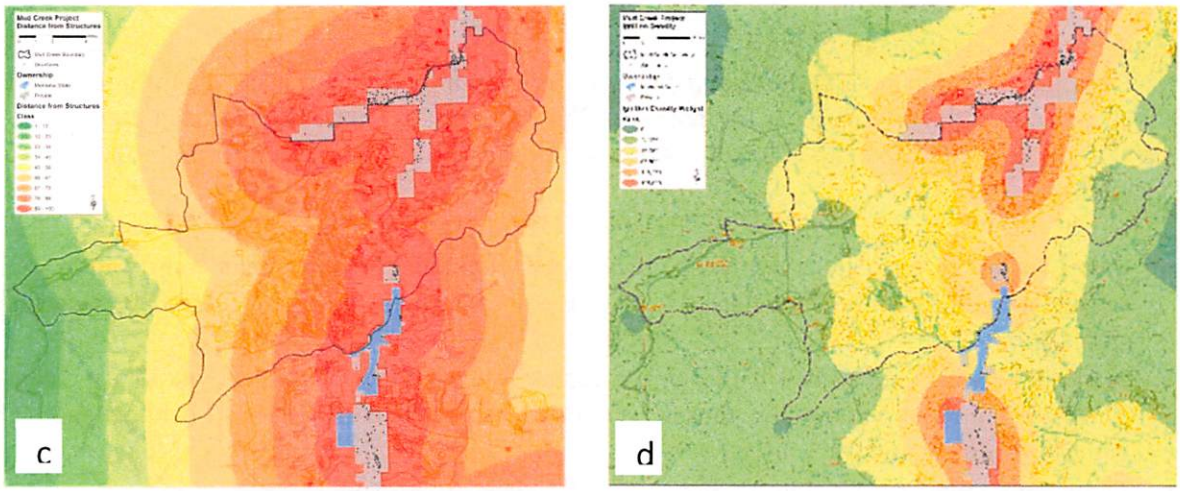


Fuels modeling outputs for the Mud Creek project area.

[6] Existing condition fire behavior was modeled for the project area using severe burning conditions (ERC 97%). This generated the potential fire type across the project area and was used to calculate the percentage of each stand with the potential for crown fire.

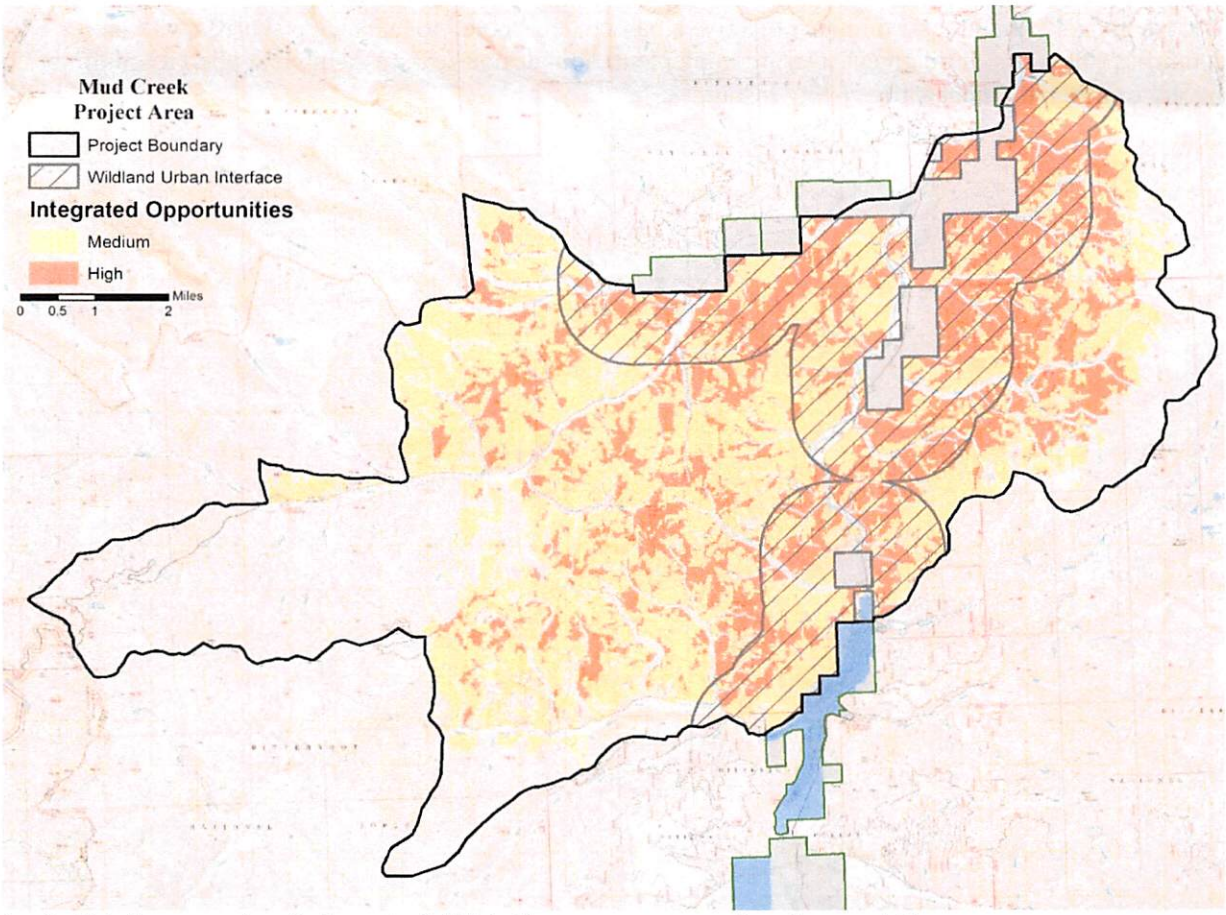
[7] An additional weighting was added to stands based on their location within the Ignition Density-Community Protection layer.

[8] Basal area is a term used to describe the average amount of an area occupied by tree stems. Basal area is defined as the total cross-sectional area of all stems in a stand measured at breast height. Basal area is usually expressed as square feet / acre.



Fuels modeling outputs for the Mud Creek project area.

Fuels treatment priorities were identified and rated based on the interaction with the above criteria. Areas classified as High and Moderate had the strongest correlation and were combined with vegetation and wildlife habitat modeling results to identify focal areas for implementing proposed treatments (Map 2). A suite of forest management and fuels reduction activities will be applied to these priority areas to move towards creating a landscape resilient to fire, insect and disease-related disturbances.



Map 2. Priority vegetation, fuels, and wildlife habitat treatment areas based on modeling.

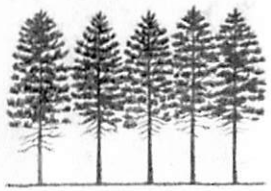
Project-level Field Assessment

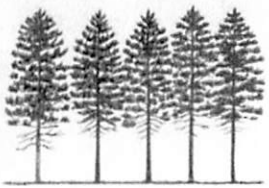
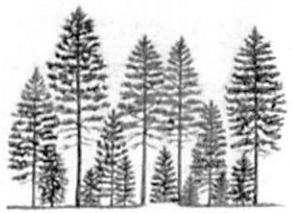
Silviculturists and foresters reviewed existing data sources and surveyed the project area in summer/fall 2018 to identify potential priority areas for treatment. Emphasis was given to those areas in need of treatment in the next 10 to 15 years. The following conditions precluded some areas from further consideration:

- Areas where mechanical harvest would be required within the riparian habitat conservation area except for high priority areas adjacent to private property where site-specific design elements are in place.
- Verified lynx habitat outside of WUI in accordance to the Northern Rockies Lynx Management Direction (verification on-going, thus areas not currently removed from Map 2 medium and high priority treatment areas).
- Commercial timber harvest inside Inventoried Roadless Areas, and
- Commercial and non-commercial timber harvest inside the Blue Joint Wilderness Study Area

Within high and medium treatment areas, the existing and desired future conditions of each individual stand will dictate the silvicultural treatment options that will be applied. Table 3 provides a cross-walk between existing and desired conditions based on general habitat type (e.g. warm / dry or cool / moist). Treatment objectives within the cross-walk table are a combination of objectives for silvicultural, fuels, and wildlife programs to accomplish the identified purpose and need. During surveys for individual treatments, additional opportunities/objectives may be determined to enhance resources with the identified silvicultural treatment. During implementation, design features will be applied to minimize, avoid, or mitigate impacts to existing resources.

Table 3. Cross-walk between existing and desired vegetation conditions based on habitat category. (Table prints at 11 x 17 format)

Warm and Dry: Ponderosa Pine	Existing Condition	Desired Future Condition	Silvicultural Treatment Options: Designed to move the stands toward the desired future condition. (All treatments will be based on the existing conditions of each treated stand.)
Stand Initiation Stage	Young Stands - planted or natural regeneration. Starting to see tree to tree competition. Ingrowth of additional shade tolerant species.	Open grown, vigorous stand. Feature the best tree, primarily ponderosa pine or other desirable individuals for species diversity. • Estimated range between 50-150 trees per acre depending on site conditions.	• Small tree hand thinning.
Stem Exclusion Stage 	Even-aged stand. Crown to crown competition. Density related stressors. Moderate to high beetle hazard ratings. Past mountain pine beetle activity present with standing and down dead trees creating a fuels hazard. Ingrowth and competition from shade tolerant species. Ladder fuels may be present.	Open grown stand that is resistant and resilient to insects, disease and fire. The stand is dominated by ponderosa pine and may feature variable densities with opportunities for a second age-class of ponderosa pine. Retain the best genetics. • ≤ 60 BA for pine beetle protection for 20-30 years.	Treatments shall vary across the landscape for diversity, habitat, and esthetics. • Small tree hand thinning, mechanical thinning. • Improvement Cut • Irregular Selection • Seed Tree Cut • Shelterwood Cut • Sanitation or Salvage Cut • Prescribed Fire: site prep for planting and/or maintenance burning. • Post-harvest planting where necessary.
	Terraced Plantations: tightly spaced trees planted in terraced rows. Pockets of past mountain pine beetle mortality is present with standing dead and down material creating a fuels hazard. Stand conditions vary based on slope, aspect, soil type and water availability.	Open grown stands that are resistant and resilient to insects, disease and fire. Stands contain adequate understory vegetation to promote soil recovery. Depending on elevation and aspect, manage for a natural species composition for the site. • ≤ 60 BA to reduce the risk of mountain pine beetle.	Treatment opportunities vary based on access, slope, soil type and condition, tree size, density and stand health. • Hand Thinning • Improvement Cut • Sanitation or Salvage Cut • Prescribed Fire
Mature with Understory Re-initiation 	Dominant and co-dominant ponderosa pine often growing with a mix of Douglas-fir. Stand densities are at moderate to high hazard for beetle activity. Stands have missed multiple low intensity fires compared to the historic fire return interval. Ingrowth and competition from shade tolerant species is dense and well-established. Stand conditions are often too dense for ponderosa pine to regenerate. A buildup of needle litter, duff, down trees and ladder fuels is putting these stands at risk for fire. Under the existing conditions, the stands that were once resistance to frequent low intensities fires will likely experience stand replacing fire.	A stand that is resistant and resilient to insects, disease and fire. Retain mature and large diameter healthy ponderosa pine. Feature two to three age classes of ponderosa pine to carry the stand and species into the future. Retain the best genetics. The stands shall be open grown with low or variable stand densities and maintained by prescribed fire. • ≤ 60 BA to reduce the risk of beetle caused mortality.	Treatments shall vary across the landscape for diversity, habitat, and esthetics. • Improvement Cut • Seed Tree Cut • Shelterwood Cut • Irregular Selection • Group Selection/Single Tree Selection • Sanitation or Salvage Cut • Prescribed Fire: site prep for planting and/or maintenance burning. • Post-harvest planting where necessary.

Warm and Dry: Dry Douglas-fir Shade Intolerant Mix	Existing Condition	Desired Future Condition	Silvicultural Treatment Options: Designed to move the stands toward the desired future condition. (All treatments will be based on the existing conditions of each treated stand.)
Stand Initiation Stage	Young Stands - planted or natural regeneration. Starting to see tree to tree competition and high stand densities. Western spruce budworm defoliation is present at low to high levels depending on site.	Open grown, vigorous stands. Feature the best tree and species composition for the site. • Estimated range between 50-150 trees per acre depending on site conditions.	• Small tree hand thinning.
Stem Exclusion Stage 	Even-aged stand. Crown to crown competition. Density related stressors. Many stands are experiencing varying degrees of western spruce budworm defoliation. Douglas-fir dwarf mistletoe is common throughout the project area with a range of infection levels from mistletoe free trees/stands to heavy infections throughout the entire crown. Ingrowth and competition from shade tolerant species are starting to become established. Ladder fuels may be present.	Open grown stands that is resistant and resilient to insects, disease and fire. The species composition is dependent on location and conditions, often a mixed conifer stand is desired. Stand densities are variable and may allow for new age classes. Horizontally spaced age-classes are desired to minimize the spread of dwarf mistletoe and western spruce budworm. Retain the best genetics and phenotypic characters for a vigorous and resilient stand. Dry sites shall be maintained by prescribed fire. Reduce ladder fuels and multistory conditions that promote insects and disease. • < 100 sq ft of BA desired to reduce the risk of Douglas-fir beetle.	Treatments shall vary across the landscape for diversity, forest health, wildlife habitat, and esthetics. • Small tree hand thinning, mechanical thinning. • Improvement Cut • Irregular Selection • Seed Tree Cut • Shelterwood Cut • Sanitation or Salvage Cut • Prescribed Fire: site prep for planting, low intensity maintenance burning, jackpot burning or mixed severity. • Post-harvest planting where necessary.
Mature with Understory Re-initiation Stage 	Dominant and codominant Douglas-fir often growing with a mix of ponderosa pine and other shade tolerant conifers. Douglas-fir beetle is currently active across the project area in these stands. Stand densities are at moderate to high hazard for beetle activity due to the high stand density of old trees, larger tree diameters and species composition. Stands have missed multiple low intensity fires compared to the historic fire return interval. Ingrowth and competition from shade tolerant species is dense and well established. Stands often contain moderate to high levels of western spruce budworm defoliation and dwarf mistletoe infections. It is common to find mature relic ponderosa pine towering above a multistoried dense Douglas-fir stand with little to no young ponderosa pine present to perpetuate a mixed conifer stand containing ponderosa pine in the future. A buildup of needle litter, duff, down trees and ladder fuels is putting these stands at risk for fire. Under the existing conditions, these stands that were once resistance to frequent low intensities fires will likely experience stand replacing fire and are currently experiencing insect and disease related mortality.	A stand that is resistant and resilient to insects, disease and fire. The stands shall be generally open grown with variable density. A mix of age-classes is preferred while retaining the healthies individuals, best genetics and phenotypic characteristics for a vigorous and resilient stand. Species composition will feature Douglas-fir and often ponderosa pine or other species where site conditions allow. Stand densities shall remain low enough to reduce the risk of beetle, disease and fire. Stands shall be maintained with prescribed fire. • < 100 sq ft of BA to reduce the risk of Douglas-fir beetle. • < 80 sq ft of BA to reduce the spread of western spruce budworm with horizontally well-spaced age-classes to reduce the spread of western spruce budworm and dwarf mistletoe.	Treatments shall vary across the landscape for diversity, forest health, wildlife habitat, and esthetics. • Improvement Cut • Seed Tree Cut • Shelterwood Cut • Irregular Selection • Group Selection/Single Tree Selection • Sanitation or Salvage Cut • Prescribed Fire: site prep for planting, low intensity maintenance burning, jackpot burning or mixed severity. • Post-harvest planting where necessary.

Cool and Moist : Spruce/fir, Lodgepole pine, Mixed Mesic Conifer and Shade Tolerant Mix	Existing Condition	Desired Future Condition	Silvicultural Treatment Options: Designed to move the stands toward the desired future condition. (All treatments will be based on the existing conditions of each treated stand.)
Stand Initiation Stage	Young Stands, often lodgepole pine with a mix of other species - planted or natural regeneration. Starting to see tree to tree competition and high stand densities. Western spruce budworm defoliation is present at low to high levels depending on site where host species are present.	Open grown, vigorous stands. Feature the best tree and species composition for the site. • Estimated range between 100-200 trees per acre depending on site conditions.	• Small tree hand thinning.
Stem Exclusion Stage 	Even-aged stand. Crown to crown competition. Density related stressors. Moderate to high beetle hazard ratings. Past mountain pine beetle activity present with standing and down dead trees creating a fuels hazard. Ingrowth and competition from shade tolerant species. Ladder fuels may be present. Many stands are experiencing varying degrees of western spruce budworm defoliation where host species are present.	Stands that is resistant and resilient to insects and disease. Fire is a natural disturbance process in these stands and often stand replacing in nature. The species composition is dependent on location and conditions, often a mixed conifer stand is desired. Stand densities are variable and may allow for new age classes. Horizontally spaced age-classes are desired to minimize the spread of dwarf mistletoe and western spruce budworm. Retain the best genetics and phenotypic characters for a vigorous and resilient stand. • < 100 sq ft of BA desired to reduce the risk of Douglas-fir beetle.	Treatments shall vary across the landscape for diversity, forest health, wildlife habitat, and esthetics. • Small tree hand thinning, mechanical thinning. • Improvement Cut • Irregular Selection • Seed Tree Cut • Shelterwood Cut • Sanitation or Salvage Cut • Prescribed Fire: site prep for planting, low intensity maintenance burning, jackpot burning or mixed severity. • Post-harvest planting where necessary.
Mature with Understory Re-initiation Stage 	Dominant and codominant Douglas-fir often growing with a mix of ponderosa pine and other shade tolerant conifers. Douglas-fir beetle is currently active across the project area in these stands. Stand densities are at moderate to high hazard for beetle activity due to the high stand density of old trees, larger tree diameters and species composition. Stands have missed multiple low intensity fires compared to the historic fire return interval. Ingrowth and competition from shade tolerant species is dense and well established. Stands often contain moderate to high levels of western spruce budworm defoliation and dwarf mistletoe infections. It is common to find mature relic ponderosa pine towering above a multistoried dense Douglas-fir stand with little to no young ponderosa pine present to perpetuate a mixed conifer stand containing ponderosa pine in the future. A buildup of needle litter, duff, down trees and ladder fuels is putting these stands at risk for fire. Under the existing conditions, these stands that were once resistance to frequent low intensities fires will likely experience stand replacing fire and are currently experiencing insect and disease related mortality.	A stand that is resistant and resilient to insects, disease and fire. The stands shall be generally open grown with variable density. A mix of age-classes is preferred while retaining the healthies individuals, best genetics and phenotypic characteristics for a vigorous and resilient stand. Species composition will feature Douglas-fir and often ponderosa pine or other species where site conditions allow. Stand densities shall remain low enough to reduce the risk of beetle, disease and fire. • < 100 sq ft of BA to reduce the risk of Douglas-fir beetle. • < 80 sq ft of BA to reduce the spread of western spruce budworm with horizontally well-spaced age-classes to reduce the spread of western spruce budworm and dwarf mistletoe. • < 80 sq ft of BA to reduce the risk of mountain pine beetle in lodgepole pine.	Treatments shall vary across the landscape for diversity, forest health, wildlife habitat, and esthetics. • Improvement Cut • Seed Tree Cut • Shelterwood Cut • Irregular Selection • Group Selection/Single Tree Selection • Sanitation or Salvage Cut • Prescribed Fire: site prep for planting, low intensity maintenance burning, jackpot burning or mixed severity. • Post-harvest planting where necessary.

Description of Project Activities

Proposed Vegetation and Fuels Treatments
We anticipate needing and using several treatments types to manage the existing vegetation and fuels within the Mud Creek project area to create conditions that are more resistant and resilient to disturbances. Considering site specific stand conditions and the degree of departure from desired conditions, a suite of treatments would be applied on High and Medium priority integrated acres across the project area. Treatments will utilize standard forest design criteria to ensure compliance with laws, policy, regulations and Bitterroot National Forest Plan standards and guidelines. Site specific mitigations or resource specific thresholds may be developed and incorporated based on results of effects analysis.

Prescribed Burning without Prior Harvest: Prescribed burning without harvest would occur primarily in the Warm and Dry vegetation types. The locations are often steep, dry, and rocky and may have limited access. This treatment would burn needle litter accumulations, grasses, brush, forest litter and concentrations of down wood. It would maintain and reduce surface fuel and the ingrowth of shade tolerant Douglas-fir on dry sites historically dominated by ponderosa pine due to frequent low intensity fire. Prescribed burning would lower fuel loading, improve species composition and structure and stimulate browse species for wildlife forage.

Small Tree Thinning (Plantations): A non-commercial treatment in young stands typically less than 35 years old. Small tree thinning may occur in naturally regenerated young stands or in planted stands. The objective of thinning young stands is to improve stand health, growth, and species composition for the future.

Intermediate Treatments: Intermediate treatments including thinning and improvement cuts are purposed to maintain or enhance desirable stand characteristics. These treatments are designed to mimic nature's low intensity disturbances such as low intensity fire or low levels of insect related mortality and are most commonly used in the warm and dry, ponderosa pine and Douglas-fir forest types. The trees selected for removal within these areas would generally be smaller or showing signs of insect stress such as defoliation. Following treatment these areas would generally not be open enough to allow for the successful establishment of seedlings of desired species. Depending upon site conditions and tree species left after treatment, fuel hazard would be reduced by use of by prescribed fire and/or hand crew small tree thinning or slashing as appropriate.

- **Improvement Cut:** Improvement cutting treatments would occur in stands in drier habitats with a significant ponderosa pine component and low to moderate levels of insect and disease activity. This treatment is designed to promote and maintain mature ponderosa pine and Douglas-fir communities in these areas by removing competing less desirable species (Douglas-fir) with the goal of increasing the growth, vigor and resilience to disturbance. *An example is thinning a warm and dry mixed conifer stand containing ponderosa pine and Douglas-fir by removing intermediate or suppressed Douglas-fir and favoring ponderosa pine in a more open grown stand providing space between the crowns.*

- **Commercial Thin:** A commercial thin would retain the healthiest trees with large, well-formed crowns. The objective is to improve tree growth and would favor the desired species determined by the site conditions, fire tolerance, and desired future conditions. *An example would be thinning a more mature plantation to reduce stand densities, favor the desired species and increase growth and vigor.*

Irregular Selection: This treatment would result in a mosaic of small openings and thinned areas with variable residual densities. Trees would be thinned in areas where there is the opportunity to maintain or enhance the conditions for desirable species. Trees removed would generally be smaller, less dominant, diseased, or of a species not desired for the future stand composition. This uneven-aged treatment would promote multiple age classes and variable forest structure. *An example is removing stressed Douglas-fir with signs of western spruce budworm defoliation while retaining the individuals that show signs of genetic resistance to the budworm; leaving a variable density residual stand with possible openings.*

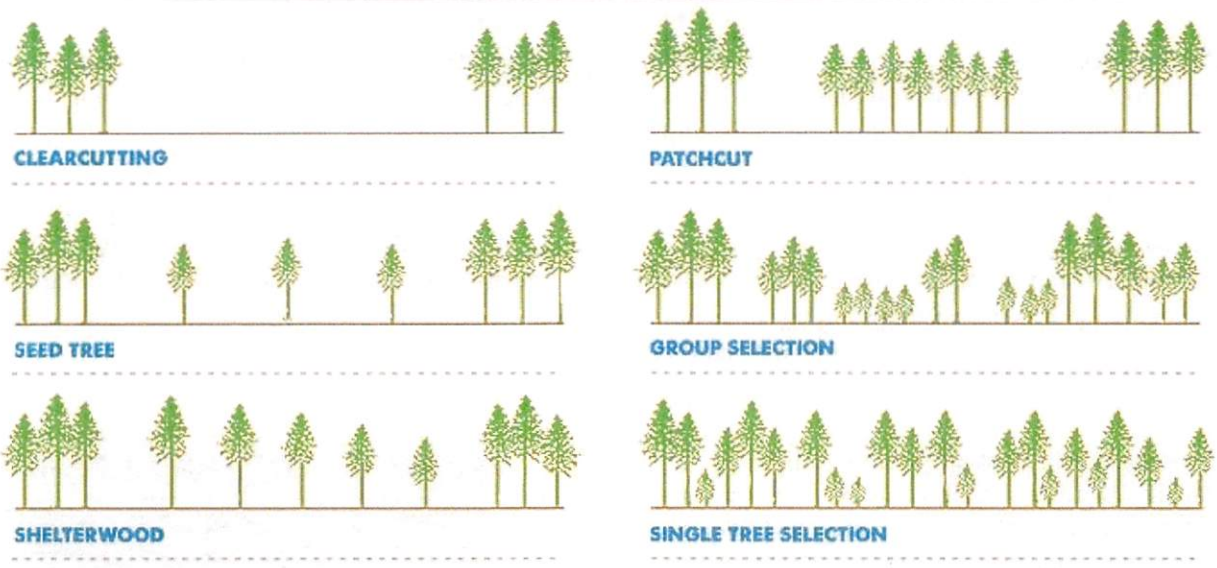
Regeneration Harvest: Regeneration harvests are proposed to address forest health issues including insect, disease and fire hazard. Regeneration harvests include shelterwood cuts, seed tree cuts and clearcuts. Regeneration harvests are a treatment tool that mimics natural disturbances that result in moderate to high levels of tree mortality. The following types of regeneration harvests are tools used in forest types that would naturally experience stand replacing fire or high mortality related to insects and disease. These treatments are most commonly found in cool and moist forest types. *An example is a mixed conifer stand on a cool and moist site where lodgepole pine has experienced mountain pine beetle mortality, Douglas-fir and subalpine fir are experiencing heavy western spruce budworm defoliation, Douglas-fir contains moderate to high levels of dwarf mistletoe, or root disease is present. In many cases, one or more of these insects or diseases is a factor and post-treatment tree retention varies depending on stand health, species and regeneration needs.*

Shelterwood with reserves trees would be left scattered throughout a stand or in clusters designed to provide shade and seed for successful regeneration.

Seed tree with reserves individual trees would be left to produce desirable seed for regeneration.

Clearcut with reserves reserve trees would not be relied upon to produce seed or shade, but would function to meet other objectives. Regeneration treatments would remove most of the trees in an area to provide growing space for planted or natural seedlings.

TYPES OF HARVEST



We anticipate some even-aged regeneration harvest openings greater than 40 acres in order to treat to the same scale insects or disease is present on the landscape, exceeding the Regional 40-acre opening size limitation (Forest Service Manual 2470, Supplement No.: R1 2470-2016-2). To exceed this size, Regional Forester approval is required. Even-aged treatments include Shelterwood with Reserves, Seed Tree with Reserves and Clearcut with Reserves. Varying densities of trees may be retained within these areas, from scattered individuals to groups consisting of the largest, healthiest trees.

Thinning and slashing includes reducing the density of seedling, sapling and pole sized trees with purposeful selection of leave trees using a combination of a spacing requirement, diameter limit or species preference. These activities would be used on most acres to control species composition, increase tree vigor, remove ladder fuels, increase canopy base heights, and prepare stands for the use of prescribed fire.

Piling includes the gathering and concentrating of residual slash (tops, limbs, branches, trunks, etc.) and existing dead and down woody material (generally larger than 1 inch in diameter) in excess of Course Woody Debris requirements by hand or machine. Piles are carefully located outside of residual/leave tree driplines, in openings or areas of low tree densities to minimize scorch to trees when burned. Piling is primarily used in conjunction with thinning to

dispose of residual slash thereby reducing fuel loadings, fire intensities and protecting residual trees prior to the use of prescribed fire.

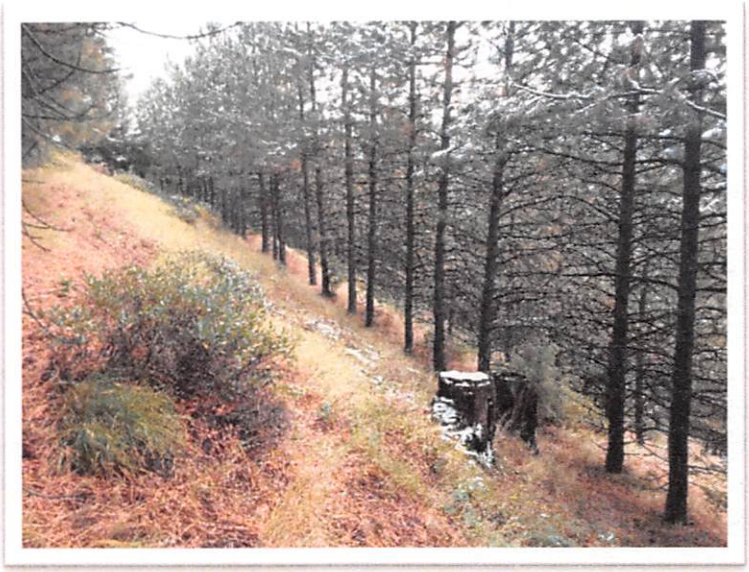
Pile burning is used to dispose of excess vegetation remaining after thinning and mechanical treatments. Pile burning is guided by burn plans that specify the parameters of favorable conditions during which the risk of fire spread and air quality impacts are low but insure complete fuel consumption.

Fuelbreak- is used in conjunction with prescribed fire implementation or during wildfire suppression. They are strategically placed along the perimeter of units or along roads and serve to decrease the resistance to control of fire. The activity includes clearing an area ranging between 20 and 100' wide of all vegetation less than 8"and pruning limbs of residual trees to limit the probability of torching and spotting. All existing down woody fuels and thinning slash within this area is removed and scattered to limit fire intensities.

Prescribed fire Post Treatment-
Usually the final step of the phased approach for effectively reducing surface fuels depending on existing conditions, proximity to values and desired outcomes. Windows of opportunity (burn windows) for implementing prescribed fire typically occur in the spring and fall months, prior to and after the normal fire season.

Prescribed fire within the project area will improve big game habitat, reduce surface fuels, reintroduce fire to a fire dependent ecosystem and move areas of the project closer to the desired conditions. Effects of the prescribed burning are reduced fuel loadings that are variable across the units but within historic ranges for each fire group. Prescribed fire will also create a discontinuous fuelbed that will reduce potential fire intensities and spread. Canopy base heights will be raised and ladder fuels removed by thinning and removing understory and intermediate sized trees. Desired scorching on residual tree's lowest limbs during prescribed fire implementation will also raise canopy base heights and reduce the probability of torching during a wildfire. The changes to surface and canopy fuels from the proposed treatments will result in reduced fire type and intensity. Maintenance burning would continue to occur at appropriate fire return intervals determined by site conditions.

Terraced plantations: The Mud Creek project area contains 79 terraces plantations ranging in size from 1 acre to 130 acres and totally approximately 1,645 acres. The majority of the terraces were planted with ponderosa pine in the 1960's and 1970's. Stand health, tree size, density and soil conditions varies greatly across the terraces. Some plantations have been heavily impacted by past mountain pine beetle mortality and based on current densities others are at high risk in future. A sample of the plantations have been visited by soil scientists and silviculturists and treatment options continue to be discussed. Vegetation treatments will be site dependent and may range from commercial thinning, non-commercial thinning, prescribed fire or no treatment.



Road Management Activities
Road management activities are needed to implement the project (e.g. maintenance, reconditioning, reconstruction, temporary road construction, road storage and decommissioning) and to address resource concerns identified during the minimum roads analysis.

Maintenance activities would include surface blading, minor earth work (e.g. cut and fill shaping), road surface shaping, ditch cleaning and reshaping, roadside clearing and/or brushing, seeding disturbed areas, drain dip and cross drain cleaning and construction, culvert cleaning, armoring, and/or replacement, slash filter windrow and sediment trap construction near live water crossings. Because these roads are intended for long-term access, and in many cases would remain open to public travel, work would be performed to minimize environmental impacts and to provide a safe and stable road.

Decommissioning treatments would occur on roads not needed for future use. Activities could vary from full recontouring of roads found to be causing resource impacts to no treatment of roads that are fully revegetated, contain no stream crossings, and have no associated resource impacts (i.e. administrative decommission). Proposed road decommissioning in this project would not affect legal public motorized access as authorized in the Bitterroot National Forest Travel Plan.

Storage treatments would occur on roads that are needed for long-term access, but not in the short-term. Treatments would leave the road prism intact, but in a stabilized condition until needed for future use. Depending on the existing condition of the road, storage activities could vary from no treatment (administrative closure) to those that include road surface ripping, placement of woody debris on roads, removal of structures (e.g. culverts) and reshaping any stream crossing to natural contours, installation of waterbars, seeding and fertilization of the road prism and recontouring the entrance of the road. Although the road prism would remain partially intact after storage treatments, it would not be useable without reconstruction. Proposed road storage in this project would not affect legal public motorized access as authorized in the Bitterroot National Forest Travel Plan.

Addition of existing non-system roads to the National Forest road system: There are 9.8 miles of undetermined roads within the project area. These roads will be included in the minimum roads analysis.

Undetermined roads identified as needed for project implementation or over the long-term will be added to the National Forest road system as Maintenance Level 1 roads. Undetermined roads identified as not needed will be decommissioned, either administratively or physically depending on the conditions of each road segment.

Long-term specified roads would be constructed to access treatment areas and provide long-term access for future land management activities. The location, design, and construction of these roads would follow Best Management Practice standards to minimize potential environmental impacts and would be positioned at mid- to upper slope locations.

Temporary roads would be constructed to a minimal standard to provide access for timber harvesting equipment and log trucks. These roads would be decommissioned following use for this project. Decommissioning of the road would include replacing overburden (excavated soils) back onto the road prism to return the ground to its natural contour, placing woody debris on the disturbed area, and seeded and fertilizing the disturbed soil.

Motorized and non-motorized routes and loops: Given the road network within the project area, opportunities exist for the development of motorized and non-motorized routes and loops. The Bitterroot National Forest recreation staff will work with other staff to identify potential routes and loops that are: 1) compatible with management area direction and travel management plan route status, and 2) not in conflict with other resources. We welcome suggestions by the public on identification of potential motorized and non-motorized routes and loops.

Additionally, the Bitterroot National Forest Travel Management Plan designates roads, trails, and areas where motorized travel is authorized within the project area (as well as elsewhere on the Forest). We are aware of several roads within the project area where on-the-ground conditions do not match the approved travel status (e.g. roads with physical barriers that are designated open to motorized travel, and open roads that are designated as closed). The correct status of those roads will be implemented as part of this project.

Programmatic Forest Plan Amendment

The Mud Creek Project proposes to programmatically amend the Bitterroot Forest Plan in regards to Elk Habitat Objectives (e.g. elk habitat effectiveness, thermal cover, and hiding cover). This scoping process will help us gather information necessary to evaluate the effects of changing or adding plan components.

When proposing a Forest Plan amendment, the 2012 Planning Rule (36 CFR 219), as amended, requires the responsible official to provide in the initial notice "which substantive requirements of §§ 219. 8 through 219.11 are likely to be directly related to the amendment (§ 219.13(b)(5)) . . ." Whether a rule provision is likely to be directly related to an amendment is determined by the purpose for and the effects of the amendment, and informed by the best available scientific information, scoping, effects analysis, monitoring data or other rationale. Based on the proposed amendment and requirement of the planning rule, the following substantive requirements of the 36 CFR 219 planning regulations would likely be directly related to the proposed amendment: 36 CFR 219.10(a)(5) the consideration of habitat conditions

for wildlife commonly used and enjoyed by the public. The responsible official has the discretion to determine the scope and scale of any amendment and is not required to apply any substantive requirements that are not directly related to the amendment.

Need for Programmatic Amendment

Current forest-wide standards for Elk Habitat Objectives (Forest Plan pp. II-21, F.1.e.(14)) direct forest managers to "manage roads through the Travel Plan process to attain or maintain 50 percent or higher elk habitat effectiveness (Lyon et al. 1983) in currently roaded third order drainages. Drainages where more than 25 percent of roads are in place are considered roaded. Maintain 60 percent or higher elk habitat effectiveness in drainages where less than 25 percent of the roads have been built." Guidance in Lyons et al. (1983) indicates the elk habitat effectiveness criteria should be applied to areas greater than 3,000 acres. The Bitterroot Forest Plan applies the criteria in Lyons et al. to the third order drainage scale, regardless of size. Only 75 of 385 third order drainages on the Bitterroot National Forest are greater than 3,000 acres in size. This discrepancy between the guidance provided by Lyons et al. and the Forest Plan has created a situation where the existing condition of many third order drainages are not in compliance with the Forest Plan standard. The Forest is considering alternative metrics for elk standards because more recent scientific literature indicates that additional factors including: forage abundance, distribution, availability, and quality; distance from open roads during hunting seasons; and hunting pressure, may affect elk use patterns and distribution across the landscape.

The Forest Plan Record of Decision (signed September 30, 1987) states, "Winter range will be managed to provide diversity of forage and hiding cover with at least 25 percent of the area in thermal cover at all times." Forest Plan standard F.1.e.(12) provides guidance by stating, "Big game cover/forage relationships, as described in Guides for Elk Habitat Objectives (USDA, 1978) will be a consideration in planning timber management activities." Thermal cover is difficult to accurately measure on a landscape scale. Procedures outlined in Guides for Elk Habitat Objectives are no longer used and objectives are expressed in crown closure, not canopy cover. This nuance is important in that each is measured differently. Closure, whether measured from the ground using a wide angle view (spherical densitometer) or from antiquated aerial hemispherical digital photographs, provides an overestimate of canopy cover with high variability among techniques (Paletto and Tosi 2009). The U.S. Forest Service VMap database is the most appropriate tool for assessing canopy cover and other vegetation variables because it captures a moment in time for comparison across the entire forest. Further, more current research indicates thermal cover is not a necessary requirement for elk (Cook et al. 1998).

Hiding cover is also difficult to measure at a landscape scale. Specific to Management Area 2, the Forest Plan defines hiding cover as, "Vegetation, primarily trees, capable of hiding 90 percent of an elk seen from a distance of 200 feet or less." The degree to which hiding cover may influence seasonal elk occupancy of Forest Service lands is unknown. However, the elk population in most units of the Bitterroot Valley has continued to grow since the Forest Plan was signed and is over population objective. There is a need to amend Forest Plan elk habitat management direction using scientific information that is measurable and applicable to the geography, landscape, and biology of the Bitterroot National Forest.

The amendment will be subject to the 36 CFR 219 objection process.

Possible Alternatives

One or more alternatives to the proposed action may be developed depending on the issues raised during internal and external scoping. An alternative must meet the purpose and need of the project and address one or more issues related to the proposed action. Alternatively, the responsible official may modify the

proposed action and / or develop design criteria that address the issue instead of developing an alternative. The interdisciplinary team will use the cause-effect relationships identified in scoping comments to 1) assist in determining if an alternative to the proposed action is needed, and 2) design an alternative that specifically addresses the issue(s).

Scoping Process and How to Comment

Comments specific to the proposed action that identify a cause-effect relationship are most helpful. Additionally, comments expressing concern about or interest in treating a specific location within the project area will help the interdisciplinary team design a proposed action that incorporates these comments to the extent possible. Comments expressing a general position or statement, while welcome, do not necessarily provide the interdisciplinary team with specific concepts or features that can be incorporated into the proposed action.

In order for scoping comments to be reviewed and considered in a timely manner, it is most helpful if comments are received within 30 calendar days following the date of signature on this letter, are specific to the proposed action and identify a cause-effect relationship. Comments received in response to this solicitation, including names and addresses of those who comment, will be considered part of the public record for this project and will be available for public inspection. The following options are available for submitting comments:

Electronic comments must be submitted via the project comment page: https://cara.ecosystem-management.org/Public//CommentInput?Project=55744 (or by going to the project webpage: https://www.fs.usda.gov/project/?project=55744 and clicking on Comment / Object on Project on right side of page).

Hardcopy comments can be mailed, hand-delivered or faxed as follows:

Mailed to:
Bitterroot National Forest
Attn: Mud Creek Project
1801 N. First Street
Hamilton, MT 59840

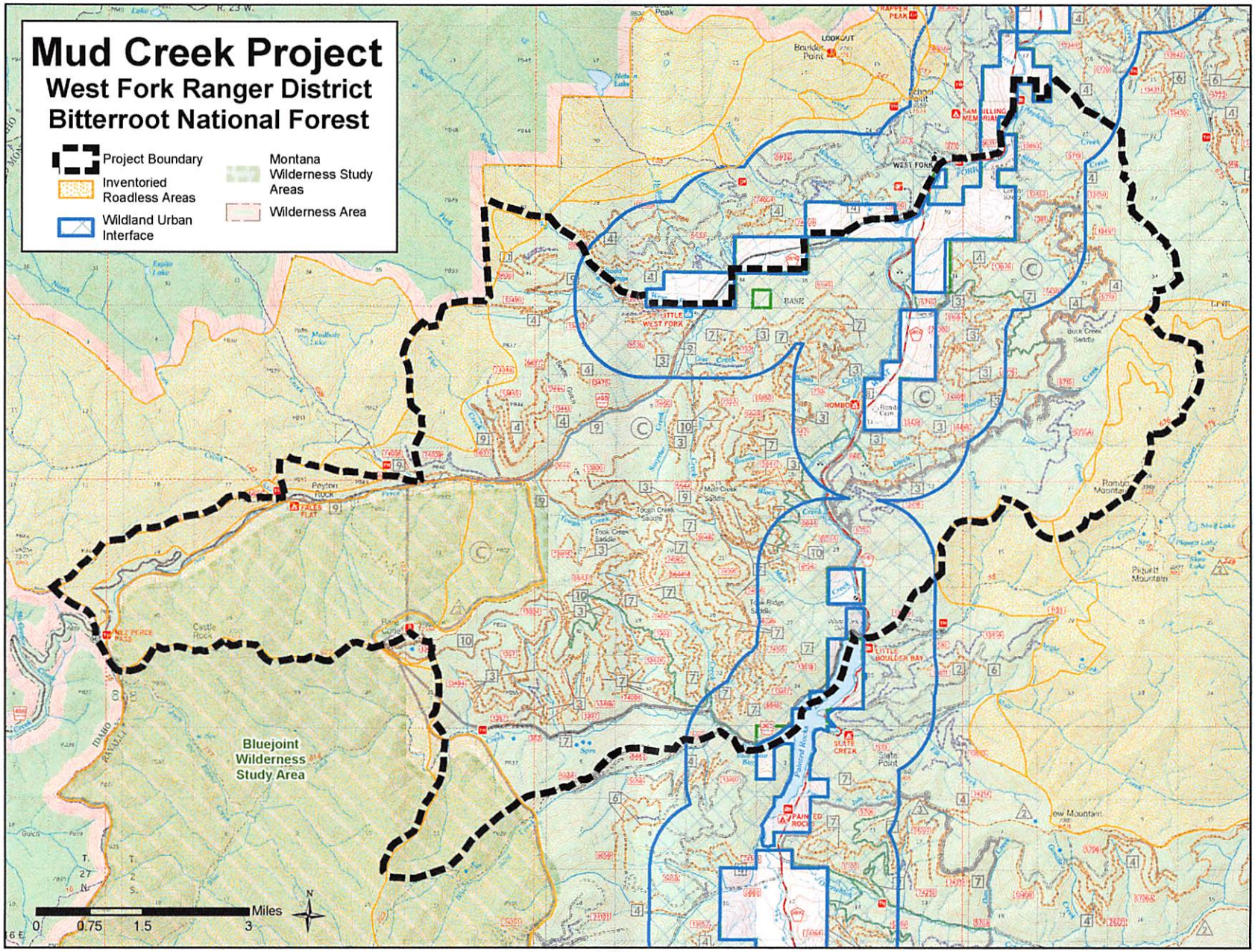
Hand delivered to:
West Fork Ranger District
Front Desk (specify comments are for Mud Creek Project)
6735 West Fork Road
Darby, MT 59829

OR

Bitterroot National Forest
Front Desk (specify comments are for Mud Creek Project)
1801 N. First Street
Hamilton, MT 59840

Faxed to: (406) 363-7159. Be sure to annotate on the cover page that these are comments for the Mud Creek project.

Information about the project, in addition to what is presented here, can also be found on the *Bitterroot National Forest* (click on Mud Creek Project). (For those receiving a hardcopy, the Bitterroot National Forest Project webpage address is: *https://www.fs.usda.gov/projects/bitterroot/landmanagement/projects*


Mud Creek Project
West Fork Ranger District
Bitterroot National Forest
Project Boundary
Inventoried Roadless Areas
Wildland Urban Interface
Montana Wilderness Study Areas
Wilderness Area
Bluejoint Wilderness Study Area
Miles
0
0.75
1.5
3
N